

TECHNICAL ASSESSMENT OF TRANSITION NO. ATT-21/034_V1

Valid from: "31 /07/ 2021"
to: "31/07/ 2024"

on the product of the following brands:

"PROFIT" / "PT"

of the family "processes for joining pre-grooved steel tubes"

issued following the CCFAT decision of 14/06/2017 as falling within the **traditional field of use** of the product for heating, cooling, air-conditioning, fire-fighting network applications (sprinkler).

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Version	Date	Main changes made	Modified part
V1	31/07/2021	Creation	/

FOREWORD

This assessment is given because the set of reference texts or "rules of the art" essential for a satisfactory deployment of the technique as a traditional technique is not available. It thus serves as a transitional assessment during this period of finalization of the rules of the art, based on the criteria retained at the time of the observation of the traditional character of the use of the process.

The authoritative version of the TTA is the one published on <http://evaluation.cstb.fr/rechercher/>.

1 DESCRIPTION

PROFIT couplings are designed for the assembly of grooved pipes and/or fittings. They consist of two casted housings which are positioned in the grooves. The assembly of these housings by means of two bolts to ensure the positioning and compression of an elastomer gasket.

2 EVALUATION CRITERIA

This section lists the examination criteria in force at the date of issue of the ATT (art. 8 of the ATT Internal Regulations), for the use of the product in the field of application defined on the cover page.

2.1 Area of use

Heating, cooling, ventilation, air-conditioning and fire-fighting (sprinkler) applications.

2.2 Materials and products

The materials comply with the relevant ASTM or European standards.

The segments are made of spheroidal cast iron with high ductility, type ASTM A 536 65-45-12. The castings can be protected against corrosion as follows: Painting by EPD process or powder coating -, hot dip galvanizing -, duplex coating systems (Class C5).

Seal rings are made of EPDM Grade E rubber (ASTM D-2000, temperature range -40°C to +110°C) or other (NBR, Silicone, FKM).

Bolts and nuts are made of steel with electro-galvanized corrosion protection and are manufactured in Grade 8 or Grade 9 depending on the type of fitting.

The products comply with FM class 1920, UL 213, EN 10311 and ASTM F1476-07/GMC TYPE1, Directive 2014/68/EU, Directive 2001/95/EU.

The products allow for the assembly of steel tubes in accordance with the standards:

- EN 10217-1, EN 10217-2 and EN 10217-7
- ISO 4200
- EN 10255
- EN 10220
- EN 10224
- EN ISO 10216-1
- NF A 49-115
- NF A 49-117
- NF A49-147
- NF A 49-141
- NF A 49-145
- EN ISO 1127
- ASME B36.10
- ASME B36.19
- ASTM A53
- ASTM A312

2.3 Size range

The range of fittings allows for the most common installations for the intended uses.

2.4 Implementation

- tools originating from or approved by the supplier.
- existence of technical documentation for installation and maintenance.
- in accordance with the provisions of DTU 60.1 Sanitary plumbing for residential buildings.
- according to the provisions of APSAD Regulation R1 "Automatic water sprinklers".
- For firefighting systems: according to NFPA13 in CEA4001.

2.5 Production

Existence of a factory production control on materials and finished products (dimensional, hardness, bending, pressure resistance).

3 TECHNICAL APPRAISAL

This section verifies the achievement of the examination criteria listed in section 2 (art. 8 of the Rules of Procedure of the TTA).

3.1 DESCRIPTION

PROFIT couplings are designed for the assembly of grooved pipes and/or fittings. They consist of two casted housings which are positioned in the grooves. The assembly of these housings by means of two bolts to ensure the positioning and compression of an elastomer gasket.

3.2 Assessment of the evaluation criteria

3.2.1 Use of the product

The product can be used for the following purposes:

- Heating application: 90°C with accidental peaks of 110°C
- Chilled water circuits for air conditioning: minimum temperature of 5 °C
- Glycol water circuits for air conditioning: minimum temperature of 5 °C
- Compressed air circuits: minimum temperature -40 °C, maximum temperature 110 °C
- Fire protection networks the following product use:
Minimum temperature of -40 °C, maximum temperature 50 °C.
*Air
*Nitrogen
*Water
*Glycol-mixtures
*Non corrosive liquids

3.2.2 Materials and products

The materials and products used are defined and characterized in accordance with the standards referred to in the chapter "Evaluation criteria".

3.2.3 Fitness for purpose

Based on the test results, the suitability of PROFIT fittings for use is considered to be satisfactory.

3.2.4 Size range

The range of fittings allows for the most common installations for the intended uses.

3.2.5 Implementation

The implementation specifications described in the Technical File are considered suitable for the product and comply with the provisions of the DTU 60.1 and the APSAD regulations "Automatic water sprinklers".

