



guiding
connections

NOVOFIT ENDSTOPS

PRODUCT DESCRIPTION

These products are microduct end stop for Telecom direct installed application and Telecom direct buried applications.

Specifically to (temporarily) close microducts, like Novomicro DI or Novomicro DB and or microduct containing products.

Novofit endstop is available to close microducts DI with outer diameter [mm]: 4, 5, 7, 8, 10, 12, 14 and 16.

Novofit endstop Reinforced Product is available to close Microducts DB with outer diameter [mm]: 7, 8, 10, 12, 14 and 16.

Novofit endstop: Although unforeseen reopening of the end stop is limited, due to the high pull out force, a locking clip is available for each size.



Novofit endstop:

Novofit endstop Reinforced Product: This product is available in Temporary version (connector RP + plug) or permanent version (endstop + protection case).



Temporary Novofit endstop RP:
Connector RP + plug



Permanent Novofit endstop RP:
Endstop + protection case

Accessible & Watertight Solutions for
latest generation telecom networks

APPLICATION AREA

Novofit endstop are designed for use with Wavin Cable Duct system to close microducts DI used in:

- as single product
- Optopipes
- Novonet
- Novospace
- Novomicro DI

The product should be used in a protected area like a PDC or in manholes.

The fittings are not meant for direct buried applications (for this we advice Novofit RP).

Novofit endstop RP are designed for use with Wavin Cable Duct system to close Microducts DB used:

- as single product
- in Novosplit
- in Novoflat

The Novofit endstop RP can be realised in two ways:

- a temporary endstop, consisting of a Novofit connector RP combined with a plug.
- a permanent endstop, consisting of an endstop combined with a protection case.

Do not use our novofit connectors and endstops with alcohol mixtures, that contents less than 20% of water

PRODUCT FEATURES

Novofit endstop:

- Transparent housing
- Suitable for microducts from 4 – 16 mm
- Easy handling due to release functioning
- Pressure tight
- Suitable from -15 °C
- Leak tight
- Expected lifetime 25 years under normal installation conditions
- Tested in accordance with EN 50411-2-8:2009

Novofit endstop RP:

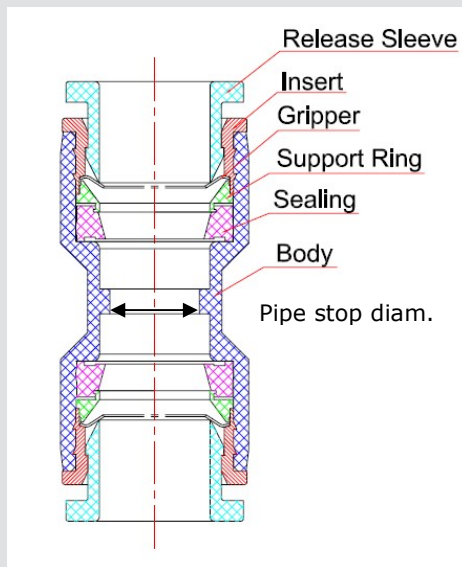
- Transparent housing + transparent protection case
- Suitable for microducts from 7 - 16 mm
- Push fit
- Re-openable (with screw driver)
- Pressure tight
- Leak tight
- Suitable from -15 °C
- Increased impact resistance for DB installation
- Locking clip included in protection case
- Expected lifetime 25 years under normal installation conditions for internal fitting
- Tested in accordance with EN 50411-2-8:2009.

