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At Filoform, we focus on you - our customers. From the moment you contact us, you are assured of a friendly reception and a prompt response to your queries. We promise you our undivided attention and we will carry out your instructions to the letter.

Our dedicated, close knit and professional team will engage with you, to find out exaFiloformy what you want in order to supply you with the best solutions you need, in your specialized market sector. We also aim to continuously improve on our service to you, however we can, wherever we can.

We will act with openness, honesty and complete transparency in all of our dealings with you - in sales, production, research, administration and management.

Simply put, we want you to enjoy the best experience possible as a customer of Filoform.

Our Mission

As energy, communications and continuous innovation are all inextricably linked with our lives today, modern communication and utility networks will play a vital and increasingly important role in the creation of our future society.

Filoform's mission is to assist you in planning for this opportunity now and to provide you with the best solutions, applications and products to protect your investment in the future.

This future includes:

· The development of highly efficient and smart energy grids with which the end user has a relationship both as a buyer and seller of energy.
· The creation of decentralized energy production systems to meet local demand for electric mobility.
· The utilization of new, safer and sustainable energy sources like wind and solar power.
· Changing the way in which we work by planning and developing high data capacity fibre optic networks and different types of mobile communications networks.

Our Expertise

For over 50 years, we have developed major expertise in manufacturing and supplying quality products and solutions to connect, seal and protect the underground cable networks of our international and domestic customers.

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ISO certification

The quality of our products is monitored - from raw material to the finished article. Our ISO 9001: 2008 certificate assures you that we work in accordance with specified procedures - from the development process and right through production. Because we review all of our processes on a constant basis, any deficiencies are noticed immediately. This ensures a continuous process of improvement.

This also applies to our environmental management system. Certified to ISO 14001: 2004, Filoform is committed to continuously improving on the environmental impact of our products and operations.

Quality, Environment, Health, and Safety Policy

Filoform works in a safe, responsible way, through which we respect quality, the environment and health of our employees, our clients and the community where we are active. We shall in no way act in a reckless way concerning values on quality, environment, health and safety in order to increase our profits or production.

Our products and working methods will be designed to respect all current laws and government directions. Our processes are as efficient as possible and we strife to continuously improve or products, services and customer satisfaction. Our education policy will enable employees to perform their tasks in the best possible way.

Filoform Values concerning Quality, Environment, Health and Safety:

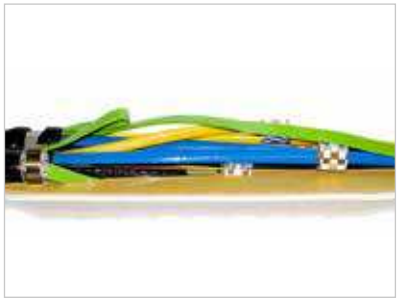
• We value the human life above all and we deal accordingly with risks. We see this as a responsibility for all employees.
• We continuously strive to a work environment free of environmental, health and safety incidents. We see this as a responsibility for all employees.
• We make no concessions in our quality, environment, health and safety for profits or production. Where possible we will change to more environmental friendly solutions and products.
• We obey all laws and apply stricter rules to us and our vendors where we experience unacceptable risks.
• We support the durable development by considering social responsibility, economic success and high environmental quality in our decision making process.
• We measure and evaluate our impact on the environment and strive for continuously improvement.
• We deliver and use safe and reliable products and services.
• We use our knowledge on quality, environment, health and safety to improve the safety and well being in the community where we are active.
• We all have the obligation to respect and implement these principles and values. Each and every Filoform employee is expected to understand and promote this policy and the related principles and actively contribute to their implementation.

Technical Information

Injection Moulded Shells
Rigid and very strong, their snap-lock design forms an excellent seal and prevents egress of resin.

Mechanical Connectors
Filoform mechanical connectors have been especially designed to complete a cable joint kit suitable as standard to fit LV cables up to 120mm. The connectors are machined from solid brass and are suitable for either copper or aluminum conductors.

The connector range is complemented with larger aluminum sheer off bolt heads, please see the LV connector section.



Earth Braid
Filoform's earth braid offers significant advantages over "single wire type" earth continuity systems, which can fail if poorly positioned within wire armour cores that have "spread". The flat, soft braid ensures good electrical contact and is insulated for extra protection.

Constant Force Springs
Cable Joints move and expand due to earth shift and heat from electrical current. Constant force springs react to this movement and maintain a sound electrical connection between the steel wire armoring and the earth continuity braid.

This method replaces the original work drive clip.

Core Separators
Provide safe separation of cores and connectors.

Two-part resin
Filoform's long proven resin formula is of such high quality that's it is equally suitable for both LV and MV applications and provides excellent adhesion to PVC, XLPE, Polythene, and paper cables. It is supplied in a two-part easy mix packaging, ensuring both convenience and safety.

Packaging
Filoform Joints are supplied in robust and rigid boxes to withstand stacking both in warehouses and in pallets. These boxes are also popular with jointers since they can be used as "mini workbenches" to cut the ends of the shells.

Breadth of range
There are few, if any combinations of power cables that Filoform cannot join. We offer over 600 variations of resin cable joints including special versions for mines & quarries; oil & petrochem, Telecom, Control; & cathodic protection. These utilize both cast resin joints; Taped resin joints and heatshrink technology. All supplied for both LV & MV applications.

Technical Support
For technical support please call you dedicated office. You will find contact details in the back of the catalogue.

LV Resin Cable Joints - Straight

suitable for PVC or XLPE cable, 1kV

Armoured Cables / CM range

Max Cable Size 4 core (mm2)	Basic Joints		Basic Joints plus Mechanical Connectors (suitable for both (aliminum & copper)	
	Part No	Earth Kit included	Part No	Connectors included
1.5 - 6.0	CM0 / ST6	Braid & Constant Force Springs	CM0 / ST6 +C	4 x (1.5 - 6.0mm) connectors
10 - 16.0	CM1 / ST16	Braid & Constant Force Springs	CM1 / ST16 +C	4 x (10 - 16mm) connectors
25	CM2 / ST25	Braid & Constant Force Springs	CM2 / ST25 +C	4 x (25 - 35mm) connectors
35 - 70	CM2.5 / ST35/70	Braid & Constant Force Springs	CM2.5 / ST35/70 +C	4 x (50 - 70mm) connectors
70 - 95	CM3 / ST95	Braid & Constant Force Springs	CM3 / ST95 + C	4 x (95 - 120mm) connectors
95 - 120	CM4 / ST120	Braid & Constant Force Springs	CM4 / ST120 +C	4 x (95 - 120mm) connectors
150 - 185	CM5 / ST185	Braid & Constant Force Springs	CM5 / ST185 +C	4 x (150 - 185mm) connectors
240 - 300	CM6 / ST300	Braid & Constant Force Springs	CM6 / ST300 +C	4 x (300mm) connectors
400	CM7 / ST400	Braid & Constant Force Springs	CM7 / ST400 +C	4 x (400mm) connectors

Quick selection - Armoured cable using Mechanicle Connectors																	
No of cores	Cable size (mm2)																
	1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400
1									CM1 / ST16		CM2.5 / ST35/70			CM3 / ST95		CM4 / ST120	CM6 / ST300
2	CM0 / ST6					CM1 / ST16		CM2 / ST25	CM2.5 / ST35/70			CM3 / ST95		CM4 / ST120		CM5 / ST185	CM6 / ST300
3	CM0 / ST6				CM1 / ST16		CM2 / ST25	CM2.5 / ST35/70			CM3 / ST95	CM4 / ST120		CM5 / ST185		CM6 / ST300	CM7 / ST400
4	CM0 / ST6				CM1 / ST16		CM2 / ST25	CM2.5 / ST35/70			CM3 / ST95	CM4 / ST120		CM5 / ST185		CM6 / ST300	CM7 / ST400
5	CM0 / ST6			CM1 / ST16		CM2 / ST25		CM2.5 / ST35/70		CM3 / ST95	CM4 / ST120	CM6 / ST300			CM7 / ST400		

Joints are available with compression ferrules which will also create more room when jointing.

Unarmoured Cables / CM Ex range

Max Cable Size 4 Core (mm)	Basic Joints	Basic Joints (suitable for both (aluminum & copper)	
	Part No.	Part No	Connectors Included
1.5 - 10	CM0 / ST6 EX / 80163	CM0 / ST6 EX+C	4 x (1.5 - 6.0mm) connectors
16	CM1 / ST16 EX / 80164	CM1 / ST16 EX+C	4 x (10.0 - 16mm) connectors
25 - 35	CM2 / ST25 EX	CM2 / ST25 EX+C	4 x (25 - 35mm) connectors
50 - 70	CM2.5 ST35/70 EX / 80165	CM2.5 ST35/70 EX+C	4 x (50 - 70mm) connectors
95	CM3 / ST95 EX / 8.000907	CM3 / ST95 EX+C	4 x (95 - 120mm) connectors
120 - 150	CM4 / ST120 EX / 8.000908	CM4 / ST120 EX+C	5 x (95 - 120mm) connectors
185 - 240	CM5 / ST185 EX	CM5 / ST185 EX+C	4 x (150 - 185mm) connectors
300 - 400	CM6 / ST300 EX / 8.000909	CM6 / ST300 EX+C	4 x (300mm) connectors
400+	CM7 / ST400 EX	CM7 / ST400 EX+C	4 x (400mm) connectors

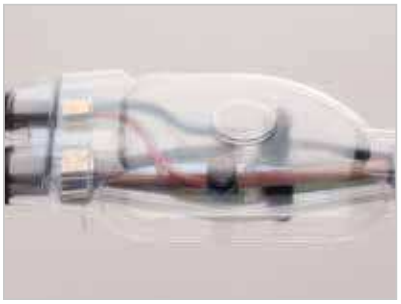
Quick selection - Un-armoured using Mechanical Connectors																	
No of cores	Cable Size (mm²)																
	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400
1									CM1 / ST16		CM2 / ST25	CM2.5 / ST35/70			CM3 / ST95		CM4 / ST120
2	CM0 / ST6EX						CM1 / ST16 EX		CM2.5 / ST35/70 EX			CM3 / ST95	CM4 / ST120			CM5 / ST185	
3	CM0 / ST6EX					CM1 / ST16 EX	CM2 / ST25		CM2.5 / ST35/70		CM3 / ST95	CM4 / ST120			CM5 / ST185		
4	CM0 / ST6EX					CM1 / ST16 EX	CM2 / ST25		CM2.5 / ST35/70		CM3 / ST95	CM4 / ST120		CM5 / ST185		CM6 / ST300	

LV Resin Cable Joints - Branch

suitable for PVC or XLPE cable, 1kV

Service Branch Joints / CB range

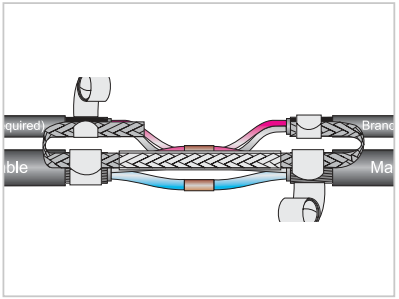
Main Cable Size, 2,3,4 core (mm²)	Max Branch Cable 2,3,4 core (mm²)	Basic Joints NO Connectors	Basic Joints Plus Earth Kit & Connectors	
		Part No	Part No	Connectors Included
Armoured & Unarmoured Cable - Uncut & Cut Main				
1.5 - 2.5	2,5	CB0 / 80169	CB0+C	4 x (1.5 - 6.0mm) Branch connectors (Unarmoured Only)
1.5 - 6.0	6	CB0.5 / MB6	CB0.5 / MB6+C	4 x (1.5 - 6.0mm) Branch connectors
10.0 - 16.0	16	CB1 / MB16	CB1 / MB16+C	4 x (10 - 16mm) Branch connectors
25.0 - 35.0	35	CB2 / MB35	CB2 / MB35+C	4 x (25 - 35mm) Branch connectors
50.0 - 70.0	70	CB3 / MB70	CB3 / MB70+C	Please contact our technical department
95.0 - 120	120	CB4 / MB120	CB4 / MB120+C	Please contact our technical department
240 - 300	300	CB6 / MB300	CB6 / MB300+C	Please contact our technical department

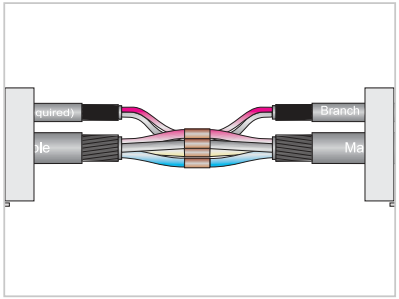


Service Branch Joints / CU range

“Universal” joints for branch & straight jointing

Main Cable Size 2,3 & 4 core (mm²)	Max Branch Cable 2,3,4 core (mm²	Basic Joints	Basic Joints plus Mechanical Connectors	
		Part No.	Part No	Connectors Included
Armoured & Unarmoured Cable - Uncut Main				
1.5 - 2.5	1 x 2.5	CU0	CU0+C	4 x 1.5 - 6mm Pre insulated branch connectors
4.0 - 6.0	2 x 6.0	CU1 / 8.003061	CU1+C	4 x 6.0 - 10mm Pre insulated branch connectors
10 - 25.0	2 x 25	CU2 / 8.003062	CU2+C	4 x 16 - 25mm Pre insulated branch connectors
35 - 50.0	2 x 35	CU3	CU3+C	Please contact our technical department
70 - 95.0	2 x 35	CU4	CU4+C	Please contact our technical department
120 - 185	2 x 35	CU5	CU5+C	Please contact our technical department

