TRANSITIONAL TECHNICAL APPRAISAL N° ATT-21/034_V2

Valid from: '6 March 2025'
to: '31 March 2028'

regarding the branded product:

'PROFIT'/'PT'

from the 'methods for assembling pre-grooved steel pipes' group of products

issued following the CCFAT decision of 14/06/2017 as falling within the **standard area** of use of the product for heating, air conditioning and fire-fighting (sprinkler) systems.

Holder: Piping Logistics BV
Industriezone Zuid III, Industrielaan 27
B-9320 Erembodegem
Belgium
Tel.: +32 53 645100
Website: www.pipinglogistics.eu
Email: info@pipinglogistics.eu

Technical Appraisal comprises 10 pages.

Version	Date	Principal amendments made	Amended section
V1	31/07/2021	Development	/
V2	07/02/2025	Amendment: • Addition of anti-corrosion protection process. • Addition of the GKE and GKA connector ranges	2.2 4.1.1

PREAMBLE

This appraisal has been provided as all the reference documents or 'best practices' essential to the satisfactory use of the technique as a standard technique are not available. It can therefore be used as a transitional assessment during the period when best practices are being finalised and is based on the criteria used to determine the process's standard use.

The correct version of the ATT is the one published on the website http://evaluation.cstb.fr/rechercher/.

1 DESCRIPTION

PROFIT connectors are intended for the assembly of pre-grooved pipes and/or connectors. They consist of two half-collars which are positioned in the grooves. These collars are assembled using two bolts to position and compress an elastomer seal ring which ensures watertightness.

2 ASSESSMENT CRITERIA

This section lists the inspection criteria in force on the date of issue of the ATT (art. 8 of the ATT's Internal Regulations) for the use of the product in the field of use outlined on the cover page.

2.1 Area of use

Heating, air-conditioning and fire-fighting (sprinkler) systems.

2.2 Materials and products

The materials comply with current ASTM or European standards.

The sections and connectors are made of highly ductile spheroidal graphite iron of type ASTM A 536 65-45-12. The segments can be protected against corrosion by: EPD coating, electrostatic powder coating, hot-dip galvanisation, duplex systems (corrosive environments Class C4/C5).

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

The nuts and bolts of the mechanical connectors are made of steel with electro-galvanised anti-corrosion protection, and are manufactured in Grade 8 or Grade 9 depending on the type of connector. On request, for use in corrosive C4/C5 environments, the bolts are provided with additional Geomet321B surface protection, which can withstand a minimum of 720 hours of salt spray testing.

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

The products can be used to assemble steel pipes which comply with the following 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 connectors means that the most common installations for the intended uses can be achieved.

2.4 Implementation

- tools belonging to or approved by the licence holder.
- the existence of technical documentation for carrying out the work.
- in accordance with the provisions of DTU 60.1 Plumbing and sanitary installations for residential buildings.
- in accordance with the provisions of APSAD Regulation R1 ‘Automatic water-based suppression sprinklers’.
- For fire-fighting systems: in accordance with the provisions of NFPA13 and CEA4001.

2.5 Production

Existence of Factory Production Control on materials and finished products (sizing, durability, bending, pressure resistance).

3 TECHNICAL APPRAISAL

This section ensures that the inspection criteria listed in section 2 (art. 8 of the ATT's Internal Regulations) are met.

3.1 DESCRIPTION

Mechanical connectors for the PROFIT/PT brand are intended for the assembly of pre-grooved pipes and/or connectors. They consist of two half-collars which are positioned in the grooves. These collars are assembled using two bolts to position and compress an elastomer seal ring which ensures watertightness.

3.2 Appraisal as regards the assessment criteria

3.2.1 Product use

The product can be used for the following purposes:

- Heating by radiators: up to 90°C with occasional peaks of 110°C
- Cold water systems for air conditioning: minimum temperature of 5°C
- Glycol water systems for air conditioning: minimum temperature of 5°C
- Compressed air systems: minimum temperature -40°C, maximum temperature 110°C
- Fire protection networks using the following fluids:
    1. Minimum temperature -40°C, maximum temperature 50°C.
        - Air
        - Nitrogen
        - Mix of water and glycol
    2. Minimum temperature 5°C, maximum temperature 50°C.
        - Water

3.2.2 Materials and products

The materials and products used are described and categorised according to the standards referred to in the chapter entitled 'Assessment criteria'.

3.2.3 Suitability for use

The results of tests carried out indicate that PROFIT connectors are suitable for the intended uses.

3.2.4 Size range

The range of connectors means that the most common installations for the intended uses can be achieved.

3.2.5 Implementation

The implementation specifications described in the Technical File are considered to be appropriate for the product and comply with the provisions of DTU 60.1 and the APSAD Regulations for 'Automatic water-based suppression sprinklers'.

