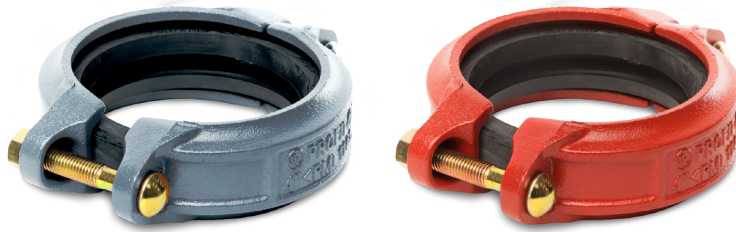
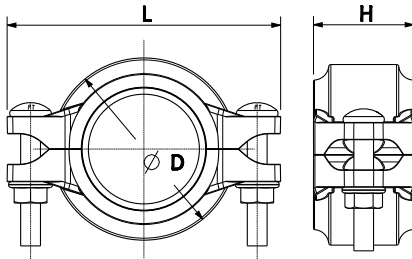


Size range: 1" - 24"
FLEXIBLE COUPLING



Flexible couplings are designed to allow axial displacement, rotation and some angular movement. The coupling can accommodate angular misalignments up to a few degrees. It can also accommodate parallel misalignment and / or thermal deformation when using two couplings with an intermediate pipe. Please read our installation instructions for carefree application.

Reference		Nominal size		Pipe Ø O.D.	Flexible coupling dimensions			Bolt size	Weight	Marking	Approvals	
Red	Galva	NPS inch	DN mm	mm	Ø D mm	L mm	H mm	d1xL mm	kg		UL	FM
GKFR	GKFG	1	25	33,7	58	100	44	M10 x 45	0,51	GKFT	UL	FM
GKFR	GKFG	1¼	32	42,4	67	107	44	M10 x 45	0,54	GKFT	UL	FM
GKFR	GKFG	1½	40	48,3	72	111	44	M10 x 45	0,58	GKFT	UL	FM
GKFR	GKFG	2	50	60,3	85	124	44	M10 x 55	0,66	GKFT	UL	FM
GKFR	GKFG	2½	65	73,0	99	138	45	M10 x 55	0,96	GKFT	UL	FM
GKFR	GKFG	2½	65	76,1	102	142	45	M10 x 55	0,95	GKFT	UL	FM
GKFR	GKFG	3	80	88,9	116	165	45	M12 x 60	1,10	GKFT	UL	FM
GKFR	GKFG	4	100	108,0	138	187	48	M12 x 65	0,51	GKFT	UL	FM
GKFR	GKFG	4	100	114,3	141	190	49	M12 x 65	1,48	GKFT	UL	FM
GKFR	GKFG	5	125	133,0	164	213	48	M12 x 75	1,65	GKFT	UL	FM
GKFR	GKFG	5	125	139,7	167	218	49	M12 x 75	1,71	GKFT	UL	FM
GKFR	GKFG	5	125	141,3	167	219	49	M12 x 75	1,70	GKFT	UL	FM
GKFR	GKFG	6	150	159,0	190	240	49	M12 x 75	2,28	GKFT	UL	FM
GKFR	GKFG	6	150	165,1	192	245	50	M12 x 75	2,35	GKFT	UL	FM
GKFR	GKFG	6	150	168,3	200	250	49	M12 x 75	2,17	GKFT	UL	FM
GKFR	GKFG	8	200	216,3	250	316	59	M16 x 85	4,62	GKFT	UL	FM
GKFR	GKFG	8	200	219,1	253	319	59	M16 x 85	3,71	GKFT	UL	FM
GKFR	GKFG	10	250	267,4	307	388	65	M20 x 120	7,92	GKFT	UL	FM
GKFR	GKFG	10	250	273,0	317	401	63	M22 x 130	7,83	GKFT	UL	FM
GKFR	GKFG	12	300	318,5	360	450	65	M22 x 130	9,80	GKFT	UL	FM
GKFR	GKFG	12	300	323,9	375	455	64	M22 x 130	9,69	GKFT	UL	FM
GKFR	GKFG	14	350	355,6	408	510	75	M22 x 110	11,70	GKF		
GKFR	GKFG	15	375	377,0	428	520	75	M22 x 140	12,80	GKF		
GKFR	GKFG	16	400	406,4	459	555	75	M22 x 140	15,20	GKF		
GKFR	GKFG	18	450	457,0	515	606	78	M22 x 140	19,00	GKF		
GKFR	GKFG	20	500	508,0	613	674	78	M22 x 140	26,00	GKF		
GKFR	GKFG	22	550	558,8	621	781	78	M22 x 140	29,05	GKF		
GKFR	GKFG	24	600	609,6	674	778	78	M24 x 150	32,50	GKF		

Material specifications

Housing: ductile iron conform to ASTM A536 Grade 65-45-12 (EN-GJS-450-10).