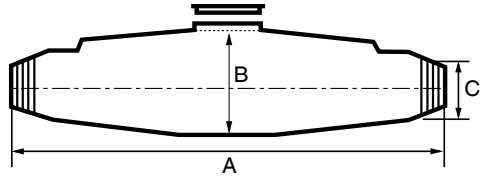




Joint Shell Dimensions

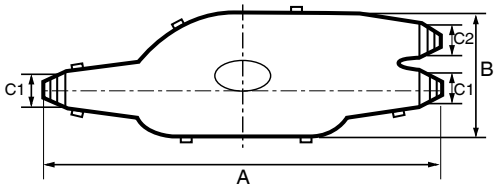
Straight Joint Dimensions					
Product Name	Shell style	Length (mm)	Diameter (mm)	Cable entry (mm)	Resin Content
CM0 / Straight 6 / 80163	Injection Moulded - Snaplock	200	35	5 - 20mm	200ml
CM1 / Straight 16 / 80164	Injection Moulded - Snaplock	250	45	8 - 30mm	350ml
CM2 / Straight 25 / 80164B	Injection Moulded - Snaplock	320	60	10 - 34mm	750ml
CM2.5 / Straight 35/70 / 80165	Injection Moulded - Snaplock	355	72	26 - 53mm	1.2 Litres
CM3 / Straight 95 / 8.000907	Injection Moulded - Snaplock	450	75	30 - 48mm	1.65 Litres
CM4 / Straight 120 / 8.000908	Injection Moulded - Snaplock	547	108	37 - 67mm	3.3 Litres
CM5 / Straight 185 / 8.0009085	Vacuum Formed	700	140	62 - 68mm	8.5 Litres
CM6 / Straight 300 / 8.000909	Vacuum Formed	800	160	48 - 88mm	12.0 Litres
CM7 / Straight 400	Vacuum Formed	1345	155	70 - 105mm	15.0 Litres

CM0 - CM7

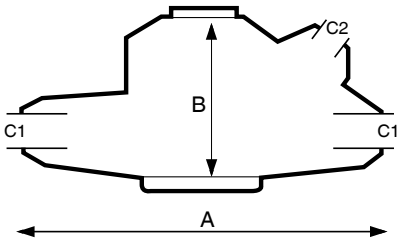


Branch Joint Dimensions					
Joint Type	Shell style	(A) Length (mm)	(B) Width (mm)	(C) Cable entry (mm)	Resin Content
CB0 / 80169	Injection Moulded - Snaplock	190	60	10 - 20mm	270ml
MB6 / CB0.5	Injection Moulded - Snaplock	220	76	10 - 22mm	450 ml
MB16 / CB1	Injection Moulded - Snaplock	335	110	10 - 30mm	1,85
MB35 / CB2	Injection Moulded - Snaplock	420	120	15 - 30mm	2,65
MB70 / CB3	Vacuum Formed	490	125	15 - 40mm	4 Litres
MB120 / CB4	Vacuum Formed	570	160	15 - 50mm	9.5 Litres
MB300 / CB6	Vacuum Formed	740	250	45 - 75mm	23.5 Litres

CB0 - CB6



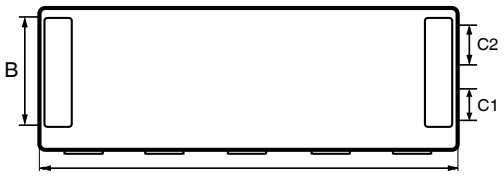
CPJ



Branch Joint Dimensions					
Joint Type	Shell style	(A) Length (mm)	(B) Width (mm)	(C) Cable entry (mm)	Resin Content
CPJ120	Injection Moulded - Snaplock	160	92	10 - 25mm	450 ml
CPJ95	Injection Moulded - Snaplock	142	73	10 - 20mm	200ml
CB0	Injection Moulded - Snaplock	190	60	10 - 20mm	270ml

Type	A	B	C1		C2	
			min	max	min	max
CU0 range	175	40	8	20	8	15
CU1 range	220	65	13	22	13	21
CU2 range	300	80	19	29	18	22
CU3 range	400	95	23	35	21	25
CU4 range	500	110	26	50	25	30
CU5 range	500	160	38	65	39	50

CU0 - CU5



LV Resin Cable Joints - Special Applications

suitable for PVC or XLPE cable, 1kV

Cathodic Protection Joints

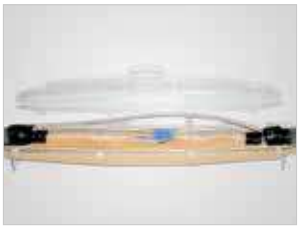
Approved by many oil and utility companies throughout the world, the main applications for these joints include:
Jointing of single core DC feeder to anode cable for cathodic protection of pipelines, jetties, tanks and buried structures.

Two variants of CP joints are offered:
CPJ · The classic cathodic protection joint for use when upright branch joints are required.
CB0 · A "Y"-shaped joint for horizontal branch jointing applications.

Max cable Size single core (mm²)	Max Branch single core (mm²)	Basic Kit - NO CONNECTOR	Kit with Split bolt line tap	
		Part No.	Part No.	Kit Includes
120	95	CPJ120	CPJ120+C	Joint + line tap
95	95	CPJ95	CPJ95+C	Joint + line tap
95	95	CB0	CB0+C	Joint + line tap

Multi Control & Pilot Cables / CML Range

Especially designed for Control/Telemetry applications and for joining Pilot cables. Suitable for multi-core cables 600/1000V, PVC insulated, armoured or unarmoured. Nylon spacer tapes are included for easy bundling of cores and to ensure even penetration of resin.



No of cores	Core size 1.5 - 2.5 mm2		Core size 4 - 6 mm2	
	Armoured	Unarmoured	Armoured	Unarmoured
2 - 4	CM0L	CM0LEX	CM0L	CM0LEX
5	CM0L	CM0LEX	CM1L	CM1LEX
7 - 8	CM1L	CM1LEX	CM2L	CM2LEX
10 - 11	CM2L	CM2LEX	CM2L	CM2LEX
16 - 27	CM3L	CM3LEX	CM3L	CM3LEX
30 - 48	CM4L	CM4LEX		
Insulated ferrules for CML range should be ordered separately (one ferrule per core). 0.5 - 1.0 mm2 - use Part No KX670; 1.5 - 2.5 mm2 - use Part No KX680; 4.0 - 6.0 mm2 - use Part No KX700.				

Multipair Telecom Cables / CML Range

For multipair cables, PVC insulated / PVC oversheathed, conductor Ø 0.9 mm, armoured or unarmoured.

No of pairs	Armoured	Unarmoured	No of pairs	Armoured	Unarmoured
2	CM0L	CM0LEX	25	CM2L	CM1LEX
5	CM1L	CM0LEX	40	CM3L	CM2LEX
10	CM1L	CM1LEX	50	CM4L	CM2LEX
15	CM2L	CM1LEX	100	CM4L	CM3LEX
Insulation-displacement connectors (Part No MCT) should be ordered separately (2 per pair).					

LV Resin Cable Joints - Special Applications

suitable for PVC or XLPE cable, 1kV

Mines & Quarries / CMMQ Range

Supplied with required accessories including:
· Self-amalgamating tape to insulate ferrules.
· Special spiral spacers for core separation.
· Stainless steel mesh sleeve.
· 11 kV version also available.

Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No
1.5	2	CM1MQ	6	2	CM1MQ	25	2	CM2MQ	70	2	CM4MQ	150	2	CM5MQ
	3	CM1MQ		3	CM1MQ		3	CM3MQ		3	CM4MQ		3	CM5MQ
	4	CM1MQ		4	CM1MQ		4	CM3MQ		4	CM4MQ		4	CM6MQ
2.5	2	CM1MQ	10	2	CM1MQ	35	2	CM3MQ	95	2	CM4MQ	185	2,3,4	CM6MQ
	3	CM1MQ		3	CM2MQ		3	CM3MQ		3	CM4MQ	240	2,3,4	CM6MQ
	4	CM1MQ		4	CM2MQ		4	CM3MQ		4	CM5MQ	300	2,3,4	CM6MQ
4	2	CM1MQ	16	2	CM2MQ	50	2	CM3MQ	120	2	CM5MQ			
	3	CM1MQ		3	CM2MQ		3	CM4MQ		3	CM5MQ			
	4	CM1MQ		4	CM2MQ		4	CM4MQ		4	CM5MQ			

Oil & Petrochem / CMOP Range

Supplied with required accessories inc:
· Earth continuity components for lead covered (LV) cables.

Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No
1.5	2	CM1OP	6	2	CM2OP	25	2	CM2OP	70	2	CM4OP	150	2	CM5OP
	3	CM1OP		3	CM2OP		3	CM3OP		3	CM4OP		3	CM5OP
	4	CM1OP		4	CM2OP		4	CM3OP		4	CM4OP		4	CM6OP
2.5	2	CM1OP	10	2	CM2OP	35	2	CM3OP	95	2	CM4OP	185	2	CM5OP
	3	CM1OP		3	CM2OP		3	CM3OP		3	CM4OP		3	CM6OP
	4	CM1OP		4	CM2OP		4	CM3OP		4	CM5OP		4	CM6OP
4	2	CM1OP	16	2	CM2OP	50	2	CM3OP	120	2	CM5OP			
	3	CM2OP		3	CM2OP		3	CM4OP		3	CM5OP			
	4	CM2OP		4	CM2OP		4	CM4OP		4	CM5OP			

1.9/3.3 kV Joints

Suitable for PVC or XLPE/SWA/PVC oversheathed, 1900/3300V cables, with stranded copper or aluminium conductors, to BS546.

Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No	Cable (mm2)	No of cores	Part No
16	3	CM2M	70	1	CM2M	120	3	CM4M	240	1	CM3M	400	3	CM6M
25	3	CM3M	70	3	CM3M	150	1	CM3M	240	3	CM6M	500	1	CM4M
35	3	CM3M	95	1	CM2M	150	3	CM5M	300	1	CM3M	630	1	CM4M
50	1	CM2M	95	3	CM4M	185	1	CM3M	300	3	CM6M	800	1	CM4M
50	3	CM3M	120	1	CM2M	185	3	CM5M	400	1	CM4M	1000	1	CM4M

LV Resin Cable Joints - Low Smoke Zero Halogen

suitable for PVC or XLPE cable, 1kV

Distinguished by its yellow- tinted injection-moulded shells, Filoform's range of Low Smoke Zero Halogen cable joints has been especially developed to meet the increasing demand for joints that match the characteristics of modern flame retardant, fire resistant and low smoke cables.

To reflect the specialist application, these joints can be installed without the need for dedicated tools or the application of heat.

All of the popular and well- established features of standard Filoform joints have been retained. Internationally, there are several standards that regulate fire behaviour. Filoform products conform to the following national standards:

UK: - BS 476 Part 7, Class 1Y rating.
Germany: - DIN 4102/part 1, B1 rating.
France: - NFP 92 501, 5 & 16, M2 rating.

A typical kit consists of an outer shell manufactured from UV stable , low smoke, zero halogen, flame retardant material that matches or exceeds the relevant properties of similarly specified cable.

For the majority of applications it is only the shell that requires specialist fire-sensitive properties. In these cases Filoform's standard two-part poly-urethane resin is supplied in easy-mix pouches.

When specifications call for the resin to also be flame retardant, halo-gen-free and low smoke, joints are shipped with Filoform's CR171H resin which is flame retardent to V0 rating of UL94.

LV Resin Cable Joints - Low Smoke Zero Halogen

suitable for PVC or XLPE cable, 1kV

Specifications - Filoform Low Smoke Zero Halogen cable joints		
Properties of shell	Rating	Relevant standard
Flammability		
Flame retardant		
Flame class rating: 3mm	V-0	UL94
Flame class rating: 1mm	V-2	UL94
Glow wire test, 1 mm, 850 ºC	Pass	IEC 695-2-1
Low Smoke		
Smoke density 4 min	Dm < 200	AIRBUS Standard ABD 0031
Halogens	Free	DIN VDE 472 part 815
Mechanical		
Tensile strength at yield (speed 50mm/min)	63 Mpa	ISO 527, DIN 53455
Impact		
Charpy Impact, notched	30 kJ/m2	ISO 179/2C
Thermal		
Thermal conductivity	0.20 W/m ºC	DIN 52612
Electrical		
Dielectric strength	17kV/mm	IEC 243, ASTMD 149
Volume resistivity	1015 Ohm.m	IEC 93, DIN53482
Surface resistivity	1015 Ohm	IEC 93, DIN53482
Properties of resin type CR171H		
Flammability - Flame class rating: 6mm	V-0	UL94
Physical properties		
Operating temperature	-40º C to +105º C	
Thermal conductivity	0.75 W/mK	
Shrinkage	Low	
Coefficient of linear expansion	Low	
Electrical properties		
Volume resistivity	11 - 13 log Ohm	
Surface resistivity	12 - 14 log Ohm	
Electric strength	> 16 MV/m	
Permittivity	3.2 @ 1 KHz	

Main Cable 2, 3 & 4 core (mm^2)	Branch Cable 2,3 & 4 core (mm^2)	Part No
Straight Joints		
4 x 6mm	N/A	CM0/ST6LSHF
4 x 10mm	N/A	CM1/ST16LSHF
4 x 16, 25mm	N/A	CM2/ST25/LSHF
4 x 35, 50mm	N/A	CM2.5/ST35/70LSHF
4 x 70, 95mm	N/A	CM3/ST95/LSHF
4 x 95, 120, 150, 185mm	N/A	CU5LSHF
4 x 240, 300, 400mm	N/A	CM56LSHF
Branch Joints		
4 x 6mm	4 x 6mm	CU1LSHF
4 x 10, 16, 25mm	4 x 10, 16, 25mm	CU2LSHF
4 x 35mm	4 x 35mm	CU3LSHF
4 x 35mm	4 x 35mm	CU4LSHF
4 x 35mm	4 x 35mm	CU5LSHF
4 x 95, 120mm	4 x 95, 120mm	CBM1LSHF
4 x 120, 150 , 185mm	4 x 120, 150 , 185mm	CBM2LSHF

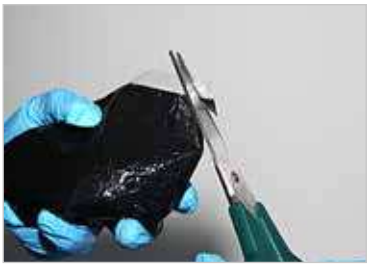
Filoform Cold-Pour Two-Part Resins

Features

· Two-part Polyurethane resin in protective aluminium foil.
· Mixing is performed in sealed conditions - no need for skin contact but safety gloves are provided.
· Controlled curing temperature designed to be compatible with PVC, XLPE, EPR, Polythene and PILC cables.
· Clear mixing instructions on every pack.
· Full Health & Safety labelling.
· Batch number & use-by-date on every pack.
· Designed to meet the requirements of BS 6910, BS7888, CENELEC HD623 S1 and EN50393:2006.
· The same well-proven high quality resin formula is used as standard throughout both the LV & MV ranges.

