Certification body

CERTIgaz

1, rue du Général Leclerc
F - 92800 Puteaux
Linéa Building
infocertigaz@certigaz.fr
www.certigaz.fr

Mandated by

afnor CERTIFICATION

11 rue Francis de Pressensé
F - 93571 La Plaine Saint Denis Cedex
www.marque-nf.com

Identification number: NF136

Revision No.: 24

Date of implementation:
June 1st, 2025

NF APE Mark certification rules (1)

CERTIFIÉ PAR CERTIGAZ NF APE

cofrac CERTIFICATION DE PRODUITS ET SERVICES
Accreditation
No. 5-0042
Available range
on www.cofrac.fr

NF136 (NF APE) mark applies to accessories for polyethylene distribution networks:

- of gaseous fuels,
- drinking water,
- irrigation,
- sanitation with pressure,
- industrial applications,
- of electrical confinement.

(1) ***the NF mark reference system consists of the specific Certification Rules of the mark concerned and in annexes the general Rules of the NF mark and the normative documents referenced therein***

SUMMARY

These Certification Rules have been submitted for approval to AFNOR Certification for acceptance into the NF certification system.

They were approved by the Legal Representative of AFNOR Certification on May 12th, 2025.

They cancel and replace any previous version.

These Certification Rules are applicable as of June 1st, 2025. There is no implementation deadline for the elements that have been the subject of the changes to these Rules, unless a transitional period is indicated as defined in the summary table of modifications.

CERTIGAZ, as a certification body accredited by COFRAC under number 5-0042 (accreditation scope available on www.cofrac.fr), is committed to developing Certification Rules guaranteeing an appropriate level of requirements for product quality, their fitness for use and their durability.

Accreditation provides proof of CERTIGAZ's independence and impartiality and its technical capabilities to develop the NF mark.

The Certification Rules may be revised, in whole or in part, by CERTIGAZ and after consultation with the Special Committee of the NF APE mark.

The revision is approved by the Legal Representative of AFNOR Certification, for acceptance into the NF certification system.

This standard is available and can be downloaded from the website www.certigaz.fr or www.marque-nf.com .

Further information regarding certification and certified products is available on these websites, including:

- identification of holders;
- identification of certified products;
- the list of certified characteristics.

In litigation, the French version applies

HISTORY OF CHANGES

Modified part	Revision No.	Date	Changes made	Impact on the requirements of already certified products and/or transitional period
The entire document	17	**April 29th, 2013**	- Complete overhaul of the reference system in accordance with the drafting guide for the Certification Rules for NF mark applications. - Integration of SROB104-NF specifications: Characteristics of threaded pads and rings with meter pitch according to NF E 29-532. - Integration of SLAB100 specifications: specification for manufacturer laboratory authorization. - Update of product standards and tests. - Clarification dealt with in the mark committee regarding tests. - Constitution of files. - Harmonization of family codification with product standards. - Details of tests by application group. - The marking.	- Before January 2014
1 – 2 – 3 4 – 5 – 7	18	**February 26th, 2015**	- Integration of MBDI with approval management of triggers and monitoring of their assembly and control sites. - Various modifications, corrections or additions identified by highlighting. - 2 new mark laboratories for partial testing. - Management of mark laboratories according to SLAB 110 specifications. - Roughness limitation for male end fittings. - Addition of the application for collectors and sanitation connections with pressure (Group 5)	- Transitional phase until the end of 2015 - No impact on already certified products - Applicable for certified accessories manufactured more than one month after revision
1 – 2 – 3 4 – 5 6 – 8	19	**June 29th, 2016**	- Updated the title of the rules with the addition of the application of sanitation with pressure according to standard EN 12201 - Number of copies of technical file in part 7 - Document update (standards, specifications) - Replacement of the ISO10838-1/2/3 series by ISO 17885 - Separation of test tables (TT, BRT, PVT, AT) for families D1, D2 and D3 - Modification of table 9 for each family D1, D2 and D3 and depending on the technologies - Role and mission of the committee - Replacement of the product sheet form 004A with a downloadable Excel file linked to the technical files - MOP marking if different from MOP max - Taking into account the 2 ISO9001 versions - Resin Batch Mix - Definition of observation following surveillance - Clarification on the sampling of PVTs and sending information to CERTIGAZ - Clarification of the definitions in the lexicon (extension, observation, warning and suspension)	The amendments are applicable from the date of validation of the rules except for the following subjects: -2-year transitional phase, for already certified fittings, for the transition to ISO 17885 from the date of revision 19 -3-year transitional phase for ISO 9001. Version 2008 is possible until 09/2018 -The PVT sampling provisions are applicable at the latest for the 2017 monitoring
1 – 2 – 3 4 – 5 – 7	20	**April 30th, 2018**	- Details on the scope of certifiable products in terms of PE, SDR, dimension groups, application groups. - Shaped fittings (group D of XP CEN/TS 12201-7) are not covered by the rules. - Change of definition of the C2 family, only for butt welding. - Scope of ISO13954 and ISO13955 standards for family A debonding tests. - Details for hydrostatic pressure tests in addition to §10.3 of the ISO1167-1 standard for hazard management. - Redefinition, on an experimental basis, of the TT, BRT, PVT and AT test plans, for water in its various applications and for the Gd3 of the gas application, for families A, B and C. .../...	No impact on already certified products. The changes are applicable from the validation date.

.../...

Modified part	Revision No.	Date	Changes made	Impact on the requirements of already certified products and/or transitional period
			- Application of the decohesion test according to ISO 21751 for family B and Gd3. - Details for collars and flanges according to NF EN ISO 15494, for families C. - Closing direction for valves for applications other than gas, to be entered in the technical file. - SDR management for hydrostatic pressure testing of multiple valve testing. - Removal of specific articles from the consumer code. - Additional information for test reports for a summary. - Defining a rule for rounding measured values. - Accuracy of electrical resistance measuring means. - Distribution of a list of members of the mark committee. - Information on the codification of certificates and approvals. - Various editorial corrections. - Addition of standards, for information purposes, NF EN 13100, 14728 and EN 16296 - Details on the composition of the 2nd college of the committee - Details on writing AT reports - Details of the role of the Committee Chair	
1 – 2 3 – 4 5 – 6 7 – 8	21	**December 1st, 2019**	- §1.1.1 Precision of the quantity of a small series for group D of XP CEN/TS 12201-7 - §1 – 2 – 3 and 4 New application for electrical confinement - §2 – 3 and 4 Precision for the ammonia stress resistance test and pr NF E 29-196 to replace annex 2 of SROB100 - §2.4.4.8 separation of the control plane of the B1 family triggers, to avoid confusion - §2.5.3.1 marking of areas of application on accessories - §3.3.1 Details on the appearance of accessories (PE/Steel protection, stitching, RPC) - §3.3.1 Table 9 – test plan in the event of a change of MRS or SDR in family D3 - §3.3.1 clarification of the test according to ISO13924 in family D1 - §5 update of links to NF114 certificates on the LNE website and for ACS managed on the ministry website - §6 information for the tariff revision based on the SYNTEC index - §7 details for creating technical files (PE/Steel protection, tools for tapping and RPC, key for perforator) - Correction or addition following consultation 201908 - §1.1.1 / 2.5.3 harmonization of application group with NF114 - Clarification or correction following the COFRAC audit - §2.5 addition of rules for using the COFRAC logo - §3.3.2 / 3.4 / 4.1.2 / 4.2 for audits and decisions - §3.1 and 7 addition EFTA to EEA - §8 addition of definitions (NCmaj , NCmin , PS, PP, PF)	No impact on already certified products. The changes are applicable from the validation date.
			- §2.3 Regulatory developments, new decree of February 23, 2018 and CNPG guides to replace 3 decrees (August 2, 1977, March 4, 1996 and July 16, 1980) - §2.1 addition of standard NF D36-136, connection	Transitional periods, see CNPG guide: "Gas appliances and equipment"
2 – 3 – 4 5 – 7 – 8	22	**June 23rd, 2021**	- §2.4.4.8 monitoring of the durability of the marking (NF and GAZ logo) - §2.5.3.1 and 3.3.1: addition of the conditions for the durability of NF and GAZ marking on products: wire logo, use of NF letters - §3.3.1 tables 2 and 7a and 4.1.1 table 13a– tests of standardized mechanical joints	- during monitoring during 2021 audits for certified products - During the 2021 ATs for certified products

Modified part	Revision No.	Date	Changes made	Impact on the requirements of already certified products and/or transitional period
			- §2.2.1 addition ISO12176-5 / NF E 29-135 (durability of marking) - §2.2.2 addition of ATG B.521 specification and RSDG specifications - § 2.2.2 and tables of § 3.3.1 and 4.1.1 to specify NF E 29-196 instead of Annex 2 of SROB100 06-2020 since version SROB100 04-2021 - §2.3 update of gas regulations - §2.4.1 deletion ISO9001 version 2008 - §2.4.6 details and commitments: management of customer complaints - §2.5.3.1 possible addition of a QR code - §2.5.3.2 assembly accuracy for family C fittings - §3 extension clarification which implies a new certificate - §3.1 details for the ELEC application (diagram modification) - §3.3.1 information for the WATER application (groups 2, 3 and 4) dimensional details – rounded - tables 4, 7a 10 and 13a precision for samples under ammoniacal constraints - §3.3.2. Removal of progress tracks and clarification for the resolution of deviations during a supplementary audit. Details for multi-site audits and remote audits - §4.1.1 correction of sample numbers for ATs Sending of PVT results to CERTIGAZ before the end of February - §4.1.2 Details for multi-site audits and remote audits - §5.6.1 clarification for guests of the Special Committee - §7.1 provision of the DT in 1 unlocked PDF file - §7.2 completed request letters for invoicing - §7 sheet 005 – technical file: details for seals and lubricants - lack of material certification attached ➔tests every 2 years - absence of EN377 certification possible if historical use - §8 definitions of major/minor non-conformities and agent	No impact on already certified products. The changes are applicable from the validation date.
1 to 8	23	**January 10th, 2023**	-Page 1, §2.2, §7.2, § 7.2 letters => change of address of CERTIGAZ -Page 3, information on the application date and transitional periods -Page 3, availability of information on the Afnor and Certigaz websites -§1.1.1, §2.5.3, clarification of application groups and gaseous fuel information (§2.2.1 list of standards for EN437) -§1.1.2.1 precision of virgin resin without recycling, certified NF114. -Addition of §1.1.2.3 cascade certification info for certain PE accessories (extensions, crosses, etc. with brazing or welding) to NF540 -§1.3, NF APE info recognized in the field of gas regulations -§2.4.4.8, breaking torque details NF E 29-532 and NF E 29-536 -§2.5, clarifications for marking - §2.5.3.1, §2.5.3.2 and § 2.5.3.3, details on the marking and instructions including the expiry date before implementation, the CT codification and the recommendation of the ELEC marking on the accessory - §3, details for the different cases of maintenance - §3 and 4, tables 4, 5, 6 and 14 precisions of tests by impression -Tables 5, no test according to ISO13924 for stitching saddles or ballooning on the capped ends (family B2) -Tables 5 & 11, recording saddle deco method (method A1 if dispute) -Tables 5 bis & 11 bis, PBDI saddle diameter info -Tables 7c & 13c, ovalization info family D3 for use of PE pipe -Family E3, page 54, details on purges and non-NF kit components -Addition §3.3.3 Auditors/inspectors -§3.4 and § 3.5, certificate validity 3 years but at the end of the previous month -Addition §3.6 Confidentiality -§4, §4.1 and §8, clarification for the holder = manufacturer or distributor -§4.1.1, if NC with suspension during AT ➔suspension maintenance + Details of the PVT plan for families D and E + AT PBDI dn 40 to 125 + Details for monitoring AT samples sent within 30 days. -§4.1.2, distributor monitoring audit in maintenance every 2 years	➔12-month transitional period for fittings already certified NF136 ➔12-month transitional period ➔12-month transitional period for BRT (table 14)

Modified part	Revision No.	Date	Changes made	Impact on the requirements of already certified products and/or transitional period
			-§4.2, case of renewals during a suspension -§ 6.2, invoices issued in electronic format only -§6.3, delivery time for samples 30 days -§7, sheet 005 -§8, deletion of progress track -§6.1, details of costs incurred if visit is cancelled or postponed -§7.1, P91 and P100, clarification for sheets 004 and 005 -§3.4, 4.3 and 4.4, details for granting the right to use and its withdrawal	
1-2-3 4-6-7	24	01/06/2025	-§1.1.1 Details of the nature of gases and regulations for PE accessories -§1.1.2.1 Gd4 GAS and WATER and 2 notes **:** for restrictions on PE resins compared to NF114 by network managers and mention of PE 100-RC, RD and HT -§2.2 Replacement of AFG by FranceGaz §2.2.1 Update standards: NF EN ISO 3127 replaces EN744 – series EN1555, EN12201, ISO 18488 for PE 100 RC, ISO13957, **ISO8233** … withdrawal of ISO 23711 (also in §7, sheet 005) -§2.3 decree of February 23, 2025 for ERP applicable on January 1, 2026 -§2.4.4.8 Details for the tightening resistance of rotating nuts for family D1 -§2.5.1 Reminder of the orders for marking -§2.5.3.1 ELEC application present on the accessory and verification of its durability, see §3.3.1 -§3 Clarification for minor and major extensions as well as PE 100-RC, RD and/or HT claims -Test tables (TT) from 1 to 9 (OIT, **valve torque** , ELEC tests family D2, etc.) + corrections or clarifications -§3.3.1 clarification on the durability of markings + clarifications for pdb (perforators) -§3.4 Re-invoicing of the instruction if the instruction period is more than 12 months after the request, due to lack of information from the applicant. -§4 Test tables (BRT, PVT and AT) from 10 to 16, with SHT test if claim PE 100-RC, including monitoring of PBDI and MBDI in connection with SAPE102-3, and other modifications in connection with tables 1 to 8, details in tables 11 - 13abc and 14 -§4.1.1 Clarification in the event of absence of production for ATs and adjustment of quantities to be taken -§4.1.2 Details for audits of ancillary sites -§5 Supplement on confidentiality and access to files by third parties -§5.4 due to lack of activity derogation from SLAB110 – Change of name GRTgaz becomes NATRAN -5.5 details for access to LNE certificates and information for the replacement of ACS in accordance with European directive 2020/2184 -§6.1 Reminder of § 3.4 above -§6.3 Details of test prices to be obtained from laboratories -§7 Addition of claim(s) PE 100-RC – PE 100-RD – PE 100-HT Clarify the § tools for families B2 and E2 Clarification for the CT70 or CT110 in the technical file	**Compliance deadlines until 12/31/2025 for characteristics related to operating torque and the resistance of the drive mechanism and stops for taps.** Applicable from June 1 2025 for other modifications

Part 1
PRESENTATION AND SCOPE OF APPLICATION

1.1 Fields of application

This application, the NF APE mark (NF136), concerns accessories for polyethylene networks for the distribution of gaseous fuels, drinking water, irrigation, sanitation with pressure, industrial applications and electrical containment commonly referred to as “accessories for PE networks” (APE) which are classified in the following families.

1.1.1 Product families

New codification		family code before April 2013	Designation	Product standards
Group A: PE fittings with electrofusion sockets	**A1 family**	A1	Sleeves, elbows, tees, reducers… Only in PE	**NF EN 1555-3 (07/2021) / 1-G** **NF EN 12201-3 2/3/4-W 5-ELEC** **NF EN ISO 15494 / 4-PI**
	A2 family	-	Mixed fittings (polyethylene/metal) with electro-weldable sockets	
Group B: PE fittings with electrofusion saddle	**family B1**	A21	Branch sockets (pdb), with integrated trigger (PBDI) and branch sleeve with integrated trigger (MBDI)	
	B2 family	A22	Saddles for stitching, ballooning, diversion (sdd), obturation and reinforcement	
group C: (1) PE fittings with male ends	**C1 family**	A31	For assembly by electro-weldable socket	
	C2 family	-	For butt welding assembly	
Group D: Joint fittings by mechanical assembly or other types of assembly, whether removable or not	**D1 family**	B1	Metal mechanical fittings "metal-plastic" and "plastic-plastic"	**Same families A, B and C + ISO 17885**
	D2 family	B2	Plastic mechanical fittings "metal-plastic" and "plastic-plastic"	
	D3 family	B3	Transition piece (collars, flanges, sleeves, etc.) with a PE part with a male end	
Group E: PE taps	**E1 family**	C1	PE valves for PE networks	**NF EN 1555-4 (07/2021) / 1-G** **NF EN 12201-4 2/3/4-W** **NF EN ISO 15494 / 4-PI**
	E2 family	C2	Support taps (RPC), supply with an electro-weldable saddle	
	E3 family	C3	Single or dual-purge pressure relief valves	

(1) Shaped fittings, according to group D of XP CEN/TS 12201-7 or completely machined, from unit production or very small series (<100/year) are not covered by these NF136 rules.

Accessories for PE networks belong to one or more of the following groups, depending on their applications:

Group **1**	Gaseous fuels	**1-G**
Group **2**	Drinking water (with ACS, Health Conformity Certificate)	**2-W**
Group **3**	Water for irrigation or watering	**3-W**
Group **4**	Industrial process water (includes non-potable and pressurized sanitation water) Industrial process liquid	**4-W** **4-PI**
Group **5**	Electric confinement , for families A1 and D2 only	**5-ELEC**

Gaseous fuels in France and Europe are defined for test gases in the NF EN 437 standard, for different families:

- 1st family, manufactured gases with hydrogen as the main constituent, methane (natural gas) and nitrogen,
- 2nd family , natural gases therefore mainly methane with different contents of other constituents (hydrogen <20%, propane, nitrogen),
- 3rd family , liquefied petroleum gases (LPG), including butane and propane but also DME (DiMethylEther) .

accessories for gas applications can therefore be used for these gas networks and also those containing biomethanes (biogas).

Products intended for gas installations are considered to be products with safety obligations within the meaning of Article 10 of the General Rules of the NF mark. As such, the Environmental Code applies and is supplemented by the decrees of July 13th, 2000, as amended, and February 23rd, 2018, as amended, for their respective scopes of application.

These Rules treat NF certification and NF approval (of triggers mounted in PBDI or MBDI) in an identical manner. The concept of certification in these Rules cover NF approval. In the event that certification and approval are different, these elements are indicated in the Rules.

1.1.2 Products and product lines

1.1.2.1 PE accessories

A PE accessory is defined according to:

- the family defined in §1.1, group C includes shaped fittings with male end ends for applications other than gas.
- the dimension or diameter, expressed in mm: dn
  - the dimension group (Gd), as defined in XP CEN/TS 1555-7 and XP CEN/TS 12201-7, namely only the following:

dimension group (Gd)	Nominal diameter dn in mm
Gd1	dn < 75
Gd2	75 ≤ dn < 250
Gd3	250 ≤ dn < 710
Gd4	710 ≤ dn ≤ 800 for GAS (or < 1800 for WATER)

  with the following rules for fittings with several diameters (dn):
  - For reductions or reduced tees, the Gd of the fitting is that of the large dn ,
  - For branch saddles (sdd) or connection sockets (pdb), the Gd of the connection is that of the saddle,
  - For faucets with different sleeves, the Gd of the faucet is that of the large dn ,
  - For the support taps (RPC), the Gd of the tap is that of the saddle.
- the shape of the accessory (sleeve, 90° and 45° elbow for each angle and radius of curvature, reduction, tee, single-block pdb design, dual-block pdb, sdd , reinforcement saddle, tapping, flanges, etc.)
- the metal alloy
- the resin which must be certified according to NF114 for the application group concerned. This resin must be virgin, without recycling, for the production of PE accessories in order to guarantee the durability of the characteristics and lifespan of the networks.

  Note : Network managers may be more restrictive on the resins to be used to ensure welding compatibility on their network.
- the MRS of the resin (only for PE 80 and PE 100 resins)

  Note : A PE 100 resin can be certified according to NF114 with one or more reinforced performances, against cracking (PE 100-RC), disinfectants (PE 100-RD) or temperature (PE 100-HT). This type of resin is in the PE 100 family with the associated MRS. Parts 3 and 4 deal with specific tests.
- the SDR (dn /thickness ratio)
  - for gas application, only SDR 11 and 17; SDR 17 applies to values 17 and 17.6.
  - for other applications, only SDRs 7.4 – 9 – 11 – 13.6 – 17 – 21 – 26 according to the scope of application of NF114 rules, by application.
- the MOP (maximum operating pressure) for gas applications or the PN (nominal pressure) for other applications
- the body/shutter type for faucets
- the type of barrel/drill for the connection sockets
- the trigger type for PBDIs
- the application(s) of use (gas, drinking water, irrigation, industrial process)

An accessory can be obtained using several technologies:

- machining
- injection
- compression
- socket welding, butt welding, etc.

- assembly
- electroweldable accessories
- overmolding
- bending
- combination of previous technologies

1.1.2.2 PE accessories range

A range of PE accessories which can be the subject of a certificate is made up of a set of accessories which meet the following identical characteristics:

- design or technology of functional parts except for geometric differences related to different sizes,
- family,
- material or resin,
- SDR (see note),
- application group,
- production site

which differs by:

- the dimension (dn),
- the form,
- the body of the same technology,
- the barrel,
- the trigger,
- options without influence on the certified characteristics.

Note : in the case of families D1, D2 and D3, certificates may sometimes include 2 SDRs. For example: case of mixed sleeves SDR11/17 in families D1 and D2 or identical technology SDR11 or SDR17 in family D3.

1.1.2.3 Special case of PE accessories

Some PE accessories, mainly mechanical fittings (D1 family) are combined with other products that meet other certification marks:

- Metal taps equipped with a PE connection: the PE part which constitutes the tap must be NF136 certified then the complete tap must be NF078 certified.
- An extension, a cross, an elbow... one end of which is a PE fitting brazed directly with another fitting with a mechanical junction or via a copper tube or welded in the case of a steel fitting or tube: the PE fitting to be brazed or welded must be certified NF136 but the finished product must be certified NF540.

  This is sometimes already the case for mechanical junction fittings to be soldered or welded.

  However, if these finished products have a PE end and a PLT end, each of the ends must meet the NF136 and ATG-PLT marks respectively, but the finished products must be NF540 certified.

1.2 Who can apply for the NF mark and why?

These Certification Rules are accessible to any applicant whose products fall within the scope defined above and meet the technical requirements described in part 2 of this document.

Definitions of applicants/holders, agents, distributors:

a – Applicant / holder:

Legal entity which ensures control and responsibility for compliance with all the requirements defined in the Certification Rules of the NF APE mark.
These requirements cover at least the following stages: manufacturing, assembly, quality control, marking, packaging and placing on the market and specify the critical points of the different stages.

b – Agent:

Legal entity or natural person established in the European Economic Area (EEA) or in the European Free Trade Association (EFTA) which has a function of representing the applicant/holder outside the EEA or EFTA and has a written mandate from the latter indicating that it can act on its behalf and specifying within what framework (associated missions and responsibilities and financial aspects, complaints, contact person for the certification body, among others) in the NF mark certification process in accordance with the provisions of the Certification Rules.
The agent can be the distributor or the importer, their different functions are clearly identified.

c – Distributor :

Legal entity distributing the applicant/holder's products who does not intervene on the product to modify compliance with the requirements of the NF mark.
The types of distributors can be as follows:

- distributors who do not technically intervene on the product and who distribute the product under the holder's trademark,
- distributors who do not intervene technically on the product and who distribute the product with a change of commercial brand or packaging (need to maintain the right to use or request for the right to use if the applicant does not wish explicit reference to be made to the applicant/holder, see §3).

***Note** : the applicant's sites which guarantee compliance with certain requirements of the standard are considered to be subcontractors of the applicant and may be subject to control in accordance with the requirements of the standard.*

The applicant/holder undertakes in particular not to present counterfeit products for certification.
It is the responsibility of the applicant/holder to ensure that the regulations applicable to its product are actually respected.

1.3 The NF mark

Created in 1938, the NF mark is a collective certification mark, the purpose of which is to certify the conformity of products to the national, European and international normative documents concerning them, which may be supplemented by additional specifications, under conditions defined by certification standards. It is issued by AFNOR Certification and its network of partner organizations, which constitute the NF network.

A voluntary product certification mark, the NF mark meets the requirements of the French Consumer Code, in particular by involving interested parties in the validation of certification standards, by defining rules for marking certified products and clear and transparent communication on the main certified characteristics. The NF mark also meets the requirements of the NF EN ISO / IEC 17065 standard, which applies to bodies certifying products, processes and services as part of the assessment of conformity to a standard.

The right to use the NF mark is granted on the basis of compliance with one or more standards and, more generally, with an entire certification framework, for a product originating from an applicant and a designated design and/or manufacturing and/or marketing process(es). The granting of the right to use cannot under any circumstances substitute the responsibility of CERTIGAZ for that which legally falls to the company holding the right to use the NF mark.

The NF mark aims to control the safety characteristics of people and property, the suitability for use and durability of products, as well as additional characteristics that enable them to stand out on the market.

Unanimously recognized by economic players, consumers, public authorities and institutions, the NF mark has forged an undeniable reputation, recognized by the very rare status of well-known trademark in France. Its reputation is based on:

- Compliance with standards, a symbol of the consensus reached between interested parties,
- the assurance of having quality, safe and efficient products, which have been subject to controls,
- the desire to respond to the evolving expectations of the markets,
- Confidence in the robustness of the certification processes implemented for its delivery (rigor, transparency and impartiality, process control),
- Confidence in the competence and impartiality of the bodies that issue it.

The operation of the NF mark is based on a network of mandated certification bodies, technical secretariats, laboratories, inspection bodies, auditors, regional facilitators of recognized technical expertise, which together with AFNOR Certification constitute the NF Network.

In accordance with the General Rules of the NF mark, AFNOR Certification entrusts the exercise of the various functions necessary for the management of the NF APE mark to CERTIGAZ, known as the mandated body.

CERTIGAZ is responsible to AFNOR Certification for the operations entrusted to it and which are the subject of a contract with AFNOR Certification.

For the GAS application, CERTIGAZ and the NF APE mark are recognized within the framework of the regulations for PE accessories for gas installations.

Part 2
THE REQUIREMENTS OF THE REFERENCE

2.1 The certification framework

The reference framework for this application of the NF mark, within the meaning of the Consumer Code, is made up of:

- the General Rules of the NF mark which set out the general organization and conditions of use of the mark,
- of these Certification Rules which describe the technical characteristics to be respected as well as the methods of checking compliance with these characteristics.
- standards referenced in these Certification Rules, as well as any additional technical specifications.

These Certification Rules, which are part of the certification of products and services other than food products provided for in the Consumer Code, specify the conditions for applying the General Rules of the NF mark to the products defined in part 1.

The company (applicant/holder) undertakes to comply with the Certification Rules in force as specified in the standard request letters in part 7.

2.2 Additional standards and specifications

The standards and documentation booklets (NF, XP, FD, etc.) are available from the Sales Department of:

AFNOR – 11 rue Francis de Pressensé – F 93571 LA PLAINE ST-DENIS Cedex
Tel: +33 (0)1 41 62 80 00 – www.afnor.org

The working sheets (FT), ATG specifications and specifications (CCH) are available at the BNG (Gas Standardization Office) – 1, rue du Général Leclerc – F - 92800 Puteaux – Immeuble Linéa
Tel: +33 (0)1 80 21 07 76 – www.francegaz.fr

The SROB, SAPE, SLAB, etc. specifications are available on request from CERTIGAZ and can be downloaded from the website www.certigaz.fr

2.2.1 Applicable standards

The table below lists the various mandatory or informative standards required for the certification and implementation of accessories for PE networks. These standards are considered for each part at the latest revision date and include any amendments.
The last column specifies whether the standard (normative document) is applicable (A) or informative (I) and also whether it is mandatory to apply by an order, decree, guide or directive (O).