Coating:

- Hot dip galvanised.
- Red paint coating RAL 3000, epoxy powder coating (any other colour on request).

Bolts and nuts:

- Medium carbon steel, zinc electroplated, quenched and tempered (ASTM A183/ISO 898).

For additional details we refer to our separate bolts & nuts datasheet.

Rubber gasket: standard delivered with EPDM Grade E gasket, manufactured from compounds meeting applicable ASTM D2000 requirements. NBR can be ordered separately.

GASKET COMPOUND GRADE	REFERENCE CATALOGUE ITEM	TEMPERATURE RANGE (°C)	MEDIUM					
			Cold Water	Hot water	Air (oil-free)	Nitrogen	Glycol/ water mixtures	Air (with oil vapor)
EPDM	GKS, GKF, GKA, GKRF, GSF	-40°C / +110°C	✓	✓	✓	✓	✓	
NBR-TL	GKS, GKF, GKA, GMD, GSTFC	-29°C / +83°C				✓		✓
NBR-TL	GKS, GKF, GKA, GMD, GSTFC	-29°C / +63°C	✓	✓	✓			
NBR-TL	GKS, GKF, GKA, GMD, GSTFC	-29°C / +20°C					✓	

Applications

• Fire protection systems (water-based):

Wet, dry, deluge and pre-action sprinkler systems in accordance with FM / UL approvals and applicable standards.

• HVAC and building services:

Heating, cooling, and glycol-based systems.

• Industrial applications:

Compressed air, exhaust, drainage and other piping systems.

Working pressure

• Sprinkler applications (water-based fire protection systems):

Maximum working pressure 1" - 4": 3,45 MPa / 34,5 bar / 500 psi; 5" - 12": 2,07 MPa / 20,7 bar / 300 psi, in accordance with applicable product certifications (e.g. FM) and system standards (e.g. NFPA 13, EN 12845, APSAD). Following limitations apply for UL: 1" - 3": 3,45 MPa / 34,5 bar / 500 psi; 4" - 12": 2,07 MPa / 20,7 bar / 300 psi. Maximum working pressure 14" - 24": 2,07 MPa / 20,7 bar / 300 psi.

• Other media and non-sprinkler applications:

The allowable working pressure depends on the fluid group and application and shall be determined in accordance with Directive 2014/68/EU (PED) and applicable technical documentation (available on Profit website CSTB certifications).

These products are typically classified under Article 4(3) (Sound Engineering Practice - SEP) and are not CE-marked.

The applicable PED category depends on system parameters and must be verified by the system designer.

These products are not intended for use with gases classified in Group 1 (hazardous media according to PED).

Such applications fall outside the scope of this datasheet.

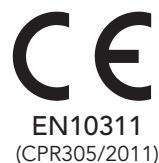
• Vacuum resistance (all media except gas group 1):

Suitable for vacuum applications. Tested down to -0,85 bar(g) in according to FM1920.

For design purposes, a conservative limit of -0,55 bar(g) is recommended.

Approvals

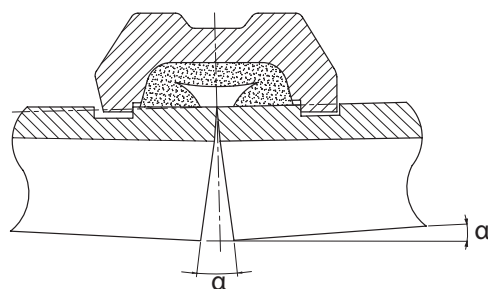
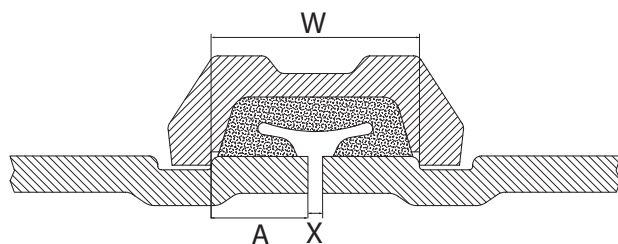
- Sprinkler-specific:



- Other qualifications:



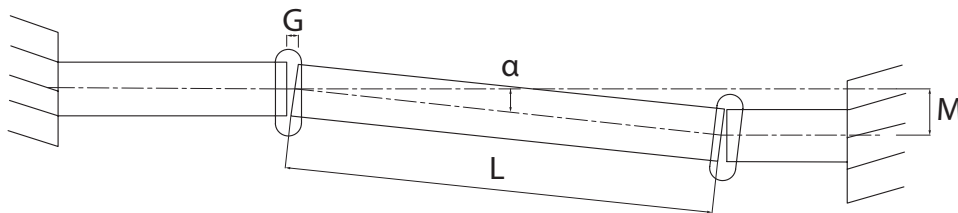
- **CSTB:**
Confirms that PROFIT grooved couplings are independently assessed and validated for use in HVAC and fire protection systems, ensuring compliance with recognized standards, proper installation practices, and controlled manufacturing quality.
- **Becetel:**
Independent testing covering vacuum resistance -0,85 bar (g) and high-pressure performance with water/glycol mixtures.
- **KOMO® (KIWA):**
A quality mark that guarantees the quality, integrity and compliance with building regulations of products, processes, and services within the construction and infrastructure sectors for cold & hot non-drinking water applications up to 110°C. The certification is based on BRL 2013 and EN 681-1 standards.
- **Performance standards:**
The Profit grooved couplings comply with the applicable product performance requirements stated in ASTM F1476.



Nominal size		Pipe Ø O.D.	W	A mm			X* mm	Max. end load N
NPS inch	DN mm	mm	mm	basic	max.	min.	max.	
1	25	33,7	35,0	15,9	16,6	15,1	1,2	1800
1¼	32	42,4	35,0	15,9	16,6	15,1	1,2	2920
1½	40	48,3	35,0	15,9	16,6	15,1	1,6	3790
2	50	57,0	35,0	15,9	16,6	15,1	1,6	5270
2	50	60,3	35,0	15,9	16,6	15,1	1,6	5910
2½	65	73,0	35,0	15,9	16,6	15,1	3,2	8640
2½	65	76,1	35,0	15,9	16,6	15,1	3,2	9410
3	80	88,9	35,0	15,9	16,6	15,1	3,2	12840
4	100	108,0	37,0	15,9	16,6	15,1	4,0	18940
4	100	114,3	37,0	15,9	16,6	15,1	4,0	21220
5	125	133,0	37,0	15,9	16,6	15,1	4,0	28780
5	125	139,7	37,0	15,9	16,6	15,1	4,0	31700
5	125	141,3	37,0	15,9	16,6	15,1	4,0	32430
6	150	159,0	37,5	15,9	16,6	15,1	4,0	41060
6	150	165,1	37,5	15,9	16,6	15,1	4,0	44131
6	150	168,3	37,5	15,9	16,6	15,1	4,0	46000
8	200	216,3	44,5	19,1	19,8	18,3	4,0	75990
8	200	219,1	44,5	19,1	19,8	18,3	4,0	77970
10	250	267,4	47,0	19,1	19,8	18,3	4,0	116130
10	250	273,0	47,0	19,1	19,8	18,3	4,0	121050
12	300	318,5	48,0	19,1	19,8	18,3	4,0	164760
12	300	323,9	48,0	19,1	19,8	18,3	4,0	170390
14	350	355,6	52,0	23,8	24,5	23,0	3,2	205285
16	400	406,4	53,0	23,8	24,5	23,0	3,2	268139
18	450	457,0	54,0	25,4	26,1	24,6	3,2	339400
20	500	508,0	54,0	25,4	26,1	24,6	3,2	507008
22	550	558,8	55,0	25,4	26,1	24,6	3,2	603357
24	600	609,6	55,0	25,4	26,1	24,6	3,2	708112

*Maximum axial displacement

- All tests have been carried out with standard EPDM-gaskets.
- The maximum axial movement values shown in the table are valid for rolled groove, they may be doubled for cut groove. For design and installation purposes, we recommend to reduce these values by 50% (1"-3") and by 25% (4"-16").



Nominal size		Pipe Ø O.D.	Deflection	
NPS inch	DN mm	mm	α (°)	M* mm
1	25	33,7	2,5	43
1¼	32	42,4	2,5	43
1½	40	48,3	2,0	34
2	50	57,0	2,0	34
2	50	60,3	2,0	34
2½	65	73,0	1,5	26
2½	65	76,1	1,5	26
3	80	88,9	1,5	26
4	100	108,0	1,0	17
4	100	114,3	1,0	17
5	125	133,0	1,0	17
5	125	139,7	1,0	17
5	125	141,3	1,0	17
6	150	159,0	0,5	8
6	150	165,1	0,5	8
6	150	168,3	0,5	8
8	200	216,3	0,5	8
8	200	219,1	0,5	8
10	250	267,4	0,5	8
10	250	273,0	0,5	8
12	300	318,5	0,5	8
12	300	323,9	0,5	8
14	350	355,6	0,3	4,5
16	400	406,4	0,3	4
18	450	457,0	0,2	3,5
20	500	508,0	0,2	3
22	550	558,8	0,2	2,5
24	600	609,6	0,2	2,5

* When L = 1m
Above 12": data on request

General notes:

- The maximum axial and angular movement values shown in the table are valid for rolled groove, they may be doubled for cut groove. For design and installation purposes, we recommend to reduce these values by 50% (1"-3") and by 25% (4"-10").
- Combined maximum angular and maximum axial movement are not allowed. Contact us for more information.
- Our flexible couplings meet the minimum required allowable angular movements according to NFPA 13-3.5.8.
- Couplings provide cost-effective solutions for expansion problems, vibrations, pipe stress, seismic loads etc.