PRODUCT COMPONENTS

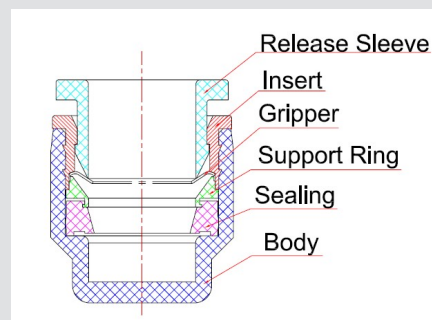
Novofit endstop:
Endstop + locking clip



Temporary Novofit endstop RP:
Connector RP + plug



Permanent Novofit endstop RP:
Endstop + protection case



Part description

No of parts

	Endstop RP Temporary	Endstop RP Permanent	Endstop
1. Release sleeve	2	1	1
2. Insert	2	1	1
3. Grab ring (Gripper)	2	1	1
4. Support ring	2	1	1
5. Sealing	2	1	1
6. Body	1	1	1
7. Protection case	1	1	not needed
8. Plug	1	not needed	not needed
9. Locking clips	not needed	not needed	1

PRODUCT SPECIFICATIONS

Materials

1. Release sleeve	POM
2. Insert	Nickel plated brass
3. Grab ring	Stainless steel
4. Support ring	POM
5. Sealing	NBR (fulfilling EN681-1)
6. Body	Clear PA
7. Protection case	PP
8. Plug	PP
9. Locking clips	POM

The material is not UV stable for ½ year. It is advised to protect the product from direct sunlight.

Dimensions Novofit endstop

Item	ID entrance [mm]	Length (body) * [mm]	Max OD(body) [mm]	Weight [g]
4 mm endstop	>4	13,0	11,0	2
5 mm endstop	>5	13,0	13,0	3
7 mm endstop	>7	16,0	14,6	4
8 mm endstop	>8	16,0	14,6	4
10 mm endstop	>10	19,4	18,4	8
12 mm endstop	>12	20,0	21,0	9
14 mm endstop	>14	20,0	23,4	10
16 mm endstop	>16	20,5	26,0	19

* = excluding insert + release sleeve

Dimensions Novofit endstop RP

	ID entrance [mm]	Protection case [mm]		Total weight endstop RP * [g]	
		Length	Max OD	Temporary endstop RP	Permanent endstop RP
7 mm endstop RP	>7	41,3	26 / 19	13	8
8 mm endstop RP	>8	41,3	26 / 19	13	8
10 mm endstop RP	>10	49,7	29 / 24	24	12
12 mm endstop RP	>12	51,5	31 / 26	28	13
14 mm endstop RP	>14	51,3	32 / 28	30	14
16 mm endstop RP	>16	51,3	32 / 28	42	19

* = including insert + release sleeve and protection case

Colours

Release sleeve	Dark grey-blue
Insert	Nickel colour
Grab ring	Stainless steel
Support ring	Black
Sealing	Black
Body	Transparent
Protection case	Translucent
Plug	Black
Locking clips	Orange

PRODUCT PERFORMANCE

Products diameter 14 mm is tested in accordance with EN 50411:2009.
Report is available on request.

Mechanical tests on Novofit endstop

Product	Push in force [N]		Pull out force [N]		Impact resistance (-15/20 °C) [Joule]
	Required	Typical test result	Required	Typical test result	1)
4 mm end stop	<40	10	>30	90	>1 / >2,5
5 mm end stop	<40	12	>55	110	>1 / >2,5
7 mm end stop	<40	15	>125	190	>1 / >2,5
8 mm end stop	<40	25	>125	320	>1 / >2,5
10 mm end stop	<40	25	>125	340	>1 / >2,5
12 mm end stop	<40	25	>125	390	>1 / >2,5
14 mm end stop	<75	34	>125	390	>1 / >2,5
16 mm end stop	<75	36	>125	586	>1 / >2,5

Mechanical tests on Novofit endstop RP

Product	Push in force [N]		Pull out force [N]			Impact resistance (-15/20 °C) [Joule]	Impact resistance (-20 °C) [Joule]
	Required	Typical test result	Required	Typical test result 1)	2)	3)	
7 mm endstop RP	<40	12	>125	200		5	>1
8 mm endstop RP	<40	23	>125	300	320	5	>1
10 mm end top RP	<40	25	>125	350	350	5	>1
12 mm endstop RP	<40	25	>125	475	640	5	>1
14 mm endstop RP	<75	30	>125	600		5	>1
16 mm endstop RP	<75	31	>125	584	580	5	>1