Also available

· Flame retardant, halogen-free resin to VO rating of UL94.
· Traffic systems resin - Two-part, fast-curing toughened polyurethane resin designed for the encapsulation of speed sensors, junction boxes and the bases of control cabinets.
· Re-enterable resin - Two-part polyurethane resin that can be removed after curing. Ideal for encapsulating expensive components or multicore and multipair cables where subsequent repair may be required.



Item number	Description	Content	Colour	Order unit
804652	Filofill P2654 200ml	200ml	black	15 pcs/carton
804655	Filofill P2654 350ml	350ml	black	10 pcs/carton
804656	Filofill P2654 450ml	450ml	black	10 pcs/carton
804658	Filofill P2654 750ml	750ml	black	8 pcs/carton
804663	Filofill P2654 1200ml	1200ml	black	2 pcs/carton
804664	Filofill P2654 1500ml	1500ml	black	1 pcs/carton
804665	Filofill P2654 2000ml	2000ml	black	2 pcs/carton

LV Resin Cable Joints - Branch

suitable for PVC or XLPE cable, 1kV

Smart Gel Joint

The Smart-Joint is a cable joint which is pre-filled with an insulating and waterproof filling mass, and is suitable for cable diameters up to 15.7mm (0,62 inch); 4 x 2.5 mm^2 (Un-armoured cables Only).

· Quick and easy installation
· Ready to use; the Smart Joint is being supplied “pre-filled” with the insulating filling mass (double) branch off joint provided with 4 pre-installed connectors and one earth connector
· Fully sealed for water penetration Environmental friendly
· No shelf life
· Provided with cable clamps
· Provided with 2 holes for easy installation CE-approval

Part No.	Description	Cable Diameter	Dimensions
80172	Smart Joint	5 – 15.7mm Ø	190 x 45 x 35mm
80176	Branch Smart Joint	5 – 15.7mm Ø x 4	170 x 73 x 37mm

Gelbox

· Suitable for connecting LV electrical cables, telephone cables, etc.
· Gelbox is especially suitable for outdoor- and underground applications or in a humid environment where and IP68 sealing is required.

Item number	Description	Cable diameter (mm)	Dimensions (mm)	Order unit	Qty
80160	Gelbox	max Ø 14	78x78x34	per piece	170 x 73 x 37mm

Filobox

Filobox is a compact and reliable cable joint for connecting plastic insulated cables. The Filobox is ideally suited for applications underwater, underground or in wet areas where an IP68 sealing is required.

Item number	Description	Cable diameter (mm)	Dimensions (mm)	Order unit
801601	Filobox JB2.5	max Ø 20	78x78x34	5 pcs/carton
801602	Filobox JB 6	max Ø 20	94x94x34	5 pcs/carton

LV Taped Resin Injection Joint

Filoform has over 50 years' experience in production and supply of taped injection joints and components.
The latest techniques and most innovative products are created from field tests and tests in our own R&D laboratory. Filoform injection joints are compatible with most commonly used cable types, such as XLPE, PVC, PE, and PILC cables.

Taped injection cable joints are well known for their flexibility, as this system can accommodate most cable types and configurations. With only six basic components all Low Voltage cable joints can be made. This offers enormous advantages in the direction of logistics and training of your personnel.

The manufacturing process of Filoform injection joint components is continuously monitored for quality control and meets the international engineering standards in conformity with the ISO 9001-2000 quality standard.
Once correctly installed, Filoform's injection joints provides a mechanically strong and flexible seal whilst also providing excellent resistance to weathering, moisture, contamination and adverse environmental conditions.
Filoform supplies excellent polyurethane resins as well as epoxy resins for taped injection joints. All resins are developed in accordance with HD631-1 S2 standard. The complete resin injection joints are tested in accordance with EN50393. All major utilities in the Netherlands are installing the Filoform injection joints into their networks for many years now.

Advantages of Filoform injection joints:

Technical
· Six basic components allows the engineer to make every type of straight connection joint, branch-off joint, stop end joint, transition joint and cable repair joint.
· Suitable for cable sheath repair, no separate heat shrink repair sleeves required.
· Suitable for complicated connections, for example:
· Crossed cores
· Cables on a bend or radius
· Cable running horizontally
· Suitable for both unarmoured and armoured cables and cables with incorporated earth screen.
· Less faults compared to the traditional cast resin joints.
· Jointing instructions remains the same, regardless of the connector types being used.

Economical
· Cost saving and logistical advantages
· 50% lower stock value.
· Saves space in service vans and warehouses
· Always the right materials available for every type of joint.
· A completed joint, uses much less resin compared to cast resin joints, creating a smaller more compact cable joint.

Environmental
· Uses less resin compared to traditional cast resin joints
· Fully cured resins can be disposed as normal waste material
· RoHs and Reach compliant

Health & Safety
· Closed system for both mixing and injecting the resin ensures minimal contact with the resin.
· High strength resin packs making it fit for use in pressure pumps.
· All resins have excellent insulation resistance in both the liquid and solid phase;
· This value is also monitored & checked during each production batch.

LV Taped Resin Injection Joint

Item number	Description	Order unit
80394K	Injection pump GN-E4K (suitable for A/B/C packs)	per piece
80396	Injection pump 710ml (suitable for A/B/C/D packs)	per piece
80800	Luborsil siliconspray 500ml	12 pcs/carton

Item number	Description	Content	Colour	Order unit
804606	Filofill P2600 B-pack	184ml	black	10 pcs/carton
804610	Filofill P2600 C-pack	355ml	black	10 pcs/carton
804630	Filofill P2600 D-pack	710ml	black	8 pcs/carton
80135	Kabeline 1611 A-pack	87 gram	red	20 pcs/carton
80136	Kabeline 1611 B-pack	197 gram	red	10 pcs/carton
80137	Kabeline 1611 C-pack	380 gram	red	10 pcs/carton

Item number	Description	Order unit
80480	FiloSlim 3D gauze roll 10cm x 1,8m	50 pcs/carton
80481	FiloSlim 3D gauze roll 16cm x 1,8m	50 pcs/carton
80482	Wrap around gauze flex 10cm x 3,5m	100 pcs/carton
80477	Yellow gauze 38mm x 9m	100 pcs/carton
80478	Tube gauze 50mm x 5m	120 pcs/carton

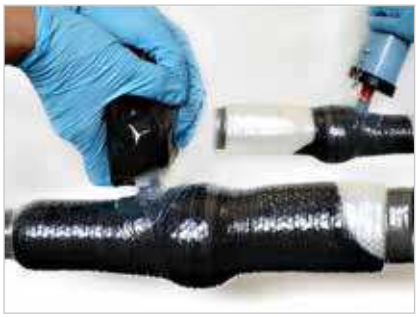
Item number	Description	Order unit
80381	Injection nipple 6,1mm	10 pcs/bag
80535	Injection valve 6,1mm	10 pcs/bag
80370	Injection nipple 12,2mm	50 pcs/carton
80540	Injection valve 12,2mm	10 pcs/bag

Item number	Description	Colour	Order unit
800350.5	Wrap-around tape 25mm x 20m	transparent	96 pcs/carton
80467	Wrap-around tape 38mm x 20m	transparent	60 pcs/carton
80469	Wrap-around tape 50mm x 10m	transparent	80 pcs/carton
80470	Wrap-around tape 50mm x 20m	transparent	48 pcs/carton

Item number	Description	Order unit
80534	Core separator 22x8cm	100 pcs/carton
80532	Core separator 22x16cm	50 pcs/carton
80533	Separator strip 220x80mm	100 pcs/carton

Item number	Description	Order unit
80530	Branch-off seal universal	200 pcs/carton

LV Filoslim cable jointing system



Filoform has over 50 years' experience in production and supply of taped resin injection joints and components.

The latest techniques and most innovative products are created from field tests and tests in our own R&D laboratory. Filoform injection joints are compatible with most commonly used cable types, such as XLPE, PVC, PE, and PILC cables.

Filoform now offers the benefits of the traditional taped resin injection cable joint combined into one joint which can be filled by Manuel pressure FiloSlim ensures you can make high quality low voltage joints, filled by hand, without special or expensive tools and much less labour than traditional injection joints. With the new FiloSlim cable jointing system you can create a perfect cable joint with just five basic components.

Once correctly installed, Filoform's injection joints provides a mechanically strong and flexible seal whilst also providing excellent resistance to weathering, moisture, contamination and adverse environmental conditions.

Filoform supplies an excellent polyurethane resin with FiloSlim LV cable joints. This resin is developed in accordance with HD631-1 S2 standard. The complete FiloSlim LV cable joints is tested in accordance with EN50393.

Advantages FiloSlim wrap-around cable joint:

· No special tools are required. Filling by hand pressure
· Much less labor is required for wrapping the 3D gauze plus less time for mixing resin packs compared to a traditional taped resin injection cable joint
· FiloSlim cable joints can be adapted to any situation, including repairs to damaged cable sheaths straight connection, branch and end joints are made with a few basic components
· Cost and logistic advantages: low inventory costs, space saved in warehouse and vans
· Backwards compatible with traditional taped resin injection cable joint.
· Moisture resistance even when installed on wet cables
· Suitable for complicated cable connections, for example:
· Crossed cores
· Cables on a bend or radius
· Cable running horizontally

Environmentally friendly:

· Compact dimensions ensure minimum use of resin and materials
· Fully closed system for both mixing and injecting the resin ensures minimal contact with resin
· FiloSlim wrap around joints are approved under EN 50393

To create a FiloSlim wrap-around joint, 5 basic materials are required. For further technical information about the individual components, please continue reading on the following pages.

FiloSlim resin P2662

Item number	Description	Order unit
804639	FiloSlim resin P2662 250ml	10 pcs/carton
804640	FiloSlim resin P2662 400ml	8 pcs/carton
804641	FiloSlim resin P2662 700ml	6 pcs/carton

LV Filoslim cable jointing system

3D gauze mat

Item number	Description	Order unit
80525	FiloSlim 3D gauze mat 360mm x 10m	1 pcs/carton
80526	FiloSlim 3D gauze mat 600mm x 10m	1 pcs/carton

3D gauze roll

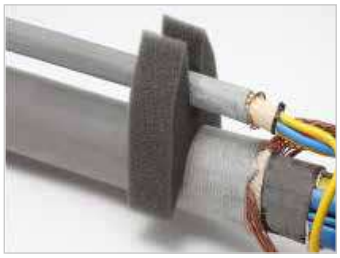
Item number	Description	Order unit
80480	FiloSlim 3D gauze roll 10cm x 1,8m	50 pcs/carton
80481	FiloSlim 3D gauze roll 16cm x 1,8m	50 pcs/carton

Injection valve

Item number	Description	Order unit
80550	FiloSlim injection valve	10 pcs./box

Wrap around tape

Item number	Description	Colour	Order unit
800350.5	Wrap around tape 25mm x 20m	transparent	96 pcs/carton
80467	Wrap around tape 38mm x 20m	transparent	60 pcs/carton
80469	Wrap around tape 50mm x 10m	transparent	80 pcs/carton
80470	Wrap around tape 50mm x 20m	transparent	48 pcs/carton



Branch off seal

Item number	Description	Order unit
80530	Branch off seal universal	200 pcs/carton

LV Heatshrink Joint

A comprehensive range of heatshrink joints offering the following features:-
· Simple, fast installation allowing immediate backfill of the trench.
· Excellent electrical insulation
· Outstanding environmental resistance.
· Proven mechanical strength.
· Slim profile.
· Mechanical or crimp connectors available upon request.
· Joints to customer specification also available (eg HJ1/3/6 for 3 x 6 mm2, HJ3/3/120 for 3 x 120 mm2 etc).
· Special kits for lead covered (LC) cables.

Typical kit content

Adhesive-lined medium wall tubing for connector insulation, outer sealing and protection tube. For armoured cable we include a special aluminium cage and constant force springs for mechanical protection and earth continuity.