NF EN 377	Lubricants intended for appliances and associated equipment using gaseous fuels, with the exception of appliances specifically intended for industrial use	HAS
NF EN 437	Test gases — Test pressures — Device categories	I
NF EN 549	Rubber-based materials for seals and membranes for gas appliances and gas equipment	HAS
NF EN 681-1 -2 -3 -4	Rubber gaskets - Specification of materials for gaskets for pipe joints used in the water and drainage sector. - Part 1: Vulcanized rubber - Part 2: Thermoplastic elastomers - Part 3: Vulcanized rubber cellular materials - Part 4: Molded polyurethane	HAS
NF EN 682	Rubber gaskets - Specification of materials for gaskets for joints in pipelines and fittings carrying gas and hydrocarbon fluids	HAS O
~~NF EN 712~~ (replaced by NF EN ISO 3501)	~~Thermoplastic piping systems - Mechanical joints with bottom effect between pressure pipes and fittings - Test method for pull-out resistance under constant force~~	

~~NF EN 713~~ (replaced by NF EN ISO 3503)	~~Plastic piping systems - Mechanical assemblies between fittings and polyolefin tubes under pressure - Internal pressure leak test of assemblies subjected to bending~~	

~~NF EN 715~~	~~Thermoplastic piping systems - Bottoming joints between small diameter pressure pipes and fittings - Leak test method with internal water pressure with bottoming effect~~	
NF EN 736-1	Valves and fittings - Terminology - Part 1: Definition of types of devices	HAS
NF EN 736-2	Valves and fittings - Terminology - Part 2: Definition of valve components	HAS
NF EN 736-3	Valves and fittings - Terminology - Part 3: Definition of terms	HAS
~~NF EN 744~~ (replaced by NF EN ISO 3127)	~~Plastic piping and ducting systems - Thermoplastic tubes - Test method for resistance to external impact by the dial method~~	~~HAS~~
NF EN 751-1	Sealing materials for threaded connections in contact with gases of the 1st, 2nd and 3rd family and hot water - Part 1: Anaerobic waterproofing composition	HAS O
NF EN 751-2	Sealing materials for threaded connections in contact with 1st, 2nd and 3rd family gases and hot water - Part 2: Non- hardening sealing composition	HAS O
NF EN ISO 1133-1	Plastics - Determination of the melt flow rate of thermoplastics, by mass (MFR) and by volume (MVR) - Part 1: Normal method	HAS
NF EN ISO 1167-1	Thermoplastic pipes, fittings and assemblies for the transport of fluids - Determination of resistance to internal pressure - Part 1: General method	HAS
NF EN ISO 1167-2	Thermoplastic pipes, fittings and assemblies for the transport of fluids - Determination of resistance to internal pressure - Part 2: Preparation of tubular test specimens	HAS
NF EN ISO 1167-3	Thermoplastic pipes, fittings and assemblies for the transport of fluids - Determination of resistance to internal pressure - Part 3: Preparation of components	HAS
NF EN ISO 1167-4	Thermoplastic pipes, fittings and assemblies for the transport of fluids - Determination of resistance to internal pressure - Part 4: Preparation of assemblies	HAS
NF EN 1555-1 (2021/07)	Plastics piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 1: General	HAS O
NF EN 1555-2 (2021/07)	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 2: Pipes	HAS O
NF EN 1555-3 (2021/07)	Plastics piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 3: Fittings	HAS O
NF EN 1555-4 (2021/07)	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 4: Valves	HAS O
NF EN 1555-5 (2021/07)	Plastics piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 5: Fitness for purpose of the system	HAS O
XP CEN/TS 1555-7	Plastics piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 7: Guidance for assessment of conformity	I
NF EN 1594	Gas infrastructure - Pipelines for maximum operating pressure greater than 16 bar - Functional requirements	I
NF EN 1680	Plastic piping systems - Valves for polyethylene (PE) piping systems - Test method for leaktightness under and after bending applied to the drive mechanism	HAS
NF EN 1704	Plastic Piping Systems - Thermoplastic Valves - Test Method for Verifying a Valve After Thermal Cycling Under Flexure	HAS
NF EN 1705	Plastic piping systems - Thermoplastic valves - Test method for checking a valve after an external shock	HAS
NF EN 1716 (will be replaced by ISO 13957)	Plastic piping systems - Polyethylene (PE) service outlets - Test method for impact resistance of an assembled service outlet	HAS
NF EN 1775	Gas supply - Gas piping for buildings - Maximum operating pressure less than or equal to 5 bar - Functional recommendations	I
NF EN ISO 3126	Plastic Piping System – Plastic Components – Determination of Dimensions	HAS
NF EN ISO 3127 (replaces EN 744)	Thermoplastic tubes - Determination of the resistance to external shocks - Method around the dial	HAS
NF EN ISO 3458	Plastic Piping Systems - Mechanical Joints Between Fittings and Pressure Pipes - Test Method for Internal Pressure Leaktightness	HAS
NF EN ISO 3501	Plastic Piping Systems - Mechanical Joints Between Fittings and Pressure Pipes - Test Method for Pull-Out Strength Under Constant Longitudinal Force	HAS
NF EN ISO 3503	Plastic piping systems - Mechanical joints between fittings and pressure pipes - Test method for internal pressure tightness of assemblies subject to bending	HAS

ISO 4059	Polyethylene (PE) pipes. Pressure losses of mechanical fittings. Test method and specifications.	I
ISO 4437-1	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 1: General	I
ISO 4437-2	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 2: Pipes	I
ISO 4437-3	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part ": Fittings"	I
ISO 4437-4	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 4: Valves	HAS
ISO 4437-5	Plastics piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Part 5: Fitness for purpose	I
ISO 4633	Rubber gaskets - Joint gaskets for water supply and drainage pipes (including sewers) - Material specifications	HAS
NF EN ISO 6509-1	Corrosion of metals and alloys - Determination of resistance to dezincification of copper alloys with zinc - Part 1: Test method	HAS
NF EN ISO 6509-2	Corrosion of metals and alloys - Determination of resistance to dezincification of copper alloys with zinc - Part 2: Acceptance criteria	HAS
ISO 6957	Copper alloys. Ammonia test for stress corrosion resistance	I
ISO 6993-1	Polyvinyl chloride (PVC-HI) buried piping systems with improved impact resistance for gaseous fuel networks - Part 1: Pipes for a maximum working pressure of 1 bar (100 kPa)	HAS
NF EN ISO 8233 (replaces NF EN 28233)	Thermoplastic valves — Operating torque — Test method	HAS
NF EN ISO 9000	Quality Management System – Essential Principles and Vocabulary	HAS
NF EN ISO 9001(2015)	Quality Management System – Requirements	HAS
NF EN ISO 9080	Plastic piping and duct systems - Determination of long-term hydrostatic resistance of thermoplastic materials in the form of tubes by extrapolation	HAS
~~ISO 10838-1~~ (replaced by ISO 17885)	~~Mechanical fittings for polyethylene piping systems intended for the distribution of gaseous fuels - Part 1: Metallic fittings for pipes with a nominal outside diameter of 63 mm or less~~	
~~ISO 10838-2~~ (replaced by ISO 17885)	~~Mechanical fittings for polyethylene piping systems intended for the distribution of gaseous fuels - Part 2: Metallic fittings for pipes with a nominal outside diameter greater than 63 mm~~	
~~ISO 10838-3~~ (replaced by ISO 17885)	~~Mechanical fittings for polyethylene piping systems intended for the distribution of gaseous fuels - Part 3: Thermoplastic fittings for pipes with a nominal outside diameter of 63 mm or less~~	
~~ISO 10933~~ (replaced by ISO 4437-4)	~~Polyethylene (PE) taps for gas distribution~~	
NF EN ISO 11357-6 (replaces NF EN 728)	Plastics - Differential scanning calorimetry (DSC) - Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)	HAS
ISO 11413	Plastic tubes and fittings - Preparation of test specimens by electrofusion tube/fitting assembly in polyethylene (PE)	HAS
ISO 11414	Plastic tubes and fittings - Preparation of test specimens by joining tube/tube or tube/fitting in polyethylene (PE) by butt welding	HAS
NF EN 12007-1	Gas infrastructure - Pipelines for maximum operating pressure less than or equal to 16 bar - Part 1: General functional requirements - Gas supply systems	I
NF EN 12007-2	Gas infrastructure - Pipelines for maximum operating pressure less than or equal to 16 bar - Part 2: Specific functional requirements for polyethylene (MOP less than or equal to 10 bar)	I
NF EN 12007-3	Gas supply systems - Pipelines for maximum working pressure up to and including 16 bar - Part 3: Specific functional recommendations for steel	I
NF EN 12007-4	Gas infrastructure - Pipelines for maximum operating pressure less than or equal to 16 bar - Part 4: Specific functional requirements for renovation - Gas supply systems	I
NF EN 12007-5	Gas infrastructure - Pipelines for maximum operating pressure less than or equal to 16 bar - Part 5: Connections - Specific functional recommendations	I
NF EN 12100	Plastic piping systems - Polyethylene (PE) valves - Test method for flexural strength between supports	HAS
~~NF EN 12117~~ (see NF EN ISO 17778)	~~Plastic piping systems - Fittings, valves and auxiliary equipment - Determination of the gas flow rate/pressure drop ratio~~	
NF EN 12119	Plastic piping systems - Polyethylene (PE) valves - Test method for resistance to thermal cycling	HAS

NF EN ISO 12162	Thermoplastic materials for pipes and fittings for pressure applications - Classification, designation and calculation coefficient	HAS
ISO 12176-1	Plastic pipes and fittings - Apparatus for joining polyethylene systems by welding - Part 1: Butt welding	HAS
ISO 12176-2	Plastic pipes and fittings - Equipment for joining polyethylene systems by welding - Part 2: Electrofusion	HAS
ISO 12176-3	Plastic pipes and fittings - Equipment for joining polyethylene systems by welding - Part 3: Operator identification card	I
ISO 12176-4	Plastics pipes and fittings - Equipment for joining polyethylene systems by welding - Part 4: Traceability coding	HAS
ISO 12176-5	Plastic pipes and fittings - Equipment for welding polyethylene systems - Part 5: 2D coding of component data and data exchange format for PE piping systems	I
NF EN 12201-1	Plastic piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 1: General	HAS
NF EN 12201-2	Plastic piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 2: Pipes	HAS
NF EN 12201-3	Plastic piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 3: Fittings	HAS
NF EN 12201-4	Plastic piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 4: Valves for water supply systems	HAS
NF EN 12201-5	Plastic piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 5: Fitness for purpose of the system	HAS
XP CEN/TS 12201-7	Plastics piping systems for water supply and for sewerage connections and collectors under pressure - Polyethylene (PE) - Part 7: Guidance for the assessment of conformity	I
NF EN 12327	Gas infrastructure - Pressure tests, operating procedures for commissioning and decommissioning networks - Functional requirements	I
NF EN 12732	Gas infrastructure - Welding of steel pipes - Functional requirements	I
NF EN 13100-1	Non-destructive testing of welded assemblies on semi-finished thermoplastic products - Part 1: Visual inspection	I
NF EN 13100-2	Non-destructive testing of welded joints on semi-finished thermoplastic products - Part 2: X-ray radiographic testing	I
NF EN 13100-3	Non-destructive testing of welded joints on semi-finished thermoplastic products - Part 3: Ultrasonic testing	I
NF EN 13100-4	Non-destructive testing of welded joints on semi-finished thermoplastic products - Part 4: High voltage tests	I
ISO 13761	Plastic pipes and fittings. Pressure reduction factors for polyethylene pipes used at temperatures above 20°C.	I
NF EN ISO 13845	Plastic piping systems - Elastomeric sealing ring socket joints for plastic pressure pipes - Test methods for leaktightness under internal pressure and with angular deflection	HAS
ISO 13924	Plastic pipes and fittings – Repeated bending-tensile tests for PE/metal fittings, PE branch sockets and branch saddles	HAS
NF ISO 13950 (replaces NF T54-975)	Plastic tubes and fittings - Automatic recognition processes for an assembly by electrowelding	HAS
ISO 13951	Plastic Piping Systems - Test Method for Tensile Strength of Polyolefin Tube/Tube or Tube/Fitting Joints	HAS
ISO 13953	Polyethylene (PE) pipes and fittings - Determination of tensile strength and failure mode of specimens taken from butt-welded assemblies	HAS
ISO 13954	Plastic pipes and fittings. Peel decohesion test of electrofusion polyethylene (PE) assemblies with nominal external diameters ≥ 90 mm	HAS
ISO 13955	Plastic pipes and fittings. Crushing decohesion test of polyethylene (PE) electrofusion joints	HAS
ISO 13956	Plastic pipes and fittings - Debonding test of polyethylene (PE) saddles assembled by welding - Evaluation of the ductility of the welding interface by pull-off test	HAS
ISO 13957 (will replace EN1716)	Plastic pipes and fittings - Polyethylene (PE) connection sockets - Test method for impact resistance	HAS

~~ISO 14236~~ (see ISO 17885)	~~Plastic Pipe and Fittings - Compression joint mechanical fittings used with polyethylene pressure pipe in water supply systems~~	
NF EN 14728	Defect in thermoplastic welded assemblies - Classification	I
NF EN 15001-1	Gas infrastructure - Gas installation pipelines with a working pressure above 0.5 bar for industrial installations and above 5 bar for industrial and non-industrial (domestic and commercial) installations - Part 1: Detailed functional requirements for design, materials, construction, inspection and testing	I
NF EN 15001-2	Gas infrastructure - Gas installation pipelines with an operating pressure above 0.5 bar for industrial installations and above 5 bar for industrial and non-industrial installations - Part 2: Detailed functional requirements for commissioning, operation and maintenance	I
NF EN ISO 15494	Plastic Piping Systems for Industrial Applications - Polybutylene (PB), Polyethylene (PE), Polypropylene with Improved Temperature Resistance (PE-RT), Crosslinked Polyethylene (PE-X), Polypropylene (PP) - Metric Series for Component and System Specifications	HAS
ISO 16010	Elastomeric gasket - Material requirements for gaskets used in pipelines and fittings carrying gaseous fuels and liquid hydrocarbons	HAS
NF EN 16296	Defects in thermoplastic welded assemblies - Quality levels	I
ISO 16486-1	Plastics piping systems for the distribution of gaseous fuels - Unplasticized polyamide (PA-U) piping systems with welded and mechanical joints - Part 1: General	I
ISO 17467-1	Plastics piping systems for the distribution of gaseous fuels - Unplasticized polyamide (PA-U) piping systems with adhesive bonding - Part 1: General	I
NF EN ISO 17778	Plastic piping systems - Fittings, valves and auxiliary equipment - Determination of the gas flow rate/pressure drop ratio	HAS
ISO 17885	Plastic Piping Systems - Mechanical Fittings for Pressure Pipes - Specifications -	HAS
ISO 18488	Polyethylene (PE) materials for piping systems — Determination of strain hardening modules in relation to slow crack propagation — Test method	HAS
NF EN ISO 19011	Guidelines for auditing management systems	HAS
ISO 19899	Plastic Piping Systems - Polyolefin Pipe Assemblies and Mechanical Fittings - End-of-Load Strength Test Method (AREL Test)	HAS
ISO 21751	Plastic tubes and fittings. Decohesion test for electrofusion joints . Strip-bend test	HAS
~~ISO 23711~~ For pressure-free application	~~Rubber gaskets - Specification of materials for gaskets used in water and drainage - Thermoplastic elastomers~~	~~HAS~~
~~NF EN 28233~~ (replaced by NF EN ISO 8233)	~~Thermoplastic valves - Operating torque - Test method~~	
NF D 36-136	Dimensional characteristics of mechanical connections intended to be installed on pipes for gas installations NOTE: The connections defined in standard NF D 36-136 replace the definitions of the various connections in the standards listed in this paragraph. A transition phase for the application of this standard is defined in the CNPG guide “Gas appliances and equipment”.	HAS O
NF E 29-135	Gas fittings, low pressure – Flat-bottomed ball and cone valves intended to be manually operated for gas installations in buildings – MOP 0.5	I O
NF E 29-196 (replaces Annex 2 of SROB100 06-2020)	Home Economics - Ammonia Test for Stress Corrosion Resistance of Copper Alloys - Specific Use for Fuel Gases	HAS
NF E 29-532 (replaces XP T54-971)	Removable fittings with flat joints intended for installation on pipes for gas installations.	HAS O
NF E 29-533	Combustible gas installations - Requirements for the selection of flat sealing gaskets used in combustible gas installations distributed in networks or by containers	HAS O
NF E 29-536	Piping - Removable fittings with sphero -conical junction - PN 10	HAS O
NF T54-965	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Specifications for the packaging, storage, handling and transport of pipes	I
NF T54-969	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Electrofusion accessories - Welding cycle safety time	HAS O
NF T54-970	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Electrofusion branch sockets - Branch socket design and leakage rate of the perforator	HAS

NF T54-972	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Valves - Angular sealing range and additional dimensional specifications	HAS O
NF T54-973	Plastic piping systems for the distribution of gaseous fuels - Polyethylene (PE) - Valves - Valve extensions and valve extensions	HAS
NF EN ISO 80000-1	Quantities and Units - Part 1: General Information	HAS

2.2.2 Applicable (A) or informative (I) specifications

SAPE102-3	Connection socket and sleeve with integrated trigger for polyethylene gas fuel distribution network	HAS
SLAB100	Manufacturer's laboratory authorization	HAS
SLAB110	Authorization of laboratory recognized by the mark	HAS
~~SROB100 06-2020 annex 2~~ (see NF E 29-196)	~~DN 50 copper alloy valves ≤used upstream of gas meters~~	
SROB100 (04-2021)	DN 50 copper alloy valves ≤used upstream of gas meters (In particular for types E1 and E1A equipped with a PE family D fitting)	I
SROB104	Characteristics of threaded pads/rings with meter pitch according to NF E 29-532	HAS
SROB105	Features of the tap clamping plates	HAS
ATG B.521 (France Gaz specifications – formerly AFG)	Fuel gas installations – Steel tubes and assemblies	HAS O
ATG B.524 (France Gaz specifications – formerly AFG)	Fuel gas installations – Copper tubes and assemblies	HAS O
ATG B.527-9 (France Gaz specifications – formerly AFG)	Qualification procedure for polyethylene (PE) operators	I
ATG B.540-9 (France Gaz specifications – formerly AFG)	Qualification procedures for welders, brazers and brazing welders	I
RSDG 1 to 17 (21 specifications of France Gaz – formerly AFG)	Gas distribution networks – Technical rules and tests	I

2.3 The regulations

The products covered by this Certification Standard must comply with the French regulations in force concerning them and in particular:

Environmental Code	Articles L554-5 to 11, R554-40 to 61 Articles L557-1 to 61, R557 sections 1 to 5 and 8
The decree of July 13th, 2000, as amended	regulating the safety of the distribution of combustible gas by pipeline.
The decree of May 29th, 1997, amended	relating to the health safety of water intended for human consumption.
The decree of June 25th, 1980, as amended	approving the general provisions of the safety regulations against the risks of fire and panic in establishments open to the public (ERP).
The decree of February 23rd, 2025 (will come into force on January 1st, 2026)	amending the decree of June 25th, 1980 approving the general provisions of the safety regulations against the risks of fire and panic in establishments open to the public (ERP)
The decree of February 23rd, 2018, amended (A)	relating to the technical and safety rules applicable to combustible gas installations in individual or collective residential buildings, including common areas
The decree of March 4th, 2021	Amending the decree of February 23rd, 2018
The directive DI97/23/CE29/05/1997	Relating to the approximation of the laws of the Member States concerning pressure equipment.

(A) The decree of February 23rd, 2018, amended, supplemented by 5 CNPG guides:

- Guide to Indoor Gas Installations (IG)

- Gas Appliances and Equipment Guide (AMG), this guide contains the mandatory normative documents
- Energy Production Sites (EPS) Guide
- Guide to Combustion Products Evacuation Systems (EVAPDC)
- Welding Aptitude Certificate (AAS) Guide.

replaced the decrees of August 2nd, 1977, March 4th, 1996 and July 16th, 1980, as of January 1st, 2020 with transitional periods defined in the CNPG guides.

The applicant/holder undertakes to comply with them for products relating to the NF APE mark and must be able to prove this.

The various regulatory texts are available on the website: https://www.legifrance.gouv.fr

The CNPG guides are available on the website: https://www.cnpg.fr

2.4 Quality management provisions

2.4.1 General

The minimum quality assurance provisions *that* the applicant/holder must adopt and implement so that products bearing the NF APE mark are manufactured and/or distributed at all times in compliance with this standard are specified below.

By using the NF mark, the holder makes a commitment to the ongoing quality of the certified products that it manufactures and/or delivers to its customers. Under the NF mark, the applicant/holder provides proof of the existence and effectiveness of its quality file.

The objective to be achieved by the applicant/holder is the control of processes (within the meaning of standard NF EN ISO 9000) and the maintenance of the conformity of its products to the models initially accepted.

Achieving this objective requires that the applicant/holder implements its own means, the performance of which is assessed during the admission visit and verified during follow-up visits.

The quality requirements of this NF mark are defined below and are based on the requirements of the NF EN ISO 9001 standard, the scope of which is limited to the field of application. The table below summarizes these requirements.

Quality Requirements	Requirements * § NF EN ISO 9001 (2015)	
General requirements	4.1 - 4.2	Required for processes related to product manufacturing
Documentation requirements	4.4 - 7.5	Required
Management Responsibility		
Management Commitment	5.1 - 5.2	Required
Responsibility and authority	5.3	Required
Management Representative		Required
Management review	9.3	Required
Resource management	7.1 to 7.4	Required
Product realization		
Product realization planning	8.1	Required
Customer-related processes	8.2	Required for customer complaints management
Purchases	8.4	Required
Mastery of production and service preparation	8.5.1	Required
Identification and traceability	8.5.2	Required
Product preservation	8.5.4 - 8.5.5	Required
Mastery of monitoring and measuring devices	7.1.5	Required
Measurement, analysis and improvement		
Product monitoring and measurement	8.6 - 9.1	Required
Control of non-compliant product	8.7 - 10.2	Required
Corrective action	10.2	Required

(*) These requirements also apply to any subcontractors

2.4.2 Minimum requirements for quality organization

The applicant/holder's commitments regarding product quality must be written and signed by management, adapted, known and implemented at all levels. The applicant/holder must establish a functional organization chart and establish job descriptions for all people involved in the production of certified products.

The applicant must formalize in writing in a quality file or quality manual, the provisions in terms of organization, documents, material and human resources that it puts in place to guarantee control of the quality of the products.

The applicant/holder must describe and have an organization in place to record, process, and settle customer complaints relating to certified products. Records related to these actions must be kept for a relevant period, defined by the applicant/holder.

2.4.3 Quality system certification

A manufacturer whose quality system has been certified by a recognized certification body is assumed to meet the applicable quality management requirements. The certificates recognized by CERTIGAZ are those issued by quality system certification bodies accredited by an accreditation body that is a member of the EA (European Accreditation) or the IAF (International Accreditation Forum).

The applicable quality management requirements and the production of the product(s) concerned must be covered by the standard and the scope of the quality system certification.

In this case, the assessment by CERTIGAZ is limited to:

- resource management, product production, measurement, analysis and improvement, of the NF EN ISO 9001 standard,
- the review of manufacturing controls as defined in paragraph 2.4.4.

It may nevertheless be extended to any requirement of the applicable quality system not covered by the standard and/or the scope of the quality system certification or whose effectiveness may be called into question.

2.4.4 Product-specific requirements

2.4.4.1 General

As part of the quality system, products are examined and appropriate tests, defined in the applicable standard(s), or equivalent tests are carried out to verify their conformity.

To this end, the manufacturer implements a manufacturing control plan at least equivalent to the “Standard Control Plan” in paragraph 2.4.4.8.

2.4.4.2 In-process controls

The manufacturer may carry out all or part of the checks mentioned in the “Standard Control Plans” (in paragraph 2.4.4.8) during manufacturing if he can ensure that compliance with the relevant requirements will be maintained up to the stage of the delivered product.

2.4.4.3 Control of raw materials and components

The manufacturer must check with its potential supplier(s) the conformity of the products delivered to the applicable specifications of the reference standard(s), either by ensuring that the supplier's quality management system allows it to obtain a sufficient degree of confidence in the quality of the products purchased, or by carrying out the appropriate checks itself by taking samples from the batches received.

2.4.4.4 Unit controls

The controls identified 100% in the “Standard Control Plans” must be carried out on each product manufactured at a stage of manufacturing to ensure that compliance with the relevant requirements will be maintained up to the stage of the delivered product.

2.4.4.5 Controls by sampling or statistics

These controls are identified in the “Standard Control Plans”.

Unless otherwise specified in the "Standard Control Plans", the sampling plan is left to the manufacturer's initiative. This plan must define the sampling method (lot size, conditions and number of samples), the conditions of acceptance or rejection. The sampling plan must be defined to ensure the conformity of all the individuals in a batch; it must be adapted to the manufacturing processes implemented.

2.4.4.6 Control records

All inspections must be recorded and made accessible to inspectors/auditors.

2.4.4.7 Control procedures

The choice of methods for controlling raw materials and materials during manufacturing is left to the applicant/holder provided that the methods used make it possible to obtain significant results under the conditions defined in article 2.4.4.8.

The methods of the controls must comply with the requirements of the standards. However, methods and equipment different from those described in these standards may be used provided that the results are equivalent.

2.4.4.8 Minimum requirements for inspections and tests during reception and manufacturing

Upon receipt and then during production, the applicant/holder is required to carry out the following checks and tests at the minimum frequency indicated in the “Standard Control Plans” specific to each product family.

The samples are distributed to be representative of production in the given period.

Stage	Products, features	Trigger - - choirs	Families A1, A2, B1, B2	Families C1, C2	Family D1	Families D2, D3	Families E1, E2, E3
Reception	Raw materials: resin, metals, seals (essential characteristics, MFR, OIT, chemical analysis, certificate, etc.)	Batch	Batch	Batch	Batch	Batch	Batch
Reception or manufacturing	Instructions, label or any document accompanying the product	s	s	s	s	s	s
Reception or manufacturing	Components (essential characteristics, dimensions, appearance, certificate, resistance, etc.)	s	s	N / A	s	s	s
Reception or manufacturing	Fittings: threads, dimensions, breaking torque (NF E 29-532 or 536)	N / A	s (A2 and B2)	N / A	s	s	N / A
Manufacturing	Trigger value and trigger tightness under adverse pressure, batch number and serial number	100%	N / A	N / A	N / A	N / A	N / A
Manufacturing	Electrical resistance (Ω)	N / A	100%	N / A	N / A	s	N / A
Manufacturing	Waterproofing 1.5xMOP for 30s	N / A	N / A	N / A	N / A	s	100%
Manufacturing	Tightening strength of rotating nuts (JPC, JPG, JSC)	N / A	N / A	N / A	s **(1)**	N / A	N / A
Manufacturing	Operating torque at room temperature	N / A	N / A	N / A	N / A	N / A	100%
Manufacturing	Marking, appearance, dimensions	s (frequency: every 4 hours. If the process is stable with relevant recordings to demonstrate this, the frequency can be increased to 8 hours, i.e. per team)					
Manufacturing	Durability of markings	N / A	Annual (marking on label or inkjet on accessory according to the terms of §3.3.1)				
Manufacturing	Packaging - conditioning	s	s	s	s	s	s

100%: unit control
NA: not applicable
s: statistical sampling to guarantee a good level of confidence
Batch: each batch received: supplier certificates and/or internal controls

(1) The NF E 29-532 and NF E 29-536 standards apply with the following additional specifications in BRT:
- If a value less than or equal to 115% of the minimum breaking strength torque ("Tightening torque" values in table 1 NF E 29-532 and table 2 NF E 29-536) is observed on the minimum sampling of 2 test pieces, a new sampling is carried out to guarantee the conformity of the batch.

Example for a DN12 JPG:

Tightening torque to ensure tightness 30 Nm. Minimum tightening torque for the strength of the rotating nut 50 Nm.
Minimum tightening torque of 1 15% = 57.5 Nm. If breakage or obvious deformation is observed between 50 and 57.5 Nm, a second sample is tested. If at least one value is below the required minimum of 50 Nm, there is non-compliance .
Stop the test at 100 Nm or before if breakage or obvious deformation.

- If a test piece fails before reaching the minimum breaking strength torque, the batch is rejected.

The definition of a lot is specified in part 8: glossary and in § 3.3.1.

In manufacturing, statistical monitoring, marked “s” in the table above, includes validation of the start of production of the batch and the first production after a stoppage.
If there are multiple prints or manufacturing stations, statistical monitoring "s" applies to each.

2.4.5 Control of registers

The registers in which the results of the control tests are recorded may be requested by CERTIGAZ and examined during audits by the auditors who also assess the control methods.

2.4.6 Customer complaints

The applicant/holder will record and process all customer complaints relating to NF certified products, within a timeframe satisfactory to the complainant and the entities concerned.

It will communicate at the request of CERTIGAZ the annual statement of customer complaints received. CERTIGAZ may possibly request additional information for certain complaints and their occurrence in relation to sales of the accessory(ies) in question or the product family.

It will quickly communicate to CERTIGAZ any customer complaint received which seriously impacts the safety of the product.

2.5 Marking

Marking is an integral part of product certification. It helps identify, promote, and guarantee the traceability of an NF-certified product.

Beyond the identification of a certified product and its traceability, the marking of a product with the NF logo ensures better protection for users and allows the defense of owners against abusive use and counterfeiting.

As a reminder, information relating to certification and certified products is available on the website www.marque-nf.com and the website www.certigaz.fr . For each product category, this includes in particular:

- identification of holders;
- identification of certified products;
- NF certification rules;
- the list of certified characteristics.

The holder's communication must be carried out in compliance with the principles of clarity and sincerity. The holder must take particular care to indicate the product(s) covered by the NF certification and comply with all the indications of the NF mark graphic charter in force available from CERTIGAZ, under penalty of sanctions, in accordance with the General Rules of the NF mark.

When the holder uses the NF mark, he undertakes to:

- respect the applying graphic charter of the NF mark;
- comply with the applying regulations (see §2.3);
- use a distinct trade name to avoid any confusion between an NF certified product and a non-NF certified product;
- not to use the certification of its products in a way that could harm the certification body, nor to make any statement about the certification of its products that the certification body could consider misleading or unauthorized, including:
  - not to use the NF mark in an abusive manner or in a manner that does not comply with the applying certification standard and the applying graphic charter;
  - do not use the AFNOR, AFNOR Certification and CERTIGAZ logo without prior agreement from these organizations.
- in the event of suspension, withdrawal or expiry of the certification, remove any reference to the certification from all means of communication. It also undertakes to inform without delay the body from which it obtained approval and/or authorization and/or recognition of the certification.
- remove from its website any link to AFNOR Group and CERTIGAZ sites, if requested by the latter.

The reproduction and affixing of the COFRAC logo as well as the reference to CERTIGAZ accreditation, by the holder/applicant and its clients, are prohibited by CERTIGAZ.

CERTIGAZ only authorizes the full reproduction of the certificates it has issued.

2.5.1 Reference texts

The Consumer Code stipulates that: "When reference is made to certification in the advertising, labeling or presentation of any product or service as well as in commercial documents of any nature relating thereto, the following information must be brought to the attention of the consumer or user:

- The name or business name of the certification body or the guaranteed mark,
- The name of the certification standard used,
- The terms and conditions under which the certification framework can be consulted or obtained.

Furthermore, the purpose of listing the main certified characteristics is to make the technical characteristics covered by the NF mark transparent to consumers and users. It thus enhances the certification and its content. A "certified characteristic" is any technical characteristic whose content is controlled within the framework of the NF mark.

The environmental code (Book V - Title V - Chapter VII “Risk products and equipment” and see § 2.3 of these rules)

The orders, see § 2.3:

The decree of July 13th, 2000, amended	regulating the safety of the distribution of combustible gas by pipeline.
The decree of February 23rd, 2018 amended	relating to the technical and safety rules applicable to combustible gas installations in individual or collective residential buildings, including common areas

The following marking rules are intended to guide the holder in complying with regulatory requirements and the requirements of NF certification. The General Rules of the NF mark specify the conditions of use, the conditions of validity and the terms of sanctions in the event of abusive use of the NF mark.

Without prejudice against the sanctions provided for in the General Rules of the NF mark, any erroneous announcement of the certified characteristics and any fraudulent use of the NF logo exposes the holder to prosecution for fraud and/or false advertising.

2.5.2 The NF logo

The NF logo must ensure the identification of any certified product.

The holder undertakes to comply with the NF mark's graphic charter. The NF logo and its graphic charter are available from CERTIGAZ.

The NF certified product is subject to a designation and identification distinct from those of non-NF certified products.

The holder must only use the NF logo to distinguish NF-certified products and without there being any risk of confusion with other products and in particular non-NF-certified products.

The holder is recommended to submit to CERTIGAZ in advance all documents where the NF mark is mentioned.

2.5.3 Marking procedures

This part describes both the methods of affixing the NF logo and the marking of essential certified characteristics, according to the following aspects:

1. marking of the NF logo on the NF certified product
2. marking of the NF logo on the packaging of the NF certified product
3. marking of the NF logo on documentation and on websites

In order to meet the requirements of the Consumer Code, the marking must, whenever technically possible, be carried out as follows:

As indicated in paragraph 2.5.1, it is recommended to inform the consumer about the main reasons and benefits of using a certified product. In the NF certification system, the certified essential characteristics must appear on at least one of the supports (product, packaging or documentation).

The lists of certified products distributed by CERTIGAZ and the certificates issued to the holder mention or guarantee the certified characteristics, for example:

MAIN CERTIFIED CHARACTERISTICS (* if applicable)

- Raw Material
- Dimensions
- Welding *
- Marking
- Mechanical strength
- Technical characteristics
- Intended use
- Sanitary compliance (ACS) *

Definition of families of accessories / *Definition of the accessory families*

New codification *New codification*	**Family** *Family*	**Designation** *Description*
Group A: PE fittings with electro-weldable sockets *PE fittings with electro fusion joints*	**A1**	Sleeves, elbows, tees, reducers… only in PE *Couplers, elbows, tees, reductions… PE only*
	A2	Mixed fittings (polyethylene/metal) with electro-weldable sockets *Electro socket welding fittings (PE/metal)*
Group B: PE fittings with electro-weldable saddle *PE saddles with electro fusion connection*	**B1**	Branch sockets (pdb), branch sockets with integrated trigger (PBDI) and branch sleeve with integrated trigger (MBDI) *Tapping tees (pdb), tapping tees with integrated excess flow valve (PBDI) and coupler with integrated excess flow valve (MBDI)*
	B2	Saddles for stitching, ballooning, diversion (sdd), obturation and reinforcement *Saddle bypass*
Group C: PE fittings with male ends *PE fittings with spigot ends*	**C1**	For assembly by electro-weldable socket *For electro fusion joint*
	C2	For butt welding assembly *For butt fusion joint*
Group D: Joint fittings by mechanical assembly or other types of assembly, whether removable or not *Metallic or plastic mechanical fittings that can be dismantled*	**D1**	Metal-plastic and plastic-plastic mechanical fittings *Metallic mechanical connections "metal-plastic" and "plastic-plastic"*
	D2	Plastic mechanical fittings "metal-plastic" and "plastic-plastic" *Plastic mechanical connections "metal-plastic" and "plastic-plastic"*
	D3	Transition piece (collars, flanges, sleeves, etc.) with a PE part with a male end *Transition fittings with a PE spigot end*
Group E: Polyethylene faucets *PE valves*	**E1**	PE valves for PE networks *PE valves for PE piping systems*
	E2	Support taps (RPC), supply with an electro-weldable saddle *PE valves with branch saddle*
	E3	Single or dual-purge pressure relief valves *Single or dual-purge valves*

Defining Application Groups / *Definition of the application groups*

Polyethylene network accessories belong to one or more of the following groups depending on their applications:
The accessories for PE networks belong to one or more of the following groups, depending on their application.