1) Tested with Novomicro DB pipe (in case of permanent endstop RP)

2) Pull out force when using the plug (in case of temporary endstop RP)

3) Impact requirement for microducts DI is 1 joule ≥ 5 mm and 0,5 J for <5 mm ducts at 20 °C (EN 50411-6-1:2011)

Tightness tests

Product	Leak tightness [cm ³ /min]	Resistance against internal pressure [h]		Spade test
	1)	18 bar/20 °C	25 bar/20 °C	2)
Requirement		>2h	>0,5h	
4 mm end stop	<1	> 24 h	>0,5 h	
5 mm end stop	<1	> 2 h	>0,5 h	
7 mm end stop	<1	> 2 h	>0,5 h	1000 N
8 mm end stop	<1	> 2 h	>0,5 h	
10 mm end stop	<1	> 24 h	>0,5 h	1000 N
12 mm end stop	<1	> 2 h	>0,5 h	1800 N
14 mm end stop	<1	> 2 h	>0,5 h	
16 mm end stop	<1	> 24 h	>0,5 h	

1) 8 bar / 4 hours + 2 bar / 24 hours

2) Technical Specification Speednet, version 1,0, June 2011.

Corrosion test stainless steel parts

Alls stainless steel parts have been tested on corrosion resistance during 100 h, pH 6-7 salt solution.

Life time fitting body material

Fitting product withstand pressure test after aging during 1000 hours at 95 °C to indicate an expected lifetime of 25 years

PACKAGING AND LABELLING
Packaging


Endstop (1 product have to be ordered)

Product	Article no	Fittings/bag [nr]	Weight per bag [g]	Size of bag width x length [mm]
4 mm end stop	3023911	100	213	120 x 170
5 mm end stop	4021082	100	282	120 x 170
7 mm end stop	3023913	100	394	180 x 250
8 mm end stop	3023914	100	376	180 x 250
10 mm end stop	3023738	100	800	220 x 295
12 mm end stop	3023916	100	925	220 x 295
14 mm end stop	4036088	100	1175	220 x 295
16 mm end stop	4037193	100	1960	220 x 295

Temporary endstop RP (2 products have to be ordered)

Size	Article no	Fittings/bag [nr]	Weight per bag [g]	Article no	Plugs/bag [nr]	Weight per bag [g]
						
7 mm	4036082	100	870	3040601	25	25
8 mm	4036083	100	1030	3040602	25	42
10 mm	4036084	100	1700	3040603	20	45
12 mm	4036085	100	1925	3040604	10	30
14 mm	4036086	100	2820	3040605	5	20
16 mm	4037191	100	3680	3040606	5	26

Permanent endstop RP (2 products have to be ordered)

Size	Article no 	end stops/bag [nr]	Weight per bag [g]	Article no 	Protection cases/bag [nr]	Weight per bag [g]
7 mm	3023913	100	390	4036811	100	400
8 mm	3023914	100	380	4036811	100	400
10 mm	3023738	100	800	4036813	100	400
12 mm	3023915	100	930	4036814	100	400
14 mm	4036088	100	1200	4036815	100	400
16 mm	4037193	100	2000	4037192	100	400

Labelling

The labels contain information about ; product name / quantity / article no / batch no / barcode + EAN code.

Repair

In case of problems, locking clips and Novofit protection cases are available as repair set. Packed as 100 fittings/bag.

Product	Article no	Fittings / bag (Nbr)
4mm Locking clip	4036089	100
5mm Locking clip	4036090	100
7mm Locking clip	4036090	100
8mm Locking clip	4036092	100
10mm Locking clip	4036093	100
12mm Locking clip	4036094	100
14mm Locking clip	4036095	100
16mm Locking clip	4036096	100



Protection case

Product	Article no	Weight / bag (g)
7mm Protection Case	4036811	400
8mm Protection Case	4036811	400
10mm Protection Case	4036813	400
12mm Protection Case	4036814	400
14mm Protection Case	4036815	400
16mm Protection Case	4037192	400





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NOVOFIT CONNECTORS

PRODUCT DESCRIPTION

These products are microduct connectors for Telecom direct buried applications and Telecom direct installed applications.