Conductor Size 2 3 or 4 core (mm2)	Filoform Joint Kit	Approx Joint Size (mm)	
		Length	Ø
Polymeric Insulated Armoured Cable			
1.5 - 6	HJ1	400	40
10 - 50	HJ2	800	60
70 - 150	HJ3	1000	100
185 - 300	HJ4	1200	120
Polymeric Insulated Unarmoured Cable			
1.5 - 10	HJ1EX	300	30
16 - 70	HJ2EX	600	50
95 - 185	HJ3EX	800	80
240 - 400	HJ4EX	1000	100
Paper Insulated Armoured Cable			
16 - 25	HJP1	400	40
35 - 50	HJP2	800	60
70 - 150	HJP3	1000	100
185 - 300	HJP4	1200	120
Transition Joints (Paper/Polymeric)			
16 - 25	HJT1	400	40
35 - 50	HJT2	800	60
70 - 150	HJT3	1000	100
185 - 300	HJT4	1200	120
Underwater Joint Kits for Flexible Cable			
1.5 - 2.5	HUJK1	400	40
4 - 6	HUJK2	800	60
10	HUJK3	1000	100
16	HUJK4	1200	120
25	HUJK5	1200	120

Cable or Joint Type	Filoform Joint Kit	Approx Joint Size (mm)	
		Length	Ø
Airfield Lighting Kits			
Primary 6 mm2	HALK1	200	19
Secondary 4mm2	HALK2	200	19
Braided Primary	HALK3	200	19
Traffic Light Kits			
Loop - Armour	HTLK1	300	30
Loop - Loop	HTLK5	50	12
Feeder - Feeder	HTLK7	300	30

Stop End Joint / Pot End Kit

Filoforms stop end kit is used to abandon live low voltage cable ends - each core is separately sealed using small heat shrink cable end caps and a screen bandage applied to reinstate earth fault protection.
Finally a thick wall outer heat shrink cable cap is installed with a live flash.

Item number	Description	Order unit
800220	Stop end joint 4 x 1,5-6mm²	per piece
80022010	Stop end joint 4 x 10-35mm²	per piece
80022020	Stop end joint 4 x 50-150mm²	per piece
80022030	Stop end joint 4 x 150-300mm²	per piece

LV Termination

Typical kit content

· Adhesive-lined medium wall tubing for core sealing; cable breakout; non-adhesive-lined tubes for lug sealing; phase colour-coded thin wall tubes; constant force springs for earth connection.
· Cable lugs are also available if required.

No of Cores	Cable range (mm2)	Part No	
		Indoor	Outdoor
2	4 - 16	HT16-2	HTO16-2
	25 - 50	HT50-2	HTO50-2
	70 - 150	HT150-2	HTO150-2
	185 - 400	HT400-2	HTO400-2
3	4 - 16	HT16-3	HTO16-3
	25 - 35	HT35-3	HTO35-3
	50 - 150	HT150-3	HTO150-3
	185 - 400	HT400-3	HTO400-3
4	4 - 35	HT35-4	HTO35-4
	50 - 70	HT70-4	HTO70-4
	95 - 120	HT120-4	HTO120-4
	150 - 400	HT400-4	HTO400-4

LV Connectors

Brass Tunnel

Item number	Description	Core min. (mm²)	Core max. (mm²)
400000	10mm² brass tunnel connector	1.5	10
400010	16mm² brass tunnel connector	10	16
400020	35mm² brass tunnel connector	25	35
400030	70mm² brass tunnel connector	50	70
400035	95mm² brass tunnel connector	70	95
400036	120mm² brass tunnel connector	95	120

Brass Tunnel Range

Straight-through Type / MF Range

Item number	Description	Core min. (mm²)	Core max. (mm²)
400038	MF1/1	50	95
400040	MF1/2	95	185
MF1/3A	MF1/3A	150	300
400050	MF1/3	185	300
400060	MF1/4	300	500

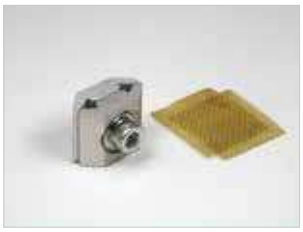
MF Range

Service Branch Type, Uncut Main / P1 Connector

Aluminium Alloy

Main cable to max 35mm²	Branch cable to max 35mm²

P1 Connector



Service Branch Type, LT Range

Plain Brass or Tin Plated

Main cable mm²	Max Branch Cable:-					
	6mm²	10mm²	16mm²	35mm²	70mm²	120mm²
1.5 - 6	LT3	MC3/0	MC3/1	MC3/2	MC3/3	MC3/4
10	MC3/0	MC3/0	MC3/1	MC3/2	MC3/3	MC3/4
16	MC3/1	MC3/1	MC3/1	MC3/2	MC3/3	MC3/4
25 - 35	MC3/2	MC3/2	MC3/2	MC3/2	MC3/3	MC3/4
50 - 70	MC3/3	MC3/3	MC3/3	MC3/3	MC3/3	MC3/4
95 - 120	MC3/4	MC3/4	MC3/4	MC3/4	MC3/4	MC3/4

LT Range

Service Branch Type, Uncut Main - US Range

Aluminium Alloy

Main cable mm2	Branch to max 35mm2	Notes
50 - 95	US1	Fitted with shear-head screws. Brass gauze is supplied for use on Cuconductors.
120 - 185	US2	
240 - 300	US3	

US Range

Mains Branch Type, Uncut Main - WM Range

Aluminium Alloy

Item number	Core min. (mm²)	Core max. (mm²)
400110	16	95
400120	50	185
400130	120	300

WM Range

LV Connectors

Insulated connection and branch-off connector

Item number	Description	Core min. (mm²)	Core max. (mm²)	Dimensions (mm)	Order unit
800120	Insulated connection and branch-off connector 6mm²	2,5	6	9x11x19	100 pcs/carton
800121	Insulated connection and branch-off connector 10mm²	2,5	10	11x12x22	100 pcs/carton
800122	Insulated connection and branch-off connector 16mm²	6	16	12x14x26	100 pcs/carton
800123	Insulated connection and branch-off connector 25mm²	10	25	14x18x29	100 pcs/carton
800124	Insulated connection and branch-off connector 35mm²	16	35	18x21x41	50 pcs/carton

Insulated branch-off connector

Item number	Description	Core min. (mm²)	Core max. (mm²)	Dimensions (mm)	Order unit
PC11010	self piercing tap-off screw connector messing 1,5 - 10mm²	1,5	10	20x8x9	12 pcs/bag

Insulated screw connector

Item number	Description	Order unit
MTE06-25TN	Insulated screw connector 6-35mm²	50 pcs/carton

Insulated piercing connector

Item number	Description	Order unit
PHSR1.5-10RE	Insulated piercing connector 1.5-10mm²	100 pcs/carton
PHSR1.5-25	Insulated piercing connector 1.5-25mm²	30 pcs/carton

Accessories

Constant Force Springs

Filoform's range of Constant Force Springs is manufactured from BS5770 302S25 Stainless Steel which has been heat-treated and coiled. The springs feature chamfered and raised leading edges for easy use.

Principal applications are:

· Earth continuity systems for LV joints.
· Screen attachment in MV joints and terminations.

Item number	Name	Description	O/D (mm)	I/D (mm)
860070	CFS	CF Spring 4.0 - 10.0mm	6.4	4.65
860000	CFS0	CF Spring 9.0 - 15.0mm	9.0	7.46
860010	CFS1	CF Spring 14.0 - 22.0mm	12.5	10.8
860020	CFS2	CF Spring 18.5 - 29.0mm	16.7	14.9
860030	CFS3	CF Spring 23.5 - 37.0mm	19.9	17.8
860040	CFS4	CF Spring 31.0 - 50.0mm	26.6	23.3
860050	CFS5	CF Spring 44.0 - 70.0mm	35.8	30.0
860060	CFS6	CF Spring 58.0 - 94.0mm	48.2	41.3
CTL0865	CFS7	CF Spring 60.0 - 130.0mm	55.7	45.2

Copper wire mesh

Copper wire mesh is used for shielding and earthing in telecommunication joints and others. The wire mesh needs to be applied with a slight tensile force, without pleats, and with half overlap. Both ends of the wire mesh need to be fixed with a constant force spring or by soldering.

tem number	Description	Order unit
80155	Copper wire mesh 25mmx4,5m (Sleeve Double wire knitted)	per piece
80156	Copper wire mesh 60mmx4m (Flat Single wire knitted)	per piece

Steel wire mesh

Filoform steel wire mesh is a knitted wire mesh of tin-plated steel wire and is used for EMC-shielding and continuation of the earth connection in joints for signalisation cables.

Item number	Description	Order unit
80157	Steel wire mesh 50mmx25m	per meter

Filofast thermoshrink joints

The Filofast joints have been developed for telecom networks, based on a special sealing material, and offer many advantages against other jointing methods existing in the market. Installation is easy, and the result is extremely reliable. Filofast joints can be used for connection- as well as for branch-off joints.

tem number	Description	Order unit
800270	Filofast 50/50-500	10 pcs/carton
800271	Filofast 105/30-600	10 pcs/carton

Criteria	Condition	Norm	Filofast joint
Visual appearance		QCTS E121	No visible change
Longitudinal shrinkage	23+/-3°C		>5% (measured 0%)
Installation	5 - 45°C		> 10E10 ohm
Intermittent environmental temp.	10 cycli	IEC 60068-2-14	> 10E10 ohm
Water penetration	7 days	IEC 60068-2-17	> 10E10 ohm
Isolation resistance	1 minute	IEC 60512-1-1	> 10E10 ohm
UV resistance	20°C/min	ISO 11358	>2% C
Stress cracking	30d 50°C	IEC 60811-4-1 B	No damage
Tensile strength longitudinal	23= +/- 3°C	ISO 527 1 + 3	13,7 Mpa
Tensile strength radial	23= +/- 3°C	ISO 527 1 + 3	15,8 Mpa
Elongation at break longitudinal	23= +/- 3°C	ISO 527 1 + 3	1200%
Elongation at break radial	23= +/- 3°C	ISO 527 1 + 3	1200%
Shrink parameter	5 minutes		<5 min at 200°C
Melting temperature adhesive			Ca. 80°C
Weakening point adhesive		ASTM E28	Ca. 70°C
Hardness thermoshrink material		ISO 868	51 ° D
Brittleness		ISO 974	Still flexible at -20°C
Thermal aging	68 hours	ISO 188	17,4 Mpa
Themal aging	168 hours	ISO 188	400%
Die-electric strength		IEC 243	>10 kV/mm
Bonding strength adhesive	50 mm/min		Ca. 35 N/25mm

Coax joints

Filoform's coax joints uses thermoshrink technology with a special and high quality sealing material, to join and protect coax cables.

Thickness EPT-butyl rubber	1mm	ASTM D 1000
Thickness butyl rubber petroleum jelly	1mm	
Total thickness	2mm	
Width	50mm	
Adhesion RVS	1500 g/25mm at 20°C	ASTM D 1000
Adhesion PE	1000 g/25mm at 20°C	ASTM D 1000
Tensile strength	3,0 kg/25mm	ASTM D 1000
Elongation at break	600%	ASTM D 1000
Insulation resistance	1,0 x 10^{15} ohm cm	ASTM D 257
Dielectric strength	33 kV	ASTM D 149
Water absorption	0,1%	ASTM D 570

Item number	Description	Order unit
800275	Heat-shrink connection joint Coax 9&12	10 pcs/carton
800280	Heat-shrink connection joint Coax 6	10 pcs/carton
800285	Heat-shrink connection joint Coax 3	5 pcs/carton

Eton Connectors

The ETON 23 range of Telecommunication connectors offers exceptional reliability due to its new insulation displacement technology. These connectors are used to protect telephone connections from any moisture or dirt.

Type connector	Max. current	Application electricity	Application telecom
Eton 23 YF	3 Amp.	Connection, 2 conductors	Splicing, 2 conductors
Eton 23 G	3 Amp.	Branch-off without interuption, 2 conductors	Splicing without interuption, 2 conductors
Eton 23	3 Amp.	Connection or branch-off, 2 till 5 conductors	Splicing or Y-branch off, 2 till 5 conductors
Eton 23 EN	30 Amp.	Connection , 2 conductors	Connection of above ground cables, 2 conductors

Item number	Description	Core min. (mm^2)	Core max. (mm^2)	Dimensions (mm)	Order unit
8802020	Eton connector type 23YF green	Ø 0,35	Ø 0,90	12,8x8,75x9,75	100 pcs/carton
8802022	Eton connector type 23 red	Ø 0,35	Ø 0,90	16,6x8,75x9,75	100 pcs/carton
8802024	Eton connector type 23G blue	Ø 0,35	Ø 0,90	12,9x8,75x10,0	100 pcs/carton
8802026	Eton connector type 23EN black	Ø 0,35	Ø 0,90	28,4x17,9x23,6	100 pcs/carton

MV Terminations for Polymeric Cables up to 36kV

7.2 kV to 36kV Terminations certified to:

DIN VDE 0278 up to 24 kV
IEC 502 1994 for 36 kV.

· Terminations and tail lengths can be designed for individual needs.
· Optional crimping lugs for both indoor and outdoor terminations are available
· A range of bushing kits for indoor terminations is also available.
· Stand-off insulators with pole mounting brackets for outdoor terminations are also available.

