ATG-Sert Rules

In litigation, the French version applies

1 Purpose and scope

These Specific Certification Rules of the ATG Mark define the specific conditions for the granting and maintenance of the ATG Mark for copper press fittings for use on combustible gas and liquefied hydrocarbon installations in residential buildings and their outbuildings, as well as in livestock buildings and greenhouses.

They also cover intermediate copper-alloy fittings:

- Male tubular fittings with threaded fitting meant to be crimped with a crimping fitting. Those are considered as a tube extra quality (see. 5.1.3).
- Crimping female fittings with threaded fitting.

These Certification Rules shall apply in addition to the General ATG Certification Rules.

The Decree of February 23rd, 2018, completed by the CNPG AMG guide makes the specifications CCH 2004-02 of October 2nd 2018 "Copper press fittings for use on gas installations" as from January 1st 2020 mandatory and recognises the granting of the ATG Mark by CERTIGAZ as proof of conformity to the specifications of the fittings.

2 Definitions

The definitions contained in CCH 2004-02 (see Part 1, C) shall apply.

3 Marking

The marking rules for products, their packaging and instructions are defined in CCH 2004-02 (see Part 1, F) and the annex 2 of the present rules.

In addition, the press fittings shall bear the letters ATG or the ATG logo under the same conditions as the other required markings.

Information required by other markets may be incorporated to the product marking but shall not result in confusion and may be explained in the instructions.

The marking process must ensure the information durability.

The marking on the packaging may include the marking information and shall also specify the batch number.

The instructions and commercial documents relating to the press fittings certified by the ATG Mark must refer to the ATG Mark and bear the ATG logo and no interpretation can be made if the accessories are not certified.

4 Certification criteria

4.1 Obligations

No specific requirements other than those specified in the application file (see annex 1).

Those engagements shall meet the certification requirements of the NF EN ISO CEI 17065 Standard.

4.2 Requirements applicable to copper press fittings

Copper press fittings bearing the ATG Mark shall comply with the following specifications:

- Specifications AFG CCH2004-02 ed2 (October 2018): Copper press fittings for use on gas installations.
- The ATG-Sert Certification Rules and its Annex 2.

4.3 Quality management requirements

4.3.1 Quality management system

The minimum provisions in terms of quality assurance that the applicant/holder shall adopt and implement so that the products covered by the ATG-Sert Mark are manufactured and/or distributed at all times in accordance with these certification guidelines are defined below.

By making use of the ATG Mark, the holder makes a commitment regarding the permanent quality of the certified products that it manufactures and/or supplies to its customers. In the context of the ATG-Sert Mark, the applicant/holder shall provide proof of the existence and effectiveness of its quality record.

The objective to be achieved by the applicant/holder shall be process control (as defined in Standard NF EN ISO 9000) and the maintained compliance of its products with the models initially certified.

Achieving this objective requires that the applicant/holder should implement its own means whose performance is assessed during the admission visit and verified during follow-up visits. The quality requirements of this ATG-Sert Mark are defined below and are based on the requirements of NF EN ISO 9001 whose scope is limited to the field of application. The following table summarises these requirements based on the version of the standard.

Quality requirements	**Requirements *§ NF EN ISO 9001 (2015)**	
General requirements	4.1 - 4.2	Required for the product manufacturing processes.
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 development		
Product development planning	8.1	Required
Customer-related processes	8.2	Required for customer complaint management
Purchasing	8.4	Required
Control of service production and preparation	8.5.1	Required
Identification and traceability	8.5.2	Required
Product preservation	8.5.4 - 8.5.5	Required
Control of monitoring and measuring equipment	7.1.5	Required
Measurements, analysis and improvement		
Product monitoring and measurement	8.6 - 9.1	Required
Control of non-conforming product	8.7 - 10.2	Required
Corrective action	10.2	Required

(*) These requirements also apply to subcontractors if any

4.3.2 In-process control plan

4.3.2.1 Raw materials

The characteristics of raw materials used in the manufacture of press fittings (bodies and seals) shall be guaranteed by the manufacturer (raw material certificates and/or internal controls).

The traceability of batches of raw materials in relation to batches of finished products shall be ensured.