Group 1 / *Group 1*	**Group 2 *** / *Group 2 **	**Group 3** / *Group 3*	**Group 4** / *Group 4*	**Group 5** / *Group 5*
Gaseous fuels, **1-G** *Gas, **1-G***	Drinking water, **2- W** *Drinking water, **2- W***	Irrigation, **3-W** *Irrigation, **3-W***	Industrial process water, non-potable water, and sanitation with pressure, **4-W** Liquids industrial processes, **4-PI** *Industrial or non-drinkable water and sewerage under pressure, **4-W*** *Liquids of industrial process, **4-PI***	Electrical confinement, 5- **ELEC** *Electrical containment, 5- **ELEC***

* for accessories with a French attestation for drinking water (ACS)

The Certification Rules and the list of certified products are available on request from the certification body CERTIGAZ or on the website www.certigaz.fr .
The Certification Rules and the list of certified products are available on demand at the certifying body CERTIGAZ or the web site www.certigaz.fr .

The holder has the choice to reproduce the above information himself in his documentation or to refer to the certificates or lists distributed by CERTIGAZ. For the French market, this information must be provided in French.

The certified characteristics can be indicated to the consumer according to the marking methods of the following examples:

2.5.3.1 - Marking of the NF APE certified product

In accordance with applicable standards, the following certified characteristics are mentioned on the product:

Certified Features			example
Manufacturer's designation or acronym (0)			XXX
Manufacturing site identification code (1)			00
NF logo (can *be placed on a label*) (2)			See logo §2.5.3
Mention of the scope of application	Gaseous fuels (7)	Group 1	**GAS / GAS**
	Drinking water	Group 2	W / WATER / WATER / EN12201
	Water (irrigation or watering)	Group 3	
	Industrial (non-potable water), sanitation	Group 4	W / WATER / WATER / P EN12201 PI / ISO 15494
	Industrial (fluids other than water)		
	Electric confinement	Group 5 (8)	ELEC
Designation of the polyethylene material used (3)			PE 100
Nominal outside diameter of the tube to which the accessory is connected			110
SDR			SDR 11
Batch: Period of manufacture / or last assembly (4)			52/21
The tightening torque on the nut (5)			20 Nm
MOP (Maximum Operating Pressure) PMS (Maximum Service Pressure) PN (Nominal Pressure),	*may be carried on a label attached to the product or the individual packaging* (6)		MOP 4 bar PMS 5 bar PN 10

(0) This designation and/or acronym are specified in the technical file,

(1) Manufacturing site number assigned by CERTIGAZ upon notification of the right to use the NF mark,
OR International number declared by the manufacturer during registration on www.traccoding.com managed by BECETEL and to be communicated to CERTIGAZ with the request. This number can be affixed:
- on the product next to the NF logo ,
- on the same label used for the NF logo if this is the case,
- on the traceability label with its barcode according to ISO 12176-4 standard (digits 16 and 17).

(2) The NF logo is defined by a graphic charter available from AFNOR Certification or CERTIGAZ.
If a label is used, the NF logo marking must be permanent (see the operating procedure in §3.3.1).

(3) Not applicable for D1 Family accessories.

(4) Coding by the manufacturer (year/month, year/weeks, year/batch, etc.) described in the technical file.

(5) Only for accessories of the D1 family where a torque is recommended.

(6) - For any product whose MOP is lower than that admissible according to the MRS and SDR of the fitting and in particular for families B1 and B2, for the safety time tests in the welding cycle and leakage flow rate in the perforator (see tables 5 and 11), if this is the case.

- For families D1, D2, D3 according to ISO 17885, marking on the product (product, label or individual bag) or packaging.

(7) The marking of the GAZ application must be permanent (see the operating procedure in §3.3.1).

(8) For the A1 family, the sleeves being standard, the marking of the ELEC application can be carried out permanently on a label affixed to the accessory to retain the marking after implementation.

Furthermore, for the respective applications, the EN1555, EN12201 and EN ISO15494 standards require other markings on the product, an associated label or its individual bag, in particular the standard(s) and compatibility with the tubes (PE/SDR).

In the event of technical impossibility, the words "APE" and "CERTIFIED BY CERTIGAZ" may not be present. If present, these markings must be legible.

The minimum permissible marking is as follows, blue or black:

Note:

Due to the specific nature of NF APE certified products, it is permitted to deviate from the requirements defined as follows:

- the NF logo may be affixed, where possible on a blue or black background, on an indelible label attached to the accessory.
- the minimum size requirement for the logo defined in the graphic charter is replaced by a notion of readability.
- for markings from a mold or die, these markings will be brought into conformity when the tooling is renewed .
- if it is not possible to mark the NF logo due to the lack of sufficient surface area:
  - if the flat surface does not allow for an NF logo with a minimum height of 5 mm to be obtained
  - if the marking can only be carried out on a cylindrical part with a diameter less than or equal to 12 mm

  the NF logo can be replaced by the letters “NF”.
- depending on the processes for marking the NF logo on the product (example: micro-percussion, laser, stamping, foundry, injection, wheel, stamping, hot, etc.), it is authorized to carry out the marking in wire, continuous or dotted form :

Additionally, a QR code can be added to access various product-specific information without compromising the required marking above. The mark committee will consider possible easing requirements.

Approved triggers are certified accessory components and do not need to be NF marked. They are identified by the model with a batch number and a serial number.

2.5.3.2 - Marking on the packaging or on the accompanying document of the NF certified product

Affixing the logo to the packaging and instructions of certified products is one way to promote NF-certified products. It is therefore strongly recommended that NF mark holders also affix the NF logo to the packaging of NF APE-certified products.

In addition to the NF logo defined in paragraph 2.5.3, and at a minimum, the reference of the certified product as well as its trademark must appear on the packaging.

In addition, the requirements of the applicable standards EN1555, EN12201 or EN ISO15494, relating to packaging markings, must be respected, especially for markings which do not already appear on the product.

When the customer requires an expiration date for accessories and/or a time between delivery and implementation, the information is mentioned on the packaging and/or on the product's accompanying document. Compliance with these specifications is verified during CERTIGAZ audits.

Special feature:

Packaging for approved triggers does not need to be NF marked. It may refer to the SAPE102 specification and is identified by the trademark, model and batch number.

The product packaging or an accompanying document must include the following information unless it already appears on the product or a label:

electrofusion fittings, the cooling time required to reach, at 23°C ambient temperature, temperatures of 70 and 110°C at the interface of the welding zones. These values must be clearly identified to avoid any interpretation during implementation, as follows:

➔CT $_{110°C}$, CT 110 or CT110 : xx min – CT $_{70°C,}$ CT 70 or CT70: yy min, for CT (Cooling Time), historically used.

Note : - The indications for CT $_{70°C}$ and CT $_{110°C}$ must be grouped together for clear information (no partial information on a product label and additional information on the packaging).

- Only one value is acceptable if it is the one that corresponds to 70°C and is clearly identified as such.
- For CT 70 , the time indicated may correspond to a lower temperature than 70°C, indicated in the file.
- When the cooling time is specified by a digit in the barcode according to the NF ISO13950 standard, it traditionally corresponds to 110°C and its value may be slightly different since it comes from a table with defined values.

- for male end fittings, the assembly method: butt welding and/or with an electro-weldable fitting.

The certified characteristics specified in paragraph 2.5.3.1 may also appear on the packaging.

In the event of technical impossibility, the words "CERTIFIED BY CERTIGAZ" may not be present. If present, this marking must be perfectly legible.

The minimum permissible marking is as follows:

2.5.3.3 - Marking on documentation (technical and commercial documents, labels, posters, advertisements, websites, etc.)

References to the NF Mark in the documentation must be made in such a way that there is no risk of confusion between certified products and others.

The reproduction of the NF mark on documentation and in advertising must be carried out in accordance with the terms defined in paragraph 2.5.3

Reproduction of the NF mark, as defined in 2.5.3, on the letterhead of papers used for the holder's correspondence is prohibited unless the holder benefits from the NF mark for all of its products.

The certified characteristics specified in paragraph 2.5.3 may also appear on the documentation.

In the event of technical impossibility, and in particular in catalogs, the mention "CERTIFIED BY CERTIGAZ" may not be present. If present, this marking must be perfectly legible.

The minimum permissible marking is as follows:

The documentation for approved triggers must not mention NF certification but possibly approval according to the SAPE102 specification in accordance with NF136 rules.

The distributor, not being the owner of the NF mark, cannot refer to it directly.
Communication on the products that it markets can only be done under the responsibility of the holder.

For a correct interpretation of this chapter, the holder is recommended to submit to CERTIGAZ in advance all documents where the NF mark is mentioned.

A notice accompanying a product must comply with the information required by the regulations, it must be in French and mention the required instructions and safety information as well as the contact details of the holder.

Part 3
GETTING CERTIFIED

The purpose of this part is to provide the applicant for the right to use the NF APE mark with all the information necessary to establish their file, for type tests (TT) and audits .

Types of requests

A request for a right to use may be:

- ☞ A first application for admission
- ☞ An application for admission
- ☞ An extension request for product modification, or for a new product derived from a product already approved for the NF APE mark.
- ☞ A request for maintenance.

A **first application for admission** comes from a manufacturer who has never obtained the right to use the NF APE mark (first application for admission). It corresponds to a product from a specific manufacturing unit, defined by a trademark, a commercial reference specific to the product presented and technical characteristics.

A **request for admission** comes from a manufacturer who has already obtained the right to use the NF APE mark for other products and who wishes to obtain the right to use the NF APE mark for a new product or a new manufacturing site. It corresponds to a product coming from a specific manufacturing unit, defined by a trademark, a commercial reference specific to the product presented and technical characteristics.

A **request for extension** comes from a holder and concerns a product already admitted to the NF APE mark and subject to modifications or a new product derived from a product already admitted to the NF APE mark. This type of request can generate a new certificate according to the criteria of § 1.1.2.2.

If this extension requires one or more tests or an additional audit, it is a major extension. Otherwise, it is a minor extension.

With the new specifications for improved strengths for PE 100, a holder can make an extension to claim that the resin used has one or more of these characteristics:

- **PE 100-RC** ➔PE 100-RC resin according to NF114 + tests => Major extension, by families A, B, C, D and E
- **PE 100-RD** ➔PE 100-RD resin according to NF114 => Minor extension
- **PE 100-HT** ➔PE 100-HT resin according to NF114 => Minor extension
- **Several claims including PE 100-RC** => Major extension
- **Multiple claims without PE 100-RC** => Minor extension

A **maintenance request** comes from a holder and concerns an NF certified product intended to be marketed under another trademark and/or having a specific reference to the product without modification of the certified characteristics.

In the event of maintenance, the manufacturer and the subcontractor are each responsible for the right to use the NF mark relating to the product in question and undertake to apply the measures resulting from the sanctions taken in accordance with the Reference Framework.

A manufacturer whose right to use has been suspended cannot therefore subcontract products to another holder within the framework of this maintenance procedure.

Likewise, the subcontractor must inform its client of any sanctions that call into question its right to use.

Several cases can be considered depending on the responsibilities/actions/markings of the initial holder and/or the distributor with the following modalities:

CASE	Holder: **T**		Distributor: **D**	Certification management procedures			Manufacturer identification on the packaging or instructions (3)
	Marking product (1)	Trademark packaging (1)		Maintaining the NF mark?	Management methods	Trademark on the NF trademark list	
No. 1	**T** marking	Packaging by **T** Trademark **T**	No change in packaging by **D**	NO	- Management of a basic certification by the **T holder** : no maintenance	YES	Holder **T**
No. 2	**T** marking	Packaging by **T** Trademark **D**	No change in packaging by **D**	NO (2)	- Indication on the packaging of one of the following two pieces of information: - "Product **T** – Commercial Ref. XXXX or registered trademark" (the ref. or trademark is that of the owner **T**) - "Product **T** – CERTIGAZ certificate/file base number" - Management of notices and packaging by the holder **T** - Review of the management of notices during the admission or monitoring audit of the **T holder** by CERTIGAZ	NO	Holder **T**
No. 3				YES (2)	- Request for maintenance by the holder **T** or the distributor **D** - Management of notices and packaging by the holder **T** - Review of the management of notices during the admission audit, then monitoring of the **T holder** by CERTIGAZ	YES	Distributor **D**
No. 4	**T** marking	Packaging by **T** Trademark **T**	Modification of packaging by **D** Trademark **D**	YES	- Request for maintenance by distributor **D** - Management of instructions and packaging by distributor **D** - Review of the management of the notices during the admission audit, then monitoring of distributor **D** by CERTIGAZ	YES	Distributor **D**
No. 5	**T** marking	No conditioning by **T**	Conditioning by **D** Trademark **D**	YES		YES	Distributor **D**
No. 6	**D** marking	Packaging by **T** Trademark **D**	No change in packaging by **D**	YES		YES	Distributor **D**
No. 7	**D** marking	No conditioning by **T**	Conditioning by **D** Trademark **D**	YES		YES	Distributor **D**

(1) : for the same owner the marking and the trademark may be different
(2) : to comply with regulatory requirements (marking, manufacturer identification, etc.), the holder and the distributor organize themselves to choose between cases no. 2 and no. 3
(3) : compliance with paragraph R557-2-5 of the environmental code. The concept of manufacturer and distributor is clarified in article L557-3 of the same code.

3.1 Filing of a certification application file

Before applying, the applicant must ensure that, at the time of application, they meet the conditions defined in these Certification Rules, and particularly in Part 2, concerning their product and the sites concerned. It is the applicant/holder's responsibility to ensure that the regulations applicable to their product are complied with.

By making an application, the applicant or holder undertakes to reserve the commercial name of its manufacture presented for admission only for certified products and to facilitate the auditors' operations incumbent on them under this Reference Document.

He must agree to respect the same conditions for the entire duration of use of the NF mark.

Failure to comply with these rules may result in the applicant/holder being subject to the interruption or suspension of the processing of their application. It is not permitted under any circumstances to refer to the NF mark before obtaining the right to use the NF mark, or to submit counterfeit products for certification.

The application for the right to use the NF mark must be made to CERTIGAZ in accordance with the conditions and models given in part 7.

It must be accompanied by the general information sheet concerning the applicant and the product sheet accompanied by the technical file.

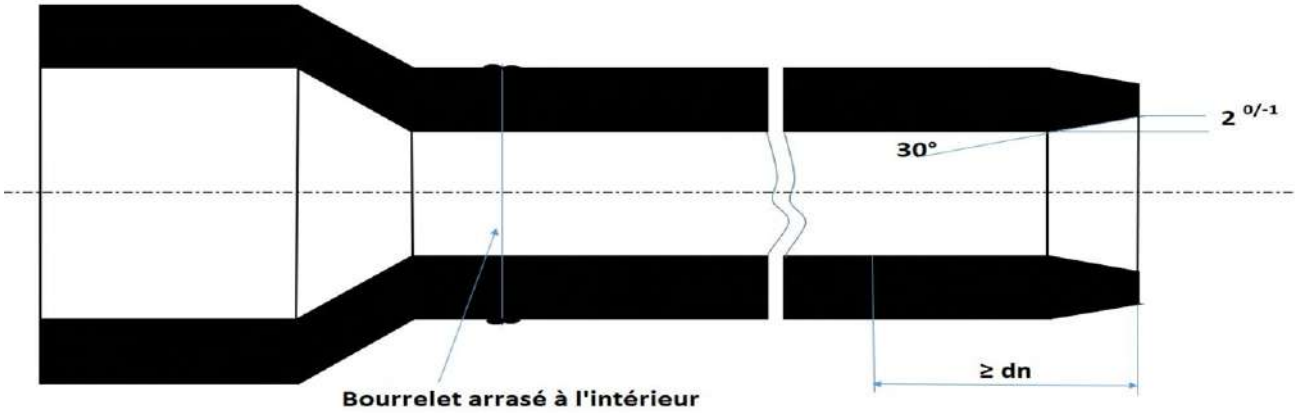
If the product comes from a manufacturing plant located outside the European Economic Area (EEA) or in the European Free Trade Association (EFTA), the applicant designates a European representative who co-signs the application and the mandate (see part 7).

Upon receipt of the request, the following process is initiated:
- The instruction of the request / the admissibility of the file,
- The implementation of controls and verifications,
- Evaluation and decision

For the electrical containment application, 2 families of accessories are concerned, families A1 only for sleeves and D2 for interlocking plastic fittings.

For this D2 family, the finished fittings are made up of 2 elements:
- A straight tube certified NF114, group 5, by the LNE.
- A push-fit fitting which is a semi-finished fitting.

These two elements are prepared and butt-welded in the factory. The other end of the tube has a scribing mark for visual control of the socket depth and a chamfer on the internal diameter.



Specifications:
- The chamfer on the internal diameter is 30° over 2 $^{0/-1}$ mm thickness.
- The chamfer on the external diameter is at the manufacturer's discretion to be compatible with the female fitting.
- The socket length is greater than or equal to the nominal diameter of the tube.
- The alignment tolerance between the tube and the welded fitting on the same tube, as well as that of the flushing of the internal bead, is less than 10% of the thickness of the tube.
- The use of a PE 100-RT tube (PE 100 with better resistance to high temperatures called RT for “Raised Temperature”) necessarily implies a PE 100-RT connection.
- The set comes with protective caps in the socket and the other end of the tube.

A request for NF136 certification may concern:
- Semi-finished fittings. They are only intended for manufacturers of finished fittings.
- Finished fittings that meet the market's needs. These fittings can benefit from the NF114 pipe and semi-finished fittings trade, but the applicant's responsibility is general for its own factories or those of subcontractors.

== > Consider thinking about PE interlocking sleeves, D2 family.

3.2 Instruction of the application / Admissibility

When processing the application, CERTIGAZ verifies that:
- the request is admissible,
- all the documents requested in the application file are present,

- the elements contained in the technical file comply with the requirements of the Certification Rules.

The request is only admissible if:
- the products subject to the application are covered by the normative documents cited in these Rules
- the letter requesting the right to use the NF mark was communicated to CERTIGAZ (letter 001, 002A or 002B).

As soon as the request is deemed admissible, CERTIGAZ processes the request and:
- checks the presence and conformity of the requested documents (see part 7)
- request, if necessary, missing elements, additional information or corrections to elements of the application file (plans, letter or application document, etc.).
- informs the applicant of the organizational arrangements (audit, audit duration, audited sites, tests to be carried out, laboratories, products sampled, etc.) and organizes the controls.

When examining the request, CERTIGAZ ensures that:
- the applicant controls and assumes responsibility for the following stages: manufacturing, assembly, quality control, marking, packaging and placing on the market;
- the controls and tests concerning the products subject to the application, provided for in the technical documents of these Certification Rules, are put in place.

3.3 Control methods

The controls carried out within the framework of the NF mark are of several types:
- product testing,
- audits.

3.3.1 - Tests

The examinations and tests are carried out in accordance with the additional standards and specifications set out in Part 2.
The test plans are in accordance with Tables 1 to 3 by product family and application. The specific specifications and sampling, by commercial reference, are specified in Tables 4 to 8.
An application for Group 2 implies a scope that covers all WATER applications in Groups 2, 3 and 4.

Type tests (TT) are carried out either:
- by one of the laboratories, recognized by CERTIGAZ, designated in part 5 of these Rules and named the mark laboratory. In this case, the mark laboratory sends its test report(s) to CERTIGAZ and to the applicant/holder.
- by the manufacturer's laboratory authorized NF by CERTIGAZ (see § 3.3.1.1 and 3.3.1.2), with verification tests if the laboratory is not accredited (see § 3.3.1.1).
- by a mix of the 2 cases above depending on the means and the scope of the NF authorization of the manufacturer's laboratory.
- By the manufacturer or under his responsibility, in his laboratory or any laboratory of his choice, after agreement from CERTIGAZ, only for gas applications in Gd3 or water regardless of the Gd and within the framework of the sampling of the test plans defined in these rules (see §3.3.1.3).

In the case of a modification to an already certified product or a transfer of production to a site already covered by the NF136 mark, a simplified test plan is possible. The applicant can then make a proposal for a test plan when submitting their application.

However, the test plan is determined by CERTIGAZ based on its expertise, Tables 9, with the assistance, if necessary, of the mark's laboratory and in agreement with the applicant. In case of difficulty, the committee may be consulted.

The tests are carried out on samples taken by the applicant or by CERTIGAZ from a representative and current series production called a batch.

Precisions on the batch :

The batch, in accordance with the definition of part 8, indicated on the accessory in accordance with § 2.5.3.1, corresponds to a manufacturing order for a commercial reference, for a defined quantity with the same design and manufacturing characteristics, of the same composition (material batch – resin or metal – or unchanged die-stamping).

The duration of the batch is not fixed as long as the manufacturing conditions remain unchanged without a stoppage calling these conditions into question. Given that some monitoring tests are carried out weekly, it is recommended not to exceed one month.

The manufacturer must, through the process, define, document and record the shutdowns that generate, or not, a batch change because the manufacturing conditions are modified. Furthermore, a shutdown without a batch change may

generate specific restart controls that must be defined, documented and recorded by the manufacturer.

In the case of the end of a batch of resin in a silo that is incompletely emptied before being filled with another batch of the same resin, it is accepted that the batch allocated to the product is that of the majority batch provided:

- that the minority part is less than 20%,
- to maintain the traceability of the products concerned,
- to define these provisions in the quality documentation.

For any accessory resulting from an assembly, the batch corresponds at least to the combinations of the batches of the main accessories assembled:

- families A1 and A2: PE body lot
- family B1: saddle and barrel sets for a duo block pdb for example
- family B2: saddle lot
- families C1 and C2: PE body lot
- family D1: batch of the mechanical connection body
- family D2: body and cap lots
- family D3: PE batches and metal body
- family E1: sets of valve bodies and sleeves
- family E2: sets of valve body, cuff and saddle
- family E3: sets of valve bodies, sleeves and purges

The manufacturer may have finer traceability, depending on other components of the accessories (wires, connectors, perforators, spheres, axes, saddles, joints, etc.), in order to facilitate analysis in the event of a possible failure.

Precisions on assessing the durability of markings on PE accessories

In the test tables (TT, PVT, AT or §2.4.4.8) the marking is verified as well as the durability required for the marking on a label affixed to the PE accessory.

Processes that allow for hollow or relief marking or even laser marking guarantee this durability.

WATER, ELEC marking on a label affixed to the PE accessory or by inkjet on the PE accessory, as well as for traceability and welding barcodes or the QR code if used, the durability is checked using a cleaner for preparing electro-welded assemblies (TANGIT type for example, authorized for use by GRDF).
10 ml of product is poured onto the marking and wiped off with a soft cloth. The marking must remain legible by the operator and code reading machines. In the event of changes to the processes concerned, label supports or inks, etc., testing is required.

Precisions on the preparation of the test tubes:

- For gas applications, in addition to the testing standards, the pipes used must comply with the NF EN 1555-2 standard. NF PE pipe certification (NF114) is not required but is recommended. Failing this, it is recommended to use standard industrial pipes made with a resin certified by the NF114 mark.
  The designations, characteristics, brands and resin as well as the delivery condition of the tubes used (straight or wound tube - reel or crown) are documented in the test reports.
- For all applications, regardless of the tests, except those which refer to standard ISO 11413, the measurement of electrical resistance must be carried out with equipment whose minimum characteristics are specified below, according to the nominal resistance value.

Resistance to be measured (Ω)	Resolution (mΩ)	Exactness
0 to 1	1	0.30% of the reading value
1 to 10	10	0.30% of the reading value
10 to 100	100	0.30% of the reading value

Note: A 4-wire connection is recommended and mandatory for resistances less than or equal to 1 Ω.

Precisions on measured values (rounding rule):

For all measurements and whatever the physical quantity, the rounding rule used by the NF136 rules, to declare conformity, is rule B of the NF EN ISO 80000-1 standard (rounding up for the required rounding interval). Examples:

nominal	tolerance	measure	rounded	compliance
5.8	0/+0.3	5.74	5.7	No
5.8	0/+0.3	5.78	5.8	Yes
5.8	0/+0.3	5.84	5.8	Yes
5.8	0/-0.4	5.85	5.9	No
5.8	0/-0.4	5.81	5.8	Yes
5.80	0/+0.3	5.78	5.78	No
5.80	0/+0.3	5,786	5.79	No
5.80	0/+0.3	5,794	5.79	No
5.80	0/+0.3	5,795	5.80	Yes
5.80	0/+0.3	5.84	5.84	Yes
5.80	0/+0.3	5,849	5.85	Yes
5.80	0/-0.4	5,850	5.85	No
5.80	0/-0.4	5,795	5.80	Yes
5.80	0/-0.4	5,805	5.81	No
5.80	0/-0.4	5,804	5.80	Yes

The test report may indicate values with more digits than the required rounding interval and announce compliance on this "raw" value. CERTIGAZ will apply the rounding rule to declare compliance or not.

For fittings with male end:

- if the maximum tolerance is exceeded for the diameter or thickness, on partial areas compared to the required areas and without exceeding 0.5 mm,
- If the minimum tolerance is exceeded for the thickness, on partial areas without exceeding 0.1 mm,

These non-conformities are acceptable if they do not cause non-conformity during mechanical tests.

Note: Conformity may be declared on the tested samples, but corrective actions may be taken by the manufacturer or requested by CERTIGAZ to guarantee the conformity of the batch or future batches to take into account the statistical distribution of the value over the entire production.

Precisions on the appearance of the fittings:

A- In addition to §5 of the product standards, the appearance of the male end ends, resulting from a machining process, must have a surface condition, for the part intended for scraping before welding with an electrofusion fitting, which does not degrade the ease of scraping. The roughness index Ra must be less than 12.5 µm.

B- Accessories whose implementation tools require sealing in an area of the accessories must have a compatible surface condition in the required area. This area is specified in the technical file as well as the compatible tools.

C- Fittings with a steel end, family A2 or D3, must be protected against oxidation of the steel, up to the point of use.

The factory-assembled PE/steel junction must be covered with a protective sheath (heat-shrinkable, etc.).

The steel ends must be covered with peelable products: varnish, paint or other coating that does not produce dangerous fumes during welding work. Only the outer part must be protected.

The protection is of such quality that:

- The end to be welded is peelable,
- Its color does not give rise to confusion as to the application group of the accessory
- After 6 months in storage, without any special precautions, in an unheated room, there is no trace of oxidation,
- The future attachment of a covering with anti-corrosion tape is satisfactory.

Precisions on connection sockets (pdb) (In addition to standard NF T 54-970):

- In § 4.2 Design of perforators, the sentence "devices must limit the stroke of the perforator in the low and high positions" is supplemented as follows: For network managers, it is important that these devices allow a clear stop or a significant increase in torque to be observed for use without prejudice in the field. Furthermore, in the low position, network managers may require that the flow to the bypass be non-existent or low to allow interventions downstream of the bypass.
- In § 4.3 Design of plugs, network managers may recommend female plugs to limit the intrusion of foreign bodies into the barrel when operating the perforator.
- In § 4.4, annexes A and B, the tests are carried out at the MOP declared by the manufacturer and not specifically at 4 or 8 bar, see also § 2.5.3.1 for the marking of the MOP.

Precisions on hydrostatic pressure tests (in addition to §10.3 of ISO1167-1):

The test report must mention the failure(s) and the required test time is calculated after subtracting the total failure time.

One or more failures may be acceptable depending on the required test duration, without exceeding the following values:

Required duration of tests (Te)	Maximum time to failure	Maximum cumulative time of failures
Te < 500 h	4 hours	4 hours
500 h ≤ Te < 1000 h	24 hours	24 hours
Te ≥ 1000 h	72 hours	72 hours

A failure can be a breakdown of the bench, a power outage, the period during which the pressure and/or temperature stress tolerances are not respected, etc.

Note: the 1000 h hydrostatic pressure tests specified in the NF136 rules correspond to the case Te ≥ 1000 h.

Precisions on test reports :

In addition to the requirements set out in the test standards, the final test report must be written primarily in French. It may be in English. Other languages may be accepted only after approval by CERTIGAZ and possibly after consultation with the committee. The final test report must specify:

- the version of the technical file of the accessory,
- the accessory lot,
- the reference of the tubes used to produce the test pieces,
- any specific requirements specified in Rules NF136.

A test report that covers several types of tests and/or several products must include a summary. This summary may be the subject of a separate document that refers to the different report numbers concerned.

Any test report must not be more than 2 years old before the certification request made to CERTIGAZ. Beyond this period, this results in:

- Consultation of the committee to decide on the admissibility or otherwise of the application,
- The provision of annual monitoring reports (PVT) if the products have been manufactured,
- If the products have not been manufactured or the PVTs have not been completed, the PVTs must be carried out on the first batch of these products after certification. These tests are in addition to the PVT schedule.

Type tests are only admissible if they have been carried out in a mark laboratory or an NF-authorized manufacturer's laboratory, when required, during a period where the test scope is valid.

Precisions on the storage period of samples:

After the test report, the storage period of the samples is the responsibility of the applicant/holder. No storage period is imposed. In case of doubt, during the analysis of the TT reports (Test type), if the samples are no longer available to carry out a further analysis, CERTIGAZ may request that the tests concerned be repeated.

3.3.1.1 - Type tests carried out by an NF-authorized manufacturer's laboratory, with verification tests

A manufacturer may carry out all or part of the tests in its laboratory provided that it has obtained authorization from CERTIGAZ based on the SLAB100 specifications “Specifications for manufacturer laboratory authorization” (available on the website www.certigaz.fr). The term “NF authorized manufacturer laboratory” is retained for the following.

When the NF-authorized manufacturer's laboratory does not have the necessary resources, it has the corresponding tests carried out by a mark laboratory.

The NF-authorized manufacturer's laboratory sends its test report(s) to CERTIGAZ, which examines them. A copy may be sent to the mark's laboratory for review.

Verification tests are then carried out in the mark's laboratory facilities or in those of the NF-authorized manufacturer's laboratory depending on availability and the applicant's choice.

These verification tests are defined in tables 4 to 8 but can be supplemented by any tests for which uncertainty appears following analysis of the initial tests.

The verification tests carried out in the laboratory of the NF-authorized manufacturer are carried out under the supervision of a representative of the mark laboratory or of CERTIGAZ.

Any verification test carried out in the NF-authorized manufacturer's laboratory, without the permanent presence of the mark's laboratory representative or CERTIGAZ, must be continuously recorded (in the case of certain endurance or fatigue tests). Otherwise, the tests will be carried out by a mark's laboratory.

The mark laboratory sends CERTIGAZ and the applicant/holder its test report(s) and its opinion on the manufacturer's test report if necessary.

3.3.1.2 - Type tests carried out by an accredited laboratory of an authorized NF manufacturer

A manufacturer may carry out all or part of the tests in its accredited laboratory, or in a laboratory accredited according to the ISO17025 standard with which it has links (management, group, shareholding, etc.) provided that it has obtained authorization from CERTIGAZ on the basis of the SLAB100 specifications. “Specifications for manufacturer laboratory authorization” (available on the website www.certigaz.fr). The term “NF authorized manufacturer accredited laboratory” is retained for the following.

When the accredited laboratory of the NF authorized manufacturer does not have the necessary resources, it has the corresponding tests carried out by a laboratory of the mark.

The accredited laboratory of the NF authorized manufacturer sends its test report(s) to CERTIGAZ.

CERTIGAZ examines the type test results from the accredited laboratory of the NF authorized manufacturer, then if it deems it necessary, has cross-check tests deemed necessary by CERTIGAZ carried out by a mark laboratory, in its facilities or in the facilities of the accredited laboratory of the NF authorized manufacturer depending on availability and choice of the applicant.

The mark laboratory sends its cross-checking test report(s) to CERTIGAZ and the applicant/holder.