For Single Core Polymeric Cable Each kit contains one set of three single-core terminations					
Max kV	Part No		Cable Size (mm2)	Std. tail Lengths (mm)	
	Indoor	Outdoor		Indoor	Outdoor
7,2	HSKI 7X 25-50-1/e	HSKO 7X 25-50-1/e	25 - 50	350	400
	HSKI 7X 70-185-1/e	HSKO 7X 70-185-1/e	70 - 185	350	400
	HSKI 7X 240-300-1/e	HSKO 7X 240-300-1/e	240 - 300	350	400
	HSKI 7X 400-500-1/e	HSKO 7X 400-500-1/e	400 - 500	350	400
	HSKI 7X 630-1000-1/e	HSKO 7X 630-1000-1/e	630 - 1000	350	400
12	HSKI 12X 16-25-1/e	HSKO 12X 16-25-1/e	16 - 25	450	500
	HSKI 12X 35-95-1/e	HSKO 12X 35-95-1/e	35 - 95	450	500
	HSKI 12X 120-240-1/e	HSKO 12X 120-240-1/e	120 - 240	450	500
	HSKI 12X 300-500-1/e	HSKO 12X 300-500-1/e	300 - 500	450	500
	HSKI 12X 630-800-1/e	HSKO 12X 630-800-1/e	630 - 800	450	500
17	HSKI 17X 25-70-1/e	HSKO 17X 25-70-1/e	25 - 70	450	500
	HSKI 17X 95-185-1/e	HSKO 17X 95-185-1/e	95 - 185	450	500
	HSKI 17X 240-400-1/e	HSKO 17X 240-400-1/e	240 - 400	450	500
	HSKI 17X 500-630-1/e	HSKO 17X 500-630-1/e	500 - 630	450	500
24	HSKI 24X 25-35-1/e	HSKO 24X 25-35-1/e	25 - 35	500	550
	HSKI 24X 35-95-1/e	HSKO 24X 35-95-1/e	35 - 95	500	550
	HSKI 24X 120-185-1/e	HSKO 24X 120-185-1/e	120 - 185	500	550
	HSKI 24X 240-300-1/e	HSKO 24X 240-300-1/e	240 - 300	500	550
	HSKI 24X 400-630-1/e	HSKO 24X 400-630-1/e	400 - 630	500	550
36	HSKI 36X 35-70-1/e	HSKO 36X 35-70-1/e	35 - 70	550	600
	HSKI 36X 95-185-1/e	HSKO 36X 95-185-1/e	95 - 185	550	600
	HSKI 36X 240-400-1/e	HSKO 36X 240-400-1/e	240 - 400	550	600
	HSKI 36X 400-630-1/e	HSKO 36X 400-630-1/e	400 - 630	550	600

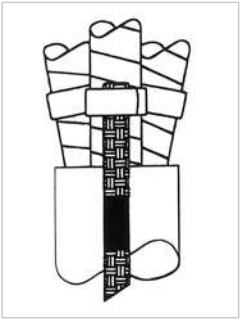
MV Terminations for Polymeric Cables up to 36kV

For Three Core Polymeric Cable Each kit contains one three - core terminations					
Max kV	Part No		Cable Size (mm2)	Std. tail Lengths (mm)	
	Indoor	Outdoor		Indoor	Outdoor
7,2	HSKI 7X 25-50-3/e	HSKO 7X 25-50-3/e	25 - 50mm	350	450
	HSKI 7X 70-185-3/e	HSKO 7X 70-185-3/e	70 - 185mm	350	450
	HSKI 7X 240-300-3/e	HSKO 7X 240-300-3/e	240 - 300mm	350	450
12	HSKI 12X 16-25-3/e	HSKO 12X 16-25-3/e	16 - 25mm	500	600
	HSKI 12X 35-95-3/e	HSKO 12X 35-95-3/e	35 - 95mm	500	600
	HSKI 12X 120-240-3/e	HSKO 12X 120-240-3/e	120 - 240mm	500	600
	HSKI 12X 240-400-3/e	HSKO 12X 240-400-3/e	240 - 400mm	500	600
17.5	HSKI 17X 25-70-3/e	HSKO 17X 25-70-3/e	25 - 70mm	500	600
	HSKI 17X 95-185-3/e	HSKO 17X 95-185-3/e	95 - 185mm	500	600
	HSKI 17X 240-400-3/e	HSKO 17X 240-400-3/e	240 - 400mm	500	600
24	HSKI 24X 25-35-3/e	HSKO 24X 25-35-3/e	25 - 35mm	600	800
	HSKI 24X 35-95-3/e	HSKO 24X 35-95-3/e	35 - 95mm	600	800
	HSKI 24X 120-185-3/e	HSKO 24X 120-185-3/e	120 - 185mm	600	800
	HSKI 24X 240-300-3/e	HSKO 24X 240-300-3/e	240 - 300mm	600	800
36	HSKI 36X 35-70-3/e	HSKO 36X 35-70-3/e	35 - 70mm	750	950
	HSKI 36X 95-185-3/e	HSKO 36X 95-185-3/e	95 - 185mm	750	950
	HSKI 36X 240-400-3/e	HSKO 36X 240-400-3/e	240 - 400mm	750	950

Screen Earthing Kits - Polymeric Cables

Solderless Screen Earthing Kits are used for earthing the copper screen layer within polymeric insulated cables. The kit consists of three constant force springs and three solder blocked earth braids.

Part No		Cable Size (mm2)			
1 core system	3 core system	7.2 kV	17.5 kV	24 kV	36 kV
MVAA1CSE	MVAA3CSE	16 - 70	16 - 25		
MVAB1CSE	MVAB3CSE	95 - 150	35 - 95	25 - 70	
MVAC1CSE	MVAC3CSE	185 - 300	120 - 240	95 - 185	25 - 70
MVAD1CSE	MVAD3CSE	400 - 630	300 - 500	240 - 500	95 - 300
MVAE1CSE	MVAE3CSE	800 - 1000	630 - 1000	630 - 1000	400 - 1000



MV (15kV) Heatshrink & Resin Cable Joints

Heatshrink joint, resin protected to prevent water ingress

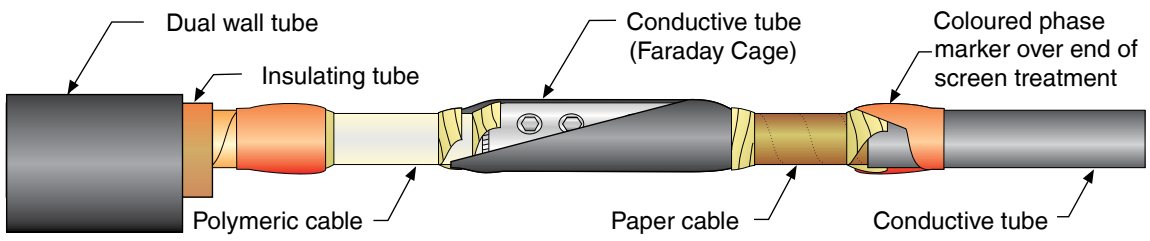
An innovative, highly effective and fully-tested design of joint that combines Filoform's two core competencies in resin and heatshrink joint technologies.
Features include:

· Resin encapsulation provides mechanical protection and prevents water ingress.
· Simple design – easy to install.
· Suitable cable types include:
  - XLPE.
  - Paper.
  - XLPE/Paper transition.
  - Trifurcating joints 3-core to 3 single cores.
· Optional core connectors - choice of:
  - Mechanical connectors with shear-head bolts.
  - Compression ferrules with conical ends.
  - High quality two-part polyurethane resin in easy-mix bag system.
· Unique mould design.
  - Clear shell for easy inspection.
  - Interlocking, non-reversible halves.
  - Superior resin-seal system.
· No taping of core conductors.
· Earth continuity kit with constant force spring system.
· Strong aluminium wrap-around cage - rubber spacers ensure correct positioning .
· All components and resin packed together in one sturdy box.
· Tested to:
  - CENELEC HD 629.1S1:1996.
  - DIN VDE 0278 Pt 629-1.
· Short circuit and current test (armour continuity & complete joint):
  - 18.5 kA for 1 second.
  - 22kA for 0.5 second.

A range of Pilot cable joints is available to accompany this range – see page 6

Unique Full Faraday Cage Solution

(Transition joint shown.)



Part No	Cable type	Cable Size
CM6HX3N	XLPE	3 core 35 - 150 mm²
CM7HX3N	XLPE	3 core 185 - 300 mm²
CM6HXP3N	XLPE/Paper (Transition)	3 core 35 - 150 mm²
CM7HXP3N	XLPE/Paper (Transition)	3 core 185 - 300 mm²
CM6HP3N	Paper/Paper	3 core 35 - 150 mm²
CM7HP3N	Paper/Paper	3 core 185 - 300 mm²
To ensure correct selection of the joints, full cable specifications should be provided at time of order.		

MV Heatshrink Cable Joints

7.2 - 36 kV

Filoform's C-Shrink Medium Voltage Heatshrink Jointing System for single and three core cables up to 36 kV features:

· Simple design – easy to install.
· Suitable cable types include:
  - XLPE, Paper & XLPE/Paper transition.
· Optional core connectors (see below).
· Outer protection either:
  - Thick wall heatshrink tubing.
  - or Reinforced wrap-around sealing sleeve for maximum mechanical strength and minimum installation space.
· 3.3kV non-shielded Joints also available.
· Tested to CENELEC HD629.1S1:1996 (DIN VDE 0278 Pt 629-1).

For Single Core XLPE Cables Each kit contains one single core cable joint			
Max kV	Part No		Cable Size (mm2)
	XLPE / Armoured	Transition	
7,2	HJMVA 7X 25-50-1	HJMVA 7PX 25-50-1	25 - 50mm
	HJMVA 7X 50-150-1	HJMVA 7PX 50-150-1	50 - 150mm
	HJMVA 7X 185-300-1	HJMVA 7PX 185-300-1	185 - 300mm
	HJMVA 7X 300-500-1	HJMVA 7PX 300-500-1	300 - 500mm
	HJMVA 7X 630-1000-1	HJMVA 7PX 630-1000-1	630 - 1000mm
12	HJMVA 12X 25-50-1	HJMVA 12PX 25-50-1	25 - 50mm
	HJMVA 12X 50-150-1	HJMVA 12PX 50-150-1	50 - 150mm
	HJMVA 12X 185-300-1	HJMVA 12PX 185-300-1	185 - 300mm
	HJMVA 12X 300-500-1	HJMVA 12PX 300-500-1	300 - 500mm
	HJMVA 12X 630-1000-1	HJMVA 12PX 630-1000-1	630 - 1000mm
17,5	HJMVA 17X 25-50-1	HJMVA 17PX 25-50-1	25 - 50mm
	HJMVA 17X 50-150-1	HJMVA 17PX 50-150-1	50 - 150mm
	HJMVA 17X 185-300-1	HJMVA 17PX 185-300-1	185 - 300mm
	HJMVA 17X 300-500-1	HJMVA 17PX 300-500-1	300 - 500mm
	HJMVA 17X 630-1000-1	HJMVA 17PX 630-1000-1	630 - 1000mm
24	HJMVA 24X 25-50-1	HJMVA 24PX 25-50-1	25 - 50mm
	HJMVA 24X 50-150-1	HJMVA 24PX 50-150-1	50 - 150mm
	HJMVA 24X 185-300-1	HJMVA 24PX 185-300-1	185 - 300mm
	HJMVA 24X 300-500-1	HJMVA 24PX 300-500-1	300 - 500mm
	HJMVA 24X 630-1000-1	HJMVA 24PX 630-1000-1	630 - 1000mm
36	HJMVA 36X 25-50-1	HJMVA 36PX 25-50-1	25 - 50mm
	HJMVA 36X 50-150-1	HJMVA 36PX 50-150-1	50 - 150mm
	HJMVA 36X 185-300-1	HJMVA 36PX 185-300-1	185 - 300mm
	HJMVA 36X 300-500-1	HJMVA 36PX 300-500-1	300 - 500mm
	HJMVA 36X 630-1000-1	HJMVA 36PX 630-1000-1	630 - 1000mm

For Three Core XLPE Cables Each kit contains one three core cable joint			
Max kV	Part No		Cable Size (mm2)
	XLPE / Armoured	Transition	
7,2	HJMVA 7X 25-50-3	HJMVA 7PX 25-50-3	25 - 50mm
	HJMVA 7X 185-300-3	HJMVA 7PX 185-300-3	50 - 150mm
	HJMVA 7X 185-300-3	HJMVA 7PX 185-300-3	185 - 300mm
12	HJMVA 12X 25-50-3	HJMVA 12PX 25-50-3	25 - 50mm
	HJMVA 12X 50-150-3	HJMVA 12PX 50-150-3	50 - 150mm
	HJMVA 12X 185-300-3	HJMVA 12PX 185-300-3	185 - 300mm
17,5	HJMVA 17X 25-50-3	HJMVA 17PX 25-50-3	25 - 50mm
	HJMVA 17X 50-150-3	HJMVA 17PX 50-150-3	50 - 150mm
	HJMVA 17X 185-300-3	HJMVA 17PX 185-300-3	185 - 300mm
24	HJMVA 24X 25-50-3	HJMVA 24PX 25-50-3	25 - 50mm
	HJMVA 24X 50-150-3	HJMVA 24PX 50-150-3	50 - 150mm
	HJMVA 24X 185-300-3	HJMVA 24PX 185-300-3	185 - 300mm
36	HJMVA 36X 25-50-3	HJMVA 36PX 25-50-3	25 - 50mm
	HJMVA 36X 50-150-3	HJMVA 36PX 50-150-3	50 - 150mm
	HJMVA 36X 185-300-3	HJMVA 36PX 185-300-3	185 - 300mm

MV Connectors

To complement its range of MV joints, Filoform can supply either shear-head mechanical connectors or compression ferrules. All are available with barrier for use with transition XLPE/paper cable joints.

MV Tubing

Stress Control Tubing

Heat-shrinkable tubing used exclusively as stress control relief in medium voltage cable joints and terminations, up to 36kV. The product features a very high dielectric constant.

Basic Properties	
Operating Temperature	-40° to +100°C
Shrinking Temperature	110°C
Dielectric constant (permitivity)	20 - 35
Standard Colour	Black

Part No	Inner Ø as supplied (mm)	Inner Ø recovered (mm)	Wall thickness nominal (mm)
HSC26-12	26	12	2.5
HSC30-15	30	15	2.7
HSC45-20	45	20	2.8
HSC50-25	50	25	2.9
HSC65-30	65	30	3.1
HSC95-45	95	45	3.2

Anti-tracking Tubing

Anti-tracking red heat-shrinkable tubing for use in MV joints and terminations up to 36kV.