Specifically to connect microducts, like Novomicro DI or Novomicro DB, and microduct containing products like Novosplit, Novoflat or Novospeed.

Novofit connector is applicable to connect Microducts DI with an outer diameter [mm]: 4, 5, 7, 8, 10, 12, 14 and 16

Novofit connector Reinforced Product is available to connect Microducts DB with outer diameter [mm]: 7, 8, 10, 12, 14, 16

Novofit connector: Although unforeseen reopening of the connector is limited, due to the high pull out force, locking clips are available for each size.



Novofit connector



Novofit connector Reinforced Product: The protection case is pre-installed but can be removed if needed (make sure that the protection case is properly reinstalled or use a repair set).

Novofit connector RP



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APPLICATION AREA

Novofit connectors are designed for use with Wavin Cable Duct system to connect microducts DI used in

- as single product
- Optopipes
- Novonet
- Novospace

The product should be used in a protected area like a PDC or in manholes.

The fittings are not meant for direct buried applications (for this we advise Novofit connector RP).

Novofit connectors RP are designed for use with Wavin Cable Duct system to connect Microducts DB used:

- as single product
- in Novosplit
- in Novoflat

The fittings are meant for direct buried applications.

The case acts as an extra impact barrier for the internal fitting.

Do not use our Novofit connectors and endstops with alcohol mixtures, that contents less than 20% of water

PRODUCT FEATURES

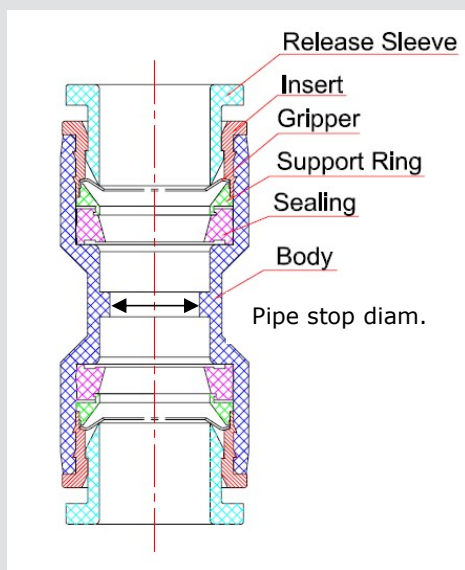
Novofit connector:

- Transparent housing
- Suitable for microducts from 4 – 16 mm
- Easy handling due to release functioning
- Pressure tight
- Suitable from -15 °C
- Leak tight
- Expected lifetime 25 years under normal installation conditions
- Tested in accordance with EN 50411-2-8:2009.

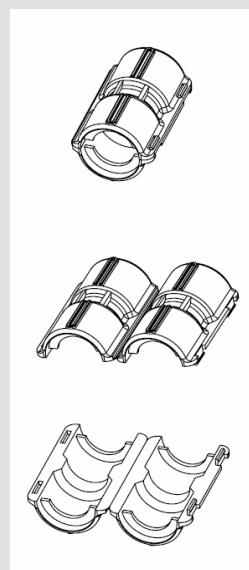
Novofit connector RP:

- Transparent housing + transparent case (Novofit connector RP)
- Suitable for microducts from 7 - 16 mm
- Push fit
- Re-openable (with screw driver)
- Re-usable connector (spare cases on request)
- Pressure tight
- Leak tight
- Suitable from -15 °C
- Increased impact resistance for DB installation
- Locking clip incorporated in the case
- Expected lifetime 25 years under normal installation conditions for fitting
- Tested in accordance with EN 50411-2-8:2009.

