



ANAMET EUROPE
RAIL AND INFRA
SOLUTIONS



TO
CONNECT
AND
PROTECT



CATALOGUE CONTENT














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Engineering Data

Anamet Europe has a wide range of conduit systems for protecting cables and wires on rolling stock as well as for rail and infrastructural applications like tunnels, tunnel equipment and waysides/linesides. The selection is extensive and certain conduits are suitable for use in more than one area of application. This brochure is set up as follows to enable customers to select the right product for their particular area of application in a professional and efficient way.

EN 45545-2 CLASSIFIED CONDUITS FOR ROLLING STOCK APPLICATIONS

All Anaconda conduits with a plastic cover for rolling stock applications are developed to meet the fire, smoke and toxicity requirements according to the European EN 45545-2 norm. Some of them also meet the requirements of the American NFPA 130 norm. The extensive range includes products for the protection of cables in several areas of applications, such as bogies, railway couplers, jumper cables, sensor cable and EMI/EMP shielding requirements. The below table is a quick overview of our Anaconda conduits with a plastic cover and the applications in which they are allowed to be installed.

TYPE OF CONDUIT	APPLICATIONS		CERTIFICATION NORM
	Interior	Exterior	
FCE-PU-V0	All traction equipment, CCTV systems, Passenger Information systems, Air conditioning systems and Floor and wall applications	Bogies, Railway coupler, Jumper cables, Sensor cables and Pantograph cables (except high speed trains)	 
HFX-V0	All traction equipment	Bogies, Railway coupler, Jumper cables, Sensor cables and Pantograph cables (on all trains)	 
ZHUA	Same as HFX-V0, plus all applications on trains that require compliance with UL/CSA, NFPA 130 and Shielding properties	Same as HFX-V0, plus all applications on trains that require compliance with UL/CSA, NFPA 130, Shielding properties and Railway coupler	   
Shieldtite Z1	All applications where Shielding against EMI/EMP is required, such as antennas and data cables	Railway coupler and all applications where Shielding against EMI/EMP is required, such as antennas and data cables	 
PA6-V0	CCTV systems, Passenger information systems and Floor and Wall applications		
PA12H-LFH	-----	Bogies, Jumper cables, Sensor cables and Pantograph cables (except high speed trains)	
Hiprojacket Aero	Sensor cables and wires that need to be protected against arcing, brake sparks, track and brake friction and heat generating equipment		

CONDUITS WITHOUT PLASTIC COVER FOR ROLLING STOCK, RAIL AND INFRASTRUCTURAL APPLICATIONS

All Anaconda metal conduits without a plastic cover for rolling stock, rail and infrastructural applications are developed to meet requirements in harsh environments. The extensive range includes products for the protection of cables in several areas of applications, such as tunnels, wayside/lineside equipment, CCTV systems, air conditioning systems, escalators as well as interior floor, wall and roof. The below table is a quick overview of our Anaconda conduits without a plastic cover and the applications in which they are allowed to be installed.

TYPE OF CONDUIT	APPLICATIONS		CERTIFICATION NORM
	Interior	Exterior	
SL / SLI	All Floor, Wall and Roof applications	CCTV systems, Passenger information systems, Tunnels, Linesides and Waysides	Not required
UIG / UI	CCTV systems, Passenger information systems and Door locking systems	CCTV systems, Passenger information systems, Tunnels, Linesides and Waysides	Not required
Anaflex	Air conditioning systems, Cooling water transportation for HVAC systems	Escalators, Lifts and Air conditioning systems	Not required

In general, all Anaconda conduits with a plastic cover which meet the fire, smoke and toxicity requirements according to the European EN 45545-2 norm, are designed to meet the following performance criteria:

- UV, sunlight, oil and chemical resistant
- Robust, flexible: able to withstand stone splashes, ice and snow, dirt ballast and abrasion
- High IP rating
- Wide operating temperature range
- High flexibility with good bending radius under extreme cold conditions
- Very good vibration and shocks resistance

SHOCK, VIBRATION AND IP TEST

Our Anaconda Sealtite conduits with standard fixed fittings and cable-hose fittings, as well as our Multitite FCE-PU-VO conduit with cable-hose fittings, successfully passed the vibration, shock and IP test according to EN-IEC 61373 – Cat. 3 (heaviest test for rail applications).

FITTINGS FOR ROLLING STOCK, RAIL AND INFRASTRUCTURAL APPLICATIONS

Anaconda fittings are available in fixed and swivel executions. Both ranges include straight, 45° and 90° versions and where the straight version is available with male and female thread. The standard material is nickel plated brass, but all types are also available in stainless steel AISI-316, with the exception for the straight female threaded version. We supply our fittings ready to mount to the conduit for which they are suitable. The below table is a quick overview of the IP ratings for our Anaconda fitting in combination with the corresponding Anaconda conduits.

Type of conduit	Fixed fittings Straight, 45° and 90°	Swivel fittings * Straight, 45° and 90°	Cable hose fittings **
SL / SLI	IP40	IP40	IP68
UIG / UI	IP40	IP40	IP68
Anaflex	IP69	---	---
FCE-PU-VO	IP65 / IP68	IP65 / IP67	IP68
HFX-VO	IP66 / IP67	IP65 / IP67	IP68
ZHUA	IP66 / IP67	IP65 / IP67	IP68
Shieldtite Z1	IP66 / IP67	IP65 / IP67	IP68
PAG-VO	IP65 / IP66 / IP68	---	IP68
PH12H-LFH	IP65 / IP66 / IP68	---	IP68
Hiprojacket	IP67	---	IP68
Thermojacket	---	---	---
Basaltjacket	---	---	---

Note: * Swivel fittings have an IP65 rating in a dynamic application and an IP67 in a static application.

** The IP rating for the cable-hose fittings is the connection to the enclosure and not to the conduit

Remarks: For Anaflex conduit ISO metric straight fittings are available only.
Fittings are available with ISO metric, NPT and PG threads. Other thread upon request.
Fittings suitable for Anaconda Sealtite conduit are UL and CSA approved as a standard.

EN 45545-3 CLASSIFICATION ON ANACONDA CABLE-HOSE FITTINGS

Our cable-hose fittings only come in a straight version and have a double clamping seal, creating an extended clamping range. Because the double clamping seal is made from a flame-retardant VO-rated EPDM rubber, they meet the HL1, HL2 and HL3 classification according to EN 45545-2 for interior and exterior (R22 and R23), as well as the fire-barrier classification E30 according to EN 45545-3 for both wall and ceiling applications.

FIRE AND HEAT PROTECTION SLEEVES FOR ROLLING STOCK, RAIL AND INFRASTRUCTURAL APPLICATIONS

Thermojacket S and Basaltjacket fire and heat protection sleeves are designed to protect cables, harnesses and hoses exposed to extreme radiation heat or open fire. Furthermore, we offer products which insulate pipes and exhaust systems, such as Basaltjacket, where it is necessary to reduce the energy loss e.g. diesel particulate filters on engines. In another application of rolling stock an O.E.M manufacturer simulated a test we successfully passed by using a combination out of Hiprojacket Aero and Thermojacket , in order to guarantee the durability of 15min in case of fire.

Note: This always needs to be individually tested, as this depends on the function of the cable and its own fire performance. The below table is a quick overview of our Thermojacket S and Basaltjacket and the applications in which they are allowed to be installed.

TYPE OF CONDUIT	APPLICATIONS	CERTIFICATION NORM
Thermojacket S	Protection of cables and hoses against radiation heat (e.g. diesel engine). Offering additional isolation when used in combination with Hiprojacket Aero sleeve to protect crucial cabling for a certain period of time in case of a fire	Not required
Basaltjacket	High insulation properties against energy (heat) loss (e.g. exhaust pipes, diesel particulate filter etc). Protection of cables and hoses against radiation heat. Protecting humans from harm, such as skin burning. Higher temperature resistance compared to Thermojacket S up to 750° C	Not required

STEP FILES AND 3D DRAWINGS

The majority of our conduits and fittings are available in the Cadenas electronic database. Otherwise available upon request.

Anaconda Multiflex conduit

TYPE SL



ROBUST AND FLEXIBLE

The galvanized steel SL is used for the inner core of Anaconda Sealrite. It provides a high mechanical protection for cables, in those applications where a high IP rating is of less importance. Typical rail application areas include interior cable protection in floors, walls and roofs. SL provides an excellent level of protection against rodents.

Material & Construction:

Material: Galvanised steel

Temperature: -55 °C till +300 °C.

Construction: Square locked profile.

Colour: Metal coloured.

Classification according to NEN-EN-IEC 61386:

Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 40.



Square locked

SL	DIAMETRE		BENDING RADIUS (CL)		SMALL CARTON		STANDARD CARTON		LARGE CARTON		WEIGHT (kg/m)	
	Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No.	Metre	Article No.	Metre		Article No.
5/16"		10,1	12,8	50	65	30	107.010.2	-	-	-	-	0,14
3/8"		12,6	15,5	60	85	30	107.012.2	-	-	-	-	0,24
1/2"		16	18,9	75	110	30	107.016.2	-	-	-	-	0,26
3/4"		21	23,9	90	140	30	107.020.2	-	-	-	-	0,41
1"		26,5	30	120	170	30	107.026.2	-	-	-	-	0,55
1.1/4"		35,1	38,7	135	215	30	107.035.2	-	-	-	-	0,63

* For sizes 1.1/2" and 2" we advise to use the interlocked designed conduit type UIG

* On demand the SL conduits are available also in production reels with longer lengths (codes change in 107.xxx.0)

Anaconda Multiflex conduit

TYPE SLI



ROBUST, FLEXIBLE AND EXTRA CORROSION RESISTANT

SLI is the stainless steel AISI-304 execution of the SL conduit. This conduit provides high mechanical protection in applications that require a high degree of corrosion resistance. Typical rail application areas include interior cable protection in floors, walls and roofs. SLI provides an excellent level of protection against rodents.

Material & Construction:

Material: Stainless steel AISI-304.

Temperature: -100 °C till +600 °C.

Construction: Square locked profile.

Colour: Metal coloured.

Classification according NEN-EN-IEC 61386:

Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 40.



Square locked

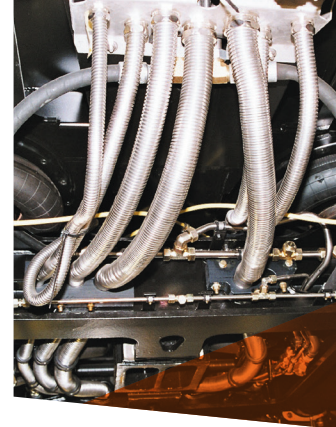
SLI	DIAMETRE		BENDING RADIUS (CL)		SMALL CARTON		STANDARD CARTON		LARGE CARTON		WEIGHT
	Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No.	Metre	Article No.	Metre	
5/16"	10,1	12,8	50	65	30	600.010.2	-	-	-	-	0,15
3/8"	12,6	15,5	60	85	30	600.012.2	-	-	-	-	0,24
1/2"	16	18,9	75	110	30	600.016.2	-	-	-	-	0,26
3/4"	21	23,9	90	140	30	600.020.2	-	-	-	-	0,41
1"	26,5	30	120	170	30	600.026.2	-	-	-	-	0,55
1.1/4"	35,1	38,7	135	215	30	600.035.2	-	-	-	-	0,63

* For sizes 1.1/2" and 2" we advise to use the interlocked designed conduit type UI

* On demand the SLI conduits are available also in production reels with longer lengths (codes change in 600.xxx.0)

* Note: also available in stainless steel AISI-316.

Compact fittings for SL / SLI, IP 40, nickel plated brass



ANACONDA COMPACT NICKEL PLATED BRASS FITTINGS FOR MULTIFLEX SL / SLI

Due to the metal clamping ring (as shown below), these nickel plated brass Anaconda compact fittings achieve a very high pull-out strength. The high quality nickel plated finish protects them very well against corrosion and gives a nice appearance.

Material & Construction:

Material: Counter nut, ferrule and body are nickel plated brass. The ferrule is from galvanised steel. O-rings are from NBR.

Construction: Nickel plated brass fitting, consisting of 4 parts (counter nut, clamping ring, ferrule and body).

Special approvals: The cable-hose fittings have clamping rubbers from flame retardant V0-rated

EPDM and are HL 1, HL 2 and HL 3 according EN 45545-2, R22 and R23, as well as meeting the fire-barrier classification E30 according EN-45545-3 for both wall and ceiling applications.

Temperature: -55 °C till +260 °C continuous.

Protection class: IP 40.

Colour: Metal coloured.

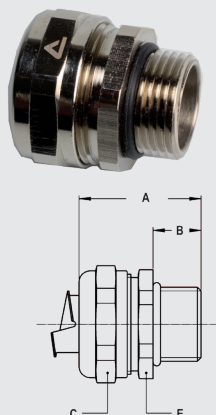


Clamping ring, nickel plated brass,
for combination with Multiflex type SL / SLI



THREAD ISO	SL / SLI SIZE (INCH)	MIN. INTERNAL BORE (MM)	FITTING THREAD SIZE			STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			ISO	Pg	NPT			
-	5/16"	-	M16 x 1,5	Pg 9	1/2" NPT	10	817.210.6	0,6
-	3/8"	-	M16 x 1,5	Pg 11	1/2" NPT	10	817.213.6	0,6
-	1/2"	-	M20 x 1,5	Pg 16	1/2" NPT	10	817.216.6	0,6
-	3/4"	-	M25 x 1,5	Pg 21	3/4" NPT	5	817.220.6	1
-	1"	-	M32 x 1,5	Pg 29	1" NPT	5	817.226.6	1,2
-	1.1/4"	-	M40 x 1,5	Pg 36	1.1/4" NPT	2	817.235.6	2

ISO straight compact fitting, male, nickel plated brass
(incl. metal clamping ring)

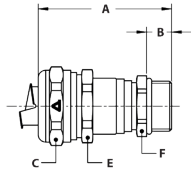


THREAD ISO	SL / SLI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	31	10	26	-	24	10	712.015.6	6,1
M20 x 1,5	5/16"	8,3	31	10	26	-	24	10	712.014.6	6,2
M16 x 1,5	3/8"	11	31	10	26	-	24	10	712.016.6	4,5
M20 x 1,5	3/8"	11	31	10	26	-	24	10	712.017.6	4,6
M20 x 1,5	1/2"	14,5	32	10	29	-	27	10	712.020.6	5
M25 x 1,5	3/4"	19,4	33	10	35	-	33	5	712.025.6	7,6
M32 x 1,5	1"	24,7	36	12	45	-	42	5	712.032.6	12,9
M40 x 1,5	1.1/4"	33,3	40	13	53	-	50	2	712.040.6	18

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS FOR SL / SLI, IP 40, NICKEL PLATED BRASS

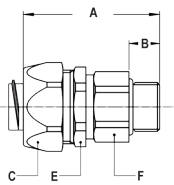
ISO cable-hose fitting, compact, male, nickel plated brass, double seal according EN 45545-2, HL1 / HL2 / HL 3, table R22 and R23, E30 acc. to EN 45545-3 (incl. connection set)



THREAD ISO	SL / SLI SIZE (INCH)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	5/16"	4,0 - 8,3	50	10	26	24	18	10	712.715.6	9
M20 x 1,5	5/16"	4,0 - 8,3	50	10	26	24	22	10	712.714.6	9,6
M16 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	18	10	712.716.6	7,4
M20 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	22	10	712.717.6	8
M20 x 1,5	1/2"	6,0 - 13,0	53	10	29	27	22	10	712.720.6	8,2
M25 x 1,5	1/2"	6,0 - 13,0	54	10	29	27	27	5	712.722.6	9,6
M25 x 1,5	3/4"	11,0 - 18,0	56	10	35	33	27	5	712.725.6	12,7
M32 x 1,5	3/4"	11,0 - 18,0	58	12	35	33	35	5	712.728.6	16
M32 x 1,5	1"	16,0 - 24,7	61	12	45	42	35	5	712.732.6	21,5
M40 x 1,5	1"	16,0 - 24,7	63	13	45	42	43	2	712.735.6	25,7
M40 x 1,5	1.1/4"	22,0 - 32,0	69	13	53	50	43	2	712.740.6	30,6

Note: also available in stainless steel AISI-316.