Basic Properties	
Operating Temperature	-40° to +100°C
Shrinking Temperature	120°C
Dielectric strength	> 15 kV/mm
Comparative tracking index	KA1 (IEC 112)
Flammability	Self extinguishing/ halogen free
Standard Colour	Black

Part No	Inner Ø as supplied (mm)	Inner Ø recovered (mm)	Wall thick-ness nominal (mm)
HAT30-10	30	10	2.4
HAT35-12	35	12	2.6
HAT49-16	49	16	2.9
HAT56-21	56	21	3.0
HAT70-26	70	26	3.1
HAT100-40	100	40	3.8

Semi-conductive Tubing

Semi-conductive heat-shrinkable tubing used to rebuild the shield in medium voltage cable joint applications.

Basic Properties	
Operating Temperature	-40° to +90°C
Shrinking Temperature	120°C
Standard Colour	Black

Part No	Inner Ø as supplied (mm)	Inner Ø recovered (mm)	Wall thick-ness nominal (mm)
HCON44-16	44	16	2.8
HCON70-25	70	25	3.0
HCON95-35	95	35	3.0
HCON110-40	110	40	3.0

Busbar Tubing

The HBM range of heat shrinkable tubing is particularly suited for insulating medium voltage busbars up to 36kV. It is available in Medium Wall (reduces distance between bus bars to half) and Thick Wall (reduces distance to one third the distance between two phases in medium voltage switchboards).

Basic Properties	
Continuous temperature range	-40° to +100°C
Shrinking Temperature	120°C
Dielectric strength	> 15 kV/mm

Part No	Inner Ø as supplied (mm)	Inner Ø recovered (mm)	Wall thickness nominal (mm)
Medium Wall			
HBM30-12	30	12	2.3
HBM50-12	50	20	2.5
HBM75-30	75	30	2.5
HBM100-40	100	40	2.5
HBM120-50	120	50	3.0
Thick Wall			
HBT36-10	36	10	4.0
HBT46-14	46	14	4.5
HBT54-16	54	16	5.0
HBT66-20	66	20	5.0
HBT95-30	95	30	7.0

MV Breakouts

Heat-shrinkable tubing used exclusively as stress control relief in medium voltage cable joints and terminations, up to 36kV. The product features a very high dielectric constant.

MV Terminations for Polymeric Cables up to 36kV

These Universal Boot Kits are designed for indoor use with Polymeric or Paper cables at voltages between 6.6kV and 24kV. Providing screw-on connection using standard bushing, they are equally suitable for round or sector-shaped cable.

Features include:

· Manufactured from heavy-duty EPDM rubber.
· Re-usable.
· Suitable for use in oil-filled transformer boxes when Paper cables are upgraded to XLPE.
· Universal design - same kit can be used for straight, right-angled, or parallel ("pig gy-back") installation.
· Easy to install - no heat or tools required. Easily removable cover for voltage testing.
· An ideal complement to indoor terminations.
· Sold in sets of 3.

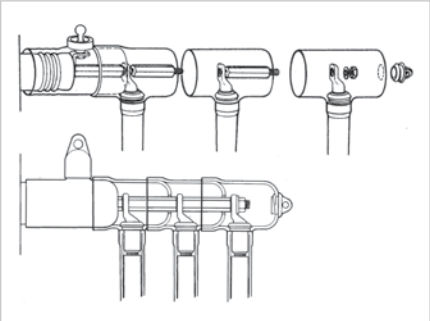


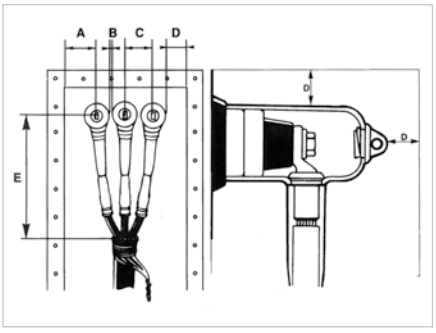
Illustration of a parallel installation. (extension bolts can be provided.)

Illustration of universal straight or right-angle installation.

Cable size (mm2)	Part No	Rating (A)
25 - 300	IBK300	600

Recommended Minimum Air Gaps (mm)						
U (kV)	Insulation Level (kV)	A	B	C	D	E
12	75	50	10	90	20	470
24	125	110	50	130	50	570

The recommended minimum distances quoted apply in general. However, in cases where type testing has been carried out, other minimum distances may apply. The distances shown above are for gas-insulated Ring Main Units (RMU).



MV Accessories

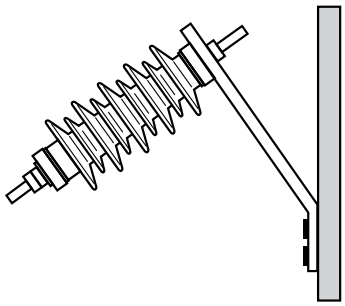
Heatshrink Boot Kits

Each kit consists of three boots and sufficient mastic tape to cover the bushing nuts.

Cable size (mm^2)	Part No	Description
50 - 400	HKS	Set of 3 straight boots
	HKR	Set of 3 right-angle boots

Stand-Off Insulators

Designed for outdoor terminations, each kit consists of a pole mounting bracket with three polymeric insulators.



Voltage kV	Creepage Path (mm)	Part No
12	465	SO12
24	615	SO24
33	845	SO33
36	1160	SO36

Gland Kits

"Top Hat" style, for three-core paper or polymeric cable. Manufactured from zinc-plated steel. Suitable for Indoor Terminations up to 36kV.

Cable size (mm^2)	Part No
16 - 95	HSGA/3
120 - 300	HSGB/3

"Top Hat" style, for single-core aluminium wire armoured cable. Manufactured from aluminium. Suitable for Indoor Terminations up to 36kV.

Cable size (mm2)	Part No
16 - 630	HSGB/1
Supplied in sets of three	

Brass cone style, for paper or polymeric cable. Suitable for earthing of cable entry for Indoor Terminations up to 36kV.

Cable size (mm2)	Part No	Description
16 - 300	CG16-300	Kit for 3 x single-core cable
16 - 300	CG16-300/INS	Kit for 1 x 3 core cable c/w insulating cork gasket

Cable Joints Accessoires

An especially comprehensive range of lugs and ferrules that is manufactured to the very highest standards. Matching mechanical, battery and hydraulic compression tools complement the range. Range highlights are shown below and a detailed 300 page catalogue is available upon request.

"R" range

Tin plated copper cable lugs, available with or without inspection holes in size range 6 mm2 to 400 mm2. Insulated, 45º and 90º angled variants also available.Ferrules include "Butt", "T" and "Cross" connector types.

DIN range

As above, with the added benefit of meeting DIN Standard 46235.

Aluminium cable lugs and ferrules

Aluminium lugs 16 mm2 to 500 mm2 with solid palm (suitable for outdoor terminations). DIN Standard 46329.
Aluminium lugs 10 mm2 to 400 mm2 suitable for indoor terminations. DIN Standard 48201.
Aluminium ferrules 10mm2 to 500 mm2. DIN Standard 48201.

Bi-metallic cable lugs and ferrules

Bi-metallic lugs 16 mm2 to 300 mm2 with solid copper palm. DIN Standard 48201.
Bi-metallic lugs10 mm2 to 400 mm2 with copper insert. DIN Standard 48201.
Bi-metallic ferrules 10mm2 to 300 mm2 including copper connecting bolt option.

Insulated and uninsulated solderless terminals and cable end sleeves

Ring, fork, tab and pin types with matching receptacles and butt connectors. Available both in packs and assortment boxes.

Duct sealing

Wherever a structure or facility needs connecting to necessary utilities, the fabric of the structure is breached by these connections. Often, these utilities enter via a duct system containing one or more cable or pipes.

Each duct entry to a structure is therefore a very easy way for contamination, infestations, floods and fire to enter! Filoform duct seals have been designed specifically to prevent this.

The Filoform range of duct sealing systems can:

· Protect from floods and dust contamination.
· Prevent the spread of gas through duct systems
· Prevent the spread of fire.
· Prevent the ingress by rodents and insects.
· Be selected very simply.

Selection of the best suited solution can be aided by calling your local sales office. Generally, the seals can be divided thus:

1. Semi-permanent seals (types MDI to MDIV), and

2. Re-openable seals (type Filoseal+)

The types MDI to MDIV are based upon a specifically formulated two component expanding polyurethane resin. The resin is packed in a divided transparent plastic bag with a screw point ready for the pouring nipple. By removing the divider and mixing for 30 seconds, the resin is ready to be poured into your MDI-IV seal system. After pouring, the resin starts to expand by forming CO2. This expansion of the resin penetrates all areas inside the duct thus sealing any opening regardless of the shape of the duct or bore hole. Once expanded, the resin starts to cure and harden. The two component resin provides not only a 100% water and gas tight seal but also offers excellent mechanical strength.

The type Filoseal+ are based upon our MD+ silicon system. This system is particularly effective when there is a need to re-open the duct for removal or replacement of cables and pipes. The Filoseal+ kit comes with a two density foam filler piece to create a backing for the MD+ and create suitable cable or pipe spacing and retention. Once the foam filler piece is fitted into the duct (typically 20mm in) the one component MD+ silicon system is applied over the top using a standard mastic type skeleton gun. Once fully cured, the thixotropic MD+ forms a plastic elastomer mass with special qualities of sealing and bonding and also being very durable. Re-entry into the system is simple and fast and just requires more MD+ to be applied where it has been removed.

Fire

Flood

Rodents

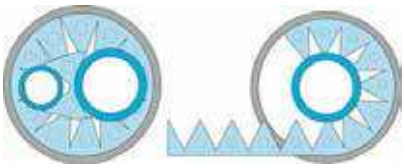
FiloSeal+ Re-enterable Duct Sealing System

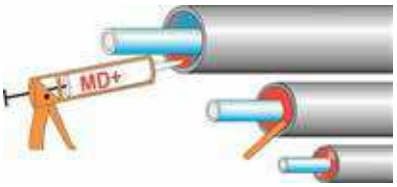
The Filoform duct sealing system FiloSeal+ uses our MD+ sealant which is easily applied from a skeleton gun. The high quality, one component, flexible sealant “MD+” is based on a silicon compound that cures with air (Humidity).

After application and full curing the thixotropic MD+ forms a plastic elastomer mass with special qualities effectively sealing and bonding, while providing a high level of durability.

FiloSeal+ is very easy to apply regardless of the type of cable scenario in the cable ducts as it uses a uniquely shaped foam piece which positions neatly around the cables or pipes in the duct.

The unique design of the tri-flexible foam makes positioning and separation of the cables very simple while also providing a backing for the MD+ to be applied on. This seal is easily installed in vertical scenarios while providing the added security of insuring no loss of components down the duct.
FiloSeal+ is suitable for sealing several cables or pipes contained in one duct and also allows re-entry of the seal to add or remove cables or pipes as required.





- Flexible, one component, adhesive and sealing compound in a cartridge - (310ml)
- High levels of Gas and Water tightness
- Excellent adhesion
- Shows Fire resistance properties
- Resistant to, Petrol, Diesel, Ethanol, ASTM oil, LPG & Many more.
- Resistant against Water, Alkaline, Chemical agents
- Resistant to Hydrogen Sulphide / Methane and many other Gases (NedLab)
- Non corrosive
- Solvent free
- Shock absorbing
- Non toxic, neutral and almost odourless
- Complies with ATEX regulations
- WIMES Compliant, (3.02 clause 7.4.3.2, d & e)
- Suitable for any shaped duct / bore hole / opening
- Quick and easy installation
- A complete kit for one duct
- Seals all know materials, PVC & PE sheathed cables, PILC, (HD) PE pipes
- Suitable for renovations, can be installed retrospectively
- Over 25 years of operational experience

Item number	Description	Maximum duct diame-ter (mm)	Maximum cable / pipe diameter in the duct (mm)	Order unit
80203	FiloSeal+ 50mm	max. Ø 50	max. Ø 40	per piece
80201 / 282580	FiloSeal+ 125mm	max. Ø 125	max. Ø 95	per piece
80202 / 282590	FiloSeal+ 200mm	max. Ø 200	max. Ø 160	per piece

FiloSeal+ Re-enterable Duct Sealing System

Specifications

Density	1,2 gr/cm³	
Flow	< 2mm	ISO 7390
Colour	red-brown	
Skin over time (23C/55%RH)	± 15 minutes	
Curing	1,5mm / 24 hours	
Hardness	30 shore A	DIN 53505
Elongation	100%	DIN 53504
Tensile strength	0,8 N/mm²	DIN 53504
Operating temperature	+5°C tot +40°C	
Temperature resistance	-40°C tot +120°C	

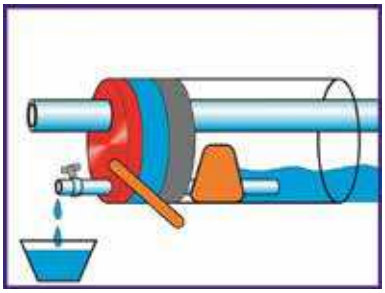
***The FiloSeal+ < 50mm kit can be used for up to 10 ductsealings**

Installation Video
filoform.com/en/video

Item number	Description	Order unit
282595	Finishing Sponge	per piece

FiloSeal+ Re-enterable Duct Sealing System

One of the reasons why ducts are sealed is to prevent running water getting into a building or enclosure. Often when faced with sealing a duct, this running water is still evident.



Our Filoseal Running Water Block system provides the user with a method of preventing the water from ruining any permanent sealing system whilst that system is installed. The kit provides a method of damming the water flow, controlling it and stopping it.