PRODUCT COMPONENTS



Part description	No of parts
1. Release sleeve	2
2. Insert	2
3. Grab ring (Gripper)	2
4. Support ring	2
5. Sealing	2
6. Body	1
7. Protection case	1
8. Locking clips	2



Protection case*

*the locking clips are incorporated in the protection case

PRODUCT SPECIFICATIONS

Materials

1. Release sleeve	POM
2. Insert	Nickel plated brass
3. Grab ring	Stainless steel
4. Support ring	POM
5. Sealing	NBR (fulfilling EN681-1)
6. Body	Clear PA
7. Protection case	PP
8. Locking clips	POM



Locking clips

The material is not UV stable for ½ year. It is advised to protect the product from direct sunlight.

Dimensions Novofit connector RP and Novofit connector

Item	Length (total product) [mm]	Max OD (prot. case) [mm]	ID entrance [mm]	Pipestop diameter [mm]	Pipestop width [mm]	Weight [g]
4 mm connector	25,0	11,0	>4	3,6	1,8	4
5 mm connector	26,6	13,0	>5	4,4	1,5	6
7 mm connector	29,5	14,6	>7	6,2	1,3	7
8 mm connector	29,5	14,6	>8	7,1	1,5	8
10 mm connector	37,2	18,4	>10	9,3	1,85	16
12 mm connector	38,0	21,0	>12	11,0	2,0	18
14 mm connector	38,0	23,0	>14	13,0	2,0	19
16 mm connector	38,0	26,0	>16	14,0	2,0	33
7 mm connector RP	41,3*	26 / 19	7 ±0,2	6,2	1,3	11,9*
8 mm connector RP	41,3*	26 / 19	8 ±0,2	7,1	1,5	11,3*
10 mm connector RP	49,7*	29 / 24	10 ±0,2	9,3	1,85	21,8*
12 mm connector RP	51,5*	31 / 26	12 ±0,2	11,0	2,0	25,3*
14 mm connector RP	51,3*	32 / 28	14 ±0,2	13,0	2,0	26,4*
16 mm connector RP	51,3*	32 / 28	16 ±0,2	14,0	2,0	36,8*

* = including insert + release sleeve and protection case

Colours

Release sleeve	Dark grey-blue
Insert	Nickel colour
Grab ring	Stainless steel
Support ring	Black
Sealing	Black
Body	Transparent
Protection case	Translucent
Locking clips	Orange



PRODUCT PERFORMANCE

Product diameter 14 mm has been tested in accordance with EN 50411:2009.
Report is available on request.

Mechanical tests Novofit connector RP and Novofit connector

Product	Push in force		Pull out force		Impact resistance (-15/20 °C) [Joule]	Impact resistance (-20 °C) [Joule]
	[N]		[N]			
	Required	Typical test result	Required	Typical test result	1)	
4 mm connector	<40	10	>30	80	>1 />2,5	
5 mm connector	<40	11	>55	130	>1 />2,5	
7 mm connector	<40	12	>125	200	>1 />2,5	
8 mm connector	<40	23	>125	300	>1 />2,5	
10 mm connector	<40	25	>125	350	>1 />2,5	
12 mm connector	<40	25	>125	475	>1 />2,5	
14 mm connector	<75	30	>125	600	>1 />2,5	
16 mm connector	<75		>125		>1 />2,5	
7 mm connector RP	<40	12	>125	200	5	>1
8 mm connector RP	<40	23	>125	300	5	>1
10 mm connector RP	<40	25	>125	350	5	>1
12 mm connector RP	<40	25	>125	475	5	>1
14 mm connector RP	<75	30	>125	600	5	>1
16 mm connector RP	<75	31	>125	585	5	>1

1) Impact requirement for microducts DI is 1 joule ≥ 5 mm and 0,5 J for <5 mm ducts at 20 °C (EN 50411-6-1:2011)