4.3.2.2 Dimensional characteristics

The manufacturer shall set up procedures to ensure that the allowable manufacturing tolerances for the press fittings are in accordance with the declared values drawn from the initial type tests.

The definition of the necessary metrological verifications are left to the discretion of the manufacturer. These verifications shall be carried out at the start and end of the batch and repeated every 4 hours (2 per shift).

If the process is stable with relevant records to prove it, the frequency may be increased to 8 hours.

4.3.2.3 Batch release tests (BRT)

A batch of press fittings is a set having the same nominal diameter, form and marking, manufactured on the same machine without modifying the manufacturing parameters, from the same batch of raw materials. The batch shall be defined and identified by the manufacturer.

The test characteristics and minimum frequencies shall correspond to the data in the table below:

Property	Test sample	Article or paragraph specifying the corresponding test	Minimum number of fittings/test	Minimum test frequency if reduction (2)
Axial slipping until rupture for a tube grade (DNxthickness and state) (1)	Batch	Based on §E2.2 of CCH2004-02 The manufacturer shall define the operating procedure (tube grade, thickness, etc.) and record the results and comments to carry out the necessary statistics analyses to conclude to the compliance and correlation with the family history (DN, form, raw materials)	At least 1 but still to be defined by the manufacturer	20% of the batches and at least 1 batch per year
Dimensions and nut tightening resistance	Batch	Depending on the product family : - JPC/JPG => NF D36-136 dimensions & NF E 29-532 §7 - JSC => NF D 36-136 dimensions & NF E 29-536 §6 - GPL => NF D 36-136 dimensions & CCH2020-04 §4.3	2	All batches

(1) The pressure required to achieve rupture, uncoupling or leakage shall be greater than or equal to the average observed during the type tests for each diameter and weighted tube grade with a coefficient of 0.7 without being less than 40 bar. If the pressure reaches 180 bar without failure, the test could be stopped and the batch shall be declared compliant.

(2) Rules reduced of BRT: If the history of the release records of each batch by product demonstrates a good process control (low dispersion and a satisfactory safety margin compared to the limit of 40 bar), the control can be reduced. In other words, for the product concerned, the test shall not be performed for each batch. The frequency shall be determined by the manufacturer based on the history but shall not be lower than the values in the table above. These provisions shall be verified during monitoring audits.

In the event of non-compliance of only one sample in the tested batch, another batch of samples consisting in at least twice the original batch of samples, from the same production batch, shall be retested; and if one of the new samples is found to be non-compliant, the production batch shall be rejected. If the non-conforming product was subjected to a reduced control, the following 5 batches at least shall be controlled before returning to a reduced control and the corrective actions taken shall have to be documented.

5 ATG certification process

5.1 Admission

5.1.1 Application file

The model application file is given in Annex 1.
If a certified product is reconditioned by another entity than the initial applicant, with or without commercial brand or references changes, then it is considered as an admission application by maintenance.

5.1.2 Audit(s)

The manufacturing site shall always be audited at admission to ensure the points set out in §4.3 and ATG General Rules. When the manufacturing site is ISO9001 certified, §4, 5 and §9.3 of Standard ISO 9001, specified in Table §4.3.1 may be exempted from audit after analysis of the ISO9001 audit report.

The audit duration on site shall not be less than 1 day and a 0.5 day additional fee is applied for planification, preparation and redaction of the audit plan and the audit report and the eventual non-conformity monitoring.

If the manufacturer application involves multiple sites, by default, the audit duration for each site is 1 day long except in the cases where the concerned site activity does not justify it. The audit plan details the duration and the audited activities for each site. In the case of multisites audits, the redactional fee is of 0.75 day.

By derogation, the SQUAL100 procedure applies if the audit can not be made physically due to sanitary issues. However, this disposition is not applicable for critical products who must be 100% release tested.

If a subcontract is done with another society and if this activity can impact the product quality without any possible analysis by the applicant, then this subcontracting society is also audited by CERTIGAZ.

In the case of a maintenance, a 0.5 day reduced audit and a 0.5 day redactional fee are applied by CERTIGAZ to check the markings conformity.

5.1.3 Tests

5.1.3.1 Crimping part specifics tests

The admission tests shall be those defined in CCH 2004-2 with the information in Annex 2.