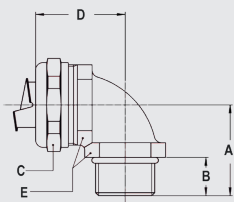
ISO straight swivel fitting, male, nickel plated brass (incl. metal clamping ring)



THREAD ISO	SL / SLI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	5/16"	8,3	48	10	26	24	21	10	813.015.6	10,3
M16 x 1,5	3/8"	10,4	48	10	26	24	21	10	813.016.6	8,7
M20 x 1,5	1/2"	13,9	49	10	29	27	25	10	813.020.6	10,8
M25 x 1,5	3/4"	17,4	49	10	35	33	31	5	813.025.6	14,8
M32 x 1,5	1"	23,4	55	12	45	42	38	5	813.032.6	33,7
M40 x 1,5	1.1/4"	29,4	58	14	54	50	48	2	813.040.6	55

Note: also available in stainless steel AISI-316.

ISO 90° fitting, compact, male, nickel plated brass (incl. metal clamping ring)



THREAD ISO	SL / SLI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	26	10	26	31	22	10	712.915.6	8,8
M20 x 1,5	5/16"	8,3	26	10	26	32	24	10	712.914.6	10,1
M16 x 1,5	3/8"	11	26	10	26	31	22	10	712.916.6	7,2
M20 x 1,5	3/8"	11	26	10	26	32	24	10	712.917.6	8,5
M20 x 1,5	1/2"	14,5	28	10	29	34	27	10	712.920.6	9,8
M25 x 1,5	3/4"	19,4	32	10	35	40	33	5	712.925.6	17,2
M32 x 1,5	1"	24,7	40	12	45	49	42	5	712.932.6	29
M40 x 1,5	1.1/4"	33,3	46	13	53	53	52	2	712.940.6	42,1

Note: also available in stainless steel AISI-316.

Anaconda Multiflex conduit

TYPE UIG



EXTREME ROBUST AND FLEXIBLE

The galvanized steel UIG is an extremely robust and flexible conduit with a fully interlocked profile, that has excellent tensile, torsional and crush strength. It is an excellent choice in demanding applications requiring a high degree of mechanical protection. Typical rail applications area include: CCTV, door locking systems and passengers information systems.

Material & Construction:

Construction: Galvanised steel core, fully inter locked.

Temperature: -55 °C till +300 °C.

Colour: Metal coloured.

Classification according NEN-EN-IEC 61386:

Compression resistance: Class 5, Very Heavy (4000 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 40.



Inter locked

UIG	DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT (kg/m)
	Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No.	Metre	Article No.	Metre	
5/16"	9,5	12,5	50	60	30	515.010.0	-	-	-	-	0,12
3/8"	13	16	65	80	30	515.012.0	-	-	-	-	0,2
1/2"	17	21	75	100	30	515.016.0	-	-	-	-	0,3
3/4"	22	26	90	125	30	515.022.0	-	-	-	-	0,4
1"	26	30	120	160	30	515.025.0	-	-	-	-	0,47
1.1/4"	34	39	175	220	30	515.034.0	-	-	-	-	0,67
1.1/2"	40,3	44,4	230	280	15	515.040.0	-	-	-	-	0,73
2"	51,6	55,7	285	340	15	515.050.0	-	-	-	-	1,6
2.1/2"	63,3	67,4	350	400	7,5	515.063.0	-	-	-	-	1,9
3"	78,4	84,2	430	600	7,5	515.075.0	-	-	-	-	2,4
4"	102,1	108	490	700	7,5	515.099.0	-	-	-	-	3,1

* On demand the UIG conduit in the sizes 1.1/2" and 2" can be ordered in production reels having variable lengths, in this case the codes change as following:
1.1/2" = 109.040.0 and 2" = 109.050.0.

Anaconda Multiflex conduit

TYPE UI



EXTREME ROBUST, FLEXIBLE AND CORROSION RESISTANT

UI is the stainless steel AISI-304 execution of the UIG conduit. This conduit provides very high mechanical protection in applications that require a high degree of corrosion resistance. It is an optimal choice for protection of cables in dynamic applications. Typical rail application areas include: CCTV security recording systems and video cameras, passenger information systems, door locking systems.

Material & Construction:

Construction: Stainless steel core (AISI-304), fully inter locked.

Temperature: -100 °C till +600 °C.

Colour: Metal coloured.

Classification according to NEN-EN-IEC 61386:

Compression resistance: Class 5, Very Heavy (4000 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 40.



Inter locked

UI	DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT (kg/m)
	Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No.	Metre	Article No.	Metre	
5/16"	9,5	12,5	50	60	30	512.010.0	-	-	-	-	0,17
3/8"	13	16	65	80	30	512.012.0	-	-	-	-	0,27
1/2"	17	21	75	100	30	512.016.0	-	-	-	-	0,34
3/4"	22	26	90	125	30	512.022.0	-	-	-	-	0,37
1"	26	30	120	160	30	512.025.0	-	-	-	-	0,53
1.1/4"	34	39	175	220	30	512.034.0	-	-	-	-	0,73
1.1/2"	40,3	44,4	230	280	15	512.040.0	-	-	-	-	0,87
2"	51,6	55,7	285	340	15	512.050.0	-	-	-	-	1,34

Compact fittings for UIG / UI, IP 40, nickel plated brass



ANACONDA COMPACT FITTINGS, NICKEL PLATED BRASS FOR MULTIFLEX UIG AND UI

Due to the metal connection set (as shown below), which consist of a metal clamping ring and a machine turned ferrule, these Anaconda compact nickel plated brass fittings achieve a very high pull-out strength. The high quality nickel plated finish protects them very well against corrosion and gives a nice appearance.

Material & Construction:

Material: Nickel plated

Construction: Nickel plated brass fitting, consisting of 4 parts (counter nut, clamping ring, ferrule and body). The clamping rubbers of the cable-hose fittings are made from EPDM.

Special approvals: The cable-hose fittings have clamping rubbers from flame retardant V0-rated EPDM and are HL 1, HL 2 and HL 3 according EN 45545-2, R22 and R23, as well as meeting

the fire-barrier classification E30 according EN-45545-3 for both wall and ceiling applications.

Temperature: -55 °C till +260 °C continuous.

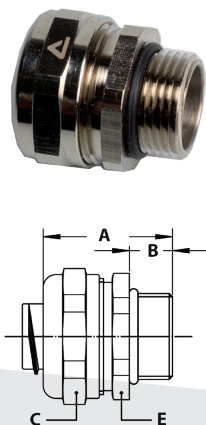
Cable-hose fittings are from -55 °C till +125 °C continuous.

Colour: Metal coloured.

Protection class: IP 40.

Cable-hose fittings are IP 68 on the switchbox.

ISO straight compact fitting, male, nickel plated brass
(including connection set)

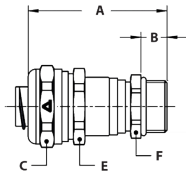


THREAD ISO	UIG / UI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	6,8	31	10	26	-	24	10	712.015.7	6,1
M20 x 1,5	5/16"	6,8	31	10	26	-	24	10	712.014.7	6,2
M16 x 1,5	3/8"	9,8	31	10	26	-	24	10	712.016.7	5,9
M20 x 1,5	3/8"	9,8	31	10	26	-	24	10	712.017.7	6
M20 x 1,5	1/2"	13,9	32	10	29	-	27	10	712.020.7	6,8
M25 x 1,5	3/4"	18,5	33	10	35	-	33	5	712.025.7	10,4
M32 x 1,5	1"	22,8	36	12	45	-	44	5	712.032.7	15,7
M40 x 1,5	1 1/4"	30,8	40	13	53	-	50	2	712.040.7	25,8
M50 x 1,5	1 1/2"	36,9	46	14	62	-	58	2	712.050.7	37,7
M63 x 1,5	2"	47,9	52	16	76	-	72	2	712.063.7	56,8
M75 x 1,5	2 1/2"	60,7	62	20	90	-	85	1	712.075.7	88,8
M90 x 2,0	3"	75,5	70	24	108	-	102	1	712.090.7	127

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS FOR UIG / UI, IP 40, NICKEL PLATED BRASS

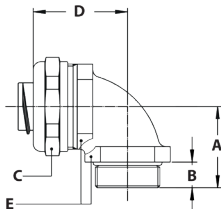
ISO cable-hose fitting, compact, male, nickel plated brass, double seal according EN 45545-2, HL1 / HL2 / HL 3, table R22 and R23, E30 acc. to EN 45545-3 (incl. connection set)



THREAD ISO	UIG / UI SIZE (INCH)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	5/16"	4,0 - 6,8	50	10	26	24	18	10	712.715.7	9
M20 x 1,5	5/16"	4,0 - 6,8	50	10	26	24	22	10	712.714.7	9,6
M16 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	18	10	712.716.7	8,8
M20 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	22	10	712.717.7	9,4
M20 x 1,5	1/2"	6,0 - 13,0	53	10	29	27	22	10	712.720.7	10
M25 x 1,5	1/2"	6,0 - 13,0	54	10	29	27	27	5	712.722.7	11,4
M25 x 1,5	3/4"	11,0 - 18,0	56	10	35	33	27	5	712.725.7	15,5
M32 x 1,5	3/4"	11,0 - 18,0	58	12	35	33	35	5	712.728.7	18,8
M32 x 1,5	1"	16,0 - 22,5	61	12	45	42	35	5	712.732.7	24,3
M40 x 1,5	1"	16,0 - 22,5	63	13	45	42	43	2	712.735.7	28,5
M40 x 1,5	1.1/4"	22,0 - 30,8	69	13	53	50	43	2	712.740.7	38,4

Note: also available in stainless steel AISI-316.

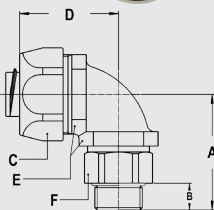
ISO 90° fitting, compact, male, nickel plated brass (including connection set)



THREAD ISO	UIG/UI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	6,8	26	10	26	31	22	10	712.915.7	8,8
M20 x 1,5	5/16"	6,8	26	10	26	32	24	10	712.914.7	10,1
M16 x 1,5	3/8"	9,8	26	10	26	31	22	10	712.916.7	8,6
M20 x 1,5	3/8"	9,8	26	10	26	32	24	10	712.917.7	9,9
M20 x 1,5	1/2"	13,9	28	10	29	34	27	10	712.920.7	11,6
M25 x 1,5	3/4"	18,5	32	10	35	40	33	5	712.925.7	20
M32 x 1,5	1"	22,8	40	12	45	49	42	5	712.932.7	31,8
M40 x 1,5	1.1/4"	30,8	46	13	53	53	52	2	712.940.7	49,9
M50 x 1,5	1.1/2"	36,9	52	14	62	57	60	2	712.950.7	69,9
M63 x 1,5	2"	47,9	62	16	76	68	72	2	712.963.7	108,8

Note: also available in stainless steel AISI-316.

ISO 90° swivel fitting, compact, male, nickel plated brass (incl. connection set)

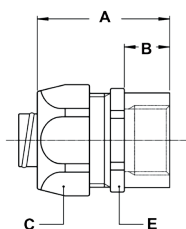


THREAD ISO	UIG/UI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E	F			
M16 x 1,5	5/16"	6,8	39	10	26	35	22	21	10	813.915.7	13
M16 x 1,5	3/8"	9,8	39	10	26	35	22	21	10	813.916.7	12,8
M20 x 1,5	1/2"	13,9	39	10	29	37	27	25	10	813.920.7	15,6
M25 x 1,5	3/4"	17,4	46	10	35	44	33	31	5	813.925.7	26,6
M32 x 1,5	1"	22,8	55	12	45	55	42	38	5	813.932.7	45,4

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS FOR UIG / UI, IP 40, NICKEL PLATED BRASS

ISO straight fitting, female, nickel plated brass
(including connection set)



THREAD ISO	UIG/UI SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	6,8	35	12	26	-	24	10	812.315.7	6,4
M16 x 1,5	3/8"	9,8	35	12	26	-	24	10	812.316.7	6,6
M20 x 1,5	1/2"	13,9	37	13	29	-	27	10	812.320.7	9,4
M25 x 1,5	3/4"	18,5	40	15	35	-	33	5	812.325.7	12
M32 x 1,5	1"	22,8	46	15	45	-	43	5	812.332.7	20,9
M40 x 1,5	1 1/4"	30,8	52	16	54	-	52	2	812.340.7	33,1
M50 x 1,5	1 1/2"	36,8	56	18	63	-	60	2	812.350.7	46,8
M63 x 1,5	2"	47,8	66	20	77	-	74	2	812.363.7	81,2

Anaconda Multiflex corrugated hose

TYPE ANAFLEX



VERY FLEXIBLE, HALOGEN FREE, NON-SMOKE, WIDE TEMPERATURE RANGE, EMI / EMP SHIELDING

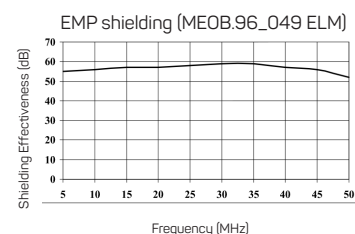
The Anaflex click system consists of a highly quality flexible stainless steel AISI-316L hose with a nickel plated brass Anaflex Click fitting. The IP 69 system retains its liquid-tight rating up to +250° C. The Anaflex System is designed to resist oils, greases and solvents and because the system has no plastic parts fire, smoke and toxicity will not be an issue. The Anaflex system was initially designed as a self-mounting flexible piping system for HVAC installations but due to its continuous profiled tube it is also suitable for protecting cables, especially in applications where EMI / EMP shielding is required. These features make Anaflex System suitable for use in electrical and non-electrical applications in the subway-, train- and bus building industry, in closed areas such as tunnels and underground.

Material & Construction:

Construction: Flexible parallel corrugated hose, stainless steel AISI-316L.

Temperature: -70 °C till +250 °C.

Colour: Metal coloured.



ANAFLEX® Size DN	DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT (kg/m)
	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No.	Metre	Article No.	Metre	Article No.	
DN 12	12,2	16,7	45	180	30	465.012.1	10	465.012.3	120	465.012.5	0,12
DN 16	16,2	21,5	60	180	30	465.016.1	10	465.016.3	90	465.016.5	0,2
DN 20	20,3	26,7	70	190	30	465.020.1	10	465.020.3	60	465.020.5	0,28
DN 25	25,4	32,3	100	215	30	465.025.1	10	465.025.3	60	465.025.5	0,39

Anaflex-click fittings, IP 69, nickel plated brass



QUICK MOUNTING, RELIABLE, HIGH TEMPERATURE RESISTANCE AND VERY HIGH PROTECTION CLASS IP 69

For the stainless steel ANAFLEX® hose, a special and unique fitting has been designed. The major advantage of these nickel plated brass ANAFLEX®-CLICK fittings is the easy click-on system (no need to dis-assemble the fitting first). After tightening the counter nut (2 till 3 full turns) a strong and fully liquid-tight connection is made (IP 69).