Mechanical and tightness tests Novofit connector

Product	Leak tightness [cm ³ /min]		Resistance against internal pressure [h]		Crush resistance		Spade test
	1)	2)	18 bar/ 20 °C	25 bar/ 20 °C	3)	4)	5)
Requirement			>2h	>0,5h			
4 mm connector	<1		> 24 h	>0,5 h		87 N	
5 mm connector	<1	< 1	> 2 h	>0,5 h		134 N	
7 mm connector	<1	< 1	> 2 h	>0,5 h		191 N	1400 N
8 mm connector	<1		> 2 h	>0,5 h		229 N	
10 mm connector	<1		> 24 h	>0,5 h	OK	287 N	1400 N
12 mm connector	<1		> 2 h	>0,5 h	OK	488 N	1800 N
14 mm connector	<1	< 1	> 2 h	>0,5 h	OK	471 N	
16 mm connector	<1	<1	> 24 h	>0,5 h			

1) 8 bar / 4 hours + 2 bar / 24 hours

2) 15 bar during 4 hours (leakage at t=4 hours)

3) EN 50411-2-8 (test -15 °C and +45 °C) – 450 N

4) Pull out (5mm/min) after crush 1000 N and check removing and reinstalling new pipes

5) Technical Specification Speednet, version 1,0, June 2011.

CORROSION TEST STAINLESS STEEL PARTS

All stainless steel parts have been tested on corrosion resistance during 100 h, pH 6-7 salt solution.

LIFE TIME BODY MATERIAL

Product withstand pressure test after aging during 1000 hours at 95 °C to indicate an expected lifetime of 25 years

PACKAGING AND LABELLING

Packaging Novofit connector RP and Novofit connector

Product	Article no.	Fittings/bag [nr]	Weight per bag [g]	Size of bag width x length [mm]
4 mm connector	3023754	100	423	180 x 255
5 mm connector	3023755	100	583	170 x 255
7 mm connector	3023756	100	770	220 x 300
8 mm connector	3023757	100	730	220 x 300
10 mm connector	3023384	100	1600	280 x 405
12 mm connector	3023909	100	1825	280 x 405
14 mm connector	4036087	100	2490	280 x 405
16 mm connector	4037190	100	2380	280 x 405
7 mm connector RP	4036082	100	870	220 x 295
8 mm connector RP	4036083	100	1030	220 x 295
10 mm connector RP	4036084	100	1700	280 x 405
12 mm connector RP	4036085	100	1925	280 x 405
14 mm connector RP	4036086	100	2820	280 x 405
16 mm connector RP	4037191	100	3680	280 x 405

The locking clips are incorporated with each connector.

The protection case are incorporated with each connector RP.



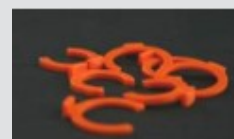
Labelling

The labels contain information about; product name / quantity / article no / batch no / barcode + EAN code.

Repair

In case of problems, locking clips and Novofit protection cases are available as repair set. Packed as 100 fittings/bag.

Product *	Article no	Fittings/bag [nr]
4 mm locking clip	4036089	100
5 mm locking clip	4036090	100
7 mm locking clip	4036091	100
8 mm locking clip	4036092	100
10 mm locking clip	4036093	100
12 mm locking clip	4036094	100
14 mm locking clip	4036095	100
16 mm locking clip	4036096	100



Product	Article no.	Weight per bag [g]
7 mm protection case	4036811	400
8 mm protection case	4036811	400
10 mm protection case	4036813	400
12 mm protection case	4036814	400
14 mm protection case	4036815	400
16 mm protection case	4037192	400




 guiding
connections

GAS AND WATER BLOCK CONNECTOR (ACTIVE)

PRODUCT DESCRIPTION

This product is a water and gas block connector and offers a water and gas tight seal with the cable and the microduct to the external network.

It is available in two designs and in reducer version (design 3).

APPLICATION AREA

This product can be used with microducts in a telecom network. It should be used in situation where there is a risk of water and/or gas permeation penetration into the network.

The connector offers a continuous uninterrupted internal through bore, to ensure good fiber cable installation. The connector offers simple handling to guarantee a water and gas tight seal to the external network.

The fittings are not meant for direct buried applications.