Small kit

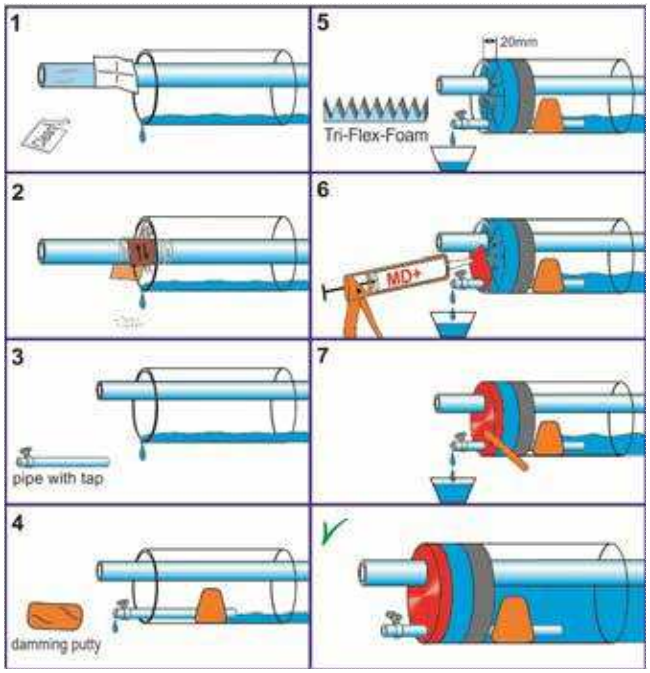
- Non-hardening plastic waterproofing sealant.(Damming Putty)
- 200mm length 15mm pipe
- 15mm Emergency tap
- Pipe insert to strengthen pipe when tap is fitted

Large kit

- Non-hardening plastic waterproofing sealant.(Damming Putty) x 2
- 200mm length 15mm pipe
- 15mm Emergency tap
- Pipe insert to strengthen pipe when tap is fitted

Properties	Unit	Nominal Value
Dielectric Strength	kV / mm	13,5
Dielectric constant (K)		6.5
Volume Resistivity at 20°C	Ohm.m	8 x 1011
Temperature range	°C	-20 to +80
Working voltage (maximum)	kV	1
Specific gravity at 15.5°C		1.70
Flashpoint	°C	+210

Item number	Description	Order unit
282592	Small Running Water Block kit	per piece
282593	Large Running Water Block kit	per piece



MDI - Duct sealing system

Duct sealing system MD I has been developed for sealing ducts containing pliable cables such as coax and rubberised cables, which can be easily bent to a right angle.

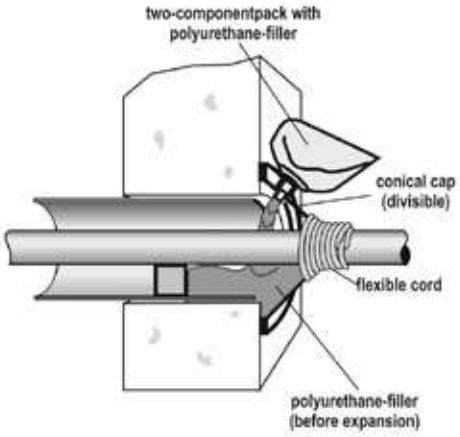
This system allows these usually vulnerable cables to be sealed anywhere along a wall where the cable enters a building

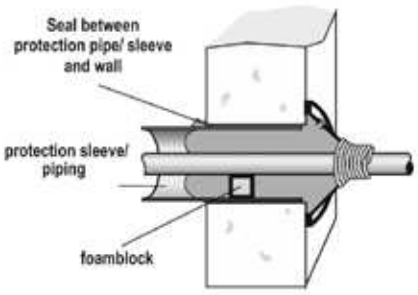
Suitable for ducts with a diameter of 16mm up to 32mm and cables or pipes with a diameter up to 25mm. All our duct sealing system is specified and used by major Electrical, Gas, & Water Utililty companies in the UK and Benelux countries.

Properties	Unit	Value
Start time expansion	seconds	> 95
End time expansion	minutes	15
Compressive strength	N / cm²	> 100
Density 0,5bar	30 days	no leakage
Density 5m water column	30 days	no leakage
Volume consistency	cube 10 x 10cm	no change
Temperature Cycles, -20°C tot +40°C	10 consecutive cycles	no leakage
Vibration test 10 Hz/amplitude 3mm	240 hours	no leakage
Axial tensile force	diameter x 10 N	no leakage
Resistance to bending	cables 45° in 2 directions >250mm	no leakage
Expansion polyurethane foam in pipe	cm	< 40
Chemical resistance		
0,1N Na_2SO_4	30 days	no degradation
0,1N NaCl	30 days	no degradation
0,1N H_2SO_4	30 days	no degradation
0,1N NaOH	30 days	no degradation
Diesel	30 days	no degradation
Gasoline	30 days	no degradation
Resistance		
Moulds		good
Rodents		good
Shelf life	months	minimal 30

Item number	Description	Maximum duct diameter (mm)	Maximum cable diameter in the duct (mm)	Order unit
280220	MDI-1 25mm duct sealing kit	Ø 16 - 32	max. Ø 12.5	per piece
280223P	MDI-2 50mm duct sealing kit	Ø 32 - 60	max. Ø 25	per piece

MDII - Duct sealing system





Duct sealing system type MDII has been developed to provide an effective and simple solution to all gas- and watertight duct sealing requirements. MDII will not only seal the space between the cable or pipe but also the space between the duct and the wall in one operation.

The MDII system is suitable in situations where more than one cable or pipe is in the duct. The opening of the duct does not need to be completely round.

Seals all known materials: PVC & PE sheeted cables, PILC cables, (HD)PE pipes, PE drinking water conduits.

Due to the design of the divisible conical cap, it is possible to install the system also in existing situations. Installation of the cap can be done by trimming the cap to the desired diameter of the cable or pipe.

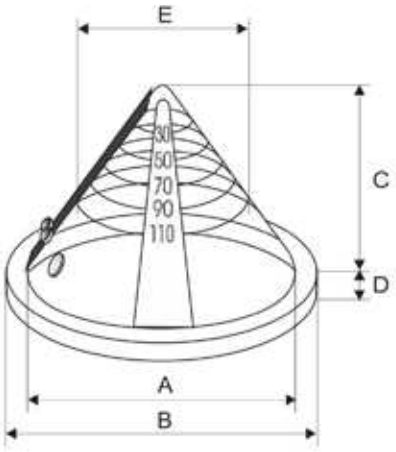
Product overview

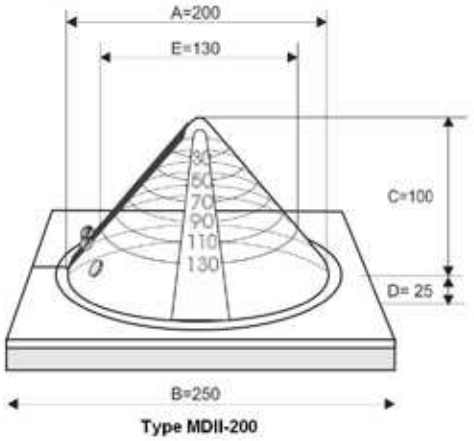
Item number	Description	Maximum duct diam-eter (mm)	Maximum cable diameter in the duct (mm)	Order unit
280271P	MDII-50 duct sealing kit	max. Ø 50	max. Ø 40	per piece
280261	MDII-110 duct sealing kit	max. Ø 110	max. Ø 70	per piece
280251	MDII-125 duct sealing kit	max. Ø 125	max. Ø 90	per piece
280241	MDII-160 duct sealing kit	max. Ø 160	max. Ø 130	per piece
280246	MDII-200 duct sealing kit	max. Ø 200	max. Ø 160	per piece
280247	MDII-250 duct sealing kit	max. Ø 250	max. Ø 200	per piece

Set Contents

· Conical cap with sealing cap
· Foam support block
· Self-adhesive foam strip
· Flexible cord
· Expanding polyurethane filler
· Screw nipple
· Set protective gloves
· Sandpaper

MDII - Duct sealing system





Type MDII-200

	MDII-50	MDII-110	MDII-125	MDII-160	MDII-200	MDII-250
A	80	130	150	200	200	300
B	100	150	170	220	250	350
C	80	75	70	90	160	130
D	16	15	15	15	25	25
E	40	70	90	130	160	250

Specifications

Properties	Unit	Value
Start time expansion	seconds	> 95
End time expansion	minutes	15
Compressive strength	N / cm²	> 100
Gas and water tightness 1,0bar	30 days	no leakage
Density 10m water column	30 days	no leakage
Volume consistency	cube 10 x 10cm	no change
Temperature Cycles, -20°C tot +40°C	10 consecutive cycles	no leakage
Vibration test 10 Hz/amplitude 3mm	240 hours	no leakage
Axial tensile force	diameter x 10 N	no leakage
Resistance to bending	cables 45° in 2 directions >250mm	no leakage
Expansion polyurethane foam in pipe	cm	< 40
Chemical resistance		
0,1N Na_2SO_4	30 days	no degradation
0,1N NaCl	30 days	no degradation
0,1N H_2SO_4	30 days	no degradation
0,1N NaOH	30 days	no degradation
Diesel	30 days	no degradation
Gasoline	30 days	no degradation
Resistance		
Moulds		good
Rodents		good
Shelf life	months	minimal 30

Installation Video
filoform.com/en/video

MDIII - Duct sealing system

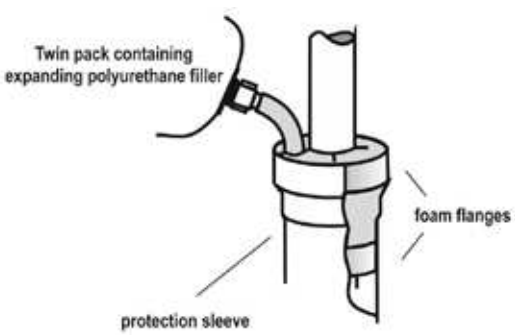
Duct sealing system type MD III is designed for sealing cable and pipe penetrations in conduits or duct openings that are tightly positioned against each other.

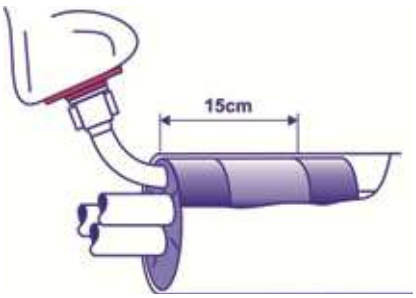
The MDIII systems has two circular foam flanges that creates a chamber where our specially formulated expanding poly-urethane resin can easily be injected due to the convenient and safe to use twin pack with screw nipple and filling tube. The polyurethane resin will expand and thus create a gas and watertight seal.

Item number	Description	Maximum duct diameter (mm)	Maximum cable diameter in the duct (mm)	Order unit
780291	MDIII-25 duct sealing kit	max. Ø 25	max. Ø 8	per piece
282550	MDIII-50 duct sealing kit	max. Ø 50	max. Ø 20	per piece
282575	MDIII-75 duct sealing kit	max. Ø 75	max. Ø 40	per piece
280295	MDIII-110 duct sealing kit	max. Ø 110	max. Ø 80	per piece
280296	MDIII-160 duct sealing kit	max. Ø 160	max. Ø 130	per piece
2802973	MDIII-200 duct sealing kit	max. Ø 200	max. Ø 160	per piece
2802978	MDIII-250 duct sealing kit	max. Ø 250	max. Ø 220	per piece

Set Contents

· 2 foam flanges
· Self-adhesive foam strips
· Expanding polyurethane filler
· Screw nipple with filling tube
· Set protective gloves
· Sandpaper
· Installation instructions





MDIII - Duct sealing system

Specifications

Properties	Unit	Value
Start time expansion	seconds	> 95
End time expansion	minutes	15
Compressive strength	N / cm²	> 100
Gas and water tightness 1,0bar	30 days	no leakage
Density 10m water column	30 days	no leakage
Volume consistency	cube 10 x 10cm	no change
Temperature Cycles, -20°C tot +40°C	10 consecutive cycles	no leakage
Vibration test 10 Hz/amplitude 3mm	240 hours	no leakage
Axial tensile force	diameter x 10 N	no leakage
Resistance to bending	cables 45° in 2 directions >250mm	no leakage
Expansion polyurethane foam in pipe	cm	< 40
Chemical resistance		
0,1N Na_2SO_4	30 days	no degradation
0,1N NaCl	30 days	no degradation
0,1N H_2SO_4	30 days	no degradation
0,1N NaOH	30 days	no degradation
Diesel	30 days	no degradation
Gasoline	30 days	no degradation
Resistance		
Moulds		good
Rodents		good
Shelf life	months	minimal 30

Installation Video
filoform.com/en/video

MDIV - Duct sealing system

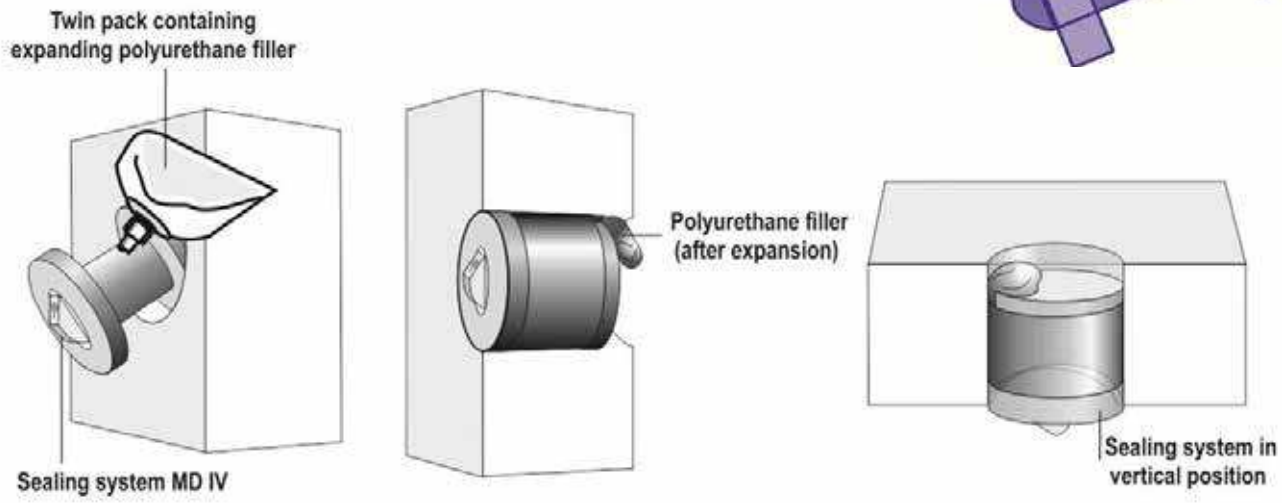
Sealing system type MDIV has been developed to create an effective gas and watertight seal of ducts that have no cables or pipes installed.