When so-called “intermediate” copper-alloy fittings consist of a tube end and another threaded end (male copper-alloy crimping fittings with mechanical coupling), they shall be considered an additional tube grade and shall meet the requirements of the mechanical batch 1 tests.

The tests shall be carried out by the Nantes CETIM, which is the independent Mark laboratory.

However, any test carried out in a laboratory accredited by a member of the EA (European Cooperation for Accreditation), whose application field mentions CCH2004-02, may be retained after analysis of the report by CERTIGAZ to ensure the test conditions.

A manufacturer’s laboratory may be authorised by CERTIGAZ to perform mechanical type tests or monitoring tests in accordance with Specifications CERTIGAZ SLAB100 and after completing an application form. Verification tests shall then be carried out in the independent Mark laboratory or in the manufacturer’s laboratory in the presence of a person mandated by CERTIGAZ.

These verification tests shall consist in performing at least one test of each type within the scope of certification for the application for admission or the monitoring considered.

After the first certification of the manufacturer’s laboratory, the following annual monitoring test shall be inter-compared with the Mark laboratory. In this case, the number of test specimens sampled shall be 2 per lab instead of 3. CERTIGAZ may apply this provision after a change in the authorised manufacturer’s laboratory.

The applicant shall guarantee the representativeness of the fittings submitted for admission.

The applicant shall prepare the samples for the independent laboratory in agreement with it and the dispositions contained in Annex 2. This preparation shall consist in supplying the test specimens and crimping the fitting(s) to the recommended copper tube lengths. Otherwise, this operation shall be carried out in the independent laboratory by the applicant.

When the application concerns a modification, the test plan may be reduced. It shall be defined by CERTIGAZ depending on the nature of the modification. The CETIM laboratory may be asked to draw up this test plan. In case of doubt, the Special Committee of the Mark may be called upon to give an opinion. If there is still any doubt, the initial tests shall be performed as a safety and precautionary measure.

In the case of an extension of compatibility with R250 pipes thickness 0.8, the batch 1 tests are made on every DN and the shear stress, crushing and shock tests are made on the 2 extremes DN.

5.1.3.2 Specifics tests related to tools

New tools with the same crimping principle:

If a press-fit tool manufacturer is not referenced for a range of fittings, an extension may be requested by the fitting licence holder, who shall ensure compatibility with its fittings. It shall enclose a study file at its request along with a technical commercial description of the tool.

The tool manufacturer may also apply for a certificate of use of its equipment with a range of fittings certified already. In this case, only batch 1 tests shall be retained according to CCH 2004-02 (see Annex 2). The application must enclose a technical commercial description of the tool.

For an update of the compatible tools, an holder must make an application to CERTIGAZ for a revision of the concerned certificate(s). The application must enclose a technical commercial description of the tool. In this case, the update of the concerned certificate(s) by CERTIGAZ is covered by the annual fee.

Several crimping types or principles (crimping geometry: single and double for example) for the same range of fittings:

In this case, the number of samples taken for each admission or monitoring test shall no longer be 3 but 2 per crimping type, except for chemical and temperature cycle tests, which remain unchanged.

5.1.3.3 Threaded end specific tests

Depending on the product family, the following normative files applies in accordance to the coupling diameter:
- JPC/JPG => NF D 36-136 dimensions & NF E 29-532
- JSC => NF D 36-136 dimensions & NF E 29-536
- GPL => NF D 36-136 dimensions & CCH2020-04
- EN10226-1 => CCH2020-05

5.1.3.4 Marking durability specific tests

To ensure the markings durability on the product, the NF E 29-135 Standard paragraph 9 is applicable during the admission and during the marking process modification:

- First category: Name, logo or manufacturer registered trademark, GAS application and ATG conformity mark,
- Second category: Every other marking elements.

5.2 Monitoring

5.2.1 Audit(s)

The monitoring audits shall be carried out every year under the same conditions as the admission audits provided for in §5.1.2.

In the case of a maintenance or for externalised activities with low impact on the product, the monitoring audit is only done once during the 3 years long certificate duration.

By way of derogation, the SQUAL100 procedure applies if the audit can not be physically attended due to sanitary issues.