3.3.1.3 - Type tests carried out by a manufacturer's laboratory with type tests under the control of CERTIGAZ

A manufacturer may carry out all or part of the tests in its laboratory for gas applications in Gd3 or water regardless of the Gd and within the framework of the sampling of the test plans defined in these rules, families A, B and C according to tables 4, 5 and 6, after agreement from CERTIGAZ.

This agreement is acquired when the manufacturer's laboratory is NF authorized according to one of the 2 previous cases or if the manufacturer uses a laboratory which has accreditation according to ISO 17025 including:
- the scope covers the standards EN 1555 and EN 12201.
- the test reports meet the requirements of NF136 rules.

NF authorization from the manufacturer's laboratory is therefore recommended, but if the manufacturer is not NF authorized, CERTIGAZ ensures during admission and/or production monitoring audits that the laboratory's resources and instructions meet the requirements of NF136 rules to issue acceptable test reports. The audit time can be adapted to allow for this analysis.

The test reports with a summary are sent to CERTIGAZ for analysis and they are supplemented by type tests under CERTIGAZ control for sampling defined in tables 4, 5 and 6.

These type tests under CERTIGAZ control are carried out in a mark laboratory selected by CERTIGAZ.

In this context, gas application type tests can be used for water applications, when the sampling concerns a couple, Gd and a form of connection, provided that they are less than 2 years old.

TABLE 1: Summary of tests required by application group for family group A, B and C

family						Tests	reference	application group			
A1	A2	B1	B2	C1	C2			Gas **1-G**	Drinking water **2-W**	**3-W** Irrigation Sanitation, non-potable water in industrial processes. **4-W** Liquid in industrial process. **4-PI**	Electric confinement **5-ELEC** (family A1)
X	X	X	X	X	X	Marking, appearance, dimensions	NF EN ISO 3126 – NF136 rules tech file – NF EN ISO 15494 NF EN 1555-3 - NF EN 12201-3	required	required	required	required
X	X	X	X			Electrical resistance	technical file NF EN 1555-3 - NF EN 12201-3	required	required	required	required
X	X	X	X	X	X	Fluidity Index (MFR)	NF EN ISO 1133-1 +/-20%/lot resin	required	required	required	required
X	X	X	X	X	X	Oxidation stability - OIT at 200°C > 20 min	NF EN ISO 11357-6	required	required	required	required
X		X		X		Cracking resistance for PE 100-RC with regrind connection (Strain-Hardening test – SHT)	ISO 18488	required	required	**NO**	**NO**
X	X	X	X			Welding cycle safety time (Temp.: -10, 23 and 45°C) – under MOP for family B	NF T 54-969 § 3.6 & 4	required	**NO**	**NO**	**NO**
X	X	X	X	X	X	Hydrostatic resistance 20°C - 100 h	NF EN ISO 1167	required	required	required	required
					X	Hydrostatic resistance 80°C - 165 h, for dn≥90 (admission with misalignment, -5 and +40°C)	NF EN ISO 1167 ISO 11414	required	required	required	**NO**
X	X	X	X	X	X	Hydrostatic resistance 80°C - 1000 h	NF EN ISO 1167	required	required	required	required
X	X					Resistance to decohesion (°C variation, clearance, energy and PE tube)	ISO 13955 (Gd1 and Gd2) ISO 13954 (Gd2 and Gd3) ISO 11413	required	required	required	required
		X	X			Resistance to decohesion (°C variation, energy and PE tube)	ISO 13956 - ISO 21751 ISO 11413	required	required	required	**NO**
		X	X			Impact resistance	NF EN 1716 (ISO13957) under 0°C, 2m, 2.5kg	required	required	required	**NO**
		X				Leakage rate at the perforator (per perforator)	NF T54-970 Leak < 200 l/h under MOP	required	**NO**	**NO**	**NO**
		X				Pressure losses	NF EN ISO 17778	required	**NO**	**NO**	**NO**
		X	X			Repeated flexions - tractions (10000 cycles) dn ≤ 63	ISO 13924	required	**NO**	**NO**	**NO**
					X	Tensile strength, for dn≥90 (Same and different MRS, -5 and +40°C)	ISO 13953 ISO 11414	required	required	required	**NO**
		X				integrated trigger (PBDI & MBDI)	SAPE102	required	**NO**	**NO**	**NO**
	X					Sealing after ammonia stress	NF E 29-196	required	required	required	**NO**
X	X	X	X	X	X	ACS	Order of May 29, 1997, amended	**NO**	required	**NO**	**NO**

TABLE 2: Summary of tests required by application group for family group D

family			Tests	reference	application group			
D1	D2	D3			Gas **1-G**	Drinking water **2-W**	**3-W** Irrigation Sanitation, non-potable water in industrial processes. **4-W** Liquid in industrial process. **4-PI**	Electric confinement **5-ELEC** (D2 family)
X	X	X	Marking, appearance, dimensions	NF EN ISO 3126 + DT + NF136 NF EN 1555-3 - NF EN 12201-3 ISO 17885	required	required	required	required
	X		Resistance to gaseous constituents if the body is not in PE	ISO 17885 §8.4.2 + Annex E	required	**NO**	**NO**	**NO**
	X	X	Fluidity Index (MFR)	NF EN ISO 1133-1 +/-20%/lot resin	required	required	required	required
	X	X	Oxidation stability - OIT at 200°C > 20 min	NF EN ISO 11357-6	required	required	required	required
	X	X	Cracking resistance for PE 100-RC with regrind connection (Strain-Hardening test – SHT)	ISO 18488	required	required	**NO**	**NO**
X	X	X	Hydrostatic resistance 80°C - 1000 h	ISO 17885 § 9.3.3.2 ISO 3458 NF EN ISO1167-1/-4	required	required	required	required
X	X	X	Pressure losses	ISO 17885 § 9.3.3.11 NF EN ISO 17778	required	**NO**	**NO**	**NO**
X	X	X	Waterproofing	ISO 17885 § 9.3.3.1 ISO3458	required	required	required	required
X	X	X	Waterproofing after tensile stress, 23°C	ISO 17885 §9.3.3.3 ISO13951	required	required	required	required
X	X	X	Tightness after tensile stress, 80°C – 500 h, dn ≤ 63	ISO 17885 §9.3.3.5 ISO 19899	required	**NO**	**NO**	**NO**
X	X	X	Sealing after temperature cycle	ISO 17885 §9.3.3.6 ISO 3458 (-20/+60°C 3h stage)	required	required	required	required
X		X	Sealing after ammonia stress	NF E 29-196	required	required	required	**NO**
X			Repeated bending - traction (10000 cycles) dn ≤ 63 with aging	ISO 13924 – NF EN ISO 1167	required	**NO**	**NO**	**NO**
X			Bending and internal pressure tightness dn ≤63 (1)	ISO 17885 §9.3.3.7 ISO 3503	required	required	required	**NO**
X			Compliance of the standardized mechanical junction (dimensional, sealing, mechanical and ammonia resistance)	NF D 36-136 NF E 29-532 - NF E 29-536	required	**NO**	**NO**	**NO**
X	X	X	ACS	Order of May 29, 1997, amended	**NO**	required	**NO**	**NO**

(1) If the application is only for GAS application, compliance with ISO13924 validates this test.

TABLE 3: Summary of tests required by application group for family group E

family			Tests	reference	application group		
E1	E2	E3			Gas **1-G**	Drinking water **2-W**	**3-W** Irrigation Sanitation, non-potable water in industrial process. **4-W** Liquid in industrial process. **4-PI**
X	X	X	Marking, appearance, dimensions	NF EN ISO 3126 – NF T 54-972 - technical file rules NF136 - NF EN 1555-4 – NF EN 12201-4	required	required	required
	X		Electrical resistance	technical file – NF136	required	required	required
X	X	X	Fluidity Index (MFR)	NF EN ISO 1133-1 +/-20%/lot resin	required	required	required
X	X	X	Oxidation stability - OIT at 200°C > 20 min	NF EN ISO 11357-6	required	required	required
	X		Cracking resistance for PE 100-RC with regrind connection (Strain-Hardening test – SHT)	ISO 18488	required	required	**NO**
X	X	X	Hydrostatic resistance 20°C - 100 h	NF EN ISO 1167	required	required	required
X	X	X	Hydrostatic resistance 80°C - 165 h (admission dn≥90)	NF EN ISO 1167 – ISO11414	required	required	required
X	X	X	Hydrostatic resistance 80°C - 1000 h	NF EN ISO 1167	required	required	required
X	X	X	Impact resistance	NF EN 1705 below -20°C, 2 m, 2.5 kg	required	required	required
X	X	X	Pressure losses	NF EN ISO 17778	required	**NO**	**NO**
X	X	X	Angular sealing range	NF T 54-972 Angle 7° under 200 mbar	required	required	required
X	X	X	Maneuvering extensions and extensions	NF T54-973	required	required	required
X	X	X	Seat sealing and trim	NF EN 1555-4 annex A 1.5 MOP 30 s and 25 mbar 1h	required	required	required
X	X	X	Operating torque	NF EN ISO 8233	required	required	required
X	X	X	Resistance of the stops	NF EN ISO 8233	required	required	required
X	X	X	Resistance of the drive mechanism	NF EN ISO 8233	required	required	required
X	X	X	Bending between supports (63<dn≤315)	NF EN 12100	required	required	required
X	X	X	thermal cycles (63<dn≤225)	NF EN 12119	required	required	required
X	X	X	Flexural tightness with thermal cycle (dn≤63)	NF EN 1704	required	required	required
X	X	X	Tightness under tensile stress	NF EN 1555-4 annex B	required	required	required
X	X	X	Tightness (flexing on the drive)	NF EN 1680	required	required	required
X	X	X	Multiple trial	NF EN ISO 1167 (PE 80 16 bar/PE 100 20 bar) NF EN1555 NF EN ISO 8233 NF EN 1705	required	required	required
		X	Test on the purge part according to configuration (Shock, traction(s), decohesion)	EN 1716 (ISO 13957) - EN 13951 ISO 13956	required	**NO**	**NO**
	X		Saddle/tap tensile tests	EN 13951	required	required	required
X	X	X	ACS	Order of May 29, 1997, amended	**NO**	required	**NO**

TABLE 4: Families A1 and A2 (electrofusion socket fittings)

Admission tests	Number of samples for Gd1 and Gd2 gas application		Number of samples Gd3, gas application according to XP CEN/TS 1555-7		Number of samples for other applications according to XP CEN/TS 12201-7		Operating mode Requirements	*Observations*
	Type tests (TT)	**Verification tests**	**TT manufacturer sent to CERTIGAZ**	**TT under CERTIGAZ control**	**TT manufacturer sent to CERTIGAZ**	**TT under the control of CERTIGAZ (1)**		
Marking, appearance, color, dimensions, electrical resistance	8 (*)	2	5 1 mini/print	5/Gd/shape	5 1 mini/print	5/Gd/shape	NF EN ISO 3126 - EN 1555-3 Technical file Machined male end ends ➔roughness Ra < 12.5	Samples suitable for further testing Check the consistency of the barcode data (welding/traceability) against the technical file during one of the following tests
***MFR** 190°C - 5 kg*	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 1133-1 ±20% of the value of the lot used	A measurement / sample
OIT 210°C	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 11357-6 OIT > 20 min	A measurement / sample
Resistance to cracking *(Strain-Hardening test – SHT)*	5 test pieces for all the fittings of families A1 and A2, whatever the SDR						ISO 18488 <*Gp*> ≥ *50 MPa*	For claim PE 100-RC with regrind connection
Welding cycle safety time Welding at -10°C, +23°C & +45°C	3 for each temperature	1 for each temperature	Not required	Not required	Not required	Not required	NF T54-969 § 3.6 & 4	Not required for application 5-ELEC
Hydrostatic resistance 20°C - 100 h	3 (*)	N / A	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	NF EN ISO 1167 PE 80: σ= 10 MPa PE 100: σ= 12 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
80°C - 1000 h PE 100 tube & minimum SDR	3 (*)	1	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	PE 80: σ= 4 MPa PE 100: σ= 5 MPa	

(*) With at least 1/footprint

(1) Gas application TTs can be used as TTs under CERTIGAZ control for water applications where sampling concerns a Gd

…/…

TABLE 4 – continued –: Families A1 and A2 (electrofusion socket fittings)

Admission tests	Number of samples for Gd1 and Gd2 gas application		Number of samples Gd3, gas application according to XP CEN/TS 1555-7		Number of samples for other applications according to XP CEN/TS 12201-7		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests	TT manufacturer sent to CERTIGAZ	TT under CERTIGAZ control	TT manufacturer sent to CERTIGAZ	TT under the control of CERTIGAZ (1)		
Resistance to decohesion	(*)						**Before revision 20:** ISO 13955 ($d_n \leq 225$ mm) or ISO 13954 ($d_n > 225$ mm)	
23°C - usual clearance - nominal energy (condition 1 annex C - ISO11413)	2	2	N / A	N / A	N / A	N / A		
23°C - usual clearance - nominal energy - PE 100 tube & SDR mini (2) (condition 1 annex C - ISO11413)	1	N / A	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape	**From revision 20:** ISO 13955 ($d_n \leq 225$ mm) or ISO 13954 ($d_n \geq 90$ mm)	
23°C - usual clearance - nominal energy - PE 80 tube & SDR maxi (2) (condition 1 annex C - ISO11413)	1	N / A	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
-10°C - maximum play - minimum energy - PE 100 & SDR mini tube (2) (condition 2.2 annex C -ISO11413)	2	1	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape	Initiation to break length $\leq L_{2/3}$ with brittle fracture	
45°C - usual game - maximum energy - PE 100 & SDR mini tube (2) (condition 3.2 annex C -ISO11413)	2	1	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
Waterproofing after crack resistance test under ammoniacal constraints Waterproofing at 1.5 x MOP after testing	2	N / A	N / A	N / A	N / A	2	NF E 29-196 **No leaks or breaks** The standard materials and solutions for pH are recorded in the report	Test carried out on fittings with external brass parts, **family A2, $d_n \leq 63$ mm** Sample preparation in half at -5°C and +40°C The test is carried out under pressure with recording, to know the moment of possible failure

(*) Using all the prints distributed in the different conditions. If there are more than 8 prints, these are tested at 23°C, usual clearance, nominal energy, PE 100 tube and identical SDR

(1) Gas application TTs can be used as TTs under CERTIGAZ control for water applications where sampling concerns a Gd

(2) Choice of preferred SDR; if PE 100 is not available, use PE 80 tubes or vice versa

TABLE 5: Family B1 (branch outlets) and family B2 (branch saddles)

Admission tests	Number of samples for Gd1 and Gd2 gas application		Number of samples Gd3, gas application according to XP CEN/TS 1555-7		Number of samples for other applications according to XP CEN/TS12201-7		Operating mode Requirements	*Observations*
	Type tests (TT)	**Verification tests**	**TT manufacturer sent to CERTIGAZ**	**TT under CERTIGAZ control**	**TT manufacturer sent to CERTIGAZ**	**TT under the control of CERTIGAZ (1)**		
Marking, appearance, color, dimensions, electrical resistance	8 (*)	2	5 1 mini/print	5/Gd/shape	5 1 mini/print	5/Gd/shape	NF EN ISO 3126 – EN1555-3 NF T 54-970 - Technical file Machined male end ends ➔roughness Ra < 12.5	Samples suitable for other tests Check the consistency of the barcode data (welding/traceability) against the technical file during one of the following tests
***MFR** 190°C - 5 kg*	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 1133-1 ±20% of the value of the batch used	A measurement / sample
OIT 210°C	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 11357-6 OIT > 20 min	A measurement / sample
Resistance to cracking *(Strain-Hardening test – SHT)*	5 test pieces for all the fittings of families B1 and B2, whatever the SDR						ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrind connection
Welding cycle safety time (2) Welding at -10°C, +23°C & +45°C	3 / dn saddle and for each temperature	1 / dn saddle and for each temperature	Not required	Not required	Not required	Not required	NF T54-969 § 3.6 & 4 MOP max =20 MRS/(c(SDR-1))	The tube is under the MOP admissible by the tube as a function of the MRS and SDR with c=2 **(2)** The report specifies this information
Hydrostatic resistance 20°C - 100 h	3 (*)	N / A	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	NF EN ISO 1167 PE 80: σ= 10 MPa PE 100: σ= 12 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
80°C - 1000 h	3 (*)	1	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	PE 80: σ= 4 MPa PE 100: σ= 5 MPa	
Impact resistance *0°C - 2 m - 2.5 kg*	1	N / A	1	1 /Gd/shape	1	1 /Gd/shape	NF EN 1716 (ISO 13957) No breakage or leakage under 25 mbar and MOP admissible for 1 hour	1 test per barrel size Family B2, shocks 15 mm from the end of the leads
Repeated flexions and tractions *10,000 cycles*	1	N / A	N / A	N / A	N / A	N / A	ISO 13924 No leak, no break	Family B1: by type of barrel/derivation Family B2 (3): by derivation dn < 75

(*) With at least 1/footprint

(1) Gas application TTs can be used as TTs under CERTIGAZ control for water applications where sampling concerns a Gd

(2) If the welding cycle safety time test is carried out under a lower MOP, declared by the manufacturer, the marking must specify this, see § 2.5.3.1

(3) No tests for reinforcement saddles, stitching or ballooning on the plugged ends which are not subject to this type of forces generated by ground movements

.../...

TABLE 5 – continued –: Family B1 (connection sockets) and family B2 (branch saddles)

Admission tests	Number of samples for Gd1 and Gd2 gas application		Number of samples Gd3, gas application according to XP CEN/TS 1555-7		Number of samples for other applications according to XP CEN/TS 12201-7		Operating mode Requirements	*Observations*
	Type tests (TT)	**Verification tests**	**TT manufacturer sent to CERTIGAZ**	**TT under CERTIGAZ control**	**TT manufacturer sent to CERTIGAZ**	**TT under the control of CERTIGAZ (1)**		
Resistance to decohesion								
23°C - nominal energy (condition 1 annex C - ISO11413)	(*) 2	2	N / A	N / A	N / A	N / A	**Gd1 & Gd2** : according to ISO 13956 With Ld ≤ 50% and Ad ≤ 25% *If the tube is torn off without allowing analysis of the welded area, then the test according to ISO 21751 is required with only the Ld criterion ≤ 50%* **Gd3:** only according to ISO 21751 With Ld ≤ 50 %	Test performed once per ∅main element If multiple heating elements, test on all elements Photos are attached to the test report according to the standard(s) used. The method used according to ISO13956 is recorded in the report. In case of doubt or dispute, method A1 is used for any saddle dn
23°C - nominal energy - PE 100 & SDR mini tube (2) (condition 1 annex C - ISO11413)	1	N / A	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
23°C - nominal energy - PE 80 & SDR maxi tube (2) (condition 1 annex C - ISO11413)	1	N / A	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
-10°C - minimum energy - PE 100 & SDR mini tube (2) (condition 2.2 annex C -ISO11413)	2	1	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
45°C - maximum energy - PE 100 & SDR mini tube (2) (condition 3.2 annex C -ISO11413)	2	1	1/ footprint	1/Gd/shape	1/ footprint	1/Gd/shape		
Leakage rate at the perforator under the MOP (3) (Family B1 only)	1	1	1/ punch	N / A	N / A	N / A	*NF T54-970 Leak ≤200 l/h* *MOP max =20 MRS/(c(SDR-1))*	1 test per type of perforator. The tube is under the MOP admissible by the tube as a function of the MRS and SDR with c=2 **(3)** The report specifies this information
Pressure loss *According to EN 1555-3* ***(Family B1 only)***	1	N / A	1	N / A	N / A	N / A	*NF EN ISO 17778*	
Built-in trigger (Family B1 only)	7/ dn of derivation and 1 dn of saddle	N / A	N / A	N / A	N / A	N / A	*See Table **5 Bis** below* SAPE102 Specifications	Type tests are carried out only in a laboratory of the NF136 mark

(*) Using all the prints distributed in the different conditions. If there are more than 8 prints, these are tested at 23°C, nominal energy, PE 100 tube and identical SDR

(1) Gas application TTs can be used as TTs under CERTIGAZ control for water applications where sampling concerns a Gd

(2) Choice of preferred SDR; if PE 100 is not available, use PE 80 tubes or vice versa **(3)** If the test is carried out under a lower MOP declared by the manufacturer, the marking must specify this, see § 2.5.3.1

TABLE 5 Bis: Family B1 (PBDI & MBDI - Sockets or Connection Sleeve with Integrated Trigger)

For MBDI and in addition to the tests in table 2 for PBDI, the trigger must be approved by CERTIGAZ and the tests according to the SAPE102 specifications are carried out on the PBDI and MBDI assemblies for the main dn of 63 but for each pair of dn of derivation and flow (dn20/D25 and dn32/D100).

Note: Instead of dn 63, other main PBDI dns can be tested (dn 40 to 125) depending on the range requested for certification.

The MBDI kit consists of NF136 mark fittings and a section of NF114 mark PE pipe.

Admission tests	**Number of samples**		**Operating mode Requirements**	***Observations***
	Type tests (TT)	**Verification tests**		
Primary characteristics (triggering and resetting tests, pressure drop, non-triggering on sudden opening, response time on closing and sealing on closing) **before and after accelerated aging** (climatic cycles and hydrostatic resistance 1000 h)	5	N / A	***SAPE102 Specifications***	Including 2 reserve samples in case of mishandling or problems related to the implementation of the tests 3 samples must be compliant for their respective tests

TABLE 5 Ter: B1 Families (Approval of triggers)

The approval tests of the triggers are carried out for the main dn of 63 but for each pair of dn of derivation and flow rate on a reference assembly of the laboratory for each dn /flow rate.

Admission tests	**Number of samples**		**Operating mode Requirements**	***Observations***
	Type tests (TT)	**Verification tests**		
Primary characteristics (triggering and resetting tests, pressure drop, non-triggering on sudden opening, response time on closing and sealing on closing) **before and after accelerated aging** (mounting inclination, influence of gas direction, endurance of 1000 cycles, climatic cycles, hydrostatic resistance 1000 h and dusting)	7	N / A	***SAPE102 Specifications***	Including 2 reserve samples in case of mishandling or problems related to the implementation of the tests 5 samples must be compliant for their respective tests

TABLE 6: Families C1, C2 (male end fittings, according to assembly methods)

Admission tests	Number of samples for Gd1 and Gd2 gas application		Number of samples Gd3, gas application according to XP CEN/TS 1555-7		Number of samples for other applications according to XP CEN/TS12201-7		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests	TT manufacturer sent to CERTIGAZ	TT under CERTIGAZ control	TT manufacturer sent to CERTIGAZ	TT under the control of CERTIGAZ (1)		
Marking, appearance, color, dimensions,	8 (*)	2	5 1 mini/print	5/Gd/shape	5 1 mini/print	5/Gd/shape	NF EN ISO 3126 – EN1555-3 NF EN ISO 15494 - Tech file ➔roughness Ra < 12.5	Samples suitable for other tests For machined male end ends
***MFR** 190°C - 5 kg*	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 1133-1 ±20% of the value of the batch used	A measurement / sample
OIT 210°C	3 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	NF EN ISO 11357-6 OIT > 20 min	A measurement / sample
Resistance to cracking *(Strain-Hardening test – SHT)*	5 test pieces for all the fittings of families C1 and C2, whatever the SDR						ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrind connection
Hydrostatic resistance 20°C - 100 h	3 (*)	N / A	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	NF EN ISO 1167 PE 80: σ=10MPa / PE 100: σ=12MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
80°C - 1000 h	3 (*)	1	1/ footprint	1/Gd/shape	**Gd1 & 2:** 3 1 mini/print **Gd3:** 1/ emp.	**Gd1 & 2:** 3/Gd/shape **Gd3:** 1/shape	Family C2, butt welding PE 80: σ=4MPa / PE 100: σ=5MPa	
80°C - 165 h (cf. EN 1555-5) - with ISO11414 §7a misalignment - minimum conditions (-5°C)	1 /Gd/shape	1 /Gd/shape	1 /Gd/shape	N / A	1 /Gd/shape	N / A	PE 80, σ=4.5 MPa	Butt welding, same MRS, same SDR
ISO 11414 § 7a and annex B - maximum conditions (+40°C)	1 /Gd/shape	N / A	1 /Gd/shape	N / A	1 /Gd/shape	N / A	PE 100, σ=5.4 MPa	**for families C2 dn≥90**
ISO 11414 § 7a and annex B	1 /Gd/shape	N / A	1 /Gd/shape	N / A	1 /Gd/shape	N / A		
Tensile strength ○ 23°C, butt welding, same MRS and SDR	1	1	1 /Gd/shape	N / A	1 /Gd/shape	N / A	ISO 13953 Ductile fracture	**for families C2, dn≥90**
○ 23°C, butt welding, same SDR, PE 100/80 or PE 80/100	1 /Gd/shape	N / A	1 /Gd/shape	N / A	1 /Gd/shape	N / A		
○ with misalignment and minimum conditions (ISO 11414 §7a and annex B)	1 /Gd/shape	N / A	1 /Gd/shape	N / A	1 /Gd/shape	N / A		
○ with misalignment and maximum conditions (ISO 11414 §7a and annex B)	1 /Gd/shape	N / A	1 /Gd/shape	N / A	1 /Gd/shape	N / A		

(*) With at least 1/footprint **(1)** Gas application TTs can be used as TTs under CERTIGAZ control for water applications where the sampling concerns a Gd

TABLE 7 a: Family D1 (metal mechanical fittings for polyethylene networks)

During implementation, the tube normally held by hand must not rotate when tightening the compression fittings and the information is recorded in the report.

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Marking, appearance, dimensions	5 / dn	2 / dn	NF EN ISO 3126 – ISO17885 Technical file	Samples usable for other tests
Waterproof at 20+/-5°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1 hour	2 / dn	N / A	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	Sample preparation half at -5°C and +40°C ISO3458 specifies that during the test phase, the temperature must be maintained at +/-2°C; a lower threshold may be necessary to avoid biasing the measurement.
Resistance to temperature variations 10 cycles under 6 bar Waterproofing before and after testing	2 / dn	2 /Gd	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	Sample preparation half at -5°C and +40°C
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ**,** 1h **2nd step: constant speed =** 25 mm/min	2 / dn	2 / dn	ISO 17885 §9.3.3.3 + ISO13951 F = 2s σunder 50 mbar PE 80: σ=5.7MPa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	$d_n \leq 63$ mm and $d_n > 63$ mm Sample preparation half at -5°C and +40°C
Watertightness after a constant load tensile test at 80°C - 500h, $d_n \leq 63$ mm	2 / dn	2 / dn	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Test carried out on $d_n \leq 63$ mm Sample preparation half at -5°C and +40°C Testing not required for applications 2-3-4 WATER nor ELECTRICITY

.../...

TABLE 7 a – continued –: Family D1 (metal mechanical fittings for polyethylene networks)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Hydrostatic resistance 80°C - 1000 h	6 / dn	2 / dn	ISO 17885 §9.3.3.2 ISO 3458 ISO 1167-1 /-4 PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Pressure calculation formula P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel Sample preparation in half at -5°C and +40°C No specimen breakage during the entire test period
Pressure drop $d_n \leq 63$ - Air at 25 mbar - ΔP = 0.5 mbar $d_n > 63$ - Air at 25 mbar - ΔP = 0.1 mbar	1 / dn	N / A	ISO17885 §9.3.3.11 ISO 17778	Measured flow rate ≥0.9 x nominal flow rate (stated by manufacturer)
Waterproofing after crack resistance test under ammoniacal stresses **$_3$ test)**	2 / dn	N / A	***NF E 29-196*** **No leakage** TT leak test **or rupture** ***The standard materials and solutions for pH are recorded in the report***	Test carried out on fittings with external brass parts **$d_n \leq 63$ mm** Sample preparation in half at -5°C and +40°C The test is carried out under pressure with recording, to know the moment of possible failure
Repeated flexions and tractions of $_n \leq 63$ mm *10,000 cycles* (Only for D1 and Gd1 family)	2/ dn (new condition) 2/ dn (aged state after RH test)	N / A	ISO 13924 No leakage in the TT leak test no break At the end of the tests, the indentation of the tube linked to the attachment system must not have caused the initiation of a rupture	Made in new and aged condition, after hydrostatic resistance (HR) testing, Samples prepared at -5 and +40°C Possibility of using RH test specimens If the temperature of 80°C in RH can alter the performance of the joints, the RH test can be carried out at 60°C, 1000 h with σ= 5.3 MPa in PE 80 or σ = 6.7 MPa in PE 100
Sealing under bending and internal pressure dn ≤63 **(1)**	2 / dn	N / A	ISO 17885 §9.3.3.7 ISO 3503	Sample preparation in half at -5°C and +40°C Test pressures for gas application: 25 mbar then 1.5 x MOP (declared and marked on the fitting by the manufacturer) The maximum MOP is 10 bar and the radius of curvature R = 15 x dn
Compliance of the standardized mechanical junction (dimensional, sealing, mechanical and ammonia resistance) **(2)**	According to respective standard by standardized DN	N / A	NF D 36-136 NF E 29-532 - NF E 29-536	GAS application only for JPG/JPC or JSC zone The mechanical resistance test on the rotating nut is carried out on 2 new samples The ammonia stress cracking resistance test can be carried out in conjunction with the $NH_{3\ test}$ mentioned previously in this table

(1) If the application is only for GAS application, compliance with ISO13924 validates this test.

(2) If the applicant has NF540 certification for standardized DNs with the same characteristics and from the same process, the tests are not repeated.

TABLE 7b: Family D2 (plastic mechanical fittings for polyethylene networks)

During implementation, the tube normally held by hand must not rotate when tightening the compression fittings and the information is recorded in the report.

For socket fittings, a notice must describe the assembly implementation to ensure the tube is securely attached to the fitting, in the field and for testing.

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Marking, appearance, color, dimensions	5 / dn	2 / dn	NF EN ISO 3126 - ISO17885 Technical file	Samples usable for other tests For ELEC application, if the accessory is obtained with butt welding, the bead is factory trimmed to ensure the internal passage diameter
Resistance to gaseous constituent			ISO 17885 §8.4.2 + Annex E	if the body is not in PE Only required for GAS application
MFR *190°C - 5 kg*	3 /Gd	1 /Gd	*NF EN ISO 1133-1* *±20% of the value of the batch used*	A measurement / sample
OIT 210°C	3 /Gd	1 /Gd	*NF EN ISO 11357-6* *OIT > 20 min*	A measurement / sample The test is not carried out on the NF114 tube used for a connection
Resistance to cracking (Strain-Hardening test – SHT)	5 test pieces for all D2 family fittings, whatever the SDR		ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrind connection
Waterproofing at 20+/-5°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1 hour but under 4 bar for the 5-ELEC application	2 / dn for GAS otherwise 1/ dn	N / A	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	Sample preparation in half at -5°C and +40°C only required for GAS application ISO3458 specifies that during the test phase, the temperature must be maintained at +/-2°C; a lower threshold may be necessary to avoid biasing the measurement.
Resistance to temperature variations 10 cycles under 6 bar but under 1 bar for the 5-ELEC application Waterproofing before and after testing	2 / dn for GAS otherwise 1/ dn	2 / dn for GAS otherwise 1/ dn	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	Sample preparation in half at -5°C and +40°C only required for GAS application Free length 3xdn and 250 mm minimum For 5-ELEC application => pressure 1 bar

.../...