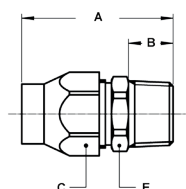
Anaflex click is available with male thread in NPT and ISO, but also in female thread BSPT and a clamping version for rigid pipes of Ø 15 mm till Ø 22 mm.

Material & Construction:

Construction: Nickel plated brass fitting, consisting of 6 parts (body, counter nut, retaining ring and filler ring are nickel plated brass, internal sealing sleeve is from PTFE and the internal flat seal is from silicone rubber).

Temperature: -70 °C till +250 °C.

Colour: Metal coloured.



ISO straight fitting, male, nickel plated brass



THREAD ISO	ANAFLEX SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	DN 12	10	47	12	24	-	22	10	842.016.0	5,9
M20 x 1,5	DN 12	10	48	13	24	-	22	10	842.017.0	6,1
M20 x 1,5	DN 16	14	54	13	29	-	27	10	842.020.0	9
M25 x 1,5	DN 20	18	60	15	36	-	34	5	842.025.0	15,6
M32 x 1,5	DN 25	24	60	15	42	-	40	5	842.032.0	21,6

Anaconda Multitite conduit

TYPE FCE-PU-V0 BLACK



ROBUST, FLEXIBLE, HALOGEN FREE AND SUPERIOR OIL AND CHEMICAL RESISTANT

Type FCE-PU-V0 is, a high quality galvanised steel core conduit with a halogen free TPU cover. This conduit complies in full with the smoke and fire requirements of EN 45545-2. It is a very flexible conduit with good bending radius characteristics and is suitable for protecting cables that are subject to frequent movement and vibration such as on bogies, brake sensor cables, jumper, autocoupler and pantograph cables on low to medium speed trains. The conduit's ability to withstand stone splash, snow, ice and dirt ballast and maintain its flexibility at low temperatures and changing levels of humidity makes it suitable for use in all types of environmental conditions as well as for protecting cables on traction equipment and air conditioning systems onboard trains. It can also be used to protect CCTV and passenger information system cables on trains.

Material & Construction:

Construction: Galvanised steel core, square locked with thin wall convoluted Thermoplastic Polyurethane (TPU) cover.

Cover specifications: Polyurethane (V0 acc. UL94), halogen free, lead-free according to RoHS, oil, sunlight and UV resistant.

Special approvals, flame properties according to:

- EN 45545-2 (2013):

R22 (interior equipment) class HL 1 and HL 2.

R23 (exterior equipment) class HL1/HL2/HL3.

(CI_Tlp = 0,20, D_s max = 265 and LOI = 33).

Flame property tests: Official tests (VTEC Laboratories Inc.) indicate that the polyurethane used in FCE-PU-V0 meets the requirements for NFPA 130, ASTM E162, ASTM E662 and BSS 7239.

Temperature: -50°C till +105°C, intermittent up to +125°C.

Colour: Black.

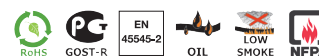
Classification according to NEN-EN-IEC 61386:

Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 67 (dust-proof, water-tight).



Square locked

MULTITITE		DIAMETRE		BENDING RADIUS (CL)		SMALL REEL		STANDARD REEL		LARGE REEL		WEIGHT
Size (dn)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. black	Metre	Article No. black	Metre	Article No. black	(kg/m)	
12	10	14	37	50	-	-	25	374.012.2	-	-	0,18	
16	13	17	45	60	-	-	25	374.016.2	-	-	0,23	
20	17	21,5	55	80	-	-	25	374.020.2	-	-	0,3	
25	21,2	26	70	100	-	-	25	374.025.2	-	-	0,39	
32	28,1	34	95	125	-	-	25	374.032.2	-	-	0,52	
40	37,7	45	115	160	10	374.040.1	-	-	-	-	0,75	
50	48,4	56	135	190	10	374.050.1	-	-	-	-	1,1	

Compact fittings for FCE-PU-V0 IP 65, nickel plated brass



ANACONDA COMPACT FITTINGS, IP 65, NICKEL PLATED BRASS FOR MULTITITE FCE-PU-V0

Anaconda compact IP 65 fittings are made from nickel plated brass and can be used in combination with FCE-PU-V0 conduit. Anaconda compact fittings offers good corrosion protection, a higher degree of ingress protection (IP 65), and have a nice appearance. Because the design is universal up to 50 mm, all types of Anaconda fittings are possible in this range.

Material & Construction:

Construction: Nickel plated brass fitting, consisting of 4 parts (counter nut, clamping ring, ferrule and body).

Material: Counter nut and body are nickel plated brass. Ferrule is from passivated brass and clamping ring is from PA 6. The clamping rubbers of the cable-hose fittings are made from EPDM.

Special approvals: The cable-hose fittings have clamping rubbers from flame retardant V0-rated

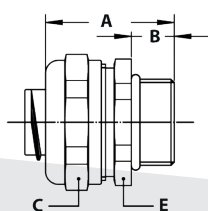
EPDM and are HL 1, HL 2 and HL 3 according EN 45545-2, R22 and R23, as well as meeting the fire-barrier classification E30 according EN-45545-3 for both wall and ceiling applications.

Temperature: -45 °C till +105 °C continuous.

Protection class: IP 65. Cable-hose fittings are IP 68 on the switchbox.

Colour: Metal coloured.

ISO straight fitting, compact, male, nickel plated brass
(including connection set)

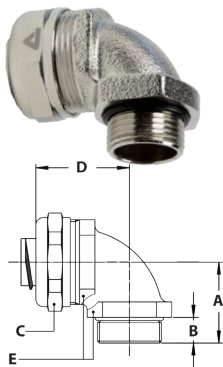


THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	12	8,3	31	10	26	-	24	10	712.015.4	4,3
M20 x 1,5	12	8,3	31	10	26	-	24	10	712.014.4	4,4
M16 x 1,5	16	11,2	31	10	26	-	24	10	712.016.4	4,3
M20 x 1,5	16	11,2	31	10	26	-	24	10	712.017.4	4,4
M20 x 1,5	20	15,2	32	10	29	-	27	10	712.020.4	5
M25 x 1,5	25	19,2	33	10	35	-	33	5	712.025.4	7,4
M32 x 1,5	32	25,9	36	12	45	-	42	5	712.032.4	13,9
M40 x 1,5	40	34,4	46	13	59	-	54	2	712.040.4	27,0
M50 x 1,5	40	35,1	46	14	62	-	58	2	712.045.4	28,3
M50 x 1,5	50	44,0	48	14	70	-	66	2	712.050.4	37,5
M50 x 1,5	50	44,0	50	14	76	-	72	2	712.055.4	39,5
M63 x 1,5	50	45,4	52	16	76	-	72	2	712.060.4	42,6

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS FOR FCE-PU-V0, IP 65, NICKEL PLATED BRASS

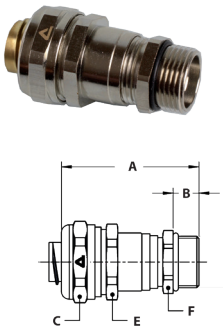
ISO 90° fitting, compact, male, nickel plated brass
(including connection set)



THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	12	8,3	26	10	26	31	22	10	712.915.4	7
M20 x 1,5	12	8,3	26	10	26	32	24	10	712.914.4	8,3
M16 x 1,5	16	11,2	26	10	26	31	22	10	712.916.4	7
M20 x 1,5	16	11,2	26	10	26	32	24	10	712.917.4	8,3
M20 x 1,5	20	15,2	28	10	29	34	27	10	712.920.4	9,8
M25 x 1,5	25	19,2	32	10	35	40	33	5	712.925.4	17
M32 x 1,5	32	25,9	40	12	45	49	42	5	712.932.4	30
M50 x 1,5	40	35,1	52	14	62	57	60	2	712.945.4	60,5
M63 x 1,5	50	45,4	62	16	76	68	72	2	712.960.4	94,6

Note: also available in stainless steel AISI-316.

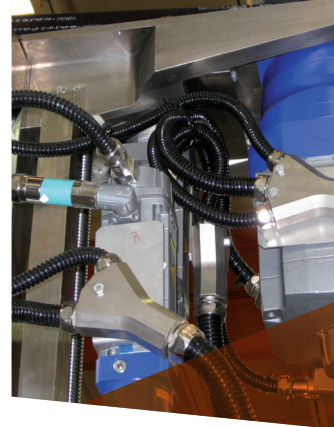
ISO cable-hose fitting, compact, male, nickel plated brass, double seal according EN 45545-2, HL1 / HL2 / HL 3, table R22 and R23, E30 acc. to EN 45545-3 (incl. connection set)



THREAD ISO	MULTITITE SIZE (DN)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	12	4,0 - 8,3	50	10	26	24	18	10	712.715.4	7,2
M20 x 1,5	12	4,0 - 8,3	50	10	26	24	22	10	712.714.4	7,8
M16 x 1,5	16	4,0 - 9,5	50	10	26	24	18	10	712.716.4	7,2
M20 x 1,5	16	4,0 - 9,5	50	10	26	24	22	10	712.717.4	7,8
M20 x 1,5	20	6,0 - 13,0	53	10	29	27	22	10	712.720.4	8,2
M25 x 1,5	20	6,0 - 13,0	54	10	29	27	27	5	712.722.4	9,6
M25 x 1,5	25	11,0 - 18,0	56	10	35	33	27	5	712.725.4	12,5
M32 x 1,5	25	11,0 - 18,0	58	12	35	33	35	5	712.728.4	15,8
M32 x 1,5	32	16,0 - 25,0	61	12	45	42	35	5	712.732.4	22,5
M40 x 1,5	32	16,0 - 25,0	63	13	45	42	43	2	712.735.4	26,7
M40 x 1,5	40	22,0 - 32,0	69	13	59	55	43	2	712.740.4	36,5
M50 x 1,5	40	22,0 - 32,0	70	14	59	55	54	2	712.745.4	42,5
M50 x 1,5	50	30,0 - 40,0	78	14	70	66	55	2	712.750.4	55,0
M63 x 1,5	50	30,0 - 40,0	82	16	70	66	70	2	712.760.4	70,0

Note: also available in stainless steel AISI-316.

Compact fittings for FCE- PU-V0, IP 68, nickel plated brass



ANACONDA COMPACT FITTINGS, IP 68, NICKEL PLATED BRASS FOR MULTITITE FCE-PU-V0

The nickel plated brass Anaconda compact IP 68 fittings are designed for use in combination with FCD and FCE conduit. Anaconda compact fittings offer a good corrosion protection, a high degree of ingress protection (IP 68), and have a nice appearance. Because the design is universal up to 50 mm all types of Anaconda compact fittings are possible in this range.

Material & Construction:

Material: Counter nut, filler ring, ferrule and body are nickel plated brass. Sealing sleeve is NBR-rubber.

Construction: Nickel plated brass fitting, consisting of 5 parts (counter nut, filler ring, sealing sleeve, ferrule and body).

Special approvals: The cable-hose fittings have clamping rubbers from flame retardant V0-rated EPDM and are HL 1, HL 2 and HL 3 according

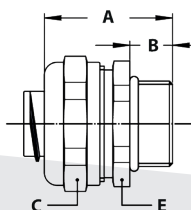
EN 45545-2, R22 and R23, as well as meeting the fire-barrier classification E30 according EN-45545-3 for both wall and ceiling applications.

Temperature: -45 °C till +105 °C continuous.

Protection class: IP 68, swivel fittings are IP 65 (dynamic applications) or IP 67 (static applications).

Colour: Metal coloured.

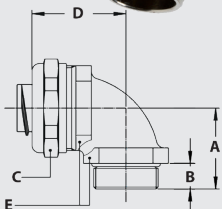
ISO straight fitting, compact, male, nickel plated brass (including connection set)



THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M12 x 1,5	12	8,5	31	10	22	-	20	10	812.012.5	3,8
M16 x 1,5	16	11,2	31	10	26	-	24	10	712.016.5	4,3
M20 x 1,5	16	11,2	31	10	26	-	24	10	712.017.5	4,4
M20 x 1,5	20	15,2	32	10	29	-	27	10	712.020.5	5
M25 x 1,5	25	19,2	33	10	35	-	33	5	712.025.5	7,4
M32 x 1,5	32	25,9	36	12	42	-	44	5	712.032.5	13,9
M40 x 1,5	40	34,4	46	13	59	-	54	2	712.040.5	27,0
M50 x 1,5	50	44,0	48	14	70	-	66	2	712.050.5	37,5

Note: also available in stainless steel AISI-316.

ISO 90° fitting, compact, male, nickel plated brass (including connection set)

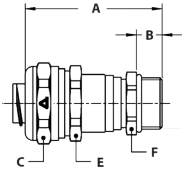


THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	16	11,2	26	10	26	31	22	10	712.916.5	7
M20 x 1,5	16	11,2	26	10	26	32	24	10	712.917.5	8,3
M20 x 1,5	20	15,2	28	10	29	34	27	10	712.920.5	9,8
M25 x 1,5	25	19,2	32	10	35	40	33	5	712.925.5	17
M32 x 1,5	32	25,9	40	12	45	49	42	5	712.932.5	30

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS FOR FCE-PU-V0, IP 68, NICKEL PLATED BRASS

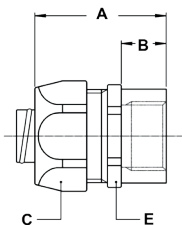
ISO cable-hose fitting, compact, male, nickel plated brass, double seal according EN 45545-2, HL1 / HL2 / HL3, table R22 and R23, E30 acc. to EN 45545-3 (incl. connection set)



THREAD ISO	MULTITITE SIZE (DN)	CLAMPING RANGE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F				
M16 x 1,5	16	4,0 - 9,5	50	10	26	24	18	10	712.716.5	7,2	
M20 x 1,5	16	4,0 - 9,5	50	10	26	24	22	10	712.717.5	7,8	
M20 x 1,5	20	6,0 - 13,0	53	10	29	27	22	10	712.720.5	8,2	
M25 x 1,5	20	6,0 - 13,0	54	10	29	27	27	5	712.722.5	9,6	
M25 x 1,5	25	11,0 - 18,0	56	10	35	33	27	5	712.725.5	12,5	
M32 x 1,5	25	11,0 - 18,0	58	12	35	33	35	5	712.728.5	15,8	
M32 x 1,5	32	16,0 - 25,0	61	12	45	42	35	5	712.732.5	22,5	
M40 x 1,5	32	16,0 - 25,0	63	13	45	42	43	2	712.735.5	26,7	
M40 x 1,5	40	22,0 - 32,0	69	13	59	55	43	2	712.740.5	36,5	
M50 x 1,5	40	22,0 - 32,0	70	14	59	55	54	2	712.745.5	42,5	
M50 x 1,5	50	30,0 - 40,0	78	14	70	66	55	2	712.750.5	55,0	
M63 x 1,5	50	30,0 - 40,0	82	16	70	66	70	2	712.760.5	70,0	

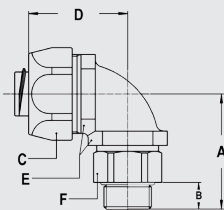
Note: also available in stainless steel AISI-316.

ISO straight fitting, female, nickel plated brass (including connection set)



THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	16	11,2	35	12	26	-	24	10	812.316.5	5,4
M20 x 1,5	20	15,2	37	13	29	-	27	10	812.320.5	8,2
M25 x 1,5	25	19,2	40	15	35	-	33	5	812.325.5	9,8
M32 x 1,5	32	25,9	46	15	45	-	43	5	812.332.5	20,5

ISO 90° swivel fitting, male, nickel plated brass (including connection set)



THREAD ISO	MULTITITE SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E	F			
M16 x 1,5	16	10,7	39	10	26	35	22	21	10	813.916.5	10,8
M20 x 1,5	20	13,9	39	10	29	37	27	25	10	813.920.5	13,2
M25 x 1,5	25	17,4	46	10	35	44	33	31	5	813.925.5	22,8
M32 x 1,5	32	23,4	55	12	45	55	42	38	5	813.932.5	41,4

Note: also available in stainless steel AISI-316.