5.2.2 Tests

Monitoring tests shall be performed every year on fittings taken as samples by CERTIGAZ during audits specified in §5.2.1 or otherwise from retail shops or from the stocks of a reseller.

Once the samples are taken, the products shall be prepared by the holder or in the lab with the holder participation for the crimping of the various parts, according to the prescriptions of the ATG-Sert Rules and CETIM. They shall then be sent to CETIM, at the expense of the holder, within a maximum of one month.

5.2.2.1 Crimping part specific tests

The monitoring tests are the same as the admission tests as defined in §5.1.3.1 and concerned by batch 1 but they must be done successively on a unique DN for each certified crimping type as defined in CCH 2004-02 (see annex 2).

If the annealed pipes are not certified for the concerned DN, they are however tested, by way of precaution, in order to assess the risks for an eventual fieldwork usage, during a gas installation extension for example.

When the holder has declared the compatibility of several tools for the considered DN, the tooling shall not be the same each year to ensure monitoring with the various parameters.

5.2.2.2 Threaded ends specific tests

Depending on the product family the following standards apply:

Product family	Normative files	sampling
JPC/JPG GPL	NF D36-136 dimensions & NF E 29-532 NF D 36-136 dimensions & CCH2020-04	One coupling diameter per year
JSC EN10226-1	NF D 36-136 dimensions & NF E 29-536 CCH2020-05	One coupling diameter per year

5.2.2.3 Marking durability specific tests

The marking durability monitoring is ensured on an annual basis by the manufacturer according to the prescriptions of NF E 29-135 Standard, paragraph 9.

Those dispositions are verified during audits.

5.3 Information

In addition to §6.1 of the ATG General Rules, the list of certified fittings shall also specify the compatibility for each state and thickness of copper tubes and the tools recognised as compatible by each holder.

This list is available on the CERTIGAZ website: www.certigaz.fr

6 Approval

These ATG-Sert Specific Rules:

- were approved on April 27th, 2021, by the Managing Director of CERTIGAZ after consulting of the ATG-Sert Technical Committee;
- are applicable as of May 1st, 2021, except for changes subject to a transition period;
- cancel any previous version;
- may be modified by the Managing Director of CERTIGAZ after consulting the ATG-Sert Technical Committee.

7 Summary of changes

Revision no.	Date	Main changes made	Transition period if necessary
Creation	30/06/2008	Creation of ATG-Sert Specific Rules	NA
Rev1	18/03/2013	- §4.3.2.3 possibility of reducing batch release tests - §5.1.3 possibility of a reduced test plan in case of modification - §5.1.3 new Specifications SLAB100 for ATG-authorised manufacturer laboratories and inter-comparison tests. - §5.1.4 sampling in the case of different tools for a fitting range - Annex 1, add the seal raw material certificates to the technical file and modify the table of references - Annex 2, details on the tolerances of the tests in CCH2004-02 - Annex 2, details on the impact test and the minimum cross-section - Change of address of CERTIGAZ	None for all the modifications
Rev2	13/06/2016	- Integration of the 2 versions of ISO9001, 2008 and 2015 in §4.3.1 - Details on the frequency of in-process dimensional monitoring - Details on test specimen shipment times for annual monitoring tests - Performing monitoring tests by changing tooling brand each year when multiple brands are declared - Annex 2 adapted to the plan in CCH2004-02 - Details on the press-fit tool and its identification according to Standard NF EN 1775 - Details on possible end fittings (JSC fittings according to NF E 29-536, LPG fittings or conical male/cylindrical female fittings according to EN 10226-1) - Production of test specimens with copper alloy fittings - Integration of Specifications SROB100, Annex 2 for ammonia stress corrosion tests - In extension of Specifications ATG-B524, the DN54 copper tube, R290, 1.5 mm thick is certifiable for the crimping application. - Details on tolerances and implementation of tests - Correction in Annex 2 of the tables of test plans	- Both versions are usable until October 2018; after this, only the 2015 version - No - No - No - No - No - No - No - Applicable for new applications but mandatory after 31 December 2017 for certified accessories - No - No - No
Rev3	26/04/2021	- Update in order to mention the new regulatory files in relation with the February 23rd, 2018, Decree and the AMG guide. - Suppression of the reference to the ISO9001 2008 version Standard - Succession of CCH2004-02 ed1 by ed2 from october 2018 - Maintenance application - Management of multisite audits, in maintenance, remotely and for subcontractors - Monitoring for non-certified annealed pipes in compatibility - Updating rules for compatible tooling - Revision of annex 2 for the information which can be found in the edition 2 of CCH2004-02 - Precision on the technical file in unlocked pdf format - Various precisions and titular or representative country in Europe - Annex 2 §E0.1, clarification on the samples	No, already applied with or without incidence for already certified products.
		- Tests on threaded couplings	Applicable for 2021 certified products monitoring
		- Marking durability test and monitoring made by the manufacturer	6 months transition period to check on certified products