TABLE 7b: Family D2 (plastic mechanical fittings for polyethylene networks)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ, 1h **2nd step: constant speed =** 25 mm/min	2 / dn	2 / dn	ISO 17885 §9.3.3.3 + ISO13951 F = Cs σ under 50 mbar PE 80: σ=5.7MPa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	$d_n \leq 63$ mm and $d_n > 63$ mm Sample preparation in half at -5°C and +40°C any application With C depending on the applications: application / 1st step / 2nd step 1-G / C=2 / Until the PE tube shrinks or creeps 2, 3, 4-W / C=1.5 / Until the PE tube shrinks or creeps 5-ELEC / C=0.7 / C=1 minimum before break
Watertightness after a constant load tensile test at 80°C - 500h, $d_n \leq 63$ mm	2 / dn for GAS uniquely	2 / dn for GAS uniquely	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Test carried out on $d_n \leq 63$ mm Sample preparation in half at -5°C and +40°C only required for GAS application Testing not required for applications 2-3-4 WATER nor 5-ELEC
Hydrostatic resistance (1) 80°C - 1000 h	6 / dn for GAS otherwise 3/ dn	2 / dn for GAS otherwise 1/ dn	*ISO 17885* §9.3.3.2 *ISO 3458 ISO 1167-1 /-4* PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Pressure calculation formula P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel Sample preparation in half at -5°C and +40°C only required for GAS application No specimen breakage during the entire test period
Pressure drop $d_n \leq 63$ - Air at 25 mbar - ΔP = 0.5 mbar $d_n > 63$ - Air at 25 mbar - ΔP = 0.1 mbar	1 / dn	N / A	*ISO17885* §9.3.3.11 *ISO 17778*	Measured flow rate ≥0.9 x nominal flow rate (stated by manufacturer) Not required for 5-ELEC application
Sealing under bending and internal pressure dn ≤63	2 / dn for GAS otherwise 1/ dn	N / A	ISO 17885 §9.3.3.7 ISO 3503	Sample preparation in half at -5°C and +40°C only required for GAS application Test pressures for gas application: 25 mbar then 1.5 x MOP (declared and marked on the fitting by the manufacturer) The maximum MOP is 10 bar and the radius of curvature R = 15 x dn Not required for 5-ELEC application

(1) For socket fittings in the ELEC application, axial support may be necessary (type B end fitting according to ISO1167-1) **while maintaining a clearance to avoid or limit forces linked to expansion** . For the ELEC application, the free lengths are modified to limit the buckling of the specimen in relation to the axial support device:
- Socket side ➔50 mm whatever the dn
- Butt welded tube side ➔1xdn compared to the butt weld between the socket part and the PE tube whose internal bead is leveled.

TABLE 7c: Family D3 (transition fittings for polyethylene networks)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Marking, appearance, color, dimensions	5 / dn	2 / dn	NF EN ISO 3126 – ISO17885 Technical file Machined male end faces must have a roughness Ra < 12.5	Samples usable for other tests When the fittings are made from PE pipe, the acceptable ovality is that defined in NF EN 1555-2
MFR *190°C - 5 kg*	3 /Gd	1 /Gd	*NF EN ISO 1133-1* *±20% of the value of the batch used*	A measurement / sample Test not carried out if the PE part is made from a tube approved for the NF114 mark (PE tubes) In all cases the resin of the tube must be of the NF114 mark
OIT 210°C	3 /Gd	1 /Gd	*NF EN ISO 11357-6* *OIT > 20 min*	
Resistance to cracking (Strain-Hardening test – SHT)	5 test pieces for all D3 family fittings, whatever the SDR		ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrind of fitting not from PE tube The test is not carried out if the PE tube is NF114 in PE 100-RC
Waterproof at 20+/-5°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1 hour	1 / dn	N / A	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	ISO3458 specifies that during the test phase, the temperature must be maintained at +/-2°C; a lower threshold may be necessary to avoid biasing the measurement.
Resistance to temperature variations 10 cycles under 6 bar Waterproofing before and after testing	1 / dn	1 /Gd	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	

…/…

TABLE 7c – continued –: Family D3 (transition fittings for polyethylene networks)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ, 1h **2nd step: constant speed =** 25 mm/min	1 / dn	1 / dn	ISO 17885 §9.3.3.3 + ISO13951 F = 2s σunder 50 mbar PE 80: σ=5.7MPa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	$d_n \leq 63$ mm and $d_n > 63$ mm
Watertightness after a constant load tensile test at 80°C - 500h, $d_n \leq 63$ mm	1 / dn	1 / dn	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Test carried out on $d_n \leq 63$ mm Testing not required for applications 2-3-4 WATER nor ELECTRICITY
Hydrostatic resistance 80°C - 1000 h	3 / dn	1 / dn	*ISO 17885* §9.3.3.2 *ISO 3458 ISO 1167-1 /-4* PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Pressure calculation formula P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
Pressure drop $d_n \leq 63$ - Air at 25 mbar - ΔP = 0.5 mbar $d_n > 63$ - Air at 25 mbar - ΔP = 0.1 mbar	1 / dn	N / A	*ISO17885* §9.3.3.11 *ISO 17778*	Measured flow rate ≥0.9 x nominal flow rate (stated by manufacturer)
Waterproofing after ammonia stress cracking resistance test Waterproofing after testing	2 / dn	N / A	***NF E 29-196*** **No leakage** TT leak test **or rupture** ***The standard materials and solutions for pH are recorded in the report***	Test carried out on fittings with external brass parts $d_n \leq 63$ mm The test is carried out under pressure with recording, to know the moment of possible failure
Sealing under bending and internal pressure dn ≤63	1 / dn	N / A	ISO 17885 §9.3.3.7 ISO 3503	Test pressures for gas application: 25 mbar then 1.5 x MOP (declared and marked on the fitting by the manufacturer) The maximum MOP is 10 bar and the radius of curvature R = 15 x dn

TABLE 8: Family E1 (taps)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Marking, appearance, color, dimensions	8	2	NF EN ISO 3126 - NF T 54-972 - tech file. ➔roughness Ra < 12.5	Samples usable for other tests For machined male end ends
MFR *190°C - 5 kg*	3 /Gd	1 /Gd	*NF EN ISO 1133-1* *±20% of the value of the lot used*	A measurement / sample
OIT 210°C	3 /Gd	1 /Gd	*NF EN ISO 11357-6* *OIT > 20 min*	A measurement / sample
Resistance to cracking *(Strain-Hardening test – SHT)*	5 test tubes for all taps in families E1, E2 & E3, whatever the SDR		ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of taps
Sealing of the seat and the trim *at 23°C - 25 mbar - 1 h* at 23°C - 1.5xMOP - 30 s	1 /body type	1 /body type	*NF EN 1555-4 annex A* *No leaks*	Initial test at 1.5 x MOP (limitation to 6 bar, applicable only for other tests)
Angular sealing range *at 23°C*	1 /body type	N / A	NF T 54-972 Angle ≥7° under 200 mbar	Beware of catching up on games
Maneuver extensions and tap extensions Extension: C = 150 Nm / 15 s	3	N / A	NF T54-973	In both directions (opening and closing) No permanent deformation or breakage
Hydrostatic resistance			NF EN ISO 1167	Pressure calculation formula P = 20 σ/(SDR-1) where the SDR is that of the tap
• 20°C - 100 h	3	-	PE 80: σ= 10 MPa PE 100: σ= 12 MPa	Samples can be connected in series or parallel
• 80°C - 165 h (cf. EN 1555-5) Butt welding, even MRS & SDR				No specimen breakage during the entire test period
- with misalignment (cf. ISO 11414 § 7 a)	1	-	PE 80: σ= 4.5 MPa PE 100: σ= 5.4 MPa	If the tap is intended for butt welding (manufacturer's instructions) for **dn≥90**
- minimum conditions (cf. ISO 11414 § 7 a and annex B)	1	-		
- maximum conditions (cf. ISO 11414 § 7 a and annex B)	1	-		
• 80°C - 1000 h	3	1	PE 80: σ= 4 MPa PE 100: σ= 5 MPa	

…/…

TABLE 8 – continued –: Family E1 (taps)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
pressure drop - 25 mbar - $d_n \leq 63$ ΔP = 0.5 mbar - $d_n > 63$ ΔP = 0.1 mbar	1	N / A	*NF EN ISO 17778* *Measured flow rate ≥0.9 x nominal flow rate (stated by manufacturer)*	
Operating torque *at -20°C, 23°C and 40°C*	1 /body type	N / A	*NF EN ISO 8233* *$d_n \leq 63$: 5 < C ≤35 Nm* $63 < d_n \leq 125$:10 < C ≤70 Nm *125 < d_n:* 10 < C ≤150 Nm	One measurement for each direction of operation after a minimum of 6 hours of conditioning
Resistance of the stops at –20°C and 40°C, for 15 s MAX (2xC_{max} measured; 150 Nm)	1 /body type	N / A	*NF EN ISO 8233* *No break* *No leakage from the seat and trim*	The effort is applied for 15 s in both directions, opening & closing then the tightness is checked under 1.5xMOP for 30 s
Resistance of the drive mechanism at 23°C under 6 bar MAX (1.5xC_{max} measured; 1.2xC_{max} allowed according to dn)	1 /body type	N / A	*NF EN ISO 8233* *No break*	***C_{max} allowed according to dn :*** *$d_n \leq 63$: C ≤35 Nm* $63 < d_n \leq 125$: C ≤70 Nm $125 < d_n$: C ≤150 Nm
Bending resistance between supports $63 < d_n \leq 125$: load = 3.0 kN $125 < d_n \leq 400$: load = 6.0 kN	1	N / A	*NF EN 12100 - No leakage* C ≤70 Nm C ≤150 Nm	Checking the tightness under 25 mbar at each required step The report mentions the distance between the support points T of the force F as well as couples at each stage
Resistance to thermal cycles 6 bar - 10 cycles –20°C / +60°C $63 < d_n \leq 125$ $125 < d_n \leq 400$	1 /body type if dimensions are the same	N / A	*NF EN 12119 - No leakage* C ≤70 Nm C ≤150 Nm	

.../...

TABLE 8 – continued –: Family E1 (taps)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Waterproofing under flex and thermal cycle $d_n \leq 63$ 10 cycles –20°C / +40°C with test tube under 6 bar	1 /body type but on the largest dn which causes the maximum constraints	N / A	*NF EN 1704* *No leaks*	According to NF EN 1555-4 50 cycles without pressure To facilitate the test, 2 samples can be used to perform the bending in each axis
Tightness under tensile stress Stress σ= 12 MPa for PE 100 σ= 10 MPa for PE 80 1h under F= σs then constant speed Speed = 25 mm/min	1	N / A	*EN1555-4 Annex B* *No breakage or leakage* *$d_n \leq 63$: C ≤35 Nm* 63 < $d_n \leq 125$: C ≤70 Nm *125 < d_n: C ≤150 Nm* Waterproofing according to TT	After applying the stress for 1 h, the test continues at constant speed until the tube creeps, without rupture of the assembly.
Sealing under and after bending applied to the drive mechanism at 25 mbar and 1.5 x MOP (or 6 bar) - M = 55 Nm	1	N / A	*NF EN 1680 No leakage*	
Impact resistance -20°C - 2 m - 2.5 kg	1 /body type	N / A	*NF EN 1705* *$d_n \leq 63$: C ≤35 Nm* 63 < $d_n \leq 125$: C ≤70 Nm *125 < d_n: C ≤150 Nm*	The shock occurs on the square in the vertical axis (fig.1 of the standard) Checking the tightness under 25 mbar Recording of operating torques
Multiple trial - Resistance to long-term internal pressure load 20°C - 1000 h - Sealing of the seat and the trim - Operating torque - Impact resistance	1 /body type	N / A	NF EN ISO 1167 PE 80: σ= 8.0MPa / PE 100: σ=10.0MPa NF EN 1555 annex A (See above) *NF EN ISO 8233 (See above)* NF EN 1705 (See above)	Pressure calculation formula $P = 20\ \sigma/(SDR-1)$ where the SDR is that of the tap No specimen breakage during the entire test period

Family E 2 - Electrofusion saddles equipped with a tap for hot drilling (RPC: hot tap for gas application)

These accessories must meet the requirements:

- of a bypass saddle, family B2 (see table 5)
- from a tap, family E1 (see table 8)

In the specific case where the RPC assembly is produced by assembling already certified accessories, without modification (diverter saddles and/or taps), the tests may be reduced based on the initial results.

In any case, the assembly must be tested for the following tests.

TABLE 8a: Family E2 (RPC)

Admission tests	Number of samples		Operating mode Requirements	*Observations*
	Type tests (TT)	Verification tests		
Hydrostatic resistance 80°C - 1000 h	3	1	NF EN ISO 1167 PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Pressure calculation formula P = 20 σ/(SDR-1) where the SDR is that of the tap No specimen breakage during the entire test period The samples are prepared and drilled using the drilling device recommended by the manufacturer.
Tensile test at 23°C, **at constant load,** σ = 6 MPa / 1h **then constant speed,** speed = 25 mm/min	1 / dn of junction	N / A	*ISO 13951* *No deterioration under stresses up to tube creep, same MRS, at RPC outlet*	If the RPC outlet and saddle bypass dn are different, carry out the test with a tube at the RPC outlet, corresponding to the smallest dn

Family E 3 – Bleed valves for gas applications

Bleed valves can be single or double-bleed. The pressure relief outlets must allow for rapid purging of the network, so the internal purge diameter must be as large as possible. A reduction in the internal purge diameter, carried out for reinforcement for example, cannot reduce this internal diameter more significantly than the passage diameter of the valve ball at the purge end.

The purge length, purge end valves, and other specifications for the purge kit are defined by the network management customers. Note that a length of one meter in DN32 is often recommended, as is the use of accessories, fittings, and valves with the NF mark.

The center distance between the purge and the valve control shaft is specified in the technical file, as well as the commercial references of any accessories used to manufacture the different configurations below. The assemblies required to obtain these configurations and purge lengths must be made in the factory and not on the installation site and must meet the customer's expectations.

These purge valves must meet the requirements of the E1 family valves and those of table 8ter.

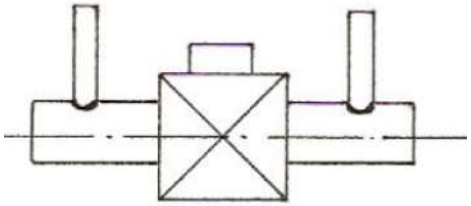
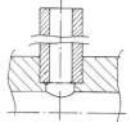
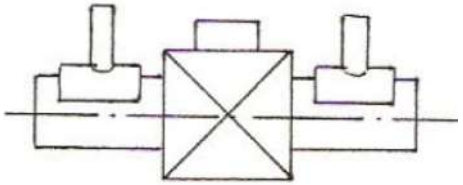
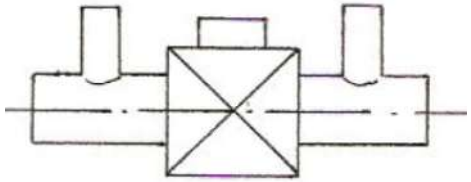
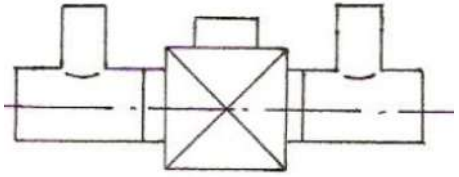
HAS		Machining of the sleeves of a "standard" tap then welding into the PE pipe socket to the required length or a purge. The smooth length for connection to the network must comply with Rules NF136. Example 
B		electrofusion bypass saddle valve with or without counter-saddle not shown and drilling of the sleeves. The total purge length is obtained by butt welding or socket welding of a PE tube or with an electrofusion fitting with the NF mark.
C		A variation of a "standard" tap in which the sleeves are T-shaped. The smooth length for connection to the network must comply with NF136 Rules. The total purge length is obtained by butt welding or socket welding of a PE pipe or with an electrofusion fitting bearing the NF mark.
D		A variation of a "standard" valve in which the sleeves are shorter, and the tees are butt-welded. The smooth length for connection to the network must comply with NF136 regulations. The total purge length is obtained by butt-welding or socket-welding a PE pipe or with an NF-marked electrofusion fitting.

TABLE 8 ter: Family E3 (bleed valves)

Configuration	Shock	Pull on the purge	Traction in the axis of the tap	Decohesion	Hydrostatic pressure (1)
HAS	Yes	Yes (2)	No	No	Yes (2)
B	Yes	No	No	Yes	Yes
C	Yes	No	No	No	Yes
D	Yes	No	Yes	No	Yes

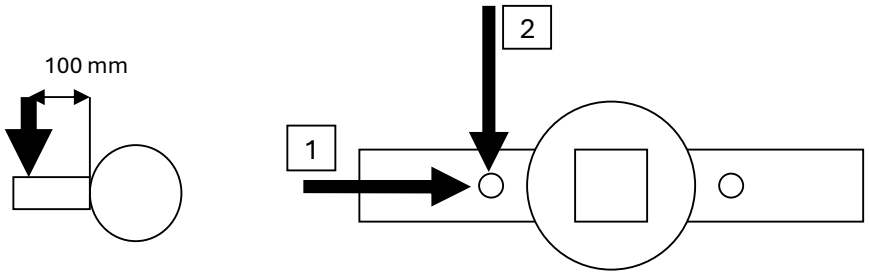
(1) Only hydrostatic pressure tests are subject to verification tests according to Table 8.

(2) For technology A, the purge length can be reduced.

Special specifications for impact testing

- According to EN 1716 or ISO 13957

- The impact points will be in the 100 mm area from the outside of the cuff. If the purge is shorter and does not allow an impact in this area, it will be extended to carry out the tests and the report will specify how the extension was made. The directions of the successive impacts are those indicated in the following diagrams:



- The temperature and the conditioning and testing times comply with the EN 1716 or ISO 13957 standard (0°C, 4 hours minimum in air, shock within 30 s, reconditioning between the 2 shocks) and the valve is immobilized.
- After 12 hours at 23°C, the leak test is carried out at 25 mbar for 1 hour then 6 bar for 1 hour.
- The type test is carried out on 3 sleeve/purge assemblies.
- No breakage or leakage during leak testing.

Special specifications for the purge tensile test

- According to ISO 13951 for the purge connection on the sleeve with a stress of 6 MPa for 1 hour.
- Traction in the axis of the purge with a free part, of the purge or of the tube welded on the purge, between the sleeve and the jaw of the traction bench, of minimum 3 times the dn of the purge.
- In the case of tube constriction, the leak test is carried out at 50 mbar for 1 hour then 6 bar for 1 hour.
- The type test is carried out on 3 samples (sleeve/purge assembly).
- No joint breakage, no disengagement, no leakage during leak tests.

Special specifications for the valve axis tensile test

- Butt welding from the factory process must be aligned and comply with ISO 11414 and 12176-1 standards.
- This test is carried out according to the ISO 13951 standard on 1 tap with a minimum stress of 6 MPa for 1 hour then at constant speed until the tube creeps with the same MRS, without deterioration of the assembly.

Special specifications for hydrostatic pressure testing

- 80°C, 1000 h, stress according to PE according to ISO 1167 on 3 purge valves (same as table 8).
- The hydrostatic pressure test is repeated on complete purge valves whose valve part is already certified.

Decohesion test

- Identical to family B2 according to NF136 Rules only for 3 samples (cuff/saddle) at 23°C and nominal energy (table 5).
- Electrowelding from the factory process is controlled in terms of positioning, application of the saddle, temperature and welding energy.
- The drilling must be clean (surface appearance, burrs, chips, etc.) and must not damage the saddle.

TABLE 9 – Families A1, A2, B1, B2, C1, C2 – Guide to tests to be carried out when changing an accessory already approved for the mark or when extending the range (non-exhaustive list)

Type of fittings	Change	Meaning of evolution	Dimensions, appearance of fittings and assemblies	Electrical resistance	MFR	ILO	SHT (a)	Welding cycle safety time	Hydrostatic resistance	Decohesion	Tensile strength (C2)	Pressure losses (B1)	Leakage rate at the perforator (B1)	Built-in trigger (B1)	Repeated flexion and traction	Shock
	PE composition	< or >	O	O	O	O	O	O	O	O	N / A	N / A	N / A	N / A	N / A	N / A
Fittings to	Nominal diameter	Same Gd	O	O				O	O	O	N / A	N / A	N / A	N / A	N / A	N / A
		Big different	O	O	O	O		O	O	O	N / A	N / A	N / A	N / A	N / A	N / A
sockets	electrical part – welding area	< or >	O	O				O	O	O	N / A	N / A	N / A	N / A	N / A	N / A
	Connectivity	< or >	O	O							N / A	N / A	N / A	N / A	N / A	N / A
electroweldable	Thickness	Increase	O	O							N / A	N / A	N / A	N / A	N / A	N / A
		Decrease	O	O				O	O		N / A	N / A	N / A	N / A	N / A	N / A
Families A1, A2	Game	Increase	O	O				O	O	O	N / A	N / A	N / A	N / A	N / A	N / A
		Decrease	O	O				O		O	N / A	N / A	N / A	N / A	N / A	N / A
	Marking	< or >	O								N / A	N / A	N / A	N / A	N / A	N / A
	PE composition	< or >	O	O	O	O	O	O	O	O	N / A			1	O	O
	electrical part – welding area	< or >	O	O				O	O	O	N / A					O
	Connectivity	< or >	O	O							N / A					
Saddles	Shaft geometry	< or >	O						O		N / A	O	O	2	O	O
	Exit geometry	< or >	O						O		N / A	O		1	O	
electroweldable	Saddle geometry	< or >	O	O				O	O	O	N / A	O				
	Fixing method/tube	< or >	O					O	O	O	N / A					
	Punch material	< or >	O								N / A					
Families B1, B2	Perforation principle	< or >	O								N / A	O	O			
	Perforator sealing means	< or >	O						O		N / A		O			
	PDB plug	< or >	O						O		N / A					
	Built-in trigger	< or >	O								N / A			O		
	Marking	< or >	O								N / A					
	PE composition	< or >	O	N / A	O	O	O	N / A	O	N / A	O	N / A	N / A	N / A	N / A	N / A
Fittings	Nominal diameter	Same Gd	O	N / A				N / A	O	N / A	O	N / A	N / A	N / A	N / A	N / A
		Big different	O	N / A	O	O		N / A	O	N / A	O	N / A	N / A	N / A	N / A	N / A
male-ended	Male end length	Increase	O	N / A				N / A	O	N / A		N / A	N / A	N / A	N / A	N / A
		Decrease	O	N / A				N / A	O	N / A		N / A	N / A	N / A	N / A	N / A
Families C1, C2	Thickness of the male end	Increase	O	N / A				N / A		N / A	O	N / A	N / A	N / A	N / A	N / A
		Decrease	O	N / A				N / A	O	N / A	O	N / A	N / A	N / A	N / A	N / A
	Marking	< or >	O	N / A				N / A		N / A		N / A	N / A	N / A	N / A	N / A

< or >: Any direction of evolution NA: Accessory not concerned by this test 0 : The test must be carried out Gd: dimension group

1: tests of primary, climatic and aging characteristics 1000h 2: tests of primary characteristics

(a) If claim PE 100-RC

TABLE 9 – Families D1, D2, D3 – Guide to tests to be carried out when changing an accessory already approved for the mark or when extending the range (non-exhaustive list)

Family	Change			Meaning of evolution	Dimensions, appearance of fittings and assemblies	Resistance to gaseous constituents	MFR	ILO	SHT (a)	Hydrostatic resistance	Pressure losses	Waterproofing	Traction	Temperature cycle	Copper alloy crack resistance dn ≤63	Repeated flexion and traction	Internal bending tightness dn ≤63
D1	Internal insert diameter			< or >	O	N / A	N / A	N / A	N / A		O					O	
	Insert length			Decrease	O	N / A	N / A	N / A	N / A	O		O	O				O
	Insert geometry			< or >	O	N / A	N / A	N / A	N / A	O		O	O			O	O
	Sealing material			< or >	O	N / A	N / A	N / A	N / A	O		O		O			O
	Sealing gasket shape			< or >	O	N / A	N / A	N / A	N / A	O		O		O			O
	Hanging ring			< or >	O	N / A	N / A	N / A	N / A	O			O			O	O
	Modification of the fitting body (material/process/thickness)			Decrease	O	N / A	N / A	N / A	N / A						O		
	Marking			< or >	O	N / A	N / A	N / A	N / A								
D2	Internal diameter insert or tube guide			< or >	O						O				N / A	N / A	O
	Sealing material			< or >	O					O		O		O	N / A	N / A	
	Sealing gasket shape			< or >	O					O		O		O	N / A	N / A	O
	Hanging device			< or >	O					O		O		O	N / A	N / A	O
	Body composition ≠ PE			< or >	O	O				O		O	O	O	N / A	N / A	O
	PE composition for injection			< or >	O		O	O	O	O		O	O	O	N / A	N / A	
	Body size, thickness			Decrease	O		O	O		O		O	O	O	N / A	N / A	O
	Marking			< or >	O										N / A	N / A	
D3	PE composition (injection)			< or >	O	N / A		O	O	O		O	O	O	O	N / A	
	PE NF tube mounted in force	Same MRS and SDR	same resin different manufacturer	< or >	O				x							N / A	
			different resin same manufacturer	< or >	O				x			O	O	O		N / A	
		MRS different		< or >	O	N / A			x	O		O	O	O		N / A	O
		Different SDR		< or >	O	N / A			x	O	O	O	O	O		N / A	O
	Electrowelded PE NF tube different resin or manufacturer			< or >		N / A			x							N / A	
	Non-NF PE tube			< or >	O	N / A	O	O	O	O		O	O	O		N / A	
	Assembly modification identical passage section			< or >	O	N / A	O	O		O		O	O	O		N / A	O
	Assembly modification modified passage section			Decrease	O	N / A	O	O		O	O	O	O	O		N / A	O
	Copper alloy material			< or >	O	N / A									O	N / A	
	Steel material			< or >	O	N / A										N / A	
	Marking			< or >	O	N / A										N / A	

< or >: Any direction of evolution NA: Accessory not concerned by this test O: The test must be carried out x: check claim PE 100-RC in NF114 (a) If claim PE 100-RC

TABLE 9 – Families E1, E2, E3 – Guide to tests to be carried out when changing an accessory already approved for the mark or when extending the range (non-exhaustive list)

Change		Meaning of evolution	Dimensions, Appearance of faucets and assemblies	MFR	ILO	SHT (a)	Resistance hydrostatic	Shock	Losses dump	Beach angular	Seat sealing and trim	Operating torque	Resistance of the stops	Drive mechanism	Bending between supports	Cycles thermal	Bending with thermal cycles	Traction	Flexion on training	Maneuvering extension and extensions
Matter	Body	< or >	O	O	O	O	O						O		O	O	O	O	O	
	Headlines (with or without purge)	< or >	O	O	O	O	O								O	O	O	O	O	
	Shutter	< or >	O				O				O	O		O						
	Saddle (see family B2)	< or >	O			O	O											O		
	Purge (PE tube)	< or >	O			O	O	O												
	Seals	< or >	O				O				O	O				O	O	O	O	
	Drive axle	< or >	O				O	O			O	O		O					O	
	Maneuvering square	< or >	O					O					O	O						
	Elongate	< or >	O																	O
Dimensional	Body	< or >	O				O			L					L	L	L	L	L	
	Headlines	< or >	O				O								L	L	L	L	L	
	Shutter	< or >	O						L	L	L	L		L	L	L	L	L	L	
	Passage section	increase	O							O	O	O			O	O	O	O		
	Seals	< or >	O				O			L	L	L			L	L	L	L	L	
	Drive axle	< or >	O					L			L			L					L	
	Maneuvering square	< or >	O					L		L			L	L						
	Elongate	< or >	O																	O
marking		< or >	O																	

< or > : Direction of any evolution O : The test must be carried out I : The test is carried out for major modifications which affect the characteristics of the tap

(a) If claim PE 100-RC, to do or verify that each PE component has claim PE 100-RC

3.3.2 - Audit

When processing an application for the right to use the NF mark, CERTIGAZ conducts an on-site audit lasting at least one day. The duration of the audit is defined by CERTIGAZ, considering the complexity of the products and the range presented. For trigger approval, the audit can be reduced to half a day for a specific manufacturing site. A fixed fee of 0.5 days is added for planning, preparation, drafting the audit plan, drafting the report, and monitoring any non-conformities.

The audit shall be carried out considering the requirements of paragraph 2.4.3.

In the case of an extension request, CERTIGAZ decides to carry out, if it deems it necessary, an audit to verify that the new provisions implemented by the manufacturer meet the requirements of this standard. In this case, the audit may only cover certain elements specific to the manufacture of the product that is the subject of the request.

In the case of a production transfer between two sites already audited under the NF136 application, CERTIGAZ decides to carry out, if it deems it necessary, an audit to verify that the provisions implemented by the manufacturer meet the requirements of this standard for the transferred accessories. In this case, the audit may only cover certain elements specific to the manufacture of the product covered by the application.

The purpose of the audit is to ensure that the provisions defined and implemented by the applicant in the audited design and/or manufacturing and/or marketing process meet the requirements of part 2 of this certification standard.

The audit is conducted by adopting the general principles defined in the NF EN ISO 19011 standard for carrying out a quality audit. The scope of the audit and the details of its conduct are specified in an audit plan sent to the company in advance.

In the case of a request where a workshop or ancillary site is involved in a significant part of the process, a separate or joint audit is organized. In the latter case, it is a multi-site audit and the editorial package is 0.75 days.

In the case of a maintenance request, an audit is carried out at the distributor's premises, which ensures control of the packaging and its marking as well as the instructions. The duration of the on-site audit, 0.5 or 1 day, is defined by CERTIGAZ, considering the complexity of the products and the range presented for maintenance.

In the event that the entity subcontracts part of its activity, CERTIGAZ reserves the right to carry out an audit at the subcontractor(s) based on the same standard.

All means (premises, installations, equipment) enabling the auditor to carry out the mission incumbent upon him must be made available to him, as well as the competent people to implement it.

Inspectors/auditors may, with the applicant's consent, take copies of any documents they consider necessary.

As an exception, the SQUAL100 procedure applies if the audit cannot be carried out physically for health reasons. However, this provision does not apply to critical products that undergo 100% release testing.

To monitor its auditors or as part of its accreditation, CERTIGAZ may appoint an observer during an audit. The auditee is informed in advance of approval to avoid any conflict of interest, and the costs of this observer remain the responsibility of CERTIGAZ.

At the end of the audit, a closing report signed by those present at the closing meeting records the number of non-conformities noted. An audit report is then prepared by the auditor and sent to the applicant.

The audit report includes any findings:

- Major non-conformity
- Minor non-conformity
- Sore point
- Strong point

In the event of non-conformities identified during the audit, the applicant must return to the auditor the completed non-conformity sheets with the corrective actions implemented and their implementation deadline.

The auditor analyses the corrective actions and their implementation timeframe, then decides on their relevance.

A major non-conformity must be resolved, and the auditor must verify that corrective actions have been effectively implemented. A major non-conformity that is not resolved blocks the certification process.

A minor non-conformity must be resolved based on the action plan proposed by the applicant:

- Minor non-compliance may be lifted based on the action plan and evidence provided
- Minor non-conformity may be lifted at the next audit when it is necessary to verify the effective implementation and effectiveness of corrective actions

A minor non-conformity that is not resolved does not block the certification process.

When a non-conformity (major or minor) cannot be resolved based on the action plan and the elements provided, it may be necessary to carry out a complementary audit. The purpose of this audit is to examine on-site the effectiveness of the

implementation of corrective actions. The RSC communicates this necessity to the client by explaining the reasons for this decision and indicates the expected duration (0.5 days or 1 day). This possibility is indicated by the auditor during the closing meeting when presenting the non-conformity(ies).

Sensitive points should be checked during the next audit.

3.3.3 Auditors/Inspectors

Audits and inspections are carried out by qualified auditors and inspectors, authorized and mandated by CERTIGAZ.

3.4 Evaluation and decision

CERTIGAZ assesses:

- The audit report and the auditor's monitoring sheet and analyzes the relevance of the applicant's responses, for corrective actions and their implementation deadline;
- The manufacturer's request and accompanying documents;
- Technical files;
- Test reports.