Anaconda Sealtite conduit

TYPE HFX-V0



VERY ROBUST, VERY FLEXIBLE, HALOGEN FREE, WIDE TEMPERATURE RANGE AND FLAME RETARDANT

Type HFX-V0 features a galvanised steel core with a thick, smooth TPU cover which is Halogen free and flame retardant and meets the smoke, fire and toxicity requirements of EN 45545-2, NFPA 130, ASTM E162, E662 and BSS 7239 standards. Type HFX-V0 is a very robust conduit that retains its flexibility at low temperatures and changing levels of humidity. The conduit is used to mechanically protect brake sensor, jumper, auto coupler, pantograph cables that are constantly exposed to frequent movement, vibration, stone splash, snow, ice and dirt ballast etc.

Material & Construction:

Construction: Hot dipped galvanised steel core, square locked with cord packing, thick smooth Thermoplastic Polyurethane (VO-rated TPU) cover.

Cover specifications: VO-rated Polyurethane, lead-free according to RoHS, sunlight and UV resistant, suitable for outside installation.

Special approvals, flame properties according to:

- EN 45545-2 (2013):
 - R22 (interior equipment) class HL1 and HL2
 - R23 (exterior equipment) class HL1/HL2/HL3.

(Average results: CI_{Tnlp} = 0,12 , D_s max = 230 and LOI > 32).

- EN ISO 11925-2: passes the Allumability test at 30 sec.

Flame property tests: Official tests (VTEC Laboratories Inc.) indicate that the Polyurethane used in HFX-V0 meets the requirements for NFPA 130, ASTM E162, ASTM E662 and BSS 7239.

Temperature: -50 °C till +105 °C, intermittent up to +125 °C.

Colour: Black.

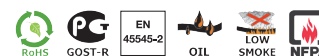
Classification according to NEN-EN-IEC 61386:

Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 66 / 67 (dust-proof, water-tight).



Square locked from 5/16" - 1.1/4"



Inter locked for size 1.1/2" - 2"

SEALTITE		DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT
Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. black	Metre	Article No. black	Metre	Article No. black	(kg/m)	
1/4"	6,4	11,5	40	50	30	348.006.1	-	-	-	-	0,15	
5/16"	10,1	14,4	50	65	30	348.010.1	-	-	-	-	0,2	
3/8"	12,6	17,8	60	85	30	348.012.1	-	-	-	-	0,3	
1/2"	16	21,1	75	110	30	348.016.1	-	-	-	-	0,4	
3/4"	21	26,4	90	140	30	348.020.1	-	-	-	-	0,55	
1"	26,5	33,1	120	170	30	348.026.1	-	-	-	-	0,75	
1.1/4"	35,1	41,8	135	215	15	348.035.1	-	-	-	-	1	
1.1/2"	40,3	47,8	165	250	15	348.040.1	-	-	-	-	1,55	
2"	51,6	59,9	210	300	15	348.050.1*	-	-	-	-	2,15	

* Size 2" only HL1 for R22 (interior equipment) and HL1/HL2 for R23 (exterior equipment)

Anaconda Sealtite conduit

TYPE ZHUA



VERY ROBUST, FLEXIBLE, HALOGEN FREE, WIDE TEMPERATURE RANGE, FLAME RETARDANT (UL-94 V0) AND UL/CSA APPROVED

Type ZHUA features a galvanised steel core with a thick, smooth TPU cover which is Halogen free and flame retardant in line with the smoke and fire requirements of EN 45545-2 and NFPA 130, ASTM E162, E662 and BSS 7239 standards. The conduit retains its flexibility at low and high temperatures and changing levels of humidity. Type ZHUA conduit is UL & CSA approved and has an integrated grounding copper wire (in sizes 3/8" to 1 1/4") to protect cables from electromagnetic interference. Type ZHUA is used in the metro-, train- and bus-building industry, in closed areas, airports, tunnels and (subway) stations, shipbuilding industry and navy.

Material & Construction:

Construction: Hot dipped galvanised steel core, square locked with integral copper grounding wire till 1 1/4", thick smooth Thermoplastic Polyurethane (VO-rated TPU compound) cover.

Cover specifications: VO-rated Polyurethane, lead-free acc. to RoHS, sunlight and UV resistant, suitable for outside installation.

Special approvals: UL-360 (file # E18917) and CSA C 22.2 (file LL15275 / 1117768). Applicable for NEC Article 250.118 (6), 350, 300.22 (D), 620.21 and 645.5 (E) (2).

Suitable for use in hazardous environments according to NEC:

- Article 501.10 (B) (2) Class I, Division 2.
- Article 502.10 (A) (2) and (B) (2) Class II, Division 1 and 2.

- Article 503.10 (A) (3) and (B) Class III, Division 1 and 2.
- EN 45545-2: R22 (interior equipment) class HL1 and HL2, R23 (exterior equipment) class HL1/HL2/HL3.
(Average results: ITCpnl = 0,12, Ds max = 230 and LOI >32).
- EN ISO 11925-2: passes the Allumability test at 30 sec.

Flame property tests: Official tests (VTEC Laboratories Inc.) indicate that the Poly-Urethane used in ZHUA meets the requirements for NFPA 130, ASTM E162, ASTM E662 and BSS 7239.

Classification according to NEN-EN-IEC 61386:

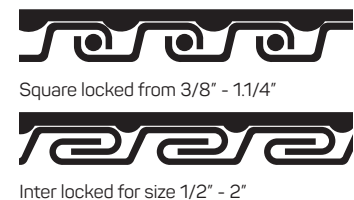
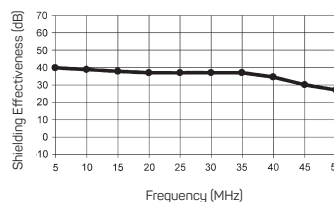
Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

Protection class: IP 66 / 67 (dust-proof, water-tight).

EMP shielding (MEOB.96_049 ELM)



SEALTITE		DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT
Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. black	Metre	Article No. black	Metre	Article No. black	(kg/m)	
3/8"	12,6	17,8	70	85	30	334.012.1	-	-	150	334.012.5	0,4	
1/2"	16,1	21,1	90	110	30	334.016.1	-	-	150	334.016.5	0,45	
3/4"	21,1	26,4	115	140	30	334.020.1	-	-	150	334.020.5	0,65	
1"	26,8	33,1	145	170	30	334.026.1	-	-	120	334.026.5	1,05	
1 1/4"	35,4	41,8	175	215	15	334.035.1	-	-	60	334.035.5	1,2	
1 1/2"	40,3	47,8	205	250	15	334.040.1	-	-	45	334.040.5	1,5	
2"	51,6	59,9	240	300	15	334.050.1	-	-	30	334.050.5	2,3	

* Size 2" only HL1 for R22 (interior equipment) and HL1/HL2 for R23 (exterior equipment)

Anaconda Sealtite conduit

TYPE SHIELDTITE Z1 GREY



VERY ROBUST, FLEXIBLE, HALOGEN FREE AND EMI/EMP SHIELDING

Type Shieldtite Z1 is a very robust conduit with a fully interlocked bronze core and thick, smooth low smoke, halogen free TPU cover. The conduit realizes an excellent protection against electromagnetic influences. The Shieldtite Z1 TPU cover complies with the smoke and fire requirements of EN 45545-2 and is resistant to sunlight, heat, oil and chemicals. The conduit provided EMI/EMP shielding applications on rolling stock, control stations and towers and other applications where electrical continuity is required.

Material & Construction:

Construction: Bronze core, fully-interlocked, thick smooth Thermoplastic Polyurethane (TPU compound) cover.

Cover specifications: V0-rated Polyurethane, lead-free according to RoHS, sunlight and UV resistant, suitable for outside installation. The cover is resistant against oil and grease.

Special approvals, flame properties according to:

- EN 45545-2 (2013): R22 (interior equipment) class HL1 and HL2

R23 (exterior equipment) class HL1/HL2/HL3
(Average results: ClTnlp = 0,12, Ds max = 230 and LOI >32).

- EN ISO 11925-2: passes the Allumability test at 30 sec.

Flame property tests: Official tests (VTEC Laboratories Inc.) indicate that the Polyurethane used in Shieldtite Z1 meets the requirements for NFPA 130, ASTM E162, ASTM E662 and BSS 7239.

Temperature: -50 °C till +105 °C, intermittent up to +125 °C.

Colour: Grey.

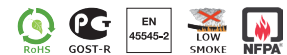
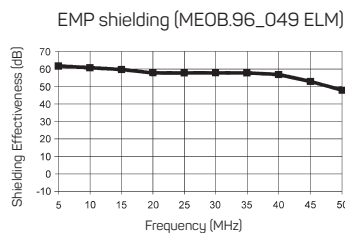
Classification according to NEN-EN-IEC 61386:

Compression resistance: Class 4, Heavy (1250 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 4, Heavy (1000 N).

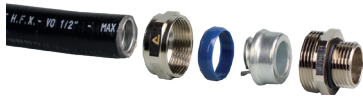
Protection class: IP 66 / 67 (dust-proof, water-tight).



SEALTITE		DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT
Size (inch)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. grey	Metre	Article No. grey	Metre	Article No. grey	(kg/m)	
3/8"	12,6	17,8	80	100	30	304.212.1	-	-	-	-	0,3	
1/2"	16	21,1	90	125	30	304.216.1	-	-	-	-	0,4	
3/4"	21	26,4	110	160	30	304.220.1	-	-	-	-	0,5	
1"	26,5	33,1	120	200	30	304.226.1	-	-	-	-	0,7	
1.1/4"	35,1	41,8	135	240	15	304.235.1	-	-	-	-	1,1	
1.1/2"	40,3	47,8	200	290	15	304.240.1	-	-	-	-	1,5	
2"	51,6	59,9	275	380	15	304.250.1	-	-	-	-	2	

* Size 2" only HL1 for R22 (interior equipment) and HL1/HL2 for R23 (exterior equipment)

Compact fittings, IP 66 / IP 67, nickel plated brass



ANACONDA COMPACT FITTINGS, NICKEL PLATED BRASS, UL/CSA APPROVED, FOR ANACONDA SEALTITE

Anaconda compact nickel plated brass fittings can be used with all types of Anaconda Sealtite conduit. The compact design is realized by less material, which makes them lighter in weight and are therefore ideal for rail applications and installations where space is limited. The fittings have a flanged ferrule which ensures a secure connection between fitting and conduit. Anaconda compact fittings are UL & CSA approved and are corrosion resistant. The Compact range of cable-hose fittings feature a double clamping rubber system which complies with EN45545-2 / EN45545-3 and are approved for use in the OEM train building industry.

Material & Construction:

Construction: Nickel plated brass fitting, consisting of 4 parts (counter nut, clamping ring, ferrule and body).

Material: Counter nut and body are nickel plated brass. Clamping ring is made from PA6 and the ferrule is made from galvanised steel. The O-rings are from NBR rubber (black for ISO and blue for Pg). The clamping rubbers of the cable-hose fittings are made from EPDM.

Special approvals: UL-514B and CSA C 22.2 (combined UL / CSA (CUL) file # E 234207).

Suitable for use in hazardous environments according to NEC:

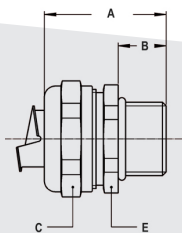
- Article 501.10 (B) (2) Class I, Division 2.
- Article 502.10 (A) (2) and (B) (2). Class II, Division 1 and 2.
- Article 503.10 (A) (3) and (B). Class III, Division 1 and 2.

Temperature: -45 °C till +105 °C continuous.

Protection class: IP 66, IP 67, NEMA 4X.

Cable-hose fittings are IP 68 on the switchbox.

Colour: Metal coloured.



ISO straight fitting, compact, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	31	10	26	-	24	10	712.015.0*	4,3
M20 x 1,5	5/16"	8,3	31	10	26	-	24	10	712.014.0*	4,4
M16 x 1,5	3/8"	11	31	10	26	-	24	10	712.016.1	3,9
M20 x 1,5	3/8"	11	31	10	26	-	24	10	712.017.1	4
M20 x 1,5	1/2"	14,5	32	10	29	-	27	10	712.020.1	4,4
M25 x 1,5	3/4"	19,4	33	10	35	-	33	5	712.025.1	6,6
M32 x 1,5	1"	24,7	36	12	45	-	42	5	712.032.1	11,7
M40 x 1,5	1.1/4"	33,3	40	13	53	-	50	2	712.040.1	16
M50 x 1,5	1.1/2"	38	46	14	62	-	58	2	712.050.1	25,3
M63 x 1,5	2"	49	52	16	76	-	72	2	712.063.1	38,6
M75 x 1,5	2.1/2"	60,7	62	20	90	-	85	1	712.075.1*	74,8
M90 x 2,0	3"	75,5	70	24	108	-	102	1	712.090.1*	107

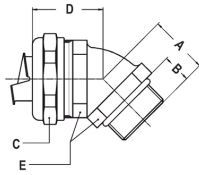
Note: also available in stainless steel AISI-316.

Sizes marked with * do not have UL/CSA approval.

COMPACT FITTINGS, IP 66 / IP 67, NICKEL PLATED BRASS



ISO 45° fitting, compact, male, nickel plated brass

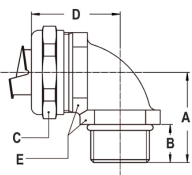


THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	19	10	26	27	22	10	712.415.0*	6,7
M20 x 1,5	5/16"	8,3	20	10	26	28	24	10	712.414.0*	7,6
M16 x 1,5	3/8"	11	19	10	26	27	22	10	712.416.1	6,3
M20 x 1,5	3/8"	11	20	10	26	28	24	10	712.417.1	7,2
M20 x 1,5	1/2"	14,5	21	10	29	30	27	10	712.420.1	8,3
M25 x 1,5	3/4"	19,4	23	10	35	33	33	5	712.425.1	12,8
M32 x 1,5	1"	24,7	28	12	45	38	42	5	712.432.1	22,5
M40 x 1,5	1.1/4"	33,3	33	13	53	39	52	2	712.440.1	34,5
M50 x 1,5	1.1/2"	38	35	14	62	46	60	2	712.450.1	50
M63 x 1,5	2"	49	40	16	76	53	72	2	712.463.1	80,5
M75 x 1,5	2.1/2"	60,7	51	20	90	65	85	1	712.475.1*	146

Note: also available in stainless steel AISI-316. | Sizes marked with * do not have UL/CSA approval.



ISO 90° fitting, compact, male, nickel plated brass

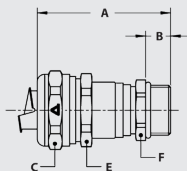


THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	26	10	26	31	22	10	712.915.0*	7
M20 x 1,5	5/16"	8,3	26	10	26	32	24	10	712.914.0*	8,3
M16 x 1,5	3/8"	11	26	10	26	31	22	10	712.916.1	6,6
M20 x 1,5	3/8"	11	26	10	26	32	24	10	712.917.1	7,9
M20 x 1,5	1/2"	14,5	28	10	29	34	27	10	712.920.1	9,2
M25 x 1,5	3/4"	19,4	32	10	35	40	33	5	712.925.1	16,2
M32 x 1,5	1"	24,7	40	12	45	49	42	5	712.932.1	27,8
M40 x 1,5	1.1/4"	33,3	46	13	53	53	52	2	712.940.1	40,1
M50 x 1,5	1.1/2"	38	52	14	62	57	60	2	712.950.1	57,5
M63 x 1,5	2"	49	62	16	76	68	72	2	712.963.1	90,6
M75 x 1,5	2.1/2"	60,7	75	20	90	87	85	1	712.975.1*	186

Note: also available in stainless steel AISI-316. | Sizes marked with * do not have UL/CSA approval.