MINIMUM PIPE WALL THICKNESS - CARBON STEEL PIPES

Allowable minimum pipe wall thickness combinations with PROFIT - couplings GKF and rolled grooves.

Nominal pipe size		FM approved		
		Min. pipe thickness MWP* 27,6 bar	Min. pipe thickness MWP* 20,7 bar	Min. pipe thickness MWP* 12 bar
NPS	DN	mm	mm	mm
1	25	2,77	2,13	1,65
1¼	32	2,77	2,13	1,65
1½	40	2,77	2,13	1,65
2	50	2,77	2,13	1,65
2½	65	3,05	2,18	-
3	80	3,05	2,36	-
4	100	3,05	2,50	-
5	125	-	3,40	-
6	150	-	3,40	-
8	200	-	3,76	-
10	250	-	4,19	-
12	300	-	4,57	-

STAINLESS STEEL PIPES ^{1, 2}

NPS Inch	DN mm	Minimum pipe thickness for MWP* 10 bar mm (Not FM approved)	Minimum pipe thickness for MWP* 16 bar mm (Not FM approved)
2"	50	2	2
2.5"	65	2	2
3"	80	2	2
4"	100	2	2,6
5"	125	2,6	2,6
6"	150	2,6	3
8"	200	3	4
10"	250	3	4
12"	300	3	4

*MWP = maximum working pressure.

For installations within Europe (EC) please note that the minimum pipe thickness in fire sprinkler piping should be according to standard EN 12845.

1. Test pressure = maximum 1,5 x MWP.

2. Special attention must be given to thin-walled stainless steel pipes. These require the use of appropriately selected groove rollers. Always refer to the technical specifications of the grooving equipment to ensure the correct roller type is used for thin-walled SS pipes. Profit does not guarantee the performance values stated in this datasheet if improper grooving tools are used.

Combined axial and angular movement is permitted, provided the maximum allowable values are not reached simultaneously. The published axial and angular movement values represent individual maximum capacities. For applications involving combined movements, please contact Profit Engineering for project-specific guidance.

GENERAL INFO

- Installers should be trained or experienced to install and understand the product.
- Before installation, carefully check the product on any damage during shipment or handling.
- Read and understand all technical datasheets and installation instructions before attempting to install, remove or adjust any Profit products.
- Check if the pressure rating of the product is compatible with the service conditions.
- Depressurise and drain the sprinkler installation system before attempting to install, remove or adjust any Profit products.
- Never work on piping systems that are pressurised and / or filled with water or pressurised air.
- Piping Logistics reserves the right to change specifications, designs and / or standard equipment without notice and without incurring in any obligations.
- Use the necessary Personal Protection Equipment (PPE) to avoid personal injury (helmet, safety shoes, goggles and gloves).



- Profit paint coated products are intended for piping with category C1 and C2 environment (indoor). For installations in category C3 we advise the use of our hot dip galvanised couplings and fittings. For application in corrosivity category C4 (higher salinity climate) or higher, please contact info@pipinglogistics.eu. (Classification according to ISO 9223)
- Pressure ratings listed for fire sprinkler applications are CWP (cold working pressure) or MWP (maximum working pressure) at a maximum service temperature of 66°C. This rating may occasionally differ from maximum working pressure listed and / or approved by UL and / or FM, as testing conditions and test pipes can differ. For more information, please contact info@pipinglogistics.eu.
- Maximum working pressure listed is the total of internal and external pressures based on standard weight (ANSI) steel pipe and standard roll or cut groove in accordance with Profit specifications. For more information, please contact info@pipinglogistics.eu.
- For more information on allowed pressures and temperatures related to HVAC applications please contact info@pipinglogistics.eu.
- For a onetime commissioning test only, the maximum joint working pressure may be increased to 150% of the working pressure.
- Independent technical datasheet for bolts & nuts and rubber gaskets.

Failure to follow these instructions could result in property damage, serious injury or death.

Our product must always be stored in closed and dry environments. Once installed on an above ground sprinkler system, they require no specific maintenance.

REVISION TABLE

Date	△	Notes
28/09/2026		Initial release.
21/10/2026	A	Page 3 - Addition of performance standards.