In the event of disputed results, CERTIGAZ may request that an additional check be carried out to verify the implementation of corrective actions (audit and/or complete or partial tests).

If an application file is not finalized within 12 months of the request due to lack of information from the applicant, the instruction may be subject to a second invoice.

If CERTIGAZ encounters difficulties in making a decision, the Special Committee of the NF APE mark may be asked to give an opinion.

Following the evaluation of the results of all the elements, CERTIGAZ takes one of the following decisions:

- Certification agreement
- Refusal of certification

In the event of a positive certification decision, AFNOR Certification grants, through CERTIGAZ, the right to use the NF mark, and CERTIGAZ sends the NF certificate and the letter notifying the decision to the applicant, who thus becomes the holder of the right to use the NF mark.

For the approval of a trigger, this is an approval certificate and there is no right to use the NF mark for this component which is not NF marked.

The certificate issued has a validity period of 3 years, reduced to the end of the previous month, starting in 2022. Any reproduction of this certificate must be made in its entirety.

In the event of breaches relating to security obligations, CERTIGAZ may, without delay, issue the necessary decision to refuse certification as a precautionary measure.

The granting of the right to use cannot under any circumstances substitute the responsibility of CERTIGAZ for that which legally falls to the company holding the right to use the NF mark.

The terms of communication on certification are defined in part 2.5 of these Certification Rules.

In the event of refusal of certification, the applicant may contest the decision taken by submitting a request, in accordance with the General Rules of the NF mark.

3.5 Codification

When admitting a group of PE accessories, the certificate code is APE 000-00. 000 is the root code of the certificate. This root code is incremented for each type of request according to the criteria: manufacturer, production site, family, design, resin, SDR.
If extensions, partial withdrawals or modifications are requested during this 3-year period, at each revision, the codification evolves as follows: APE 000-00 rev1, then rev2, rev3, etc. The root code does not evolve.
Before the end of the 3 years, CERTIGAZ ensures that nothing is blocking during monitoring during the 3-year cycle and renews the certificate with the APE 000-R1 codification, regardless of the number of revisions during these 3 years.
If it is the 2nd 3-year cycle, the codification is APE 000-R2 and so on per 3-year cycle.
If there are revisions during each 3-year cycle, the codification is APE 000-R1 rev1, then rev2, rev3, rev4 as during the first 3-year cycle.

For approvals, the principle is similar but simplified. Upon admission, the code is APE H000-00. The root code is H000 and is only assigned to one trigger. For any changes (modification or renewal after 3 years), the index changes successively 01, 02, 03, etc.

Renewals must always be made before the end of the validity period, otherwise the certification will be completely void. The renewed certificate is therefore valid for a period of slightly longer than 3 years, with a maximum of 2 months, to respect the initial anniversary date.

To facilitate the management of renewals, starting in 2022, when a certificate or approval is admitted or renewed, the validity date will be harmonized with the end of the month preceding the 3-year deadline. This provision will be fully implemented by the end of 2024.

3.6 Confidentiality

All those involved in mark management, including subcontractors' staff and Committee members, guarantee the confidentiality of the information to which they have access and the protection of the documents entrusted to them. See also § 5.

Part 4
BRINGING CERTIFICATION TO LIFE: monitoring procedures

Throughout the duration of the certification, the holder (manufacturer or distributor) must:

- ⇨ comply with the defined requirements and marking procedures described in Part 2
- ⇨ update their certification file as provided in part 7
- ⇨ systematically inform CERTIGAZ of any change in one of the characteristics of the certified product, and/or its organization likely to have an impact on the certification.

In addition, CERTIGAZ reserves the right to carry out any checks (visits, tests, verifications, etc.) that it deems necessary following:

- ⇨ to a modification concerning the certified product or the quality organization of the manufacturing entities (manufacturing plant, manufacturing workshops, subcontractors' factory, etc.);
- ⇨ to claims, disputes, litigation, etc., … of which he is aware and relating to the use of the NF Mark or approval.

Monitoring of certified products is carried out annually by CERTIGAZ upon granting the right to use the NF mark or approval.

Generally speaking, during any visit and in any location, whatever the main purpose of his mission, the NF inspector/auditor inquires about the use made of the NF mark and all questions relating to the application of the General Rules of the NF mark and these Certification Rules.

4.1 Monitoring procedures

Monitoring of NF certified products includes product testing and audits of the manufacturing site(s).

It also covers the monitoring of the use of the mark and logo on the products, packaging and any communication media of the holder (manufacturer or distributor).

Monitoring procedures are defined below but may be a function of:

- ⇨ decisions taken following previous checks.
- ⇨ possible claims

4.1.1 - Tests on the NF certified product

The conformity tests of the certified product are carried out in accordance with the specifications defined in tables 10 to 16. The specifications of the admission tests of §3.3.1 are applicable unless otherwise stated.

The storage period of samples after AT testing is the manufacturer's responsibility. In case of doubt, during the analysis of the reports, if the samples are no longer available, CERTIGAZ may request that the necessary tests be repeated.

These tests are not the responsibility of distributors, but following the ATs, if a non-conformity results in a suspension, the latter automatically impacts the products certified by maintenance. A root cause analysis could reduce the scope of the suspension if the non-conformity is limited to well-defined batches.

Surveillance tests are of 3 types:

BRT (Batch release test):

Test carried out on a batch of accessories, as defined in Part 8 and § 3.3.1, which must be completed satisfactorily before the batch can be released. These tests are carried out by the manufacturer.
When tests are required per week, this is a rolling 7-day period.

PVT (Process verification test - manufacturing process verification test):

Testing carried out on accessories at specific intervals to confirm that the manufacturing process remains capable of manufacturing accessories that meet applicable requirements.
PVT tests are annual. They are carried out by the manufacturer and the complete or summary results are communicated to CERTIGAZ before the end of February of year n+1 for PVTs of year n.
When they are synthetic, the report is accompanied by a sample of tests and it specifies the general requirements and

minimum records of each test according to the respective standards and the NF136 Rules.
In all cases, a summary list indicates the certified accessories and those which have been tested in order to guarantee a rotation of the tested references across the entire range.
This summary also specifies whether one or more references were not manufactured for the year in question.

Example of columns in the summary file to identify sampling criteria and each type of test.

Ref.	dn	Designation (shape)	APE certificate (resin/SDR)	family	Gd (1)	Faucet Body Type	Type pdb barrel	Test 1	Test 2	Test 3	Etc.	Fab ? Yes/ No

(1) according to the definition of the dimension group (Gd) in §1.1.2.1 of this document.

For families A, B, C, D and E, depending on the certified range and the sampling criteria according to tables 10 to 16, the PVTs apply to groups of accessories from one to several dozen references.
The control plan implemented by the holder must ensure that all accessories must be tested over a period of 5 years. However, for groups of 1 to 3 references, it is possible to have only 2 PVTs, for the same reference but judiciously/regularly distributed, over the 5-year period. The monitoring frequency is therefore essentially the same per reference.

Regardless of the product, the provisions of XP CEN/TS 1555-7 apply when a non-conformity is detected:

1- If the product does not meet the requirements for any of the characteristics indicated in Tables 10 to 16, as the case may be, the counter-test procedure described in the manufacturer's quality plan must be applied **and CERTIGAZ must be informed** as soon as the non-conformity is noted.
2- If the counter-test procedure does not confirm the conformity of the product to the requirements, the manufacturing process must be examined and corrected according to the procedures described in the manufacturer's quality plan, and to verify the characteristics given in Tables 10 to 16, as appropriate. **CERTIGAZ is informed of the processing of the non-conformity,** until validation of the corrective action.

AT (Audit test):

Third party testing carried out to confirm that the accessories remain compliant with applicable requirements.
Samples are collected during audits or from a sales platform by CERTIGAZ. The AT test plan is carried out every 2 years, but this plan can be broken down to take annual samples.
Samples are generally taken during audits. A sampling report is drawn up and the manufacturer must send the samples to the laboratory with a copy of the sampling report, **within a maximum of 30 days** and inform CERTIGAZ.
Upon receipt of the samples, the laboratory checks the suitability of the accessories received with the sampling report and informs CERTIGAZ.

Lack of production
In the absence of production since the last sample or since certification, the sample for monitoring may, as a priority, concern another reference, failing which, be postponed at the request of the holder if no PE accessory is available for the certificate concerned.
Any deferral of direct debit must be requested in writing from CERTIGAZ by the holder, by email or on headed letter.
The sampling will take place as soon as possible depending on production. Over a 3-year period of validity of a certificate, there must be at least one surveillance test report.
Failure to comply with this obligation, as well as any false declaration noted by CERTIGAZ, may lead to suspension or even withdrawal of the right to use the mark.

In order to comply with the sampling of the tests in tables 10 to 16, the minimum sample quantities for a reference are as follows depending on the families and dimension groups (see definition in § 1.1.2.1):

family	Gd1	Gd2	Gd3	comment
A1	7	6	5	
A2	7 or 9	6	5	9 if brass component for ammoniacal constraints
B1	9	8	7	
B1 (PBDI-MBDI)	4	4		PBDI DDDx20 or 32 with DDD from 40 to 125
B2	8 or 10	7	6	10 if brass component for ammoniacal constraints
C1, C2	4	4	4	
D1, D2	8 or 10 12	6	6	10 if brass component for ammoniacal constraints (only 4 in ELEC application for the D2 family) +2 if the fitting has a female JPG/JPC/JSC junction
D3	4 or 6	4	4	6 if brass component for ammoniacal constraints
E1, E2, E3	9	9	9	

The ATs for PBDI and MBDI are annual and defined in table 11bis. The references to be tested, in particular the saddle dn, are defined by CERTIGAZ, the sample is taken by the holder who sends them to the mark laboratory and informs CERTIGAZ.

AT tests defined for several accessories (by dimension group or valve body for example) are carried out successively with different references at each period to guarantee a complete examination of the range over the shortest possible period.

The NF136 mark laboratory, designated on the sampling sheet, carries out the tests and prepares a test report which is distributed to the holder/manufacturer and to CERTIGAZ. This report specifies at least the following information:

- Traceability of samples and the date of their receipt
- The test plan
- The specifications required in the testing standards or NF136 rules
- A summary of the test results
- The sampling report is attached to the report

In the event of a problem during a test, the laboratory informs the holder/manufacturer and CERTIGAZ, before the other tests are completed and the report is written. Additional tests may be requested by CERTIGAZ.

For these different monitoring tests (BRT, PVT and AT), the accuracy of the electrical resistance measurement is that indicated in § 3.3.1 except for the BRTs whose values come from production monitoring. For these production measurements, the accuracy is lower but must be adapted to the tolerance interval of the resistance monitored.

TABLE 10: Family s A1 and A2 (electrofusion socket fittings)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, color, dimensions, electrical resistance	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/shape/Gd/imprint/resin These measures can be taken from BRTs	**Gas Gd1 and Gd2:** 4/Gd **Others:** 3/Gd	NF EN ISO 3126 technical file Machined male end ends ➔roughness Ra < 12.5	Samples suitable for further testing Check the consistency of the barcode data (welding/traceability) during one of the following tests – Caution for BRTs if the codes are affixed after sampling
MFR *190°C - 5 kg*	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 1133-1*	±20% of the value of the lot used
OIT 210°C	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 11357-6*	OIT > 20 min
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Welding cycle safety time at –10°C, +23°C & +45°C	N / A	1/shape/Gd/resin for each temperature	1/Gd for –10°C & +45°C	NF T54-969 § 3.6 & 4	Only for gas applications, Gd1 and Gd2
Hydrostatic resistance 80°C – 165 h 80°C – 1000 h PE 100 tube & minimum SDR	1/lot/print /week N / A	N / A Gd1: 3/shape/resin Gd2: 2/shape/resin Gd3: 1/shape/resin with at least 1 sample / print	N / A Gd1: 3 Gd2: 2 Gd3: 1	NF EN ISO 1167 PE 80: σ= 4.5 MPa PE 100: σ= 5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
Resistance to decohesion 23°C usual game and nominal energy (condition 1 annex C - ISO11413) -10°C maximum clearance, nominal energy, PE 100 tube & minimum SDR (1) (condition 2.1 annex C - ISO11413) 45°C usual game, nominal energy, PE 100 tube & minimum SDR (1) (condition 3.1 appendix C - ISO11413)	N / A N / A N / A	1/shape/Gd/imprint/resin 1/shape/Gd/imprint/resin 1/shape/Gd/imprint/resin	N / A 1/Gd 1/Gd	**Before revision 20:** ISO 13955 ($d_n \leq 225$ mm) or ISO 13954 ($d_n > 225$ mm) **From revision 20:** ISO 13955 ($d_n \leq 225$ mm) or ISO 13954 ($d_n \geq 90$ mm) Initiation to break length $\leq L_{2/3}$ with brittle fracture	

(1) Choice of preferred SDR; if PE 100 is not available, use PE 80 tubes.

TABLE 10 – continued –: Family A2 (electrofusion socket fittings)

Surveillance tests	***BRT: By lot***	***PVT: annual***	***AT: bi-annual by production site, resin and SDR***	**Operating mode Requirements**	***Observations***
Waterproofing after crack resistance test under ammoniacal constraints Waterproofing after testing	N / A	N / A	2/family/Gd	**NF E 29-196** **No leaks or breaks** The standard materials and solutions for pH are recorded in the report	Test carried out on fittings with external brass parts, **family A2 and $d_n \leq 63$ mm** Sample preparation in half at -5°C and +40°C The test is carried out under pressure with recording, to know the moment of possible failure

TABLE 11: Family B1 (branch outlets) and family B2 (branch saddles)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, color, dimensions, electrical resistance	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/family/Large saddle/imprint/resin These measures can be taken from BRTs	**Gas Gd1 and Gd2:** 4/family/Gd saddle **Others:** 3/Gd	NF EN ISO 3126 technical file Machined male end ends ➔roughness Ra < 12.5	Samples suitable for further testing Check the consistency of the barcode data (welding/traceability) during one of the following tests – Caution for BRTs if the codes are affixed after sampling
MFR *190°C - 5 kg*	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 1133-1*	±20% of the value of the lot used
OIT 210°C	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 11357-6*	OIT > 20 min
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Welding cycle safety time Temperature: –10°C, +23°C & +45°C	N / A	1/family/Large saddle/resin for each temperature	1/family/Large saddle for –10°C & +45°C	NF T54-969 § 3.6 & 4 MOP max =20 MRS/(c(SDR-1))	The tube is under the MOP admissible by the tube according to the MRS and SDR with c=2 (1) The report specifies this information **Gas application only, Gd1 and Gd2**
Hydrostatic resistance 80°C – 165 h 80°C – 1000 h PE 100 tube & minimum SDR	1/lot/print /week N / A	N / A Gd1: 3/family/resin Gd2: 2/family/resin Gd3: 1/family/resin with at least 1 sample/impression	N / A Gd1: 3/family Gd2: 2/family Gd3: 1/family	NF EN ISO 1167 PE 80: σ= 4.5 MPa PE 100: σ= 5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
Impact resistance *0°C - 2 m - 2.5 kg*	N / A	1/family/Large saddle/imprint/resin By mixing barrel or derivation/year	1/Large saddle By mixing barrel or derivation/AT	*NF EN 1716 (ISO 13957)* No breakage or leakage under 25 mbar and MOP admissible for 1 hour	For family B2, the shocks take place 15 mm from the end of the leads
Leakage rate at the perforator under MOP **Only the B1 family of the gas application**	N / A	1/Large saddle/resin By mixing the drill annually	1/Large saddle By mixing the drill every 2 years	*NF T54-970* *Leak ≤200 l/h* MOP max =20 MRS/(c(SDR-1))	The tube is under the MOP admissible by the tube according to the MRS and SDR with c=2; The report specifies this information
Built-in trigger **Only the B1 family of the gas application**	N / A	N / A	4 / dn of derivation for 1 dn of saddle annual monitoring	*See Table **11 Bis** below* *SAPE102 Specifications*	Bi-annual monitoring possible according to SAPE102 Affected stools from 40 to 125 Derivation concerned 20 and 32

(1) If the test is carried out under a lower MOP, declared by the manufacturer, the marking must specify this, see § 2.5.3.1

TABLE 11 – continued –: Family B1 (connection sockets) and family B2 (branch saddles)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Resistance to decohesion 23°C nominal energy (condition 1 annex C - ISO11413)	(has)	1/family/Large saddle/imprint/resin	N / A	**Gd1 & Gd2** : according to ISO 13956 With Ld ≤ 50% and Ad ≤ 25% *If the tube is torn off without allowing analysis of the welded area, then the test according to ISO 21751 is required with only the Ld criterion ≤ 50%* **Gd3** : only according to ISO 21751 With Ld ≤ 50 %	If multiple heating elements, test all elements Photos are attached to the test report according to the standard(s) used. The method used according to ISO13956 is recorded in the report. In case of doubt or dispute, method A1 is used for any saddle size .
-10°C nominal energy, PE 100 tube & minimum SDR (b) (condition 2.1 annex C - ISO11413)	N / A	1/family/Large saddle/imprint/resin	1/family/Large saddle		
45°C nominal energy, PE 100 tube & minimum SDR (b) (condition 3.1 appendix C - ISO11413)	N / A	1/family/Large saddle/imprint/resin	1/family/Large saddle		

(a) Sampling plan by impression in the same mold (b) Choice of the preferred SDR; if PE 100 is not available, use PE 80 tubes.

Batch size	at the start of manufacturing	regularly in production	at the end of manufacturing
1 to 1500	1	-	1
1501 to 5000	1	1	1
5001 to 10000	1	2	1
10001 to 17500	2	2	1
17501 to 30000	2	2	2

TABLE 11 Bis: Family B1 (PBDI and MBDI - Sockets and Connection Sleeves with Integrated Trigger)

The PBDI and MBDI are submitted **annually** to the AT according to the SAPE102 specifications for a main saddle dn and the D25 and D100 derivations/flows.

For the same holder, the monitoring of a PBDI covers that of an MBDI equipped with the same trigger and vice versa.

Surveillance tests	Number of samples	Operating mode - Requirements	*Observations*
- **Primary characteristics (** trip and reset tests, pressure drop, non-tripping on sudden opening, response time on closing and sealing on closing) **before and after accelerated aging** (endurance of 1000 cycles and climatic cycles)	4	SAPE102 Specifications	See flowchart in SAPE102 for the use or not of the 4 test tubes as well as the frequency of monitoring which can be every 2 years. The saddle dn is determined by CERTIGAZ The test bench admits the dn 40, 63, 90, 110 and 125

TABLE 12: Families C1, C2 (male end fittings, depending on assembly methods)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, color, dimensions	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/family/form/Gd/imprint/resin These measures can be taken from BRTs	**Gas Gd1 and Gd2** : 4/Gd **Others** : 3/Gd	NF EN ISO 3126 technical file Machined male end ends ➔roughness Ra < 12.5	Samples suitable for further testing Check the consistency of the traceability barcode data (if used) during one of the following tests – Caution for BRTs if the code is affixed after sampling
MFR *190°C - 5 kg*	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 1133-1*	±20% of the value of the lot used
OIT 210°C	N / A	1/shape/Gd/resin	N / A	*NF EN ISO 11357-6*	OIT > 20 min
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Hydrostatic resistance 80°C – 165 h 80°C – 1000 h	1/lot / print /week N / A	N / A Gd1: 3/ family/form/resin Gd2: 2/ family/form/resin Gd3: 1/ family/form/resin with at least 1 sample/print	N / A Gd1: 3/family Gd2: 2/family Gd3: 1/family	NF EN ISO1167 PE 80: σ= 4.5 MPa PE 100: σ= 5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be mounted in series or parallel, with or without tubing between fittings No specimen breakage during the entire test period For the C2 family dn≥90, butt welding with same MRS and SDR as well as normal welding conditions
Tensile strength at 23°C Family C2, dn≥90	N / A	1/form/Gd/imprint/resin	1/Gd	ISO 13953 Ductile fracture	For the C2 family dn≥90, butt welding with same MRS and SDR as well as normal welding conditions

TABLE 13 a: Family D1 (metal mechanical fittings for polyethylene networks)

During implementation, the tube normally held by hand must not rotate when tightening the compression fittings and the information is recorded in the report.

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, dimensions	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/family/ dn /resin/technique	4/family/Gd	NF EN ISO 3126 – ISO17885 Technical file	Samples usable for other tests
Waterproofing at 23°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1h	N / A	2/family/ dn /resin/technique	2/family/Gd	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	Sample preparation half at -5°C and +40°C
Resistance to temperature variations 10 cycles under 6 bar Waterproofing before and after testing	N / A	2/family/Gd/resin/technique	2/family/Gd	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	Sample preparation half at -5°C and +40°C
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ**,** 1h **2nd step: constant speed** = 25 mm/min	N / A	2/family/Gd/resin/technique	2/family/Gd	ISO 17885 §9.3.3.3 + ISO13951 F = 2s σunder 50 mbar PE 80: σ=5.7MPa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	Sample preparation half at -5°C and +40°C dn≤63 mm and dn >63 mm

…/…

TABLE 13 a – continued – : Family D1 (metal mechanical fittings for polyethylene networks)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Hydrostatic resistance 80°C – 165 h 80°C - 1000 h	 N / A N / A	 N / A 2/family/Gd/resin/technique	 N / A 2/family/Gd	ISO 17885 §9.3.3.2 ISO 3458 ISO 1167-1 /-4 PE 80: σ=4.5 MPa PE 100: σ=5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period Sample preparation half at -5°C and +40°C
Waterproofing after crack resistance test under ammoniacal constraints **(Concerns the PE part and, where applicable, the standardized mechanical junction JPG/JPC or JSC)**	N / A	N / A	2/family/Gd	*NF E 29-196* No leakage TT leak test no breakup The standard materials and solutions for pH are recorded in the report NF E 29-532 or NF E 29-536 According to JPG/JPC or JSC type of GAZ application	Test carried out on fittings with external brass parts for $d_n \leq 63$ mm Sample preparation in half at -5°C and +40°C for the PE part The test is carried out under pressure with recording, to know the moment of possible failure The critical area of JPG/JPC or JSC fittings is the swivel nut
Watertightness after a constant load tensile test at 80°C – 500 h, dn ≤63 mm Waterproofing after testing	N / A	N / A	2/family/Gd	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Sample preparation half at -5°C and +40°C Test carried out on $d_n \leq 63$ mm Testing not required for applications 2-3-4 WATER nor ELECTRICITY
Compliance of the standardized mechanical junction (Mechanical resistance of rotating nuts to tightening torque)	According to respective standard 2/lot see § 2.4.4.8	2 for 1DN standardized among JPG/JPC/JSC	2 for 1DN standardized among JPG/JPC/JSC	NF E 29-532 or NF E 29-536 According to JPG/JPC or JSC type	GAS application only When the PVT and AT are common, the test is not doubled

TABLE 13b: Family D2 (plastic mechanical fittings for polyethylene networks)

During implementation, the tube normally held by hand must not rotate when tightening the compression fittings and the information is recorded in the report.
For socket fittings, a notice must describe the assembly implementation to ensure the tube is securely attached to the fitting, in the field and for testing.

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, color, dimensions	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/family/ dn /resin/technique	4/family/Gd	NF EN ISO 3126 – ISO17885 Technical file	Samples usable for other tests
MFR *190°C – 5 kg*	N / A	1/family/Gd/resin/technique	N / A	*NF EN ISO 1133-1* ±20% of the value of the lot used	
OIT 210°C	N / A	1/family/Gd/resin/technique	N / A	*NF EN ISO 11357-6*	OIT > 20 min The test is not carried out on the NF114 tube used for a connection
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Waterproofing at 23°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1h	1/ imprint at the start of production of the batch and see § 2.4.4.8 under 1.5xMOP	2/family/ dn /resin/technique	2/family/Gd	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	Sample preparation half at -5°C and +40°C
Resistance to temperature variations 10 cycles under 6 bar Waterproofing before and after testing	N / A	2/family/Gd/resin/technique	2/family/Gd	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	Sample preparation half at -5°C and +40°C
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ, 1h **2nd step : constant speed** = 25 mm/min	N / A	2/family/Gd/resin/technique	2/family/Gd	ISO 17885 §9.3.3.3 + ISO13951 F = 2s σunder 50 mbar PE 80: σ=5.7MPa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	Sample preparation half at -5°C and +40°C

.../...

TABLE 13b – continued – : Family D2 (plastic mechanical fittings for polyethylene networks)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Hydrostatic resistance				ISO 17885 §9.3.3.2 ISO 3458 ISO 1167-1 /-4	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection
80°C – 165 h	1/lot/print/ week	N / A	N / A	PE 80: σ=4.5 MPa PE 100: σ=5.4 MPa	Samples can be connected in series or parallel No specimen breakage during the entire test period
80°C - 1000 h	N / A	2/family/Gd/resin/technique	2/family/Gd	PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Sample preparation half at -5°C and +40°C
Watertightness after a constant load tensile test at 80°C Waterproofing after testing	N / A	N / A	2/family/Gd	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Sample preparation half at -5°C and +40°C Test carried out on $d_n \leq 63$ mm Testing not required for applications 2-3-4 WATER nor ELECTRICITY

For the 5-ELEC application, the specifications (pressure, stress) of table 7b-family D2 apply for the leaktightness, thermal cycling and hydrostatic pressure tests, with 1 sample instead of 2, prepared at room temperature. For the tensile test at 23°, the 2 samples are required and prepared in half at -5°C and +40°C.

TABLE 13c: Family D3 (transition fittings for polyethylene networks)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, color, dimensions	1/ imprint at the start of production of the batch and see § 2.4.4.8	1/family/ dn /resin/technique	4/family/Gd	NF EN ISO 3126 – ISO17885 Technical file Machined male end ends ➔roughness Ra < 12.5	Samples usable for other tests When the fittings are made from PE pipe, the acceptable ovality is that defined in NF EN 1555-2
MFR *190°C – 5 kg*	N / A	1/family/Gd/resin/technique	N / A	*NF EN ISO 1133-1* ±20% of the value of the lot used	Test not carried out if the PE part is made from a tube approved for the NF Tube PE mark. In all cases the resin of the tube must be of the NF114 mark
OIT 210°C	N / A	1/family/Gd/resin/technique	N / A	*NF EN ISO 11357-6* OIT > 20 min	
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Waterproofing at 23°C - 25 mbar / 1h then at 1.5xMOP (6 bar minimum) / 1h	1/ imprint at the start of production of the batch and see § 2.4.4.8 under 1.5xMOP	1/family/ dn /resin/technique	1/family/Gd	ISO 17885 §9.3.3.1 + ISO 3458 No leaks	
Resistance to temperature variations 10 cycles under 6 bar Waterproofing before and after testing	N / A	1/family/Gd/resin/technique	1/family/Gd	ISO 17885 §9.3.3.6 + ISO 3458 -20 ±2°C /+60 ±2°C, 3-hour level No leakage in the TT leak test	
Watertightness after a tensile test at 23°C **1st step: constant load,** constraint σ,1h **2nd step: constant speed** = 25 mm/min	N / A	1/family/Gd/resin/technique	1/family/Gd	ISO 17885 §9.3.3.3 + ISO13951 F = 2sσ under 50 mbar PE 80: σ=5.7Mpa PE 100: σ=6.6MPa s: wall section of the tube with nominal diameter and average thickness - No dislocation, permanent deformation or breakage of the joint - No leakage in the TT leak test	dn ≤63 mm and dn > 63 mm

.../...

***TABLE 13c – continued – : Family D3* (transition fittings for polyethylene networks)**

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Hydrostatic resistance 80°C – 165 h (1) 80°C - 1000 h	 1/lot/print/ week N / A	 N / A 1/family/Gd/resin/technique	 N / A 1/family/Gd	ISO 17885 §9.3.3.2 ISO 3458 ISO 1167-1 /-4 PE 80: σ=4.5 MPa PE 100: σ=5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the connection Samples can be connected in series or parallel No specimen breakage during the entire test period
Waterproofing after crack resistance test under duress	N / A	N / A	1/family/Gd	***NF E 29-196*** **No leakage** TT leak test **no breakup** The standard materials and solutions for pH are recorded in the report	Test carried out on fittings with external brass parts for $d_n \leq 63$ mm The test is carried out under pressure with recording, to know the moment of possible failure
Watertightness after a constant load tensile test at 80°C	N / A	N / A	1/family/Gd	ISO 17885 §9.3.3.5 + ISO19899 No leakage in the TT leak test	Test carried out on $d_n \leq 63$ mm Testing not required for applications 2-3-4 WATER nor ELECTRICITY

(1) For this D3 family, when the transition fittings are obtained with a section of PE tube assembled to the steel tube, the BRTs are produced only by pair of PE tube batch and steel tube batch regardless of the number of manufacturing orders or the manufacturing time. However, be careful of the expiry dates of the PE tube, sometimes imposed by customers.

TABLE 14: Families E1, E2 and E3 (Taps, RPC and purge taps)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Marking, appearance, dimensions	1 /print at the start of production of the batch and see § 2.4.4.8	1/body type/resin	4/Gd	NF EN ISO 3126 - technical file Machined male end ends ➔roughness Ra < 12.5	Samples usable for other tests
MFR *190°C – 5 kg*	N / A	1/body type/resin	N / A	NF EN ISO 1133-1	±20% of the value of the lot used
OIT 210°C	N / A	1/body type/resin	N / A	NF EN ISO 11357-6	OIT > 20 min
Resistance to cracking *(Strain-Hardening test – SHT)*	N / A	N / A	By site and resin Whatever SDR or family	ISO 18488 <Gp> ≥ 50 MPa	For claim PE 100-RC with regrinding of accessories
Sealing angular range and additional dimensional specifications *23°C*	N / A	1/body type/resin	N / A	NF T 54-972 Angle ≥7°	
Hydrostatic resistance 80°C - 165 h 80°C - 1000 h	1/lot N / A	N / A Gd1: 3/ body type /resin Gd2: 2/ body type /resin Gd3: 1/ body type /resin	N / A 3/ Gd	NF EN ISO 1167 PE 80: σ= 4.5 MPa PE 100: σ= 5.4 MPa PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the tap Samples can be connected in series or parallel No specimen breakage during the entire test period
Sealing of the seat and the trim *at 23°C - 25 mbar - 1 hour* *at 23°C - 1.5xMOP - 30 s*	1/batch/week at 25 mbar	1/body type/resin	N / A	NF EN 1555 Annex A No leaks	Initial test at 1.5 x MOP (limitation to 6 bar, applicable only for other tests)
Operating torque at -20°C, 23°C and 40°C	N / A See § 2.4.4.8	1/body type/resin	1/ Gd	*NF EN ISO 8233* $d_n \leq 63$: 5 < C ≤35 Nm $63 < d_n \leq 125$:10 < C ≤70 Nm $125 < d_n$: 10 < C ≤150 Nm	One measure for each direction of operation Minimum conditioning time: 6 hours
Resistance of the stops at –20°C and 40°C, for 15 s MAX (2xC_{max} measured; 150 Nm)	N / A	1/body type/resin	1/ Gd	*NF EN ISO 8233* *No break* *No leakage from the seat and trim*	The effort is applied for 15 s in both directions, opening & closing then the tightness is checked under 1.5xMOP for 30 s

TABLE 14 – continued –: Families E1, E2 and E3 (Taps, RPC and purge taps)

Surveillance tests	*BRT: By lot*	*PVT: annual*	*AT: bi-annual by production site, resin and SDR*	Operating mode Requirements	*Observations*
Resistance of the drive mechanism *at 23°C under 6 bar* MAX (1.5xC $_{max}$ measured; 1.2xC $_{max}$ allowed according to dn)	N / A	1/body type/resin	1/ Gd	*NF EN ISO 8233* No break	***C $_{max}$ allowed according to dn :*** *d $_n$ ≤63: C ≤35 Nm* 63 < d $_n$ ≤125: C ≤70 Nm 125 < d $_n$: C ≤150 Nm
Bending resistance between supports 63 < d $_n$ ≤125 load 3 kN 125 < d $_n$ ≤ 400 load 6 kN	N / A	1/body type/resin	1/ Gd	*NF EN 12100 - No leakage* C ≤70 Nm C ≤150 Nm	Checking the tightness under 25 mbar at each required step The report mentions the distance between the support points T of the force F as well as the couples at each stage
Resistance to thermal cycles 63 < d $_n$ ≤125 125 < d $_n$ ≤ 400	N / A	N / A	1/ Gd	*NF EN 12119* C ≤70 Nm C ≤150 Nm	For Gd 2 only. No leakage under 6 bar for 10 cycles between -20°C and +60°C
Flexural tightness with thermal cycle d $_n$ ≤63 10 cycles –20°C / +40°C with test tube under 6 bar	N / A	N / A	1/ Gd T	*NF EN 1704* *No leaks*	For Gd1 only. To facilitate the test, 2 samples can be used to perform the bending in each axis
Tightness under tensile stress, Stress: σ= 12 MPa for PE 100 σ= 10 MPa for PE 80 1h under F= σs then constant speed Speed = 25 mm/min	N / A	1/body type/resin	1/ Gd	*NF EN 1555-4 annex B* *No breakage or leakage* d $_n$ ≤63: C ≤35 Nm 63 < d $_n$ ≤125: C ≤70 Nm 125 < d $_n$: C ≤150 Nm Leak test according to TT	After applying the stress for 1 h, the test is continued at constant speed until the tube creeps, without rupture of the assembly.
Sealing under and after bending applied to the drive mechanism	N / A	N / A	1/ Gd	*NF EN 1680*	No leak under 25 mbar and 1.5 x MOP (or 6 bar) M = 55 Nm
Impact resistance -20°C - 2 m - 2.5 kg	N / A	1/body type/resin	1/ Gd	*NF EN 1705* *d $_n$ ≤63: C ≤35 Nm* 63 < d $_n$ ≤125: C ≤70 Nm *125 < d $_n$: C ≤150 Nm*	The shock occurs on the square in the vertical axis (fig.1 of the standard) Checking the tightness under 25 mbar Recording of operating torques

Family E2 - Electrofusion saddles equipped with a tap for drilling under load (RPC: support tap)

These accessories must meet the requirements:

- of a bypass saddle, family B2 (see table 11)
- from a tap, family E1 (see table 14)

In the specific case where the RPC assembly is produced by assembling accessories that are already certified and monitored, without modification (diverter saddles and/or taps), the additional tests may be reduced based on the initial results.