ISO cable-hose fitting, compact, male, nickel plated brass, double EPDM seal according EN 45545-2, HL1 / HL2 / HL3, table R22 and R23, E30 acc. to EN 45545-3



THREAD ISO	SEALTITE SIZE (INCH)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M12 x 1,5	1/4"	1,0 - 5,2	46	9	19	17	14	10	712.712.2*	4
M16 x 1,5	1/4"	1,0 - 5,2	47	10	19	17	18	10	712.713.2*	4,7
M16 x 1,5	5/16"	4,0 - 8,3	50	10	22	20	18	10	712.715.2*	5,7
M20 x 1,5	5/16"	4,0 - 8,3	50	10	22	20	22	10	712.714.2*	6,4
M16 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	18	10	712.716.1	6,8
M20 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	22	10	712.717.1	7,4
M20 x 1,5	1/2"	6,0 - 13,0	53	10	29	27	22	10	712.720.1	7,6
M25 x 1,5	1/2"	6,0 - 13,0	54	10	29	27	27	5	712.722.1	9
M25 x 1,5	3/4"	11,0 - 18,0	56	10	35	33	27	5	712.725.1	11,7
M32 x 1,5	3/4"	11,0 - 18,0	58	12	35	33	35	5	712.728.1	15
M32 x 1,5	1"	16,0 - 25,0	61	12	45	42	35	5	712.732.1	20,3
M40 x 1,5	1"	16,0 - 25,0	63	13	45	42	43	2	712.735.1	24,5
M40 x 1,5	1.1/4"	22,0 - 32,0	69	13	53	50	43	2	712.740.1	28,6
M50 x 1,5	1.1/4"	22,0 - 32,0	70	14	53	50	55	1	712.745.1	34,5
M50 x 1,5	1.1/2"	30,0 - 40,0	78	14	62	58	55	1	712.750.1	46,0
M63 x 1,5	1.1/2"	30,0 - 38,0	82	16	62	58	70	2	712.755.1	61,5
M63 x 1,5	2"	40,0 - 49,0	90	16	76	72	70	2	712.763.1*	80,0

Note: also available in stainless steel AISI-316. | Sizes marked with * do not have UL/CSA approval.



ISO 90° swivel fitting, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E	F			
M16 x 1,5	5/16"	8,3	39	10	26	35	22	22	10	813.915.0	11,2
M16 x 1,5	3/8"	10,4	39	10	26	35	22	22	10	813.916.0	10,8
M20 x 1,5	1/2"	13,8	39	10	29	37	27	25	10	813.920.0	13,2
M25 x 1,5	3/4"	17,4	46	10	35	44	33	31	5	813.925.0	22,8
M32 x 1,5	1"	23,4	55	12	45	55	42	38	5	813.932.0	41,4

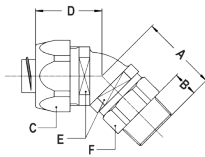
Note: also available in stainless steel AISI-316.



ISO 45° swivel fitting, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E	F			
M16 x 1,5	5/16"	8,3	34	10	26	28	22	21	10	813.415.0	9,9
M16 x 1,5	3/8"	10,4	34	10	26	28	22	21	10	813.416.0	9,5
M20 x 1,5	1/2"	13,8	34	10	29	30	27	25	10	813.420.0	13,5
M25 x 1,5	3/4"	17,4	37	10	35	32	33	31	5	813.425.0	21,5
M32 x 1,5	1"	23,4	41	12	45	37	42	38	5	813.432.0	36,5



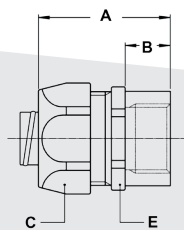
Note: also available in stainless steel AISI-316.



ISO straight fitting, female, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	5/16"	8,3	35	12	26	-	24	10	812.315.1*	5,4
M16 x 1,5	3/8"	10,2	35	12	26	-	24	10	812.316.1	5
M20 x 1,5	1/2"	13,9	37	13	29	-	27	10	812.320.1	7,6
M25 x 1,5	3/4"	18,5	40	15	35	-	33	5	812.325.1	9
M32 x 1,5	1"	23,8	46	15	45	-	43	5	812.332.1	18,3
M40 x 1,5	1 1/4"	31,8	52	16	54	-	52	2	812.340.1	29,3
M50 x 1,5	1 1/2"	36,8	56	18	63	-	60	2	812.350.1	41,2
M63 x 1,5	2"	47,8	66	20	77	-	74	2	812.363.1	71,8



Sizes marked with * do not have UL/CSA approval.

Ana-Quick polyamide conduit

TYPE PA6-V0



APPLICATION AREA

Type PA6-V0 is a medium wall polyamide conduit with good mechanical strength. The PA6-V0 is applicable for medium to heavy circumstances and has a good flexibility. Due to the very good flame properties, the PA6-V0 is particularly suitable for train-building and public areas.

Material & Construction:

Construction: Corrugated conduit from modified polyamide PA6, UV resistant, halogen free.

Flame properties: Self-extinguishing UL-94 V0.

Special approvals, flame properties according to:

- EN 45545-2:

R22 (interior equipment) class HL1, HL2 and HL3.

R23 (exterior equipment) class HL1, HL2 and HL3.

Resistant against: Alcohol, grease, fuels, mineral oils, weak bases and weak acids.

Temperature: -40 °C till +120 °C, intermittent up to +150 °C.

Colour: Black.

Classification according NEN-EN-IEC 61386:

Compression resistance: Class 2, Light (320 N).

Impact resistance: Class 3, Medium (2 J).

Tensile strength: Class 2, Light (250 N).

Protection class: IP 67 (dust-proof, water-tight).



Normal profile "standard wall"

ANA-QUICK	DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT	
	Size (dn)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. black	Metre	Article No. black	Metre	Article No. black	Approx. (kg/m)
7,5	6,7	10,0	20	45	50	801.707.0	-	-	-	-	-	0,020
10	9,9	13,0	25	60	50	801.710.0	-	-	-	-	-	0,027
12	12,2	15,8	35	80	50	801.712.0	-	-	-	-	-	0,036
17	16,6	21,2	50	105	50	801.717.0	-	-	-	-	-	0,061
23	23,2	28,5	60	135	50	801.723.0	-	-	-	-	-	0,088
29	29,0	34,5	75	185	25	801.729.0	-	-	-	-	-	0,118
37	36,0	42,5	90	225	25	801.736.0	-	-	-	-	-	0,158
50	47,7	54,5	110	275	25	801.748.0	-	-	-	-	-	0,208

Ana-Quick polyamide conduit

TYPE PA12H-LFH



APPLICATION AREA

Type PA12H-LFH is an extra heavy polyamide PA12 conduit for high mechanical strength. The PA12H-LFH is applicable for heavy circumstances and for frequent movements. Due to the good flame properties and excellent mechanical characteristics, the PA12H-LFH is particularly suitable for external static and dynamic applications on railway vehicles.

Material & Construction:

Construction: Corrugated conduit from modified polyamide PA12, UV resistant, halogen free.

Flame properties: Self-extinguishing UL-94 V2.

Special approvals, flame properties according to:

- EN 45545-2:

R22 (interior equipment) class HL1 and HL2.

R23 (exterior equipment) class HL1, HL2 and HL3.

Resistant against: Alcohol, grease, fuels, mineral oils, weak bases and weak acids.

Temperature: -50 °C till +100 °C, intermittent up to +150 °C.

Colour: Black.

Classification according NEN-EN-IEC 61386:

Compression resistance: Class 2, Light (320 N).

Impact resistance: Class 4, Heavy (6 J).

Tensile strength: Class 2, Light (250 N).

Protection class: IP 67 (dust-proof, water-tight).



Normal profile "thick wall"

ANA-QUICK		DIAMETRE		BENDING RADIUS (CL)		STANDARD CARTON		SMALL CARTON		REEL		WEIGHT
Size (dn)	Inside (mm)	Outside (mm)	Static (mm)	Dynamic (mm)	Metre	Article No. black	Metre	Article No. black	Metre	Article No. black	(kg/m)	
7,5	6,2	10,0	20	40	50	800.707.0	-	-	-	-	0,022	
10	9,0	13,0	25	55	50	800.710.0	-	-	-	-	0,031	
12	11,5	15,8	35	70	50	800.712.0	-	-	-	-	0,042	
17	16,5	21,2	50	90	50	800.717.0	-	-	-	-	0,070	
23	22,5	28,5	60	115	50	800.723.0	-	-	-	-	0,098	

Ana-Quick polyamide fitting, IP65



ANA-QUICK POLYAMIDE FITTINGS FOR CORRUGATED NYLON CONDUIT

The universal Ana-Quick fitting fits all types of Ana-Quick conduit. The Ana-Quick fitting is easy to connect and due to the integrated release clips also simple to dis-connect if needed.

Material & Construction:

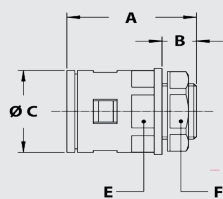
Construction: 1 piece fitting with integrated release clip and locknut included.

Material: Fitting, clip and locknut are made of halogen free Polyamide PA6 (UL-94 V2).

Temperature: -40°C till +120°C continuous.

Protection class: IP 65 (dust-proof, waterprotected).

Colour: Black.



ISO straight fitting, male, PA6, colour black, including locknut



THREAD ISO	ANA-QUICK SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M12 x 1,5	7,5	7,5	34	10	17	16	18	50	968.112.2	0,5
M12 x 1,5	10	7,5	36	10	20	18	18	50	968.111.2	0,6
M16 x 1,5	10	11,2	36	10	20	18	22	50	968.115.2	0,7
M16 x 1,5	12	11,2	41	12	23	21	22	50	968.116.2	0,8
M20 x 1,5	12	15,2	41	13	23	21	27	50	968.117.2	1,1
M20 x 1,5	17	15,2	45	13	30	27	27	50	968.120.2	1,4
M25 x 1,5	17	20,0	45	13	30	27	33	20	968.122.2	1,6
M25 x 1,5	23	20,0	48	13	37	34	33	20	968.125.2	2,0
M32 x 1,5	29	26,0	52	15	44	40	41	10	968.132.2	2,8
M40 x 1,5	37	33,5	55	15	52	49	50	8	968.140.2	3,8
M50 x 1,5	50	42,0	55	16	65	62	62	5	968.150.2	5,5
M63 x 1,5	50	52,0	55	16	65	62	74	5	968.160.2	5,8

Ana-Quick polyamide 90° fitting, IP65



ANA-QUICK POLYAMIDE FITTINGS FOR CORRUGATED NYLON CONDUIT

The universal Ana-Quick fitting fits all types of Ana-Quick conduit. The Ana-Quick fitting is easy to connect and due to the integrated release clips also simple to dis-connect if needed.

Material & Construction:

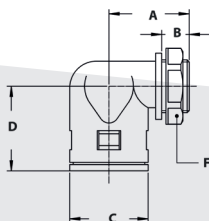
Construction: 1 piece fitting with integrated release clip and locknut included.

Material: Fitting, clip and locknut are made of halogen free Polyamide PA6 (UL-94 V2).

Temperature: -40°C till +120°C continuous.

Protection class: IP 65 (dust-proof, waterprotected).

Colour: Black.



ISO 90° fitting, male, PA6, colour black, including locknut



THREAD ISO	ANA-QUICK SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	F			
M12 x 1,5	7,5	7,8	25	10	17	29	18	50	968.312.2	0,7
M16 x 1,5	10	11,5	26	10	20	31	22	50	968.315.2	0,9
M16 x 1,5	12	11,5	29	12	23	35	22	50	968.316.2	1,2
M20 x 1,5	12	15,2	30	13	23	36	27	50	968.317.2	1,3
M20 x 1,5	17	15,2	34	13	30	39	27	50	968.320.2	1,7
M25 x 1,5	17	18,0	34	13	30	39	33	20	968.322.2	1,9
M25 x 1,5	23	19,5	39	13	37	43	33	20	968.325.2	2,7
M32 x 1,5	29	26,0	42	15	44	48	41	10	968.332.2	4,2
M40 x 1,5	37	33,0	48	15	52	57	50	8	968.340.2	6,4
M50 x 1,5	50	42,0	55	16	65	66	62	5	968.350.2	10,3
M63 x 1,5	50	52,0	55	16	65	66	74	5	968.360.2	9,5

Ana-Quick polyamide fitting, IP66, with metal thread



ANA-QUICK POLYAMIDE FITTINGS FOR CORRUGATED NYLON CONDUIT

The universal Ana-Quick fitting fits all types of Ana-Quick conduit. The Ana-Quick fitting is easy to connect and due to the integrated release clips also simple to disconnect if needed. This version is having a reinforced thread of nickel plated brass.

Material & Construction:

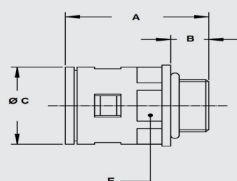
Construction: 1 piece fitting with integrated release clip.

Material: Fitting and clips are made of halogen free Polyamide PA6 (UL-94 V2), thread is nickel plated brass.

Temperature: -40°C till +120°C continuous.

Protection class: IP 66 (dust-proof, waterprotected).

Colour: Black.

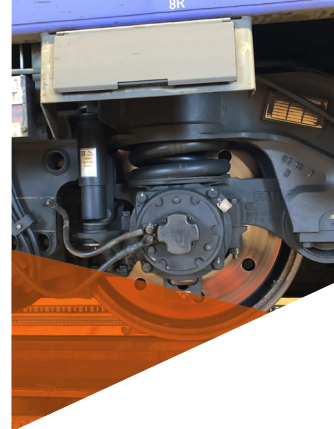


ISO straight fitting, male, PA6, colour black, with metal thread



THREAD ISO	ANA-QUICK SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	10	9,6	44	12	20	18	-	50	969.115.0	2,0
M16 x 1,5	12	9,6	45	12	23	21	-	50	969.116.0	2,2
M20 x 1,5	12	12,0	46	13	23	21	-	50	969.117.0	2,7
M20 x 1,5	17	13,7	50	13	30	27	-	50	969.120.0	3,0
M25 x 1,5	17	17,2	50	13	30	27	-	50	969.122.0	4,5
M25 x 1,5	23	17,7	53	13	37	34	-	20	969.125.0	5,0
M32 x 1,5	29	23,4	56	14	44	41	-	10	969.132.0	6,7
M40 x 1,5	37	31,0	60	17	52	49	-	8	969.140.0	9,4
M50 x 1,5	50	42,3	66	17	64	60	-	5	969.150.0	10,5

Ana-Quick fitting, IP68, nickel plated brass



ANA-QUICK NICKEL PLATED BRASS FITTINGS

The nickel plated brass Ana-Quick fitting fits all types of Ana-Quick conduit. The Ana-Quick fitting is easy to connect and due to the integrated release clips also simple to disconnect if needed. Due to the fact that not only the thread but the complete housing is nickel plated brass, this robust IP 68 fitting is suitable for applications with high technical requirements.

Material & Construction:

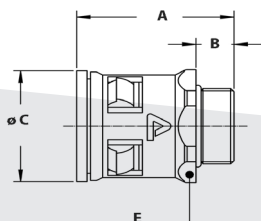
Construction: 1 piece fitting with integrated release clip and internal seal.