ANNEX 1

CONSTITUTION OF THE APPLICATION FILE

- Model application letter for admission reproduced on the letterhead of the manufacturer and prepared in accordance with the attached model (Document no. 1)
- General information form (Document no. 2)
- Identification form of the product subject to admission (Document no. 3)
- Technical file: dimensioned drawings of each fitting and seal

  NOTE: This technical file is sent in one unique unlocked pdf file in order to be validated by CERTIGAZ.
- Certificate of conformity to Standards EN549 and EN 682 for the raw material of the seals of the press-fit part
- Certificate of conformity to Rules NF078 for JPG/JPC flat seals
- Certificate of conformity to Standard EN549 for LPG seals

DOCUMENT No. 1

ADMISSION APPLICATION FORM

(to be drawn up on the manufacturer's letterhead)

Letter addressed to:

CERTIGAZ
ftao General Director
8 rue de l'Hôtel de Ville – CS 50102
F – 92200 NEUILLY SUR SEINE

Subject: Application for admission (initial, by maintenance, extension) to the ATG Sertissage Mark applicable to copper press fittings for use on gas installations.

Dear Sir,

I request permission to affix the ATG-Sert Mark on the products that I manufacture, in accordance with the applicable specifications which characteristics can be found in annex.

I declare that I have read the aforementioned texts, the ATG-Sert Certification Rules.

I agree:

- to comply fully with the requirements of the Certification Rules, as well as with the decisions taken or to be taken, in execution of said requirements;
- to sell products bearing the ATG-Sertissage Mark only after taking all the precautions to ensure their compliance with standards and specifications;
- to reserve the Mark and the reference of the products submitted to the ATG-Sertissage Mark only to the fittings conforming to those certified;
- to take all measures to protect the trademark submitted to the ATG-Sertissage Mark in order to have an exclusive right to this Mark under the industrial property legislation;
- to affix the Mark, unequivocally, on the certified products and only on them;
- to carry out the in-process controls required under the Rules of Certification of the Mark;
- to report without delay to CERTIGAZ any incident, any modification to the manufacturing method or organisation, and more generally, any fact likely to cause a variation from the conditions in which the Mark was granted;
- to facilitate the task of auditors mandated by CERTIGAZ within the framework of their missions;

DOCUMENT No. 1

- to provide any supporting documents required for the application of a penalty;
- to provide the products designated by CERTIGAZ free of charge for verifications and send them at my expense and under my responsibility to the laboratory designated by CERTIGAZ;
- to pay the amount of the costs for examination of the application laid down in the financial framework of the Mark, and to make any subsequent payments that may be claimed in accordance with the rules of the Mark;
- not to indicate on each and every printed advertisements or catalogues, characteristics other than those which are confirmed by the tests and which will be communicated.

(2) I also authorise the company ..... (3) represented by Mr..... (name and capacity) to represent me on French territory for all issues relating to the use of the ATG-Sertissage Mark.

(2) I consequently request that the expenses that are to be borne by me be invoiced directly to the said representative. This agent will ensure immediate settlement of invoices upon receipt on my behalf as bound so to do in accepting to represent me.

(2) I undertake to inform CERTIGAZ immediately of any appointment of a new agent replacing the above-mentioned agent.

Yours faithfully,

Date

*Seal and signature of **the representative*** (4)(5)

*Seal and signature of **the applicant*** (4)(5)

*Seal and signature of **the manufacturer*** (6)

Enclosures : General information form;
Product identification form;
Technical file(s).