In any case, the assembly must be tested for the following tests.

TABLE 15: Family E2 (RPC)

Surveillance tests	***BRT: By lot***	***PVT: annual***	***AT: bi-annual by production site, resin and SDR***	**Operating mode Requirements**	***Observations***
Hydrostatic resistance 80°C - 1000 h	N / A	Gd1: 3 Gd2: 2 Gd3: 1	3/ Gd	**NF EN ISO 1167** PE 80: σ= 4 MPa PE 100: σ= 5 MPa	Formula for calculating pressure: P = 20 σ/(SDR-1) where the SDR is that of the tap Samples can be connected in series or parallel No specimen breakage during the entire test period The samples are prepared and drilled using the drilling device recommended by the manufacturer.
Tensile test at 23°C **at constant load,** stress = 6 MPa / 1h **then constant speed,** speed = 25 mm/min	N / A	1/Gd	1/ Gd	*ISO 13951* *No deterioration under stresses up to tube creep, same MRS, at RPC outlet*	If the RPC outlet and saddle bypass dn are different, carry out the test with a tube at the RPC outlet, corresponding to the smallest dn

Family E3 – Bleed valves for gas applications

The taps in this family are subject to the same tests as the E1 family with the addition of the following tests in accordance with the specifications defined in admission:

TABLE 16: Family E3 (Bleed valves)

Surveillance tests	***BRT: By lot***	***PVT: annual***	***AT: bi-annual by production site, resin and SDR***	**Operating mode Requirements**	***Observations***
Crash test on purges	N / A	1/ dn purge/Gd cuff	N / A	EN 1716 (ISO 13957) Same admission	All configurations
Decohesion	Table 11 23°C	N / A	N / A	ISO 13956	Configuration B
Tensile test on purges	N / A	1/ dn purge/Gd cuff	N / A	ISO 13951 same admission	Configuration A
Tensile test at 23°C **at constant load,** stress = 6 MPa / 1h **then constant speed,** speed = 25 mm/min	N / A	1/ dn cuff	N / A	ISO 13951 same admission	Configuration D No deterioration under stresses up to tube creep, same MRS

4.1.2 - Audit of the manufacturing site

This audit is carried out annually to ensure compliance with the conditions specified in § 2.4.

The conditions for conducting the audit are the same as for the initial, standard, or multi-site audit. The audit generally lasts one day but can be reduced or increased depending on the product and range.

For the monitoring of the assembly site and control of triggers, the normal audit frequency is increased to 2 years.
For the monitoring of a distributor during maintenance, CERTIGAZ carries out a surveillance audit every 2 years.
For a workshop or subsidiary site that is involved in a significant part of the process for an accessory or a range of accessories, the surveillance audit is only carried out every 2 years in conjunction with the audit of the main site. This is a multi-site audit and the editorial fee is 0.75 days.

If the holder manufactures products under several NF applications mandated to CERTIGAZ, the surveillance audit can be jointly carried out for several marks; in this case, the duration of the audit is adapted and a team of auditors can be mandated. This practice is also possible in initial audit but less common.

By way of exception, the SQUAL100 procedure applies if the audit cannot be carried out physically for health or geopolitical reasons.

To monitor its auditors or as part of its accreditation, CERTIGAZ may appoint an observer during an audit. The auditee is informed in advance for approval to avoid any conflict of interest, and the costs of this observer remain the responsibility of CERTIGAZ.

The management of audit findings is identical to that of the admission or extension audit (see § 3.3.2).

A major or minor non-conformity must be resolved based on the action plan proposed by the applicant. It can be resolved:
- depending on the action plan and the elements provided.
- at the following audit when it is necessary to verify the effective implementation and effectiveness of corrective actions.

4.2 Evaluation and decision

The assessment procedures are similar to those for admission described in part 3.

Depending on the results of all the checks, CERTIGAZ may decide:

- to renew the certification,
- to renew the certification with one or more observations,
- to renew the certification with one or more warnings and with or without additional checks,
- to pronounce the suspension of certification,
- to pronounce the withdrawal of certification.

Reconduction:

CERTIGAZ sends a reconduction letter confirming the monitoring carried out, after receiving the monitoring test results and the results of the audit(s).

By this certification reconduction decision letter issued by CERTIGAZ, AFNOR Certification reconducts the right to use the NF mark.

Renewal:

Before the certificate expires, CERTIGAZ assesses the results of monitoring (audits and tests) and any sanctions imposed, then decides on the renewal of the certification.

Suspension:

In the event of breaches relating to security obligations and in the absence of specified requirements, CERTIGAZ may, without delay, issue the necessary suspension decisions as a precautionary measure.

In the event of suspension or withdrawal of certification, AFNOR Certification suspends or withdraws the right to use the NF mark.

A suspension or withdrawal may concern one or more certificates or approvals for one, several or all of the references of these certificates or approvals.

The suspension decision:

- specifies the terms of its lifting. The terms of lifting may be specified or reviewed by CERTIGAZ based on the expert assessments, analyses of causes and corrective actions presented by the holder,
- is pronounced for a period of 6 months, renewable under conditions; the total duration of a suspension cannot exceed 2 years. After this period, a withdrawal decision will be pronounced by CERTIGAZ.
  If a suspension concerns a full certificate, the renewal which should take place before the lifting of the suspension is not carried out.
  If a suspension only partially concerns a certificate, the renewal which should take place before the lifting of the suspension is only carried out for the non-suspended references.

The suspension may be lifted before the deadline indicated in the CERTIGAZ decision letter if the terms of its lifting are respected.

The sanction is enforceable from the date of receipt of its notification.

The additional verification costs incurred by the sanctions are the responsibility of the holder.

The holders are responsible for the right to use the NF mark relating to the product in question and undertake to apply the measures resulting from the suspension or withdrawal of the right to use, taken in accordance with these Certification Rules.

Any suspension or withdrawal of the right to use the NF mark results in a ban on using the NF mark and referring to it for any new production (See § 4.4). For production prior to the suspension or withdrawal of the right to use, CERTIGAZ, on a case-by-case basis, may take special measures (e.g.: authorization to sell off stocks, destruction of stock, recall of products, etc.).

The holder may contest the decision taken by submitting a request in accordance with the General Rules of the NF mark.

4.3 Declaration of modifications

This chapter specifies the information to be provided and the procedures to be followed in the event of changes concerning:

- The holder (manufacturer and distributor)
- The production entity(ies)
- The quality organization of the design and/or manufacturing and/or marketing process
- The product

Any change to the initial conditions for obtaining the NF mark must be reported in writing by the holder.

Failure to comply with this obligation noted by CERTIGAZ may lead to suspension or even withdrawal of the right to use the NF mark.

In cases not provided for in sections 4.3.1 to 4.3.5, CERTIGAZ determines whether the modifications call into question the certification and whether an additional check is necessary.

Depending on the results of the investigation, CERTIGAZ makes the appropriate decision.

4.3.1 - Modification concerning the holder

The holder must notify CERTIGAZ in writing of any legal changes to his company or any change of company name.

In the event of fusion, liquidation or absorption of the holder, all rights to use the mark from which it may benefit cease automatically.

A new application may be filed and its review may be simplified depending on the changes made.

4.3.2 - Modification concerning the production entity(ies)

Any transfer (total or partial) of the production entity(ies) of an NF certified product to another production site results in the immediate cessation of NF marking by the holder on the transferred products in any form whatsoever.

The holder must declare this transfer in writing to CERTIGAZ, which will organize a visit to the new production site and, if necessary, may have tests carried out.

CERTIGAZ determines whether it is a request for extension, admission or maintenance of certification.

The assessment and decision-making procedures for certification are identical to those for admission described in part 3.

4.3.3 - Modification concerning the quality organization of the manufacturing and/or marketing process

The holder must declare in writing to CERTIGAZ any modification relating to its quality organization likely to have an impact on the conformity of manufacturing and/or marketing with the requirements of these Certification Rules (modifications concerning its installations, its quality plans, its representative, etc.).

If CERTIGAZ considers that the changes are significant, a request must be communicated to CERTIGAZ by the holder. Depending on the change declared, CERTIGAZ determines whether it is a request for extension, admission or maintenance of certification.

Furthermore, any temporary cessation of internal control of an NF certified product results in an immediate cessation of the NF marking of the product by the holder in any form whatsoever. The holder shall inform CERTIGAZ thereof.

The assessment and decision-making procedures for certification are identical to those for admission described in part 3.

4.3.4 - Modification concerning the NF certified product

Any modification of the NF certified product in relation to the application file, the accepted model, the Rules defined in the certification reference system likely to have an impact on the conformity of the product to the requirements of this certification reference system or any change of trademark must be the subject of a written declaration to CERTIGAZ.

According to the declared modification, CERTIGAZ determines whether it is a request for extension, admission or maintenance of certification.

4.3.5 - Temporary or permanent cessation of control or production

Any temporary or permanent cessation of control or manufacture of an NF certified product or any abandonment of a right to use the NF mark must be declared in writing to CERTIGAZ, indicating its desired duration for the disposal of the stock of NF marked products.

Upon receipt of the holder's letter, CERTIGAZ notifies the holder of the suspension of the right to use the NF mark. The maximum stock clearance date is defined by CERTIGAZ based on the holder's demand and the market relating to the product.

The withdrawal of the right to use the NF mark is notified upon expiry of the stock clearance period indicated by the holder, which has been previously approved by CERTIGAZ; the product is then removed from the list of certified products.

During the disposal of the stock, the annual management and the right to use the NF mark must be paid.

4.4 Conditions for stopping marking or unmarking in the event of suspension, abandonment, withdrawal

Any suspension or withdrawal of the right to use the NF APE mark, whether voluntary or following a sanction, results in a ban on using this mark and referring to it. Similarly, accidentally non-compliant products must be de-marked.

Consequently, in these cases, the NF mark must no longer appear on the products, their packaging, documentation, advertising or any other support from the manufacturer, in particular websites.

Part 5
THE SPEAKERS

In compliance with §3.6, all those involved in mark management, including the staff of subcontractors and members of the Committee, guarantee the confidentiality of the information to which they have access and the protection of the documents entrusted to them.

During assessments by COFRAC (or any organization that monitors one or more CERTIGAZ marks), the Ministry or their representatives and internal audits, assessors/auditors have access to confidential information in certification files and are required to maintain confidentiality given their duties.

The organizations involved in the procedure for issuing the right to use the NF mark and monitoring NF-certified products are specified below.

5.1. AFNOR Certification

AFNOR owns the NF mark and has granted AFNOR Certification an exclusive operating license.

AFNOR Certification manages and runs the NF certification system, which defines in particular the governance rules and operating procedures of the NF mark.

AFNOR Certification 11, rue Francis de Pressensé F-93571 LA PLAINE SAINT-DENIS CEDEX	Telephone: +33 (0)1 41 62 80 00 Marque-nf@afnor.org www.marque-nf.com

5.2 CERTIGAZ

In accordance with the General Rules of the NF mark, AFNOR Certification entrusts the management of the mark NF APE to the following organization, called the mandated organization:

CERTIGAZ 1, rue du Général Leclerc – F - 92800 Puteaux Linéa Building	Telephone: +33 (0)1 80 21 07 50 infocertigaz@certigaz.fr www.certigaz.fr

CERTIGAZ is responsible to AFNOR Certification for the operations entrusted to it and which are the subject of a contract.

5.3 Inspection and audit organization

The audit functions of the manufacturing unit, and possibly at the places of use, are carried out by CERTIGAZ

In certain cases, audit and inspection operations may be carried out by a qualified subcontractor mandated by CERTIGAZ.

Auditors have the right to inspect any applicant or holder within the framework of their mission.

5.4 Laboratories

When the checks carried out include tests on products, these are carried out at the request of CERTIGAZ by the laboratory(ies), known as the mark laboratory(ies).

Testing laboratories wishing to conduct tests as independent laboratories of the mark will apply to CERTIGAZ. They will be designated on the proposal of CERTIGAZ after consultation with the Special Committee. These laboratories must meet the criteria defined by the NF EN ISO/IEC 17025 standard.
These requests are processed according to SLAB110 specifications and CERTIGAZ's agreement is formalized by:

- Establishment of a contract between the laboratory and CERTIGAZ
- A laboratory authorization, issued by CERTIGAZ, specifying its scope of intervention for the NF136 mark.
- Monitoring the sustainability of their competence (accreditation and/or CERTIGAZ audits). When there are CERTIGAZ audits, the frequency can be adapted compared to SLAB110 when activity is low so that the audit takes place during a test campaign where possible.

For the renewal of the authorization issued by CERTIGAZ, at least one CERTIGAZ audit is necessary or an accreditation of each authorized test.

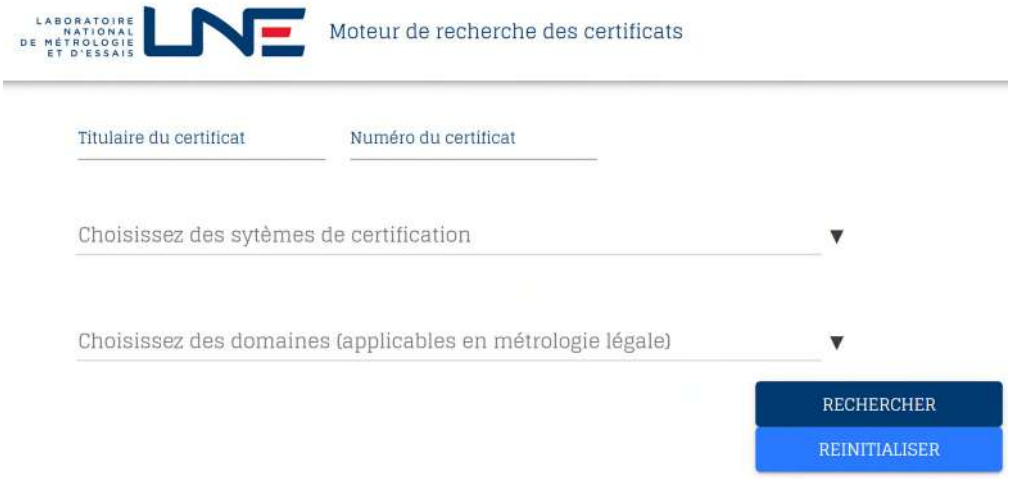
Laboratories	Contact	Test perimeters
BECETEL Gontrode Heirweg , 130 B-9090 MELLE – Belgium	Tel.: + 32 9272 50 70 Fax: + 32 9272 50 72 www.becetel.be	All tests except those specific to PBDI/MBDI
TGM Wexstrasse 19-23 A-1200 VIENNA - Austria	Such. +43 1 33 126 – 474 Fax +43 1 33 126 – 678 www.tgm.ac.at	Tests of families A, B and C except those specific to PBDI/MBDI and according to ISO 13924
TTR Institute Via Baden Powell 3/ter I-21052 Busto Arsizio (VA) - Italy	Such. +39 0331 342533 Fax +39 0331 342534 www.ttrinstitute.eu	Tests of families A, B, C and D except those specific to PBDI/MBDI
NATRAN R&I (formerly GRTgaz – RICE) 1, Villeneuve Road F-94140 ALFORTVILLE - France	Tel.: + 33 (0)1 45 18 85 72 Fax: + 33 (0)1 45 18 85 85	Trigger-specific testing and PBDI/MBDI

5.5 Other organizations

5.5.1 For HDPE resins

In compliance with gas regulations and to guarantee weldability between PE materials, PE accessories which are made with PE must be made with a resin appropriate to the application group, certified NF114.

The LNE is the NF-mandated body for managing this application. The holders' certificates can be viewed on the website: https://www.lne.fr/recherche-certificats/



In “Choose certification systems” select “NF Mark” then “construction products” by dropping down the menus using the “V” check mark, finally select “PE pipes (NF114)” in the square to obtain the list of certificates by clicking on “Search”.

At the bottom of the page, select the display of 100 lines (certificates) per page to have visibility of all the certificates.

You can then sort the different columns according to your needs and download the certificates by clicking on the “pdf ” icons.

5.5.2 For ACS

In the case of PE accessories for drinking water applications, a health conformity certificate (ACS) is required in accordance with the decree of May 29, 1997, as amended. It appears in the technical file and its validity and/or renewal are verified during site audits. The list of laboratories authorized to issue these ACSs can be viewed on the site:

Health Conformity Certificate (ACS) - Ministry of Labor, Health, Solidarity and Families

A historical list before July 2013 of ACS materials (MAT) is also available on this site.

For ACS more recent than July 2013, the lists of ACS (MAT) appear on the respective sites of the 2 laboratories authorized by the Ministry of Health:
- EUROFINS: Devices in contact with water - Eurofins France
- CARSO: Analysis of materials and objects in contact with water - https://groupecarso.com/eau-environnement-2/analyses-des-materiaux-et-objet-au-contact-de-leau/Carso Grouphttps://groupecarso.com/eau-environnement-2/analyses-des-materiaux-et-objet-au-contact-de-leau/

On these lists, the ACS which concern HDPE are found in the following paragraphs:
- §1.2 Polyethylene (PE) tubes => these are in fact resins
- §1.3 Extruded polyethylene tubes (PE- ext)
- §3.1.3 Polyethylene (PE) fittings
- §3.3 Joints
- §4 Other components

As of December 31st, 2026, ACS will be replaced by European certifications in accordance with EU Directive 2020/2184 of December 16th, 2020.
The European directive provides for a transitional period from 2027 to 2032, initially for new accessories or those for which the ACS will have expired.
Since the ACS are valid for 5 years, no later than December 31st, 2032, all accessories must have obtained a European health certificate for placing on the European market and the products will have a marking required by the European directive confirming that they are covered by the certificate.

5.6 Special Committee

5.6.1 - Role and missions of the Special Committee

A consultative body called the Special Committee has been set up, the secretariat of which is provided by CERTIGAZ.

The Special Committee meets periodically at least once a year or as needed. The missions of this Committee are as follows:

- It participates in the system for preserving impartiality (§5.2 of standard NF EN ISO/CEI 17065)
- It approves the minutes of the meetings of the Special Committees
- He gives an opinion on:
  - all questions relating to the certification of PE accessories upon request from CERTIGAZ.
  - changes to the Certification Rules (expansion of the scope of application, technical developments, etc.). The Committee then assesses the impact of the changes and proposes a transition period if necessary.
  - certification files at the request of CERTIGAZ (including dispute resolutions, sanctions, etc.).

The draft texts and changes to these Certification Rules are submitted for the opinion of the Special Committee before their approval by AFNOR Certification. The consultation is conducted by CERTIGAZ, which processes the various opinions of interested parties and provides them with feedback. CERTIGAZ prepares the final text, taking everyone's opinions into consideration and seeking to reconcile divergent views.

The Special Committee is a consultative body that issues opinions that serve as a basis for decision-making. Consensus is systematically sought.

In accordance with the provisions of the NF EN ISO/CEI 17065 accreditation standard:

- CERTIGAZ may exceptionally decide not to follow the advice of the Special Committee, for example if it is contrary to accreditation requirements. In this type of decision, if no consensus has been possible, this decision and the reasons for this decision must be recorded.

- Following a decision by CERTIGAZ which appears unjustified, the Special Committee has the right to take independent action with Cofrac or the Ministry, for example if CERTIGAZ does not follow the advice given by the Special Committee.

The members of the Committee may not receive any remuneration for the functions entrusted to them.

CERTIGAZ takes special measures to ensure the confidentiality of applicant or holder files submitted to the Special Committee (except in cases of dispute/appeal). To this end, a confidentiality agreement is completed by each full or

alternate member. Representatives of AFNOR Certification, the Ministry, and CERTIGAZ are bound by confidentiality as part of their duties and do not provide this agreement.

For specific topics, the Committee may call upon an expert. He or she is then invited and, by signing the attendance list, like any participant, he or she undertakes to maintain the confidentiality of the information discussed during the meeting.
No confirmation of participation can be made before receipt by CERTIGAZ of the confidentiality and impartiality form (FOCER02) signed by the guest/expert.
No document can be sent before receipt of the confidentiality and impartiality form cited above.
A person who is not a member of the Special Committee may be invited in the following cases:
1) Invitation at the initiative of CERTIGAZ or the Special Committee, of an expert (for a technical or other question);
2) Presentation of the future member of the Special Committee when there is an early transfer;
3) Exceptionally, if the Special Committee member file could not be processed before the meeting was held.

The Special Committee may entrust some of its work to working groups. The results of this work will be presented to the Special Committee for its opinion. These working groups may be composed of members of the Special Committee and NF mark holders.

Before each meeting, CERTIGAZ sends an agenda to each member, with or without preparatory documents.

At each Special Committee meeting, CERTIGAZ presents the complaints/appeals received and provides an update on Cofrac accreditation. CERTIGAZ also presents the actions taken to manage conflict of interest risks. The Special Committee provides its opinion on the procedures implemented by CERTIGAZ to ensure its impartiality. This opinion is recorded in the minutes.

CERTIGAZ writes and sends the report to the Committee members.

5.6.2 - Composition of the Special Committee

The composition of the Special Committee is set in such a way as to respect a representation between the different parties concerned which does not lead to the predominance of one of them and which guarantees their relevance.

The members of the Special Committee are appointed by CERTIGAZ. A member of the Special Committee may only be represented by a substitute appointed under the same conditions. A list of the committee's members is kept up to date and available on the CERTIGAZ website.

At meetings of the Special Committee, the incumbent and his alternate may be present, but in the event of a vote, only the incumbent may speak.

Where several incumbent manufacturers belong to a group, only one seat is available for the group. However, the Committee member and his or her alternate may belong to two different entities within the same group and participate in meetings together.

The term of office of the members and the president is 3 years. This term is renewable by tacit agreement if there are no other candidates and the maximum number of seats per college is not reached.

The Committee is composed of three colleges with 3 to 10 seats each:

MANUFACTURERS College:

Among the holders of the NF PE Accessories mark and the professional union bringing together PE accessories manufacturers (STRPEPP).

USERS / PRESCRIBERS College:

Among the managers, users and/or prescribers of PE networks, distributors of PE network fittings, DIY Superstores (DSB) which sell PE network fittings, organizations representing these entities.

The managers, users and/or prescribers of PE networks are:

- For the gas application, GRDF for 2 possible seats to take into account the size of the managed network and 3 seats for the other entities which manage networks within large cities and their agglomerations,
- For water applications, entities that manage PE drinking water networks, with 2 reserved seats,

Distributors are entities that distribute PE network fittings. 2 seats are reserved for them.

The remaining seat may be occupied, depending on the applications, by the entities described above, the GSBs or organizations representing these professions.

When applying, CERTIGAZ ensures that:

- each entity undertakes to promote PE networks, without discrimination,

- each entity undertakes to respect the committee member charter, available on the CERTIGAZ website,
- different entities would not represent the same organization (same group for example) to avoid unbalanced representation,

College of TECHNICAL AND ADMINISTRATIVE ORGANIZATIONS:

Among AFNOR Certification, CERTIGAZ, BNPP, the independent laboratories of the NF APE mark, technical inspection body, Ministry in charge of gas safety, etc.

The President of the Special Committee

He or she is appointed from among the full members of the Special Committee and by them.

The President has no particular prerogative except:

- to be able to request the holding of a Committee on its own, otherwise it is at the initiative of CERTIGAZ or upon written request from at least five of its members;
- to open, close or suspend the session;
- to ensure compliance with the Certification Rules;
- to ensure the smooth running of the Committee;
- to give notice to CERTIGAZ before distributing the agenda and minutes of a meeting to all members.

CERTIGAZ and AFNOR Certification are ex officio vice-presidents.

Part 6
PRICES

The purpose of this part is to define the amount of services relating to NF certification and to describe the recovery methods.

NF certification includes the following services:

- development and implementation of an application
- instruction of the request
- how the certification application works
- tests
- inspection/audit visits
- levy
- right to use the NF mark
- additional controls
- promotion

6.1 Services relating to certification

Nature of the service	Definition of the service	General conditions common to NF marks
Development and implementation of an application (Registration)	Participation in the implementation of the application of the NF mark including the development of certification rules (reference system).	A registration fee is paid by the applicant when first applying for the right to use the NF mark. This fee is invoiced from the registration by CERTIGAZ of the first request and at the latest at the time of invoicing the right to use (during product certification).
Instruction of the application	Service including review of application files, relations with applicants, laboratories, inspectors/auditors, evaluation of control results.	Payment of the amount of these benefits remains acquired even if the right to use the NF mark is not granted or if the application is abandoned during processing.
How the certification application works	Services for managing certified product files and holders, establishing lists of certified products, and evaluating control results.	This management is billed annually at the beginning of the year. Upon admission, management is calculated pro rata for the months following the certification decision. Management of the NF mark remains acquired even in the event of withdrawal or suspension during the year.
Tests	Laboratory testing services.	Test prices provided by the laboratories that bill for this service.
Inspection and audit visit	Services including preparation of the visit, the visit itself and the visit report. In addition to these services, there are travel costs and flat rates for long-distance travel.	Payment of these benefits remains acquired even if the right to use the NF mark is not granted or renewed.
Levy	Service including preparation and the collection itself.	The service is billed based on actual time spent.

Nature of the service	Definition of the service	General conditions common to NF marks
Right to use the NF mark	This usage fee paid to AFNOR Certification contributes to: • in defense of the NF mark: filing and protection of the mark, legal advice, handling of appeals and abusive uses (legal services). • to the generic promotion of the NF mark. • to the general operation of the NF mark (management of NF mark governance bodies, quality system, etc.).	The amount of the right to use is invoiced by CERTIGAZ, and paid to AFNOR Certification as manager and facilitator of the NF certification system. Upon admission, the right to use is calculated pro rata to the months following the certification decision. The right to use the NF mark remains acquired even in the event of withdrawal or suspension during the year.
Additional controls	Services resulting from additional checks or verification tests which may prove necessary following deficiencies or anomalies detected by routine checks.	Services payable by the applicant/holder.
Promotion	Sectoral promotional actions for the NF mark.	Fee, the amount of which can be defined each year and invoiced in addition to other services.

Note 1: In the event of cancellation or postponement of an inspection or audit visit, due to the applicant/holder, the actual costs incurred by CERTIGAZ will be invoiced to them.

Note 2: As stipulated in § 3.4, if an application file is not finalized within 12 months following the request due to lack of information from the applicant, the instruction may be subjected to a second invoice.

6.2 Recovery of benefits

The services defined above are invoiced by CERTIGAZ to the applicant/holder.

CERTIGAZ is authorized to recover all services.

However, the organizations involved in the trials invoice and collect the amount of the corresponding services directly.

The applicant or the holder must perform these services under the prescribed conditions: any failure on the part of the holder in fact prevents CERTIGAZ from exercising the control and intervention responsibilities incumbent upon it under these Certification Rules (reference framework).

Payment of invoices issued by CERTIGAZ, only in electronic format, is due within 30 days of receipt of the invoice.

In the event that a first formal notice does not result in payment of the full amount due, any penalty provided for in Part 4 may be imposed for all of the holder's admitted products.

The services billed correspond to the number of checks carried out. Any additional audits or tests are billed to the manufacturer, regardless of the results obtained.

As long as the holder has stocks of NF-marked products, the controls are maintained, as is the reimbursement of the corresponding services.

6.3 The amount of benefits

The amounts of these services and the right to use the mark are subject to a financial regime that is revised annually by CERTIGAZ and sent, at the beginning of the year, to all mark holders, to the members of the Special Committee and to AFNOR Certification. The price revision is based on the evolution of the SYNTEC index from July n-1 to July n for application to year n+1.

This price list is available on request from CERTIGAZ and on the CERTIGAZ website: www.certigaz.fr

Prices are in Euros excluding taxes. For test prices, samples must be delivered to the mark's laboratory, postage and customs cleared where applicable, within a maximum of 30 days from the collection date.

Testing fees are managed by each laboratory. Applicants must contact the laboratories directly for testing costs.

Part 7
CERTIFICATION FILES

7.1 Right to use application file

The request for the right to use the NF mark must be addressed to CERTIGAZ.

In the event that the request comes from an entity located outside the European Economic Area (EEA) or in the European Free Trade Association (EFTA) , the applicant designates a representative who co-signs the request.

The applicant prepares a file, the content of which must be adapted on a case-by-case basis and according to the attached models.

- ⇨ Standard request letter (for admission, extension or maintenance) reproduced on manufacturer's letterhead
- ⇨ General Information Sheet
- ⇨ Product sheet
- ⇨ Technical file. It is provided in electronic format as a single unlocked PDF file so that it can be approved by CERTIGAZ.

		Type of request		
		Admission	**Extension**	**Maintenance**
Letter of request and commitment	**PE accessory certification (2)**	Standard letter 001	Standard letter 002 A	Standard letter 002 B
	trigger approval (2)	Standard letter 001 H	Standard letter 002 AH	Standard letter 002 BH
general information sheet concerning the applicant	**Sheet 003 A sites**	X	X (1)	X (1)
	Standard letter 003 C Agent (3)	X	X (1)	X (1)
Product sheet	**Sheet 004 A (4)**	X	X (1)	X (5)
Technical file	**Sheet 005**	X	X (1)	X (1)

(1) if modification compared to the product already certified (referral to the initial file)

(2) depending on the type of request

(3) if necessary

(4) The standard 004A form is an Excel file available on the website www.certigaz.fr .