Material: Fitting is made of nickel plated brass, clips are made of Polyamide PA6 (UL-94 V2) and internal seal is TPE (alle materials are completely halogen free).

Temperature: -40°C till +120°C continuous.

Protection class: IP 68 (dust-proof, liquid-tight).

Colour: Metal

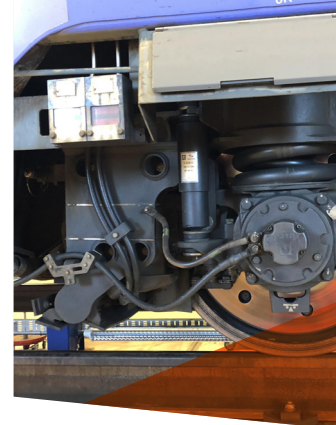


ISO straight fitting, male, nickel plated brass



THREAD ISO	ANA-QUICK SIZE (DN)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	APPROX. WEIGHT (KG/100)
			A	B	C	E	F			
M12 x 1,5	7,5	6,4	34	10	17	16	-	10	652.012.0	1,5
M16 x 1,5	7,5	6,4	34	10	17	20	-	10	652.013.0	2,0
M16 x 1,5	10	9,5	36	10	20	20	-	10	652.015.0	2,0
M20 x 1,5	10	9,5	36	10	20	24	-	10	652.014.0	3,0
M16 x 1,5	12	11,4	38	10	23	21	-	10	652.016.0	2,2
M20 x 1,5	12	11,4	38	10	23	24	-	10	652.017.0	2,9
M20 x 1,5	17	15,4	42	10	29	27	-	10	652.020.0	3,5
M25 x 1,5	17	15,4	43	11	29	29	-	5	652.022.0	4,5
M25 x 1,5	23	20,4	45	11	37	35	-	5	652.025.0	5,3
M32 x 1,5	23	20,4	47	13	37	36	-	5	652.028.0	6,3
M32 x 1,5	29	26,4	51	13	44	44	-	5	652.032.0	9,7
M40 x 1,5	29	26,4	51	13	44	44	-	2	652.035.0	10,3
M40 x 1,5	37	34,9	53	13	52	52	-	2	652.040.0	14,4
M50 x 1,5	37	34,9	54	14	52	55	-	2	652.045.0	17,8
M50 x 1,5	50	43,9	60	14	64	64	-	2	652.050.0	22,7
M63 x 1,5	50	45,9	60	14	64	68	-	2	652.060.0	26,9

Ana-Quick cable-hose fitting, IP68, nickel plated brass



ANA-QUICK NICKLE PLATED BRASS CABLE-HOSE FITTING FOR CORRUGATED NYLON CONDUIT

The nickel plated brass Ana-Quick cable-hose fitting fits all types of Ana-Quick conduit. The Ana-Quick fitting is easy to connect and due to the integrated release clips also simple to disconnect if needed. Due to the fact that not only the thread but the complete housing is nickel plated brass, this robust IP 68 cable-hose fitting is suitable for applications with high technical requirements, especially because of the double clamping seal which provides additional sealing on the cable.

Material & Construction:

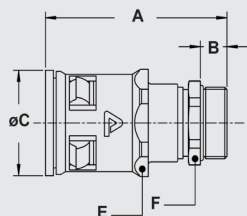
Construction: 1 piece fitting with integrated release clip and internal seal. The cable-hose version has an additional body and double clamping seal.

Material: Fitting is made of nickel plated brass, clips are made of Polyamide PA6 (UL-94 V2) and internal seal is TPE. The double clamping seals are from flame-retardant V0-rated EPDM rubber and are HL1, HL2, HL3 according EN-45545-2 (R22 and R23) as well as meeting the fire-barrier classification E30 according EN-45545-3 for both wall and ceiling applications.

Temperature: -40°C till +120°C continuous.

Protection class: IP 68 (dust-proof, liquid-tight).

Colour: Metal



ISO cable-hose fitting, male, nickel plated brass



THREAD ISO	ANA-QUICK SIZE (DN)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	APPROX. WEIGHT (KG/100)
			A	B	C	E	F			
M12 x 1,5	7,5	1,0 - 6,5	52	9	17	16	14	10	652.712.0	3,1
M16 x 1,5	7,5	1,0 - 6,5	53	10	17	16	18	10	652.713.0	3,9
M16 x 1,5	10	4,0 - 9,5	56	10	20	20	18	10	652.715.0	4,8
M20 x 1,5	10	4,0 - 9,5	56	10	20	20	22	10	652.714.0	5,5
M16 x 1,5	12	4,0 - 9,5	59	10	23	21	18	10	652.716.0	5,1
M20 x 1,5	12	4,0 - 9,5	59	10	23	21	22	10	652.717.0	5,7
M20 x 1,5	17	6,0 - 13,0	65	10	29	27	22	10	652.720.0	7,1
M25 x 1,5	17	6,0 - 13,0	66	10	29	27	27	5	652.722.0	9,1
M25 x 1,5	23	11,0 - 18,0	69	10	37	35	27	5	652.725.0	11,5
M32 x 1,5	23	11,0 - 18,0	71	12	37	35	35	5	652.728.0	15,5
M32 x 1,5	29	16,0 - 25,0	76	12	44	44	35	5	652.732.0	19,5
M40 x 1,5	29	16,0 - 25,0	77	13	44	44	43	2	652.735.0	24,8
M40 x 1,5	37	22,0 - 32,0	81	13	52	52	43	2	652.740.0	28,5
M50 x 1,5	37	22,0 - 32,0	82	14	52	52	55	2	652.745.0	35,3
M50 x 1,5	50	30,0 - 40,0	92	14	64	64	55	2	652.750.0	43,3
M63 x 1,5	50	30,0 - 40,0	95	16	64	64	70	2	652.760.0	58,9

Ana-Quick conduit holder



ANA-QUICK POLYAMIDE CONDUIT HOLDER, CONNECTABLE

The universal PA6 conduit holder fits all types of Ana-Quick conduit. This conduit holder is having an integrated securing cover and a simple mechanism for interconnecting.

Material & Construction:

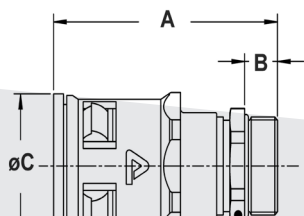
Construction: 1 piece conduit holder consisting of basic clamp and securing cover.

Material: Completely made of PA6 (UL-94 V2).

Temperature: -40°C till +120°C continuous.

Protection class: Not applicable.

Colour: Black.



Conduit holder, connectable, PA6, black



ANA-QUICK SIZE (DN)	ANA-QUICK TYPE	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	APPROX. WEIGHT (KG/100)
			A	B	C	D	E			
7,5	-	-	13	23	19	10	4,3	50	795.107.1	0,3
10	-	-	14	26	23	10	4,3	50	795.110.1	0,3
12	-	-	15	29	26	10	4,3	50	795.112.1	0,4
17	-	-	18	34	31	10	4,5	50	795.117.1	0,4
23	-	-	22	43	39	12	5,3	50	795.123.1	0,7
29	-	-	24	49	47	12	5,3	25	795.129.1	1,0
37	-	-	30	59	56	16	5,8	20	795.137.1	1,8
50	-	-	35	71	70	20	6,2	10	795.150.1	3,2

Hiprojacket Aero red



BRAIDED E-GLASS FIBRE SLEEVING, IRON OXIDE SILICONE COVER, SUPERIOR FLAME PROTECTION

This product complies in full with the smoke and fire requirements of EN 45545. The ultimate heat protection for cables and hoses. This solid braided e-glass fibre sleeving, with thick silicone cover, is constructed according to the Aerospace Standard SAE AS1072 and allows qualified hose assemblies to pass the AS1055 testing. Hiprojacket Aero is designed to protect cables and wires such as brake sensor cables from sparks and heat caused by wheel to track friction or for any cable on the train that is exposed to continuous or intermittent high temperatures from equipment such as a motor converter box.

Material & Construction:

Construction: Braided sleeving from E-glass yarns, solid constructed according Aerospace Standard SAE AS1072 type 2.

Cover specifications: Iron-oxide silicon rubber. Excellent oil resistant, halogen free, superior short term flame protection, excellent temperature reduction and withstands molten splash.

Special approvals:

- Flameretardant acc.UNI CEI 11170-3.
- EN 45545-2; R22 and R23 HL1 / HL2 / HL3, (CIT_{nlp} = 0,02 , Ds max = 70 and LOI = 40,1).

- Allows qualified hose assemblies to pass the SAE AS1055 testing.
- Temperature:** -55 °C till +260 °C continuous.
- Under flame till +800 °C for approx. 20 minutes.
- Radiation heat till +800 °C for approx. 20 minutes.
- Molten metal splash till +1640 °C for 15 - 30 seconds.
- Colour:** Red.



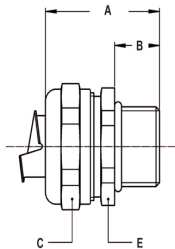
HIPROJACKET AERO			DIAMETRE		STANDARD CARTON		WEIGHT
Size (mm)	Size (inch)	Type	Inside (mm)	Outside (mm)	Metre	Article No. red	(kg/m)
6	1/4"	HJ-04	6	11	30	336.006.3	0,12
10	3/8"	HJ-06	10	15	30	336.010.3	0,16
13	1/2"	HJ-08	13	18	30	336.013.3	0,19
16	5/8"	HJ-10	16	22	30	336.016.3	0,21
19	3/4"	HJ-12	19	25	30	336.019.3	0,24
22	7/8"	HJ-14	22	28	30	336.022.3	0,28
25	1"	HJ-16	25	31	30	336.025.3	0,33
29	1.1/8"	HJ-18	29	35	30	336.029.3	0,35
32	1.1/4"	HJ-20	32	38	30	336.032.3	0,39
35	1.3/8"	HJ-22	35	41	30	336.035.3	0,45
38	1.1/2"	HJ-24	38	44	30	336.038.3	0,48
41	1.5/8"	HJ-26	41	47	30	336.041.3	0,52
44	1.3/4"	HJ-28	44	50	30	336.044.3	0,64
51	2"	HJ-32	51	57	30	336.051.3	0,67
57	2.1/4"	HJ-36	57	63	30	336.057.3	0,74
64	2.1/2"	HJ-40	64	70	30	336.064.3	0,75
70	2.3/4"	HJ-44	70	76	30	336.070.3	0,88
76	3"	HJ-48	76	82	30	336.076.3	1,03
83	3.1/4"	HJ-52	83	89	30	336.083.3	1,13
89	3.1/2"	HJ-56	89	95	30	336.089.3	1,18
95	3.3/4"	HJ-60	95	101	30	336.095.3	1,34
102	4"	HJ-64	102	108	30	336.102.3	1,41

COMPACT FITTINGS, NICKEL PLATED BRASS

Clamping ring and ferrule, zinc plated brass, for combination of compact fittings with Hiprojacket



Size (mm)	HIPROJACKET TYPE		MIN. INTERNAL (MM)	FITTING THREAD SIZE			STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
	Aero	Ind.		ISO	Pg	NPT			
13/10	HJ-08	HJ-I-06	10,4	M16 x 1,5	Pg 11	1/2" NPT	10	817.512.6	1,6
16/13	HJ-10	HJ-I-08	13,4	M20 x 1,5	Pg 16	1/2" NPT	10	817.516.6	2,2
22/19	HJ-14	HJ-I-12	18,8	M25 x 1,5	Pg 21	3/4" NPT	5	817.520.6	3,1
25	HJ-16	HJ-I-16	24,8	M32 x 1,5	Pg 29	1" NPT	5	817.526.6	4,3
35/32	HJ-22	HJ-I-20	31	M40 x 1,5	Pg 36	1.1/4" NPT	2	817.535.6	9,0
38	HJ-24	HJ-I-24	35,8	M50 x 1,5	Pg 42	1.1/2" NPT	2	817.540.6	14,5
51	HJ-32	HJ-I-32	46,6	M63 x 1,5	Pg 48	2" NPT	2	817.550.6	24,5

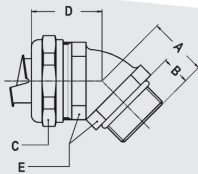


ISO straight fitting, compact, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	3/8"	11	31	10	26	-	24	10	712.016.1	3,9
M20 x 1,5	3/8"	11	31	10	26	-	24	10	712.017.1	4
M20 x 1,5	1/2"	14,5	32	10	29	-	27	10	712.020.1	4,4
M25 x 1,5	3/4"	19,4	33	10	35	-	33	5	712.025.1	6,6
M32 x 1,5	1"	24,7	36	12	45	-	42	5	712.032.1	11,7
M40 x 1,5	1.1/4"	33,3	40	13	53	-	50	2	712.040.1	16
M50 x 1,5	1.1/2"	38	46	14	62	-	58	2	712.050.1	25,3
M63 x 1,5	2"	49	52	16	76	-	72	2	712.063.1	38,6

Note: also available in stainless steel AISI-316.



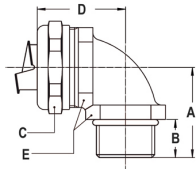
ISO 45° fitting, compact, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	3/8"	11	19	10	26	27	22	10	712.416.1	6,3
M20 x 1,5	3/8"	11	20	10	26	28	24	10	712.417.1	7,2
M20 x 1,5	1/2"	14,5	21	10	29	30	27	10	712.420.1	8,3
M25 x 1,5	3/4"	19,4	23	10	35	33	33	5	712.425.1	12,8
M32 x 1,5	1"	24,7	28	12	45	38	42	5	712.432.1	22,5
M40 x 1,5	1.1/4"	33,3	33	13	53	39	52	2	712.440.1	34,5
M50 x 1,5	1.1/2"	38	35	14	62	46	60	2	712.450.1	50
M63 x 1,5	2"	49	40	16	76	53	72	2	712.463.1	80,5

Note: also available in stainless steel AISI-316.

COMPACT FITTINGS, NICKEL PLATED BRASS



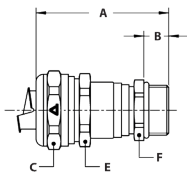
ISO 90° fitting, compact, male, nickel plated brass



THREAD ISO	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	3/8"	11	26	10	26	31	22	10	712.916.1	6,6
M20 x 1,5	3/8"	11	26	10	26	32	24	10	712.917.1	7,9
M20 x 1,5	1/2"	14,5	28	10	29	34	27	10	712.920.1	9,2
M25 x 1,5	3/4"	19,4	32	10	35	40	33	5	712.925.1	16,2
M32 x 1,5	1"	24,7	40	12	45	49	42	5	712.932.1	27,8
M40 x 1,5	1.1/4"	33,3	46	13	53	53	52	2	712.940.1	40,1
M50 x 1,5	1.1/2"	38	52	14	62	57	60	2	712.950.1	57,5
M63 x 1,5	2"	49	62	16	76	68	72	2	712.963.1	90,6

Note: also available in stainless steel AISI-316.