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(2) Optional. This paragraph only concerns applicants located outside European territory (EEE and AELE)

(3) The designation of the agent company shall include: corporate name, form of the company, registered office, trade register number, to be entered on Document no. 2

(4) The signatures of the applicant and its representative in European territory (EEE and AELE) must be preceded by the handwritten words "*Approved for representation*" and "*Approved for acceptance of representation*", respectively

(5) Signature preceded by the handwritten words "*Read and approved*"

(6) In the case of the application by maintenance

DOCUMENT No. 2

GENERAL INFORMATION FORM

- **Company name and address of the applicant:**

  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....
  Information for billing (VAT no., SIRET): .....

- Where applicable, **name and address of the agent in France:**

  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....
  Information for billing (VAT no., SIRET): .....

- **Company name(s) and address(es) of the manufacturing unit(s):**

  § to be duplicated if multiple sites are concerned
  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....

- **Company name and address of the packaging unit** (if ≠ from the manufacturer):

  § to be duplicated if multiple sites are concerned
  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....

- **Company name and address of the fitting supplier** (if resold)**:**

  § to be duplicated if multiple sites are concerned
  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....

- **Company name and address of the site performing the release tests:**

  § to be duplicated if multiple sites are concerned
  .....
  .....
  Contact person: ..... Telephone: ..... Fax: .....
  Email: .....

DOCUMENT No. 3

FITTING IDENTIFICATION FORM
(To be attached to the technical file)

- **Trademark:** .....
- **Trade reference:** .....
- **Types and sizes of fittings:**

  Insert or attach a table in excel format as shown in the model below, duly completed

- **Specification of copper tubes (grade R220 - R250 - R290, thickness and diameter):**

  In the unshaded cells, Mark with a cross the copper tubes compatible according to Standard NF EN 1057 and Specifications ATG B.524 in accordance with the ATG-Sert Rules. These tubes are NF certified according to the NF090 Mark.

State	Thickness	Diameter									
		12	14	15	16	18	22	28	35	42	54
R220	1										
R250	0,8										
R250	1										
R290	1										
R290	1.2										
R290	1.5										

Dimensions in mm

- **Seal characteristics (attach certificates):**
  - Nature (elastomer family):
  - Supplier :
  - Reference (standard designation and reference standard):
  - Hardness:
  - Temperature range:
  - Colour:

  Note: The TGA characterisation test on the seal according to ISO 9924-2 may be provided.

- **Fitting raw materials (standard designation and reference standard):**
- **Crimping type:** ☐ **Single** ☐ **Double**
- **Tool(s) recommended for crimping:**

  Attach any additional document designating the tool and its use.

  Complete the table on the next page for the various tools.

Models of tables to be completed for identifying fittings (this table is filled with examples)

The facultative family code is identical to the one of the NF088 Mark when existing for crimping fittings

Press fitting (shape and designation to be specified: coupler, elbow, reducer, tee, etc.)	**Product family code**	**Trade reference**	**Outside diameter of the copper tube in mm or type of joint to be specified**			**Fitting raw material**	**Manufacturing site**
			End 1 F or M	**End 2 F or M**	**End 3 F or M**		
Straight fitting	*JPG*	*xxxxxxxxx*	F22	JPC swivel nut DN32 NF E 29-532	-	*www*	*B*
Straight fitting	*GPL*	*xxxxxxxxx*	F14	GPL swivel nut M20x150	-	*www*	*B*
Straight fitting	*JPC*	*xxxxxxxxx*	M16	JPC swivel nut DN20 NF E 29-532	-	*www*	*B*
Straight fitting	*JSC*	*xxxxxxxxx*	F14	JSC swivel nut DN15 NF E 29-536	-	*www*	*B*
Straight fitting	*EN10226-1*	*xxxxxxxxx*	F14	Rp 1/2"	-	*www*	*B*
F or M plugs	5031	*xxxxxxxxx*	F12	-	-	Cu	A & B
FF couplers	5270	*xxxxxxxxx*	F28	F28	-	Cu	A & B
Sliding couplers FF	5270	*xxxxxxxxx*	F18	F18	-	Cu	A & B
MF 90° elbows	5001	*xxxxxxxxx*	M14	F14	-	Cu	A & B
FF 90° elbows	5002	*xxxxxxxxx*	F16	F16	-	Cu	A & B
MF 45° elbows	5040	*xxxxxxxxx*	M15	F15	-	Cu	A & B
FF 45° elbows	5042	*xxxxxxxxx*	F22	F22	-	Cu	A & B
FFF equal tees	5130	*xxxxxxxxx*	F16	F16	F16	Cu	A & B
FFF Reduced tees	5130	*xxxxxxxxx*	F16	F14	F14	Cu	A & B
FF reducer	5243	*xxxxxxxxx*	F22	F18	-	Cu	A & B
MF reducer	5240	*xxxxxxxxx*	M35	F22	-	Cu	A & B