(5) May be limited to a list of correspondence of commercial references for different marks

7.2 Form templates

STANDARD LETTER 001 - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Subject: **NF APE mark**
Application for admission of the right to use the NF mark for a new product

Madam Director General,

I have the honor to request the right to use the NF mark for the following product/range of products:
<product designation / reference normative document>
manufactured in the following manufacturing entity:
<company name + address>
and for the trademark and for the following reference:
<trademark and trade reference> .

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of use of the NF mark, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.

<OPTION (1):
I also authorize the Company (company name), (company status), (registered office) represented by Mr/Mrs/Miss (name of legal representative) as (position) to represent me on French territory for all questions relating to the use of the NF APE mark in accordance with the mandate attached to this application.

I undertake to immediately notify CERTIGAZ of any change in the representative designated above.

<OPTION:
I request that the services I am responsible for be billed directly to them.
They will ensure payment on my behalf and in my name, upon receipt of the invoices as they undertake to do by accepting the representation.
I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the applicant (mandatory)

<OPTION (1): Date and signature
of the representative in the EEA/EFTA>

(1) *Only applies to applicants located outside the European Economic Area (EEA) or the European Free Trade Association (EFTA) and optional for others*

TYPE LETTER 002 A - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Subject: **NF APE**
Request for extension of the right to use the NF mark for a modified product

Madam Director General,

As the holder of the NF mark for the product of my manufacture identified under the following references:
. product designation/product range:
. reference normative document:
manufacturing entity: (<company name> <address>)
. trademark and commercial references:
. certificate number:
. right to use granted on: (<date of certificate>)

I have the honor to request the extension of the right to use the NF mark for the product(s) of my manufacture for the following modifications:
<statement of changes>.

This product/product range replaces the certified product: ☐NO ☐YES

I declare that the products/range of products which are the subject of this application are, for the other characteristics, strictly compliant with the products/range of products already NF certified and manufactured under the same conditions.

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of use of the NF mark, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.
I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the holder

LETTER TYPE 002 B - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Subject: **NF APE**
Request for maintenance of the right to use the NF mark

Madam Director General,

I have the honour of requesting the maintenance of the right to use the NF mark for the product(s) which differ(s) from the NF certified product only by its (their) references and/or the trademark affixed to it and by adjustments which do not modify their characteristics in any way.

This request concerns:

- the designation of the product/product range :
- the name of the initial holder (company name) (address)
- the right to use granted on: (date)
- the file number: (number)

The trade names requested by the distributor are:

- the commercial reference:
- the trademark:

I declare that the product(s) which are the subject of this application are, for the other characteristics, strictly compliant with the product(s) already certified NF **<certificate no. APE .....>** and manufactured under the same conditions.

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of use of the NF mark, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.

I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the applicant

(and signature of the holder of the NF APE mark for agreement in the case of a request for maintenance where the applicant is different from the holder)

TYPE LETTER 001 H - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Subject: **NF APE mark**
Application for approval of a new trigger

Madam Director General,

I have the honor to request approval for the following trigger(s):
<designation>

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of the approval, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.

<OPTION (1):
I also authorize the Company (company name), (company status), (registered office) represented by Mr/Mrs/Miss (name of legal representative) as (position) to represent me on French territory for all questions relating to the use of the NF APE mark in accordance with the mandate attached to this application.

I undertake to immediately notify CERTIGAZ of any change in the representative designated above.

<OPTION:
I request that the services I am responsible for be billed directly to them.
They will ensure payment on my behalf and in my name, upon receipt of the invoices as they undertake to do by accepting the representation.
I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the applicant (mandatory)

<OPTION (1): Date and signature
of the representative in the EEA /EFTA>

(1) *Only applies to applicants located outside the European Economic Area (EEA) or the European Free Trade Association (EFTA) and optional for others*

STANDARD LETTER 002 AH - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Object : **NF APE**
Request for extension or modification of a trigger approval

Madam Director General,

As a holder of an approval for the following trigger(s):
. manufacturing entity: (<company name> <address>)
. trademark and commercial references:
. approval number :
. date of approval:

I have the honor to request the extension of this approval for the following modifications:
<statement of changes>.

This trigger(s) replace the previous approved trigger(s): ☐NO ☐YES

I declare that the trigger(s) subject to this application are, for the other characteristics, strictly compliant with the products already approved and manufactured under the same conditions.

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of the approval, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.
I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the holder

STANDARD LETTER 002 BH - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Subject: **NF APE**
Application for maintenance of approval

Madam Director General,

I have the honor to request the maintenance of the approval of a trigger which differs from the approved product only by its (their) references and/or the trademark and/or by adjustments which do not modify their characteristics in any way.

This request concerns:

- the product designation :
- the name of the initial holder : (company name) (address)
- approval granted on: (date)
- under the number : (number)

The trade names requested by the distributor are:

- the commercial reference:
- the trademark:

I declare that the product(s) which is the subject of this application is, for the other characteristics, strictly compliant with the product(s) already approved and manufactured under the same conditions.

To this end, I declare that I know and accept the General Rules of the NF mark as well as the NF APE Certification Rules and undertake to respect, throughout the duration of the approval, all these Rules, available on the CERTIGAZ website and provided upon request by CERTIGAZ.
I undertake to pay, upon receipt of invoices, the costs that are our responsibility.
Prices are available on the CERTIGAZ website and can be requested from CERTIGAZ.

Please accept, Madam Director General, my distinguished greetings.

Date and signature
of the legal representative
of the applicant

(and signature of the holder of the NF APE mark for agreement in the case of a request for maintenance where the applicant is different from the holder)

SHEET 003 A - NF APE MARK

GENERAL INFORMATION SHEET CONCERNING THE APPLICANT / HOLDER

APPLICANT / HOLDER :

- Company name:……
- Address :……
- Country: …….. Website: …… ……
- SIRET No. (1): ..... APE and/or VAT code.....
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : …… Fax: .... Mail: …… ……
- QHSE system certification: …… Organization: …… ……

MANUFACTURING UNIT for finished products (if different from applicant/holder) **:**

- Company name:……
- Address :……
- Country: …….. Website: ……
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : …… Fax: ..... Email: …… ……
- QHSE system certification: …… Organization: …… ……

MANUFACTURING UNIT for injected products (if different from the manufacturing unit of the finished products – paragraph to be duplicated if several injection sites are used) **:**

- Company name:……
- Address :……
- Country: …….. Website: ……
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : …… Fax: ..... Email: ……
- QHSE system certification: …… Organization: ……

NOTE: Duplicate the lines above for any other manufacturing step carried out at a different site

MANUFACTURING UNIT for triggers and/or their MOUNTING in connection sockets
(if different from the product manufacturing unit - paragraph to be duplicated if assembly is carried out on a storage site, for example) **:**

- Company name:……
- Address :……
- Country: …….. Website: ……
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : …… Fax: ..... Email: ……
- QHSE system certification: …… Organization ……

EEA REPRESENTATIVE (if requested) or other REPRESENTATIVE :

- Company name:……
- Address :……
- Country: …….. Website: …… ……
- SIRET No. (1): ..... APE and/or VAT code: ……
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : …… Fax: ..... Email: …… ……
- QHSE system certification: …… Organization: …… ……

(1) *Only for French companies* . (2) *The legal representative is the legal person responsible for the company* .

STANDARD LETTER 003 C - NF APE MARK

to be established on the applicant's letterhead

CERTIGAZ
Madam Director General
1, rue du Général Leclerc – Le Linéa Building
F - 92800 Puteaux

Object : **REPRESENTATIVE**

Madam Director General,

I authorize the Company identified below as my agent to represent me on French territory for all questions relating to the use of the NF APE mark. I undertake to immediately notify CERTIGAZ of any new designation of the representative designated below.

- Company name:……
- Address :……
- .....
- Country: …….. Website: ……..…… ……
- SIRET No. (1): ..... APE and/or VAT code: ……..
- Name and capacity of the legal representative (2): ……
- Name and position of the correspondent (if different): ……
- Such : ……..… ……. Fax: ..... Email: ……..
- QHSE system certification: ……..…… Organization: ……..……

I request in this regard that the costs I am responsible for be invoiced directly to them. They will ensure payment on my behalf and in my name, upon receipt of the invoices, as they undertake to do when accepting the representation.

Please accept, Madam Director General, the expression of my highest consideration.

Date, name and signature of the legal representative (2) of the applicant/holder preceded by the handwritten note " *Good for representation* "	**Date, name and signature of the representative in Europe preceded by the handwritten note " *Good for acceptance of representation* "**

(1) *Only for French companies.*
(2) *The legal representative is the person legally responsible for the company.*

SHEET 005 - NF APE MARK

TECHNICAL FILE MODEL by product reference

The technical file must be composed of at least the following elements. It may be supplemented by quality plans, control plans, and a quality manual. Its codification must allow traceability to establish a link with the version that is the subject of type testing.

The technical file elements are organized in the order defined below.

This file can be communicated to CERTIGAZ in electronic format (in PDF format) on the condition that all these elements are contained in a single PDF file per product reference.

1 **The information that appears on one of the 005 forms below according to the family. Part of the information on form 004 (Excel file downloadable from the CERTIGAZ website) appears in the 005 forms. During an extension or maintenance, form 004 may be optional depending on the nature of the modification.**

2 **The overall plan or diagram** (accessories, triggers, etc.)

3 **The nomenclature or information of products made up of several components**

4 **Detailed plans or information of all components** (defining precisely the materials used)

5 **The plan or marking information**

6 **The definition of the codification of the batch number indicated on the certified product**

7 **Instructions (installation, usage, as appropriate) ➔In compliance with regulations, as there are often no instructions**

8 **The type of packaging ➔In view of the regulations because often there is no information on the packaging and its marking**

9 **ACS (certificate of health conformity) for drinking water application (application group 2-W)**

10 **Material conformity certificates according to the respective specifications:**

10.1 For PE resin, NF114 certificate (available on the LNE website) and 3.1 of the NF EN 10204 standard (under audit)

10.2 For metal parts or components or other resins of the components, standard certificate document 3.1 of standard NF EN 10204 (under audit)

10.3 For seals, material certificate according to:

- **ISO 16010, NF EN 549 or NF EN 682 with hardness and temperature classes for gas application**
- **ISO 4633 or NF EN 681-1 for water applications**

If a certificate is not available but only conformity tests according to a required standard are available, CERTIGAZ will request a test report according to the required standard every 2 years during audits. These tests may be carried out at the French ELANOVA laboratory following the collection of samples conforming to the required standards by CERTIGAZ.

10.4 For lubricants contributing to sealing, certificate according to EN 377

If the lubricant does not have certification according to EN377 but has been used historically for many years by the manufacturer/holder, without generating any complaints, CERTIGAZ may accept it as an exception.

10.5 For adhesives contributing to waterproofing, certificate according to EN 751-1 or EN 751-2 with NF540 certification

11 **Description of tools**

11.1 Key for PDB punches, B1 family

11.2 Compatible tools for implementing RPCs, E2 family

11.3Compatible tools for the implementation of shut-off and/or bypass connections, family B2

TECHNICAL FILE NO.: **revision :** **Date :**

Families A, B, C

1 - DESCRIPTION

TABLE 1

Trademark	
Commercial reference	
Type of part (Sleeve, Saddle (*), Reduction, Elbow, Tee, Other to be specified)	
Identification system (batch number, manufacturing period, other)	
Nominal diameter	
Stop (removable or not, to be specified)	

(*) Specify whether the saddle is one-piece or if there is a lower saddle or girth and the tool to be used.

TABLE 2

PART	RESIN	COMMERCIAL REFERENCES
Fittings		
Welding area		

Claim: (check the box(es)) **PE 100-RC** ☐ **PE 100-RD** ☐ **PE 100-HT** ☐

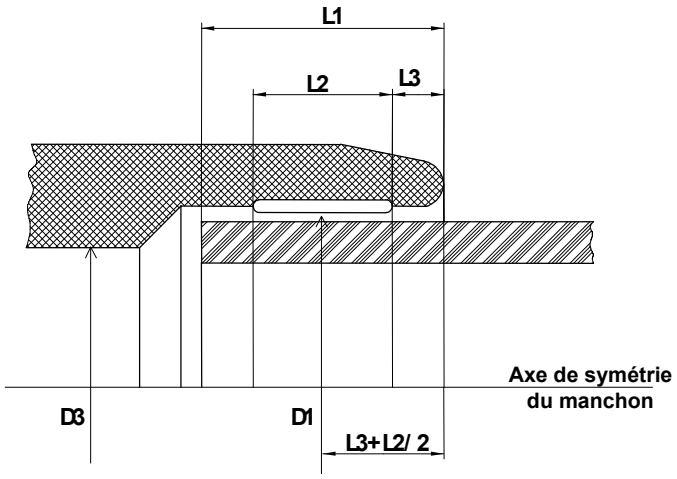
TABLE 3

Electrical connection	(See table 6 in addition)
Shape of connectors	(See table 6 in addition)
Application Limits: (Series/SDR tube, internal insert, use, storage duration)	

2 - GEOMETRY OF THE ASSEMBLY

In the absence of a connection plan, diagrams such as those shown below can be used in the file. The symbols shown below comply with the product standard.

2.1. - SOCKET CONNECTION



E: Thickness measured at any point
D1: Inner diameter of the socket, measured at L3 + L2/2
D2: Minimum internal diameter in the socket length (L1)
D3: Minimum internal diameter of the fitting
E1: Thickness at D1 level
E3: Minimum thickness outside L3
L4: Distance between welding zones
L1: Length of tube penetration

2.2 - SLEEVES

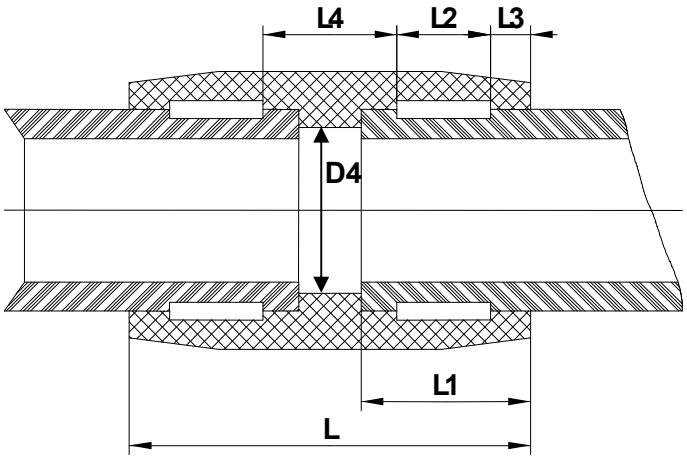


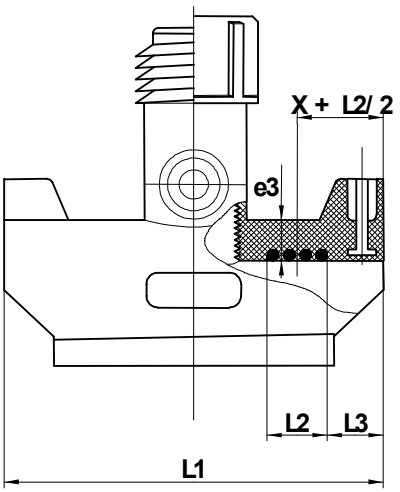
TABLE 4

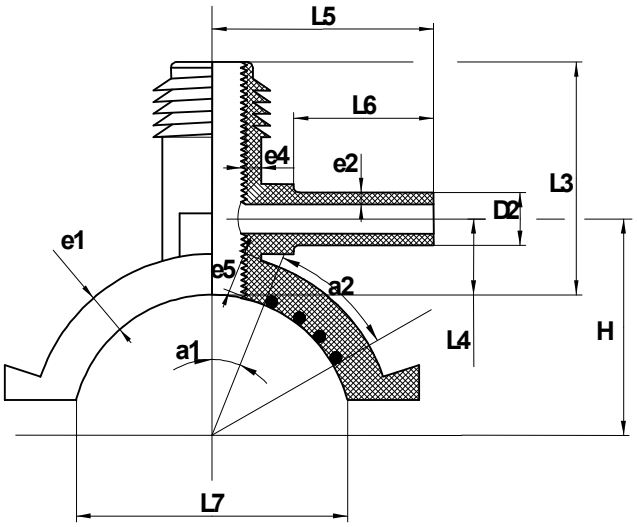
SETTING	UNIT	NOMINAL	MINI	MAXI
L	mm			
L1	mm			
L2	mm			
L3	mm			
L4	mm			
D1	mm			
D2	mm			
D3	mm			
D4	mm			
E	mm			
Ovalization	mm			
Stop *				

* for gas applications, the stop is recommended for dn < 63; In all cases, indicate if there is a stop and if it is fixed or removable.

2.3 - SADDLES

The diagrams in this figure are given as an example. The manufacturer will indicate on his diagram the dimensions as shown in the attached example.





e4: minimum thickness of the saddle barrel

e5: minimum thickness in the welding zone

TABLE 5

SETTING	UNIT	NOMINAL	MINI	MAXI
e1	**mm**			
e2	**mm**			
e3	**mm**			
e4	**mm**			
e5	**mm**			
D1	**mm**			
D2	**mm**			
L1	**mm**			
L2	**mm**			
L3	**mm**			
L4	**mm**			
L5	**mm**			
L6	**mm**			
L7	**mm**			
a1	**Degrees**			
a2	**Degrees**			
K			pressure loss coefficient in accordance with the product standard	

For the connection sockets, the main specifications of the punch function are specified:

- Material of the punch body and cutting part
- Cutting diameter
- Drill operating key (male hexagonal key of 10, 12 or 17 according to standard NF T54-970)
- For gas application:
  - MOP of the connection socket
  - Leakage level during operation (0 or <200l/h under MOP according to standard NF T54-970)

2.4 - OTHER CONNECTIONS

In the case of other electrofusion fittings (reducers, elbows, tees), the dimensions of the sockets must comply with those indicated in § 2.1 and 2.2.
In the case of male end fittings, it is necessary to specify all other characteristic dimensions.

2.5 - MBDI

General plan and nomenclature of the MBDI with the side plan of the cuff alone as well as its PE material and its resin code.

3 - CHARACTERISTICS

3.1 - ELECTRICAL

TABLE 6

CHARACTERISTIC	UNIT	NOMINAL	MINI	MAXI
Resistance to 23°C	Ω			
Thread material	*Shade of material according to the standard to be specified*			
Wire diameter	mm			
Linear resistance	Ω/m			
No winding	mm			
Number of turns				
Winding diameter	mm			
Connector material	*Shade of material according to the standard to be specified*			
Connector diameter	mm			
Connector height	mm			

Specify the technology used to produce the electrical part (insertion of wires, injection on wires, injection on a wire holding profile, etc.)

3.2 – SEALS

Indicate dimensions, gasket materials, hardnesses, temperature ranges, certifications.

3.3 – OTHER CHARACTERISTICS

You must indicate all characteristics that are important to declare, for example:

- the drill with the operating tool,
- the integrated trigger of the connection sockets,
- steel end protection means, family A2 (see family D3).

4 - WELDING PARAMETERS

4.1 - DEFINITIONS

T_R = Reference temperature: 23°C
T_m = Minimum temperature at which the fitting can be welded
T_M = Maximum temperature at which the fitting can be welded

4.2 - INFLUENCE OF TEMPERATURE

TABLE 7

TEMPERATURE	SETTING	UNIT	NOMINAL	MINI	MAXI
T_R	Time	s			
	Energy	kJ			
T_m	Time	s			
	Energy	kJ			
T_M	Time	s			
	Energy	kJ			

4.3 - TYPE OF REGULATION

Specify the type of regulation used (voltage, intensity or energy):

TABLE 8

PARAMETERS	UNITS	NOMINAL
Time	s	
Tension Intensity Regulated energy	V HAS kJ	

Any correction of welding conditions based on a parameter other than temperature must be specified by the manufacturer.

4.4 - COOLING TIME FOR ELECTROWELDABLE ACCESSORIES

Indicate the cooling time required to reach, at 23°C ambient temperature, the 2 temperatures (at the interface of the welding zone) defined in table 10 below:

TABLE 9

Designation for marking on accessory or label	Temperature at the welding zone	Cooling time (min)	Comment
CT $_{110°C}$, CT 110 or CT110	110°C		
CT $_{70°C}$, CT 70 or CT70	70°C		
CT $_{70°C}$, CT 70 or CT70	<70°C		*Optional line*

5 - TOOLS

The manufacturer must specify the mechanical tools required for the installation or implementation of the connection, in particular for:

- The key to operate the drill for the B1 family,
- Compatible tools for sealing, bypass and/or ballooning tappings , family B2. These are reported in the certificates.

Note: The roughness and generally the surface appearance of the fittings is compatible with the sealing method of the tools declared compatible. This area where sealing is required with the tools is mentioned on the plans and the instructions must alert on these areas for proper implementation.

6 – DESCRIPTION OF BAR CODES

6.1 Welding

electrofusion fittings , description in table form, of the code digit by digit, according to standard NF ISO 13950.

6.2 Component traceability

Tabular description of the code digit by digit, according to ISO 12176-4.
electrofusion fittings and optional for other fittings.

Families D1, D2, D3

1 - DESCRIPTION

1.1. – IDENTIFICATION

- **Manufacturer name**
- **Trademark**
- **Commercial reference**
- **Mechanical connection type**
- **Identification system (by batch number or manufacturing period etc.)**

1.2. - ADDITIONAL CHARACTERISTICS

- **Composition**
  - Nature and reference of materials (standardized designation and reference standard):
  - PE :

Claim: (check the box(es)) **PE 100-RC** ☐ **PE 100-RD** ☐ **PE 100-HT** ☐

  - brass :
  - steel :

- **Coating type for metallic bodies** (family D3)
  - Nature of the protection for the PE/metal junction
  - Color
  - Material reference (standard designation and reference standard)
  - Nature of the peelable coating
  - Designation
  - Color

- **Composition of sealing gaskets**
  - Nature
  - Material reference
  - Hardness
  - Temperature range
  - Certification

- **Installation instructions specific to the connection**
  - Tightening torque…

2 – GEOMETRY

- a dimensioned overview
- a detailed dimensioned plan of the constituent parts

Families E1, E2, E3

1 - DESCRIPTION

1.1 - IDENTIFICATION.

- **Manufacturer name**
- **Trademark**
- **Commercial reference**
- **PE faucet type**
- **Identification system (by batch number or manufacturing period, etc.)**
- **Nominal diameter and SDR (or series) of PE sleeves**
- **Type of turning point (cylindrical or spherical, etc.) with diameter and/or fluid passage section**
- **Saddle type for RPCs (model, reference, supplier)**

Attach the technical files of the saddles

1.2 - ADDITIONAL FEATURES

- **Body composition**

- Nature of the material(s)
- Reference of the material(s) (standardized designation and reference standard)
- closing direction (for applications other than gas):

- **Composition of the cuffs**

- Resin reference
- Classification (MRS 8 or 10)

Claim: (check the box(es)) **PE 100-RC** ☐ **PE 100-RD** ☐ **PE 100-HT** ☐

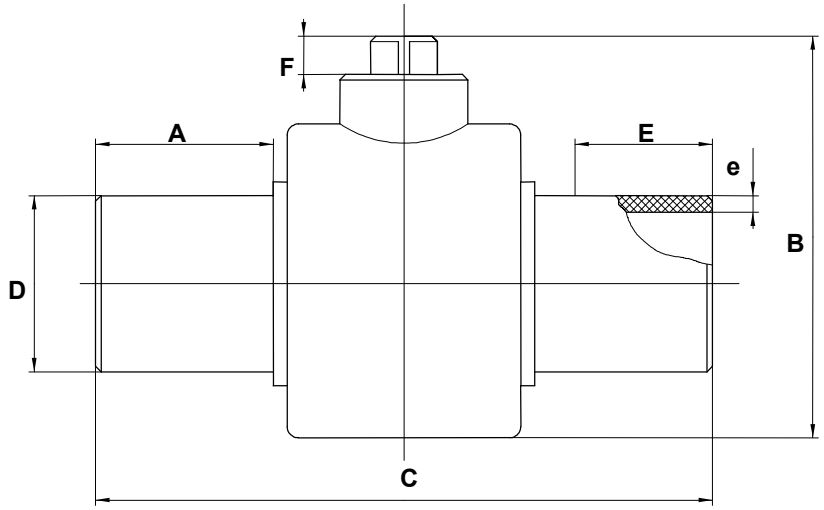
- **Body/sleeve assembly type** (butt weld or socket, mechanical or other...)
- **Type of valve/saddle assembly** (butt weld or socket, mechanical or other...)
- **Composition of the joints**

	Internal sealing	**External waterproofing**
- Nature - Material reference - Hardness - Temperature range - Certification		

2 - GEOMETRY

According to the different products below, specify the product groups by body type, control type, passage section (shape and surface), shutter type (cylindrical, spherical, etc.), technology, etc.

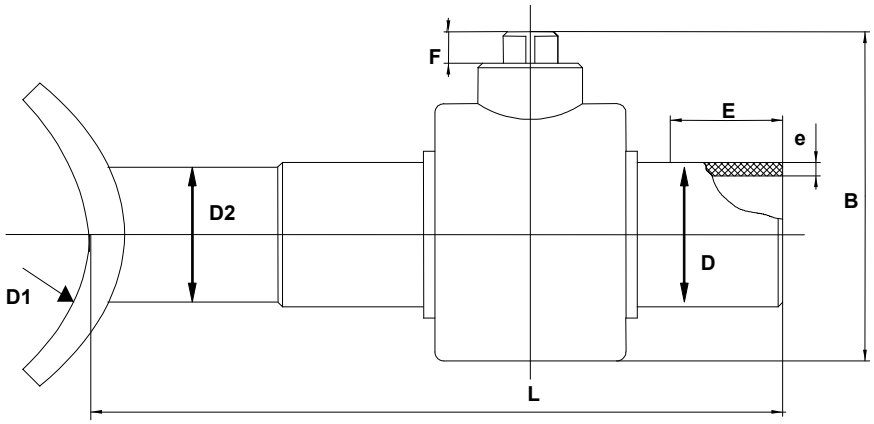
2.1 – Faucet



A = Cuff length
B = Total height of the tap
C = Total length of the tap
D = Outside diameter of the cuff
E = Useful weld length
E = Thickness of the cuffs
F = Height of the maneuvering square

2.2 - RPC

In addition to the faucet dimensions, specify the following dimensions L, D1 and D2.



2.3 - Bleed valve

- Configuration retained with the nomenclature of the different components with detailed plans
- Dimensional according to § 2.1 above with the purge(s) (center distance, dn, length, etc.)
- Composition of the purges (Resin reference, PE NF tubes, classification -MRS 8 or 10-, SDR)

3 – TOOLS

For the implementation of the RPCs, compatible tools are mentioned in the technical file to be reported on the certificates.
Note: The roughness and generally the surface appearance of the fittings is compatible with the sealing method of the tools declared compatible. This area where sealing is required with the tools is mentioned on the plans.

Part 8
LEXICON

The product standards glossaries are applicable for technical terms.

Abandonment: The owner requests the termination of the right to use the trademark on all or part of its products.

Grant of the right to use the NF mark: Authorization granted by AFNOR Certification and notified by CERTIGAZ to an applicant, to affix the NF mark to the product for which the application was made. This agreement is materialized by a certificate

Audit: According to the NF EN ISO 9001 standard:
Part of the site visit relating to the examination of a product and assessment of the specific means implemented to ensure its compliance with the requirements set out in the certification standard.

Warning : Decision taken by the certification body by which the holder must correct the deficiencies. Sanction decision, following the finding of non-compliance with a low non-recurring impact or with low recurrence, on the safety of the product, property or people, notified by CERTIGAZ, by which the holder is asked to correct the defects noted within a shorter period than an observation, set by CERTIGAZ, during which the right to use the NF mark is not suspended.

Consensus According to standard NF EN 45020:
General agreement characterized by the absence of firm opposition to the essence of the subject from a significant part of the interests at stake and by a process of seeking to take into account the views of all the parties concerned and of reconciling any divergent positions.
Note: Consensus does not necessarily imply unanimity.

Request : Letter by which an organization requests the right to use a certification mark, declares that it knows and undertakes to respect the certification standard in its entirety.

Applicant: Legal entity requesting certification and which undertakes to control the conformity of its product to the certification standard in question.

Right to use the NF mark: Right granted by AFNOR Certification to an organization to use the NF mark for products of the application concerned in accordance with the General Rules of the NF mark and the relevant certification standard.

Footprint: The interior space of a mold to be filled to form the molded product. When multiple products are produced from a single injection, it is called a multi-cavity mold. In this case, each cavity must be distinguishable to ensure its monitoring.

Extension : Authorization granted by AFNOR Certification and notified by CERTIGAZ to an applicant, to affix the NF mark to the modified product for which the application was made. This agreement is evidenced by a certificate.
This procedure by which a file of an applicant for certification is processed, and which comes from a holder, concerns a product already admitted to the mark and which is the subject of modifications or a new product derived from a product already admitted to the mark.
The extension is major when testing and/or audits are required and minor otherwise.

Batch :	A batch is a set of products, of the same model, manufactured during the same manufacturing campaign with the same composition (same batch of resin or alloy). A manufacturing campaign is understood to mean the period during which a defined and homogeneous quantity of products is manufactured under uniform conditions without any stoppage which would compromise the manufacturing conditions. The batch is defined and identified by the manufacturer and must allow the traceability of the product.
Maintenance:	Authorization granted by AFNOR Certification and notified by CERTIGAZ to an applicant, to affix the NF mark on an already certified product for which the modification does not require any technical examination (example: change of reference or trademark; aesthetic modification without functional impact, etc.).
Representative :	A legal entity or natural person established in the EEA (European Economic Area) or EFTA (European Free Trade Association). who has a function of representing the applicant/holder outside the EEA/EFTA and has a written mandate from the latter indicating that he can act on his behalf for any question relating to the use of the NF mark, the certification process and invoicing. The agent can be the distributor or the importer; their different functions are clearly identified.
Major non-conformity:	Deviation from a requirement of the reference system affecting the organization, application or formalization of the QMS, the product or the process (manufacturing/control, etc.) and resulting in a proven risk (i.e. based on objective elements) of non-compliance, recurring or unique in the event of a very significant risk, of a specified requirement, linked to the safety of the product.
Minor non-conformity:	Deviation from a requirement of the standard affecting the organization, application or formalization of the QMS or the process (manufacturing/control, etc.) and not resulting in a significant risk of non-compliance with a specified requirement not linked to the product.
Observation :	Decision taken by the certification body by which the holder must correct the deficiencies. Sanction decision, following the finding of non-compliance with no or very little non-recurring impact on the safety of the product, property or people, notified by CERTIGAZ, by which the holder is asked to correct the defects noted, during which the right to use the NF mark is not suspended. The corrective actions are reviewed during the next monitoring.
Strong point	Point which exceeds the requirements of the reference document, or is particularly efficient.
Sore point	Item compliant during the audit but fragile in the short or medium term.
Admissibility:	Status of a file which allows the application to be processed; admissibility relates to the administrative parts of the file.
Reconduction:	Decision by which the holder is granted the right to use the NF mark within the framework of surveillance.
Renewal :	Decision by which the holder is granted renewal of the right to use the NF mark (tacit renewal of certificates).
Withdrawal :	Decision taken by the certification body which cancels the right to use the NF mark. Withdrawal may be imposed as a penalty or in the event of abandonment of the right to use by the holder.

Suspension: Decision taken by the certification body which cancels for a fixed period the authorization to use the NF mark.
The suspension may be pronounced as:

- of sanction following the observation of non-compliance with a strong impact or a weak impact with significant recurrence, on the safety of the product, goods or people,
- temporary abandonment by the holder.

Holder : Legal entity, manufacturer or distributor, which benefits from the right to use the NF mark.

Manufacturing unit: Factory ensuring the manufacture of the products covered by the Standard as well as responsibility for the final testing and inspection of the products.

Place of production of PE accessories: geographical unit(s) where at least assembly and final inspection are carried out.