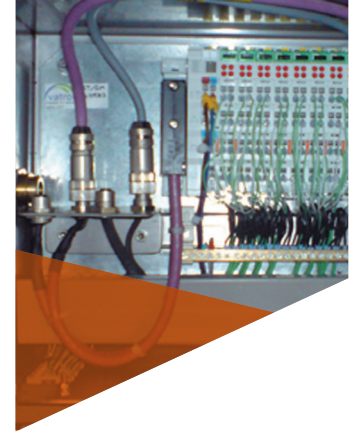
ISO cable-hose fitting, compact, male, nickel plated brass, double seal according EN 45545-2, HL1 / HL2 / HL 3, table R22 and R23, E30 acc. to EN 45545-3



THREAD ISO	SEALTITE SIZE (INCH)	CLAMPING RANGE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	E	F			
M16 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	18	10	712.716.1	6,8
M20 x 1,5	3/8"	4,0 - 9,5	50	10	26	24	22	10	712.717.1	7,4
M20 x 1,5	1/2"	6,0 - 13,0	53	10	29	27	22	10	712.720.1	7,6
M25 x 1,5	1/2"	6,0 - 13,0	54	10	29	27	27	5	712.722.1	9
M25 x 1,5	3/4"	11,0 - 18,0	56	10	35	33	27	5	712.725.1	11,7
M32 x 1,5	3/4"	11,0 - 18,0	58	12	35	33	35	5	712.728.1	15
M32 x 1,5	1"	16,0 - 25,0	61	12	45	42	35	5	712.732.1	20,3
M40 x 1,5	1"	16,0 - 25,0	63	13	45	42	43	2	712.735.1	24,5
M40 x 1,5	1.1/4"	22,0 - 32,0	69	13	53	50	43	2	712.740.1	28,6
M50 x 1,5	1.1/4"	22,0 - 32,0	70	14	53	50	55	1	712.745.1	34,5
M50 x 1,5	1.1/2"	30,0 - 40,0	78	14	62	58	55	1	712.750.1	46,0
M63 x 1,5	1.1/2"	30,0 - 40,0	82	16	62	58	70	1	712.755.1	62
M63 x 1,5	2"	40,0 - 50,0	89	16	76	72	70	1	712.763.1	81

Note: also available in stainless steel AISI-316.

Thermojacket S



BRAIDED SLEEVING FROM E-GLASS, WITH AN ACRYLIC SATURANT COATING

The braided E-glass fibre sleeving is coated with an acrylic saturant coating, which adds rigidity and abrasive strength to the hose or cable and the large braid angle allows for significant expansion of the sleeve if necessary (for instance with in-line couplings or bigger cable-splices). Thermo jacket S does not withstand molten splash like Hipro jacket does, but offers good heat protection at higher continuous temperatures than are possible for Hipro jacket.

Material & Construction:

Construction: Braided E-glass sleeving, with acrylic saturant coating; high continuous temperature, halogen free, good thermal insulation, abrasion resistant, no end-fray, easy installation for long lengths.

Temperature: -55 °C till +538 °C continuous.

Colour: Gold.



THERMOJACKET S			DIAMETRE		STANDARD CARTON		SMALL CARTON		REELS		WEIGHT
Size (mm)	Size (inch)	Type	Inside (mm)	Outside (mm)	Metre	Article No. gold	Metre	Article No. gold	Metre	Article No. gold	(kg/m)
4	1/4"	TJ-04	5 - 10	7 - 12	30	336.604.3	15	336.604.1	180	336.604.8	0,02
6	3/8"	TJ-06	8 - 15	10 - 17	30	336.606.3	15	336.606.1	120	336.606.8	0,04
10	5/8"	TJ-10	12 - 30	14 - 32	30	336.610.3	15	336.610.1	75	336.610.8	0,08
14	7/8"	TJ-14	20 - 50	22 - 52	30	336.614.3	15	336.614.1	60	336.614.8	0,15
22	1.3/8"	TJ-22	30 - 65	32 - 67	30	336.622.3	15	336.622.1	45	336.622.8	0,2
44	2.3/4"	TJ-44	50 - 125	52 - 127	30	336.644.3	15	336.644.1	-	-	0,3

Special remarks:

Thermojacket S is a woven sleeve and for this reason very flexible. Due to its flexibility it can be expanded, so different sizes can be covered with one and the same type of Thermo jacket S.

Please notice that when the sleeve is expanded, more meters are necessary to cover the same length, as indicated in the table below.

- TJ-04 on 6 mm core: 1,00 metre TJ is needed to cover 1,00 metre core.
- TJ-06 on 10 mm core: 1,00 metre TJ is needed to cover 1,00 metre core.
- TJ-06 on 13 mm core: 1,25 metre TJ is needed to cover 1,00 metre core.
- TJ-10 on 16 mm core: 1,00 metre TJ is needed to cover 1,00 metre core.
- TJ-10 on 19 mm core: 1,15 metre TJ is needed to cover 1,00 metre core.
- TJ-14 on 25 mm core: 1,02 metre TJ is needed to cover 1,00 metre core.
- TJ-14 on 32 mm core: 1,08 metre TJ is needed to cover 1,00 metre core.
- TJ-22 on 38 mm core: 1,06 metre TJ is needed to cover 1,00 metre core.
- TJ-22 on 52 mm core: 1,17 metre TJ is needed to cover 1,00 metre core.
- TJ-44 on 76 mm core: 1,16 metre TJ is needed to cover 1,00 metre core.
- TJ-44 on 102 mm core: 1,51 metre TJ is needed to cover 1,00 metre core.

Basaltjacket



KNITTED SLEEVING FROM BASALT YARN

This high temperature knitted sleeve is constructed of 100% basalt yarn, which provides excellent thermal protection and will withstand continuous exposure to temperatures of up to +750°C. When installed on locomotive exhaust tubes and pipes, the sleeve facilitates retention of high temperatures as gases flow through the exhaust system.

The durable, knitted design is very flexible, which enables ease of assembly over tubes and pipes with bends and flanges. The dense single wall construction provides optimal coverage. The heavy duty construction, which is more than 15% denser than market average and minimizes snagging and tearing of the sleeve during assembly. The sleeves are available in pre-cut lengths or continuous lengths of up to 150 meter (depending on size), which permits the user to cut the sleeves to exact lengths to adapt to specific requirements.

Material & Construction:

Construction: Knitted basalt yarn.

Operating temperature: -260 °C till +750 °C continuous, +980°C short term.

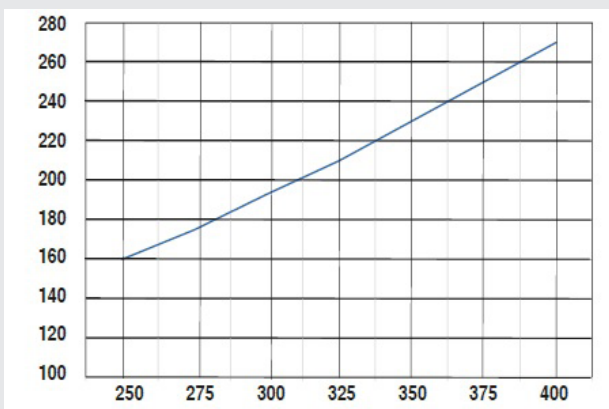
Colour: Gold.



BASALTJACKET			DIAMETRE		STANDARD CARTON		SMALL CARTON		REELS		WEIGHT
Size (mm)	Size (inch)	Type	Inside (mm)	Outside (mm)	Metre	Article No. gold	Metre	Article No. gold	Metre	Article No. gold	(kg/m)
25	1"	BJ-16	25	30	152	347625.6	30	347625.3	-	-	0,20
38	1.1/2"	BJ-24	38	43	91	347638.6	30	347638.3	-	-	0,26
51	2"	BJ-32	51	56	76	347651.6	30	347651.3	-	-	0,32
64	2.1/2"	BJ-40	64	69	68	347664.6	30	347664.3	305	347664.8	0,40
76	3"	BJ-48	76	81	61	347676.6	30	347676.3	259	347676.8	0,47
89	3.1/2"	BJ-56	89	94	53	347689.6	30	347689.3	228	347689.8	0,52
102	4"	BJ-64	102	107	50	347695.6	30	347695.3	198	347695.8	0,62
127	5"	BJ-80	127	132	38	347698.6	30	347698.3	152	347698.8	0,78

Wire heat protection test

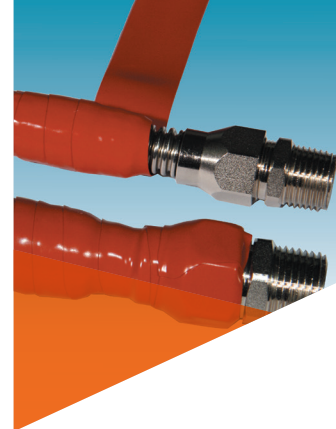
Wire temperature at 76 mm from a 4" exhaust tube



Exhaust tube temperature °C

The information contained herein is believed to be reliable. Users should make their own evaluations on products and materials to determine the suitability for the application.

Hiprosiltape red / black



TAPE FROM SELF-FUSING SILICONE RUBBER

Hiprosiltape is specially formulated to adhere to itself and is used to seal the ends of Hiprojacket and Hiprotape. Neatly applied over the transition from the Hiprojacket / Hiprotape to the surface of the hose or conduit being protected, the self-fusing tape provides a cohesive moisture resistant barrier. Conforming smoothly when wrapped around even complex shapes, the tape bonds at room temperature into a single inseparable layer after 24 hours. The product remains non-tacky to touch and is inherently flame retardant, providing a superior alternative to the standard band clamp.

Material & Construction:

Construction: Unsupported silicone rubber tape, self-fusing, ideal to seal-off.

Cover specifications: Self-fusing silicone rubber, excellent oil resistant, halogen free, inherently flame-retardant.

Temperature: -55 °C till +260 °C continuous.

Colour: Red & black, on request also available in other colours.

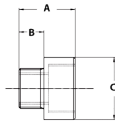


HIPROSILTAPE			DIAMETRE		STANDARD CARTON		SMALL CARTON		RANDOM LENGTH		WEIGHT
Size (mm)	Size (inch)	Type	Width (mm)	Thickness (mm)	Metre	Article No. red	Metre	Article No. red	Metre	Article No. red	(kg/m)
25	1"	HST-16	25	0,5	11	337.525.1	-	-	-	-	0,02
38	1.1/2"	HST-24	38	0,3	11	337.538.1	-	-	-	-	0,04

Accessories



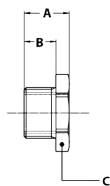
ISO / ISO enlarger, nickel plated brass



THREAD	INSIDE THREAD	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M12 x 1,5	M16 x 1,5	-	15	5	18	-	-	50	881.216.0	1,2
M16 x 1,5	M20 x 1,5	-	18	6	22	-	-	50	881.220.0	1,5
M20 x 1,5	M25 x 1,5	-	19	7	27	-	-	50	881.225.0	2,5
M25 x 1,5	M32 x 1,5	-	21	8	34	-	-	20	881.232.0	2,9
M32 x 1,5	M40 x 1,5	-	23	8	42	-	-	20	881.240.0	4,5
M32 x 1,5	M50 x 1,5	-	31	9	53	-	-	10	881.245.0	6
M40 x 1,5	M50 x 1,5	-	31	9	53	-	-	10	881.250.0	7,7
M50 x 1,5	M63 x 1,5	-	24	10	65	-	-	5	881.263.0	7,8



ISO / ISO reducer, nickel plated brass



OUTSIDE THREAD	INSIDE THREAD	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	M12 x 1,5	-	10	7	20	-	-	50	882.212.0	1,2
M20 x 1,5	M16 x 1,5	-	10	7	24	-	-	50	882.216.0	1,5
M25 x 1,5	M20 x 1,5	-	12	8	30	-	-	20	882.220.0	2,6
M32 x 1,5	M25 x 1,5	-	13	9	36	-	-	20	882.225.0	4,5
M40 x 1,5	M32 x 1,5	-	13	9	42	-	-	10	882.232.0	6,9
M50 x 1,5	M40 x 1,5	-	15	10	55	-	-	5	882.240.0	11,8
M63 x 1,5	M50 x 1,5	-	18	11	70	-	-	1	882.250.0	22,1



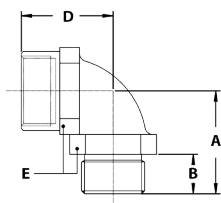
ISO lock nuts, nickel plated brass



THREAD	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	-	-	3	-	20	-	-	50	880.112.0	0,4
M16 x 1,5	-	-	3	-	20	-	-	50	880.116.0	0,4
M20 x 1,5	-	-	3,5	-	24	-	-	50	880.120.0	0,6
M25 x 1,5	-	-	3,5	-	30	-	-	25	880.125.0	0,9
M32 x 1,5	-	-	4,5	-	35	-	-	20	880.132.0	2,2
M40 x 1,5	-	-	4,5	-	45	-	-	10	880.140.0	3,2
M50 x 1,5	-	-	5,5	-	55	-	-	10	880.150.0	5
M63 x 1,5	-	-	6	-	70	-	-	5	880.163.0	5,6
M75 x 1,5	-	-	7	-	80	-	-	5	880.175.0	7,5
M90 x 2,0	-	-	8	-	100	-	-	5	880.190.0	11

Note: also available in stainless steel AISI-316.





90° elbow, ISO, inside / outside thread, nickel plated brass



OUTSIDE THREAD	INSIDE THREAD	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
M16 x 1,5	M16 x 1,5	-	26	10	-	24	22	10	783.016.0	6
M20 x 1,5	M20 x 1,5	-	26	10	-	25	24	10	783.020.0	10
M25 x 1,5	M25 x 1,5	-	32	10	-	34	33	5	783.025.0	16
M32 x 1,5	M32 x 1,5	-	40	12	-	40	42	5	783.032.0	26
M40 x 1,5	M40 x 1,5	-	46	13	-	45	52	5	783.040.0	37
M50 x 1,5	M50 x 1,5	-	52	14	-	51,5	60	5	783.050.0	52



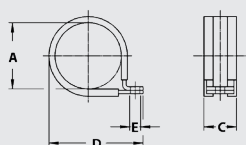
Double hole conduit holder, galvanised steel



THREAD	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
-	1/2"	-	-	-	-	-	-	25	885.016.2	-
-	3/4"	-	-	-	-	-	-	10	885.020.2	-
-	1"	-	-	-	-	-	-	5	885.026.2	-
-	1.1/4"	-	-	-	-	-	-	5	885.035.2	-
-	1.1/2"	-	-	-	-	-	-	2	885.040.2	-
-	2"	-	-	-	-	-	-	1	885.050.2	-



Conduit mounting clip, galvanised steel



THREAD	SEALTITE SIZE (INCH)	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
			A	B	C	D	E			
-	1/4"	-	10	-	12,5	25	4,2	100	885.306.0	0,4
-	5/16"	-	13	-	12,5	27	4,2	100	885.310.0	0,4
-	3/8"	-	18	-	11	34	4,2	100	885.312.0	0,5
-	1/2"	-	21	-	15,5	40	5,5	100	885.316.0	1
-	3/4"	-	29	-	15,5	48	5,5	50	885.320.0	1,2
-	1"	-	35	-	18	60	6,2	30	885.326.0	2,2
-	1.1/4"	-	42	-	18	74	6,3	20	885.335.0	2,7
-	1.1/2"	-	54	-	18,5	86	6,2	20	885.340.0	3,2
-	2"	-	58	-	18	90	6,3	20	885.350.0	3,6
-	2.1/2"	-	79	-	25	100	8,5	1	885.363.0	8,4

Sensor adapters, IP 65, nickel plated brass



ANACONDA SENSOR ADAPTER IN FULL METAL FOR PEPPERL + FUCHS SENSORS

The Anaconda nickel plated brass adapter is designed for use with a sensor of the fixed wire connection type. The all metal design means it is suited for high temperature and other demanding applications - conditions where plastic adapters often fail. The Anaconda adapter accommodates a sensor at one end and an Anaconda Sealtite or Multiflex conduit at the other end, an assembly that ensures long term protection of the sensor cable. The sensor is installed into the female thread of the adapter and the conduit is installed at the other end with a locknut on the male thread of the adapter. IP 65 is achieved with an Anaconda Sealtite conduit, IP 40 with a Multiflex conduit.