3.2.6 Production

The manufacture of finished products is subject to a Factory Production Control (CPU). This CPU is regularly monitored by CSTB.

3.3 Conclusion

The use of the product for applications in the standard area has been assessed favourably.

'Water' Department
Director

Maxime Roger

4 TECHNICAL APPENDIX

This section is a technical appendix intended to inform users of the product for the area of use defined on the cover page (art. 8 of the ATT's Internal Regulations).

4.1 DESCRIPTION

4.1.1 Identity

Product trade name: Profit connectors GKS, GKF, GKA, GRKF, FITPRO, GST, GSTFC, GMG, GMD, GB90, GB45, GB22, GB11, 2601, GBD, GT, GTR, GRTD, GAF, GSF, NGA, SGA, GRC, GRE, GRCD, GE, GER.

Manufacturer:

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

4.1.2 Definition:

Mechanical connectors
PROFIT connectors are intended for the assembly of pre-grooved pipes and/or connectors. They consist of two half-collars which are positioned in the grooves. These collars are assembled using two bolts to position and compress an elastomer seal ring which ensures watertightness.

4.1.3 Design specifications

Connector	Size range	Maximum permissible pressure
GKS Rigid connector	DN 25 to DN 300	20.7 bar/300psi
GKF Flexible connector	DN 25 to DN 300	20.7 bar/300psi
GRKF Flexible reducer connector	DN 25 to DN 300	20.7 bar/300psi
GKA Rigid connector	DN 25 to DN 300	20.7 bar/300psi
FITPRO Rapid rigid connector	DN 32 to DN 100	20.7 bar/300psi
GST, GSTFC 'Sprinkler Tee' range	DN25 to DN 65	20.7 bar/300psi
GMG, GMD 'Exit connections' range	DN 25 to DN 300	20.7 bar/300psi

Connector	Size range	Maximum permissible pressure
Elbows GB90, GB45, GB22, GB11,2601, GBD90 ‘Elbow-fittings’ range	DN 25 to DN 300	20.7 bar/300psi
GT, GRT, GRTD ‘T-fittings’ range	DN 25 to DN 300	20.7 bar/300psi
GAF, GSF ‘Flange-fittings’ range	DN 25 to DN 300	20.7 bar/300psi
NGA, SGA ‘Threaded-fittings’ range	DN 25 to DN 100	20.7 bar/300psi
GRC, GRE, GRCD, ‘Reducer-fittings’ range	DN 25 to DN 300	20.7 bar/300psi
GE, GER ‘Stop-fittings’ range	DN 25 to DN 300	20.7 bar/300psi

Table of maximum permissible pressure per connection.

All the standard items are available in painted or hot-dip galvanised versions.

Diameter	GROUP 2/LIQUID	GROUP 1/LIQUID	GROUP 2/Gas	GROUP 1/Gas
DN 25	21 bar	21 bar	21 bar	Use not permitted
DN 32	21 bar	21 bar	21 bar	Use not permitted
DN 40	21 bar	21 bar	21 bar	Use not permitted
DN 50	21 bar	21 bar	20 bar	Use not permitted
DN 65	21 bar	21 bar	15 bar	Use not permitted
DN 80	21 bar	21 bar	12 bar	Use not permitted
DN 100	21 bar	20 bar	11 bar	Use not permitted
DN 125	21 bar	16 bar	8 bar	Use not permitted
DN 150	21 bar	13 bar	6 bar	Use not permitted
DN 200	21 bar	10 bar	5 bar	Use not permitted
DN 250	20 bar	8 bar	4 bar	Use not permitted
DN 300	16 bar	6 bar	3 bar	Use not permitted

Directive PED 2014/68/EU-Art.4. Section 3 - Table of maximum permissible pressure by diameter (this table is not valid for use in sprinkler installations).

4.2 Implementation specifications

Mechanical connectors: two types of mechanical connectors are available: ‘flexible’ connectors and ‘rigid’ connectors.

GKF flexible connectors are designed to allow a certain degree of longitudinal and angular movement in the pipes; GKS, GKA and FITPRO rigid connectors prevent any movement in the pipes.
The grooving is carried out by knurling or by removing material, and must be done using specific PROFIT tools or tools approved by Piping Logistics. The size of the groove must be in accordance with the ‘OGS’ system (tolerances according to AWWA C606-15)

All connectors are designed to be used to assemble steel pipes which comply with the following 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

The grooving is carried out by knurling or by removing material, and must be done using specific Profit tools or tools approved by Piping Logistics. The size of the groove must be in accordance with the ‘OGS’ system (tolerances according to AWWA C606-15).

During implementation, the regulations outlined in the following documents must be taken into account:

- DTU 60.1 Plumbing and sanitary installations for residential buildings.
- APSAD Regulation R1 ‘Automatic water-based suppression sprinklers’.
- For fire-fighting systems: in accordance with the provisions of NFPA13 and CEA4001.