F or M: female or male fitting

Models of tables to be completed for identifying tools (those information appears in the ATG-Sert list)

Holder of fittings	No.	Year of certificate of declaration	Mark	Model	Model year	Force	Energy	One-piece jaws	" Universal" jaws + chain	" Universal" jaws + concentric inserts	" Universal" jaws + non-concentric inserts	" Universal" jaws + inserts offset in the spindle or inclined	Profile	Jaw mark	Identification mark on fitting after crimping	Link to photo of the identification mark

It is recommended to attach these tables which can be supplemented with other information in the form of additional columns, in paper format but also in the form of an Excel file.

ANNEX 2

Supplement to CCH2004-02, by paragraph

PART 1: Characterisation of copper press fittings and their jointing method

D) Characterisation of fittings

A dimensional measurement shall be performed on 3 samples of each trade reference for the main characteristics (standardised mechanical joint, press-fit part and dimensions).

D1) Specified fitting types

To be connected to existing copper or steel installations as appropriate, end fittings may be:

- A JPC/JPG fitting, compliant with Standard NF E 29-532 & NF D 36-136;
- A JSC fitting, compliant with Standard NF E 29-536 & NF D 36-136;
- A conical male (R)/female cylindrical (Rp) fitting, conforming to Standard NF EN 10226-1, only for gas installations not subject to the amended Decree of February 23rd, 2018;
- A female fitting with socket and swivel nut, M20x150 or G3/4 ISO228-1, compliant with the CCH2020-04 and the standard NF D 36-136.

E) Characterisation of joints

E0) Organisation of tests

When several brands of tools and/or types of jaws are recognised as compatible after analysis of the plans, the tests may be performed with a single type or a mix but the samples shall be identified.

E0.1) Description of test specimens

When an application concerns the 3 DNs 14, 15 and 16, the admission tests may be performed only on one of the DNs to qualify the three. However, dimensional verifications and axial sliding tests shall be performed on each DN.

For diameters 28 and 35, the batch 1 tests shall be performed for the only tube specified in Specifications ATG B.524.

For the diameters 42 and 54, the batch 1 tests shall be performed for the 2 thicknesses except for the bending test, which shall be performed with the maximum thickness.

For performing the various tests with copper-alloy fittings, the test specimens may be different from those described in CCH2004-02 depending on the type of fittings available with the applicant. Depending on these fittings, CERTIGAZ shall define the production of the test specimens necessary for each test.

In a general way, various possibilities of clogging and coupling of the samples can be taken into account. In the case where clogs or couplings include a crimping, this crimping is consequently subjected to the test requirements (for example, the tensile or axial sliding test).

E2.2) Axial sliding resistance

During the monitoring tests, this time shall be 24 hours minimum.

After the 35-bar test, the leak-tightness test is not necessary and the test is continued to determine the pressure at which the uncoupling, leakage or rupture occurs. This test provides mean values per DN and per tube grade that will serve as reference for the batch release tests.

E2.7) Crush resistance

If the cross-section is not respected, the test shall be non-compliant. But if the fitting is leaktight, the test shall be not blocking for certification since safety is ensured. The report shall indicate the maximum ball diameter that can pass into the test specimen.

E2.8) Impact resistance

For information, the cross-section shall be checked with the appropriate balls after the impact test. The report shall indicate the maximum ball diameter.

E3) Chemical resistance

E3.1) Ammonia tests for resistance to stress corrosion (resistance to stress cracking in ammonia) of copper-alloy connecting parts

Specifications of NF E 29-196 Standard shall be applicable. The conditions are the same as SROB100, Annex 2 (pH 13.1 for 120 hours).