3.2.6 Production

The manufacture of the finished products is subject to a Factory Production Control. This CPU is regularly checked by the CSTB.

3.3 Conclusion

The use of the product in the relevant traditional applications is favorably validated



Walid JAAFAR

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4 TECHNICAL ANNEX

This section is a technical annex intended to inform users of the product for the field of use defined on the cover page (art. 8 of the Internal Rules of the ATT).

4.1 DESCRIPTION

4.1.1 Identity

Products trade name : Profit Fittings and Couplings GKS, GKA, GKPA, GKF, GRKF, FITPRO, GST, GSTFC, GMG, GMD, GB90, GB45, GB22, GB11, 2601, GBD, GT, GTR, GRTD, GAF, GSF, NGA, SGA, GRC, GRCD, GE, GER

Manufacturer:

Shandong Lede Machinery Co. Ltd., Song Village, Dakuang town, Lai Yang city, Shandong China

4.1.2 Definition

PROFIT couplings are designed for the assembly of grooved pipes and/or fittings. They consist of two half-collars which are positioned in the grooves. The assembly of these collars by means of 2 bolts ensures the positioning and the compression of an elastomer gasket ring ensuring the sealing.

4.1.3 Design specifications

Connection	Size range	Maximum allowable pressure
GKS Rigid coupling	DN 25 to DN 300	20.7 bar
GKF Flexible coupling	DN 25 to DN 300	20.7 bar
GRKF Flexible reducing coupling	DN 25-DN 300	20.7 bar
GKA, GKPA Rigid coupling	DN 25 to DN 300	20.7 bar
FITPRO Rigid quick coupling	DN 32 to DN 100	20.7 bar
GST, GSTFC Sprinkler Tee Series	DN25 to DN 65	20.7 bar
GMG, GMD Outlet branches series	DN 25 to DN 300	20.7 bar
GB90, GB45, GB22, GB11, 2601, GBD90 Fittings-elbow series	DN 25 to DN 300	20.7 bar
GT, GRT, GRTD Fittings-Tee's series	DN 25 to DN 300	20.7 bar
GAF, GSF Fittings-flange series	DN 25 to DN 300	20.7 bar
NGA, SGA Threaded Fittings series	DN 25 to 100	16 bar
GRC, GRCD Fittings-Reducers series	DN 25 to DN 300	20.7 bar
GE, GER Fittings-Caps series	DN 25 to DN 300	20.7 bar

Table of maximum allowable pressure per fitting. All references are available painted and hot-dip galvanized.

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Diameter	GROUP 2 /LIQUID	GROUP 1 /LIQUID	GROUP 2 /GAZ	GROUP 1 /GAZ
DN 25	21 bar	21 bar	21 bar	Prohibited use
DN 32	21 bar	21 bar	21 bar	Prohibited use
DN 40	21 bar	21 bar	21 bar	Prohibited use
DN 50	21 bar	21 bar	20 bar	Prohibited use
DN 65	21 bar	21 bar	15 bar	Prohibited use
DN 80	21 bar	21 bar	12 bar	Prohibited use
DN 100	21 bar	20 bar	11 bar	Prohibited use
DN 125	21 bar	16 bar	8 bar	Prohibited use
DN 150	21 bar	13 bar	6 bar	Prohibited use
DN 200	21 bar	10 bar	5 bar	Prohibited use
DN 250	20 bar	8 bar	4 bar	Prohibited use
DN 300	16 bar	6 bar	3 bar	Prohibited use
example	Water	Water/glycol mixture	Compressed air	

Directive PED 2014/68/EU-Art.4. Par.3 - Table of maximum allowable pressure per diameter (this table is not valid for application in sprinkler installations).

4.2 Implementation specifications

Two types of couplings are available: "flexible" and "rigid" fittings.

Flexible couplings style GKF are designed to allow longitudinal and angular movement of the pipes, Rigid couplings GKS, GKA and FITPRO prevent any pipe movements.

These fittings are intended for the connection of steel pipes in accordance with the standards:

- EN 10217-1, EN 10217-2 and EN 10217-7
- ISO 4200
- EN 10255
- EN 10220
- EN 10224
- EN ISO 10216-1
- NF A 49-115
- NF A 49-117
- NF A49-147
- NF A 49-141
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Grooving is carried out by rolling or by material removal and must preferably be carried out using PROFIT specific or approved tools.

The rules set out in the following documents must be taken into account during implementation:

- DTU 60.1 Sanitary plumbing for residential buildings.
- APSAD Rule R1 "Automatic sprinkler system".
- For firefighting systems: in accordance with NFPA13 and CEA4001.