Material & Construction:

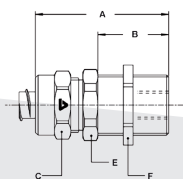
Construction: Nickel plated brass, consisting of 5 parts (counter nut, clamping ring, ferrule, body and locknut).

Material: Counter nut, ferrule, body and locknut are nickel plated brass. Clamping ring is made of Polyamide PA6.

Temperature: -45 °C till +105 °C continuous.

Protection class: IP 65.

Colour: Metal coloured.



Sensor adapter for Anaconda Sealtite, IP 65



FEMALE THREAD	SEALTITE SIZE (INCH)	MALE THREAD	MIN. INTERNAL BORE (MM)	DIMENSIONS IN MM						STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
				A	B	C	E	F				
M8 x 1	1/4"	M12 x 1,5	5,2	34	12	19	17	15	10	884.008.0	3	
M12 x 1	1/4"	M16 x 1,5	5,2	38	16	19	17	20	10	884.012.0	3,5	
M14 x 1	1/4"	M18 x 1,5	5,2	41	20	19	20	22	10	884.014.0	4	
M18 x 1	5/16"	M22 x 1,5	8,3	49	26	22	24	26	10	884.018.0	6	
M30 x 1,5	5/16"	M35 x 1,5	8,3	53	30	22	36	40	5	884.030.0	13	

Double seal cable glands, nickel plated brass



ANACONDA CABLE GLANDS WITH DOUBLE LAYER SEALS

Anaconda nickel plated brass cable glands contain two clamping seals, one with a larger diameter seal into which a smaller diameter seal fits. Both seals are made of V0 rated EPDM rubber, tested and certified in compliance with EN45545-2, Hazard Level (HL1 / HL2 / HL3) and E15/E30 according to EN45545-3 for wall and ceiling used for rail applications. When a larger diameter cable is used the larger diameter seal can be used on its own and when a smaller diameter cable is used both clamping seals are required with the smaller one inserted inside the larger one. Both seals are supplied standard as part of the cable gland. The double seal cable glands can also be used with braided cables for EMC applications by simply folding the end of the braid over the top of the clamping seal(s) before mounting.

Material & Construction:

Construction: Nickel plated brass fitting, consisting of 3 parts (body, counter nut and double clamping seal).

Material: The body and counter nut are nickel plated brass. The clamping seals are made from EPDM rubber.

Special approvals: The cable glands have clamping rubbers from flame retardant V0-rated EPDM and are HL 1, HL 2 and HL 3 according

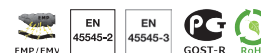
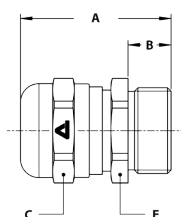
EN 45545-2, R22 and R23, as well as meeting the fire-barrier classification E30 according to EN-45545-3 for both wall and ceiling applications.

Temperature: -55 °C till +125 °C continuous.

Protection class: IP 68, NEMA 4X.

Colour: Metal coloured.

ISO cable gland, male, nickel plated brass
(with double layer EPDM seal)



THREAD ISO	CLAMPING RANGE (MM)		DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
	S1 + S2	S1	A	B	C	D	E			
M12 x 1,5	1,0 - 4,0	4,0 - 6,5	29	9	14	-	14	10	726.712.1	1,9
M16 x 1,5	1,0 - 4,0	4,0 - 6,5	30	10	14	-	18	10	726.713.1	2,7
M16 x 1,5	4,0 - 6,5	6,5 - 9,5	32	10	17	-	18	10	726.716.1	3
M20 x 1,5	4,0 - 6,5	6,5 - 9,5	32	10	17	-	22	10	726.717.1	3,7
M20 x 1,5	6,0 - 9,0	9,0 - 13	35	10	22	-	22	10	726.720.1	3,8
M25 x 1,5	6,0 - 9,0	9,0 - 13	36	10	22	-	27	5	726.722.1	5,3
M25 x 1,5	11 - 14	14 - 18	38	10	27	-	27	5	726.725.1	5,8
M32 x 1,5	11 - 14	14 - 18	40	12	27	-	35	5	726.728.1	9
M32 x 1,5	16 - 20	20 - 25	42	12	35	-	35	5	726.732.1	9,9
M40 x 1,5	16 - 20	20 - 25	43	13	35	-	43	2	726.735.1	14,3
M40 x 1,5	22 - 27	27 - 32	45	13	43	-	43	2	726.740.1	15,2
M50 x 1,5	22 - 27	27 - 32	46	14	43	-	55	2	726.745.1	21,5
M50 x 1,5	30 - 35	35 - 40	50	14	53	-	55	2	726.750.1	23

Double seal cable glands, nickel plated brass, UL / CSA



ANACONDA CABLE GLANDS UL / CSA, NICKEL PLATED BRASS, WITH DOUBLE LAYER SEALS

Anaconda nickel plated brass cable glands contain two clamping seals, one with a larger diameter seal into which a smaller diameter seal fits. Both seals are made of VO rated EPDM rubber, tested and certified in compliance with EN45545-2, Hazard Level (HL1 / HL2 / HL3) for rail applications. When a larger diameter cable is used the larger diameter seal can be used on its own and when a smaller diameter cable is used both clamping seals are required with the smaller one inserted inside the larger one. Both seals are supplied standard as part of the cable gland. The double seal cable glands can also be used with braided cables for EMC applications by simply folding the end of the braid over the top of the clamping seal(s) before mounting. The cable glands are UL / CSA and NEMA 4X approved for export outside Europe and have an extra robust counter nut, as well as an increased clamping strength.

Material & Construction:

Construction: Nickel plated brass fitting, consisting of 3 parts (body, counter nut and double clamping seal).

Material: The body and counter nut are nickel plated brass. The clamping seals are made from EPDM rubber.

Special approvals: UL-514B and CSA C 22.2 (combined UL / CSA file # E 500099), suitable for use in hazardous environments according NEC:

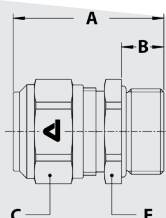
- Article 501.10 (B) (2) Class I, Division 2.
- Article 502.10 (A) (2) and (B) (2).
Class II, Division 1 and 2.
- Article 503.10 (A) (3) and (B).
Class III, Division 1 and 2.

The cable glands have clamping rubbers from flame retardant VO-rated EPDM and are HL 1, HL 2 and HL 3 according to EN 45545-2, R22 and R23, as well as meeting the fire-barrier classification E30 according to EN-45545-3 for both wall and ceiling applications

Temperature: -45 °C till +105 °C continuous.

Protection class: IP 68. NEMA 4X.

Colour: Metal.



ISO cable gland, male, nickel plated brass
(with double layer EPDM seal)



THREAD ISO	CLAMPING RANGE (MM)		DIMENSIONS IN MM					STANDARD PACKAGE	ARTICLE NUMBER	WEIGHT (KG/100)
	S1 + S2*	S1	A	B	C	D	E			
M16 x 1,5	4,0 - 6,5	6,5 - 8,5	32	10	17	-	18	10	736.716.1**	3
M20 x 1,5	4,0 - 6,5	6,5 - 8,5	32	10	17	-	22	10	736.717.1	3,7
M20 x 1,5	6,0 - 9,0	9,0 - 12	35	10	22	-	22	10	736.720.1	3,8
M25 x 1,5	6,0 - 9,0	9,0 - 12	36	10	22	-	27	5	736.722.1	5,3
M25 x 1,5	10,5 - 14	14 - 17	38	10	27	-	27	5	736.725.1	5,8
M32 x 1,5	10,5 - 14	14 - 17	40	12	27	-	35	5	736.728.1	9
M32 x 1,5	15,5 - 20	20 - 24	42	12	35	-	35	5	736.732.1	9,9
M40 x 1,5	15,5 - 20	20 - 24	43	13	35	-	43	2	736.735.1	14,3
M40 x 1,5	22 - 27	27 - 31	45	13	43	-	43	2	736.740.1	15,2
M50 x 1,5	22 - 27	27 - 31	46	14	43	-	55	2	736.745.1	21,5
M50 x 1,5	29,5 - 35	35 - 40	50	14	53	-	55	2	736.750.1	23
M63 x 1,5	29,5 - 35	35 - 40	53	16	53	-	70	2	736.755.1	41

* For UL / CSA applications requiring a pull out strength of 159 N, increase the indicated minimum clamping diameter for the double seal with 1,5 mm.

** Size M16x1,5 with UL recognition (UR) instead of UL listing.

Hipro products engineering data

Heat protection products

The right choice of heat protection materials is important for the functioning and durability of the equipment.

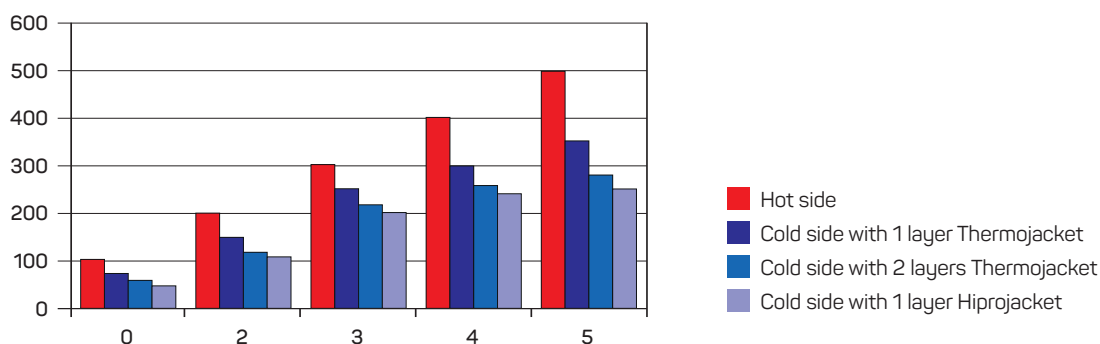
The heat protection materials of Anamet Europe B.V. can basically be divided into 3 groups:

1. Hipro-products, consisting of an E-glass fibre base, covered with iron-oxide silicon rubber.
Temperature range: -55 °C till +260 °C continuous, +800 °C for approx. 20 minutes and +1640 °C for 15 - 30 seconds
Flammability: UL-94 V1.
2. Thermo-products, consisting completely of E-glass fibre.
Temperature range: -55 °C till +538 °C continuous.
3. Silica-products consisting of completely amorphous silica fibres.
Temperature range: -55 °C till +1090 °C continuous. Each product groups are available in various grades and executions, like sleeving, tape, blankets and remountable wraps.

The choice of which product offers the best solution is strongly depending on the exact application. Thermo- and Silica-products don't withstand open flame exposure and molten splash, like the Hipro-products do. At the other hand Thermo-and Silica-products offer a good heat protection at higher continuous temperatures than are possible for Hipro-products.

Next to the temperature resistance, there is also a difference in insulation characteristics for the Hipro- and Thermo-products, as shown in the graph below. If however a higher level of insulation is required please refer to page 31 where we have our special high temperature insulation wraps shown.

Thermal protection - hot side versus cold side (Temp. in °C)



Note: Above mentioned values are based on respectively Hiprojacket Aero and Thermo jacket S (saturated) with the heat source at the inside of the sleeving. For additional information on specific conditions, please contact your Anamet representative.

When Hipro products exposed to flame, the silicone rubber transforms into crust, creating a protective SiO₂ refractory layer. Hipro products withstands repeated exposures to molten steel, molten aluminum and molten glass up to +1650 °C.



The heavy coating of our proprietary iron oxide red silicone compound sheds molten metal splashes immediately, so very little heat transfer occurs.

The fibre glass will not burn, retains 75% of its tensile at 343 °C, softens at 732 °C till 877 °C and melts at 1121 °C till 1182 °C.

The theoretical dielectric strength of our Hipro products is 16,000 V per mm cover thickness, being the characteristic of Silicone rubber. However as the liquid process, to coat the sleeves, tapes and blankets, allows for possible inclusions of tiny airbubbles or pinholes we cannot guarantee a minimum dielectric strength of the finished product.

MSDS for Hipro-, Thermo and Silicajacket



HIPRO- THERMO- AND SILICA INSTRUCTION:

The heatprotection products of Anamet Europe BV can be easily cut with a pair of scissors or a craft knife. Please note however the under mentioned safety regulations.

SAFETY AND HEALTH PRECAUTIONS FOR HANDELING HIPRO- AND THERMO PRODUCTS

For the Hipro products there are no additional safety pre-cautions needed in addition to the Thermo products. The difference between these product groups is the silicone cover. Silicone can be classified as not dangerous. In case of E-Glass fibre, precautions under certain circumstances might be needed.

Personal safety:

Breath safety: In situations where large quantities of fibre dust occur, it is advised to wear at least an European commission approved FP1 or FP2 dusk mask. We recommend using types like 3M8710 or 33M9900 or similar, being approved by the American National Institute for Occupational Safety and Health (NIOSH).

Eye protection: Safety glasses or mask.

Hand protection: Safety hand gloves.

Body protection: Using long sleeved clothes (shirt and trousers) in order to avoid irritation. Persons with a sensible skin are recommended to protect free falling skin areas with a protective crème.

Instruction for labour hygiene: The regulation as stated in TRGS 521 - glass fibre dust – as published on November 1997, Nr. 5, general statement, for fibres with a diameter larger than 3 µm which will occur during handling or machining a product, should be followed up accordingly.

Toxicologic instructions:

Local effects: Short term itch possible. The itch is from mechanical art and short term, they can be applicable for skin, eyes and the upper respiration. The influence will however decrease by leaving the production area. Classification according Norm 67 / 548 / EEC is not needed as glass filaments are according Norm 97 / 69 / EC not classified as being itchy (Class Xi).

Irritation: Very seldom allergic reactions. The statement of allergies is given in general. In order to avoid any risk we advise to handle the products in a moist environment.

Risk of cancer: The high quality E-glassfibers used in the Hipro- and Thermo-products are having a diameter of more than 3 micron (typical diameter of 9 micron average) and are therefore classified as non-respirable!! This means that these fibers do not penetrate in the lower lungs. Respirable fibers are defined as "... fibers with a length of more than 5 micron, with a diameter smaller than 3 micron and a length / diameter ratio of more than 3/1 ..." (definition according to the World Health Organization).

Details towards risk of cancer: The fact that E-Glass fibres are a non-cancer risk are, independently from each other, stated by various official authorities. The WHO (World Health Organisation) has, through its International Cancer Investigation Centre (CIRC), in addition to the congress in June 1987, checked all relevant laboratory tests on animals with reflection to glass fibres analysis. The results are that Glass fibres are judged as a non-risk in relation to cancer. They belong to the group MMF (Man made Mineral Fibres). The European commission has, in Norm 97 / 69 / EC, included that Glass fibres are a non-risk element and for this reason do not need any classification or labelling.

Risk Substances:

E-Glass fibre: CAS-Nr.: 65977-17-3, R-Type not applicable, mass quantity 98,5 - 99 %.

Coating: Non-subscribed, R-Type not applicable, mass quantity 1,5 - 1,0 %.

First aid method:

Description first aid method: Cleaning activities in order to remove fibres from respiration, skin and mucous membrane.

After inhalation: Forcing coughing by using slime developing or stimulating damp (like water damp inhalation).

After skin contact: Cleaning the skin by using water and soap.

After eye contact: Large fibres by mechanical cleaning. Small fibres by flushing water from the nose to the eye corner.

After eating: Meaningless.

Instruction for first aid or medical assistance: No specific medical treatment is needed.

Instructions for fire fighting: The burning gasses from glass fibres are in basic; Carbon Dioxide and water damp. It is however possible that small amounts of Carbon Monoxide and other substances will occur. In case of large fires the use of protection equipment is needed.

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