NOTE: Do not squeeze the seal ring before cable has been installed

PRODUCT FEATURES

- Transparent housing
- Suitable for microducts from 4 – 15 mm
- Easy handling due to release functioning, assembly without tools
- Gas and water tight
- Pressure tight
- Suitable from -25 °C
- Design life time = 20 years

PRODUCT COMPONENTS

<u>Part description</u>	<u>No of parts</u>
1. Body	2
2. Retainer	2
3. Retainer sleeve	2
4. Cap	1
5. Seal	1
6. O-ring	2
7. Grab ring	2



Design 1



Design 2



Design 3

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PRODUCT SPECIFICATIONS
Materials + colours

	Part	Material	Colour
1.	Body	Polycarbonate	transparent
2.	Retainer	POM	yellow
3.	Retainer sleeve	POM	red
4.	Cap	POM	black or yellow
5.	Gas Block Seal	Silicone	several colours
6.	O-ring	Nitrile	black
7.	Grab ring	Stainless steel	metal


Dimensions

Item	Wavin art. nr	Design	Cap color	Cable [mm]
4 mm	4034770	1		0,8 – 2,5
5 mm	4034771		black	1 – 3,5
6 mm				1 – 4
7 mm	4059344		black	1 – 3.8
	4034772			2 – 5,5
8 mm				0,5 – 3,5
			black	3 – 6
	4034637	2		0,9-4,5
10 mm	4059190	1		3 – 6
	4032264		yellow	5 – 8
12 mm	4034636			3 – 6
	4035784		yellow	5 – 8
	4032265			7 – 10
14 mm	4036089			3 – 6
	4036732		yellow	5 – 8
	4036722			7 – 10
	4036724		yellow	9 – 12
16 mm				3 – 6
				5 – 8
				7 – 10
				9 – 12
20 mm				3 – 6
			5 – 8	
			7 – 10	
			9 – 12	
Reducers				
5 – 3 mm	4037218	3		0,5 – 2,1
7 – 5 mm	4049151			1 – 3.5
8 – 5 mm	4034622			1 – 3,5

PRODUCT PERFORMANCE

Product	Tensile test [N] a)		Leak test OK at .. bar b)	Leak test at gas block c)	Max Pressure [bar] d)	4 hrs pressure test e)	Water ingress at .. bar f)
	PE pipe	FR pipe					
4 mm (0,8 – 2,5)	50	30	15	OK	25	> 15	0,3
5 mm (0,5 – 3,5)	65	45	15	OK	25	> 15	0,4
6 mm (1-4)							
7 mm (1 – 3,8)							
7 mm (2 – 5,5)	100	60	15	OK	25	>15	0,4
8 mm (0,5 – 3,5)							
8 mm (3 – 6)	85	50	10	OK	25	> 10	0,4
8 mm (0,9-4,5)							0,3
10 mm (3 – 6)							
10 mm (5 – 8)	130		8	Sniffer g)		> 10	0,3
12 mm (3 – 6)	200	120	15	OK	25	>15	0,4
12 mm (5 – 8)	200	120	15	OK	25	>15	0,4
12 mm (7 – 10)	200	120	15	OK	25	>15	0,4
14 mm (3 – 6)							
14 mm (5 – 8)							
14 mm 7 – 10)	200	120	15	OK	25	>15	0,4
14 mm (9 – 12)	200	120	15	OK	25	>15	0,4
16 mm (3 – 6)							
16 mm (5 – 8)							
16 mm (7 – 10)							
16 mm (9-12)							
20 mm (3 – 6)							
20 mm (5 – 8)							
20 mm (7 – 10)							
20 mm (9-12)							

a) Speed 25 min/min, tested with 2 types of microduct tube

b) Max leakage 1 cc/min at indicated pressure [bar]

c) No pressure drop after 48 hours, at 0,5 bar pressure.

d) Burst pressure [bar] with failure within 1 minute

e) 4 hrs pressurisation test at mentioned test pressure [bar]

f) Water ingress test, no leakage over a period of 24 hrs.

g) Gas leakage controlled with sniffer test

PACKAGING

100 per box

SAFETY

The products can be safely used at blowing pressures indicated in the table.