ADMISSION			Test plan (see paragraphs of CCH 2004-02 and Annex 2 of the ATG-Sert Rules)												Test family						
			E1.1	E2.1	E2.2	E2.3	E2.4	E2.5	E2.6	E2.7	E2.8	E3.1	E3.2	E4	E1.2						
No. of samples	Test	Strain time (h)	Leaktightness 1 h 30 mbar And 1h 3 bar	Tensile	Axial sliding	Bending	Alternate bending	Torsion	Shear	Crush	Impact	Ammonia	Bleach Pentane Acid Salt bath Detergent	Min. cross-section	Leaktightness 10 min 3 bar	Batch 1	Batch 2	Number of diameters of the fitting 12 to 54	Tube grade Max. qty	Tube grade A: hard B: hard and annealed depending on DN C: least hard/DN	Fitting type (coupler, elbow, tee, etc.)	GS and crimping form (jaws)
3	Tensile	0.5	①	②											③	X		10	2	B	1	All
3	Axial sliding	48	①		②											X		10	2	B	1	All
3	Bending	0.5	①			②									③	X		10	1	A	1	All
3	Alternate bending	14	①and③				②									X		10	2	B	1	All
3	Torsion	1	①					②							③	X		10	2	B	1	All
3	Shear	1	①						②						③		X	2	1	C	1	All only for extreme diameters
3	Crush	1	①							②				④	③		X	2	1	C	1	
3	Impact		①								②				③		X	2	1	C	1	
3	Stress corrosion	24	①and③									②					X	2	1	C	1	
15	Chemical stress 5 baths	72 to 96	①and④			③							②				X	1	1	C	1	
3	Minimum cross-section		-	-	-	-	-	-	-	-	-	-	-	①	-	-	X	10	1	C	1	
3	Accelerated ageing / GS	840															X	1	1	C	1	

GS: crimping geometry (M: single or V: double)
Batch 1: all the diameters of the fittings shall be tested
Batch 2: all extreme diameters (minimum and maximum) of each crimping form shall be tested

MONITORING OR TOOLS (required by a tool manufacturer)				**Test plan** (see paragraphs of CCH 2004-02 and Annex 2 of the ATG-Sert Rules)													**Test family**					
				E1.1	**E2.1**	**E2.2**	**E2.3**	**E2.4**	**E2.5**	**E2.6**	**E2.7**	**E2.8**	**E3.1**	**E3.2**	**E4**	**E1.2**						
	No. of samples	**Test**	Strain time (h)	Leaktightness 1 h 30 mbar And 1 h 3 bar	Tensile	Axial sliding	Bending	Alternate bending	Torsion	Shear	Crush	Impact	Ammonia	Bleach Pentane Acid Salt bath Detergent	Min. cross-section	Leaktightness 10 min 3 bar	**Batch 1**	**Batch 2**	Number of diameters of the fitting 12 to 54	Tube grade Max. qty	Tube grade A: hard B: hard and annealed depending on DN	Fitting type (coupler, elbow, tee, etc.)	**GS** and crimping form (jaws)
Monitoring	3	Tensile	0.5	①	②											③	X		**1**	**2**	**B**	**1**	All
	3	Axial sliding	24 min	①		②											X		**1**	**2**	**B**	**1**	All
	3	Bending	0.5	①			②									③	X		**1**	**1**	**A**	**1**	All
	3	Alternate bending	14	①and③				②									X		**1**	**2**	**B**	**1**	All
	3	Torsion	1	①					②							③	X		**1**	**2**	**B**	**1**	All
Tools	3	Tensile	0.5	①	②											③	X		**10**	**2**	**B**	**1**	All
	3	Axial sliding	48	①		②										③	X		**10**	**2**	**B**	**1**	All
	3	Bending	0.5	①			②									③	X		**10**	**1**	**A**	**1**	All
	3	Alternate bending	14	①and③				②									X		**10**	**2**	**B**	**1**	All
	3	Torsion	1	①					②							③	X		**10**	**2**	**B**	**1**	All

GS: crimping geometry (M: single or V: double)

Batch 1: all the diameters of the fittings shall be tested

Batch 2: all extreme diameters (minimum and maximum) of each crimping form shall be tested