The sealing system type MDIV consists of a foam ended hollow clear tube, and a safe to use twin pack containing our specially formulated expanding polyurethane filler.

This polyurethane filler is injected in the centre of the hollow tube, which then the seal needs to be pushed and positioned in the duct / bore hole. The polyurethane filler will expand thus sealing the duct against water and gas.

If the duct needs to be utilised at a later datethen the MDIV can be removed easily by using a sharpe cutting tool. The duct can then be re-sealed by using either of our sealing systems.

The sealing system MDIV can also be used for sealing vertical ducts.



Item number	Description	Maximum duct diameter (mm)	Maximum cable diameter in the duct (mm)	Order unit
280301	MDIV-1 Ø 75- 95	Ø 75 - 95	N/A	per piece
280321	MDIV-3 Ø 95- 125	Ø 95 - 125	N/A	per piece
280331P	MDIV-4 Ø 125- 160	Ø 125 - 160	N/A	per piece

Set Contents

· Coil shaped unit
· Expanding polyurethane filler
· Screw nipple
· Set protective gloves
· Sandpaper
· Installation instruction

MDIV - Duct sealing system

Specifications

Properties	Unit	Value
Start time expansion	seconds	> 95
End time expansion	minutes	15
Compressive strength	N / cm²	> 100
Gas and water tightness 1,0bar	30 days	no leakage
Density 10m water column	30 days	no leakage
Volume consistency	cube 10 x 10cm	no change
Temperature Cycles, -20°C tot +40°C	10 consecutive cycles	no leakage
Vibration test 10 Hz/amplitude 3mm	240 hours	no leakage
Axial tensile force	diameter x 10 N	no leakage
Expansion polyurethane foam in pipe	cm	< 40
Chemical resistance		
0,1N Na_2SO_4	30 days	no degradation
0,1N NaCl	30 days	no degradation
0,1N H_2SO_4	30 days	no degradation
0,1N NaOH	30 days	no degradation
Diesel	30 days	no degradation
Gasoline	30 days	no degradation
Resistance		
Moulds		good
Rodents		good
Shelf life	months	minimal 30

Installation Video
filoform.com/en/video

MD+ Fire Resistant sealants for ducts

The effective, and easy to install solution to gas, watertight, and fire proof duct sealing requirements.

Introduction

Filoform duct Sealing systems have been used for decades to provide a gas and watertight sealing. The seals can also be made fire resistant for up to 2 hours by using a special fire resistant sealant.

Firetest at Warrington Fire

Gas- and watertight

Filoform duct sealing systems are based on a specially formulated expanding 2-component polyurethane resin. The resin is packed in a transparent twin pack already prepared for use with a filling nozzle. After removing the separation strip, the 2 components should be thoroughly mixed for 30 seconds. Once the resin is ready for use; the twin pack is easily opened by installing the screw type filling nozzle. Once the resin has been squeezed into the duct it expands due to the formation of CO2. During this expansion process the resin penetrates into any gaps regardless of the shape, size, number of cables or tubes that is installed. The expanded resin will cure and form a durable gas and watertight seal with excellent mechanical strength.

Fire resistant

Using the special MD+ Fire Resistant Sealant in combination with Filoform/MD-Duct Sealing Systems provides fire resistance up to 2 hours in conformity with the standard EN1366-3:2009*.

Filoform duct sealing systems are easily adjusted to the requirements of any specific situation.

**Fire resistance in conformity with the standard EN1366-3:2009 can only be achieved when the duct seal is installed in accordance with our installation instructions. The fire resistance in conformity with the standard EN1366-3:2009 has been tested and approved by Warrington fire.*

Benefits

· High levels of gas and water tightness
· Fire resistance up to 2 hours (see page 7 for details)
· Fire resistance tested on various types of cables and piping
· Suitable for use with all shapes, size / diameter of ducts
· Quick & easy installation
· A complete kit for one duct
· Suitable for all cable and pipe materials
· Excellent mechanical strength, (after curing) resistant to movement, shocks and vibrations
· Suitable for renovations, can be installed retrospectively
· Over 25 years of operational experience in the field

Fire resistant up to 2 hours!

Classifications

Filoform had a large number of different penetration configurations tested in accordance with the standard EN1366-3:2009, and had these classified in accordance with the standard EN13501-2: 2007 +A1: 2009. Based on this, the Filoform duct seals, provided installed as described above, have been classified as follows:

Penetration seals with cables:
MDII in combination with MD+ fire resistant sealant: 90 minutes (EI 90, E 90)
MDIII in combination with MD+ fire resistant sealant: 120 minutes (EI 120, E 120)

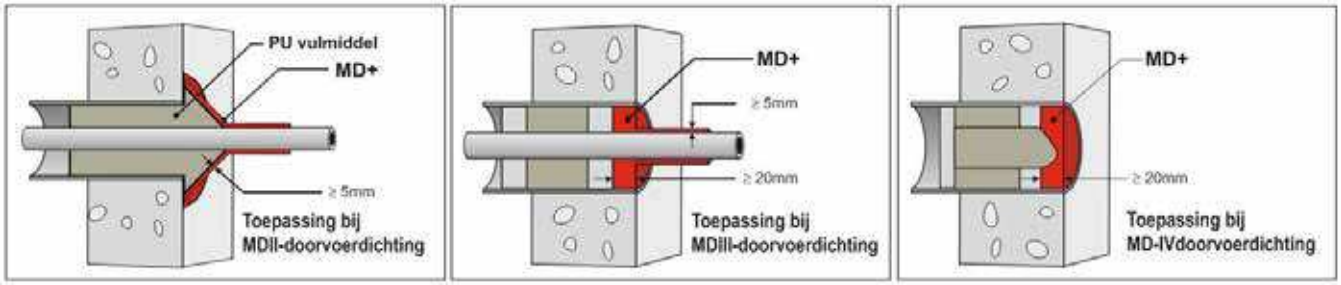
Penetration seals with steel pipe (for example gas pipe):
MDII & MDIII in combination with MD+ fire resistant sealant: 90 minutes (EI 90-C/U, E 90 C/U)

Seals without cables or pipes:
MDIV in combination with MD+ fire resistant sealant: 120 minutes (EI 120, E 120

MD+ Fire Resistant sealants for ducts

Application

The high quality MD+ Sealant is a fire resistant and flexible one-component product.
This fire resistant sealing compound is based on a silicon combination. After application, the thixotropic compound cures with atmospheric moisture to form a durable seal. MD+ is also suitable to provide a fire resistant finish to the Filoform MD-series duct sealing systems, if applied as follows:



Characteristcs

· Flexible, one-component, adhesive and sealing compound in cartridge (310 ml.)
· Gastight and watertight seal
· Fire resistant
· Tested on various cable- and piping types
· Excellent adhesion
· Good resistance against water, alkaline, chemical agents, oil and greases
· Non corrosive
· Solvent free
· Shock absorbing
· Safe useage; non-toxic, neutral and almost odourless.

Fire resistant	until 2 hours depending on application	
Density	1,2 gr/cm³	
Flow	< 2mm	ISO 7390
Color	red-brown	
Skin over time (23C/55%RH)	± 15 minutes	23°C/55%RH
Curing	1,5 mm/24 hours	
Hardness	30 shore A	DIN 53505
Elongation	100%	DIN 53504
Tensile strength	0,8 N/mm²	DIN 53504
Operating temperature	+5°C to +40°C	
Temperature resistance	-40°C to +120°C	

Item number	Description	Order unit
80849	MD+ fire resistant sealant kit 310ml	12 pcs/carton

Fill & Seal sealing kit 290ml

Filoform Fill & Seal compound is a high quality, flexible and strong one-component product. The Filoform glueing and sealing compound is based on a hybrid MS-polymer.

After application the compound cures with atmospheric moisture to form a durable, high-levelled elastomer.
Applications for Fill & Seal compound are telecom technique, cable ducts, wall ducts, gastight and watertight sealing for centre plugs and duct plugs. Also used as a glueing and sealing compound in construction and shipbuilding industry.

Item number	Description	Order unit
80840	Fill & Seal sealing kit 290ml	12 pcs/carton

Technical specifications		
Density	1,4 gr/cm³	
Thixotropic	good	
Colour	white	
Skin hardening	± 10 minutes	
Hardening	3mm / 24 hours	
Hardness	55 shore A	DIN 53504
Elongation	250%	DIN 53504
Tensile strength	1,7 N/mm	DIN 53504
Volume change	< 3%	DIN 52451
Shear strength	2,5 N/mm²	
Operating temperature	+5°C till +40°C	
Temperature resistance	-40°C till +120°C	

Fibre optic networks / FttX

The demand for faster communication links and higher speeds is increasing rapidly. Throughout the world, existing telecommunication infrastructures are being improved and new FttX networks are being rolled out.

At Filoform, we have over 50 years of expertise in providing underground telecommunication links and gas and watertight duct sealing systems. In the last 15 years we have become a specialist in the development and production of seals for fibre optic networks.

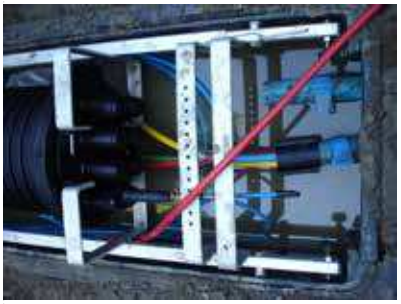
Our unique seals are suitable for both new networks and improving existing infrastructures. Filoform duct seals provide gas and watertight protection. They also provide optimal protection for duct-in-duct and cable-in-duct networks after their installation. Underground fibre optic networks are perfectly protected against the elements, thus contributing to the enhanced longevity and reliability of your investment.

Filoform duct seals for fibre optical networks are well known for their easy and quick installation. All seals have been developed with the thought in mind that they should be suitable for retro fitting. Furthermore, due to their product design our sealing products contribute to a reduction of the labour costs for a FttX project.

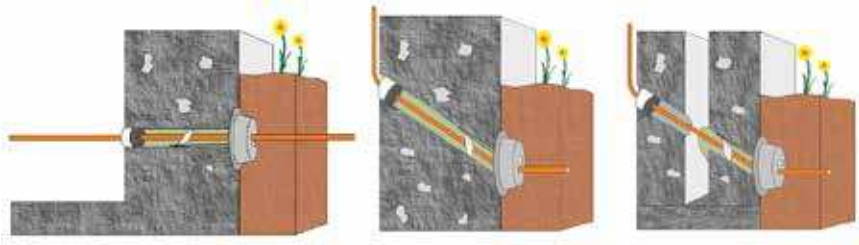
The compact design of the seals ensure easy assembly in all situations, even in locations with difficult access, without any special tools.

The technical specifications of the seals meet the technical standards of the industry. I.e. gas&water tightness up to 0,5 bar (depending on configuration) mechanical strength and environmental conditions. All sealing solutions are compatible with ducts and cables from all major manufacturers.
All components are manufactured from high quality raw materials which ensure a long life time. As part of our quality control program, all parts and duct seals are being tested before and after manufacturing process.

Our network of partners / distributors throughout the world guarantees availability of our solutions and technical assistance.
Photo practical situations.



MDI FttH Duct sealing system



The Filoform MD1-FttH is designed for gas and watertight sealing of FttH home entries with micro ducts and cables up to Ø10mm. The diameter of the drilled hole needs to be at least Ø16mm wide and max. Ø 20mm.

The sealing cap can be applied to the wall by using the special anchoring pin. This way it is not necessary to drill additional holes and to secure the cap with screws.

A gas and watertight seal is created with use of Filoform expanding PU resin type 2234. The resin package contains the right amount of resin to secure an optimal sealing. After mixing the resin and filling the cap it will start expanding. Within 30 minutes the resin will fully cure intro a stong and durable seal. Any irregularities or damage to wall will be restored with the resin.

To seal the duct opening on the inside of the house, we recommend the use of Filoform Fill & Seal sealing paste.

- Universal, suitable for micro ducts and cables up to Ø10mm
- Expansion along the borehole and on the outer wall guarantees an excellent seal
- Tested 1.0 bar Gas & Watertight
- Quick installation in minutes, no special tools required
- No extensive core drilling necessary
- Also suitable for angled penetrations
- Suitable for sealing of drilled holes in the most common wall types with waterproofing according to DIN 18195 T4
- Complies with DIN 18332 underground cable laying works: cable and conduit entries into buildings are to be made watertight and gastight
- High mechanical strength, resists ground movement, shocks and vibrations
- Supplied as one complete kit for sealing of one house connection
- Over 30 years of practical experience, installed in many Telecom / FO network

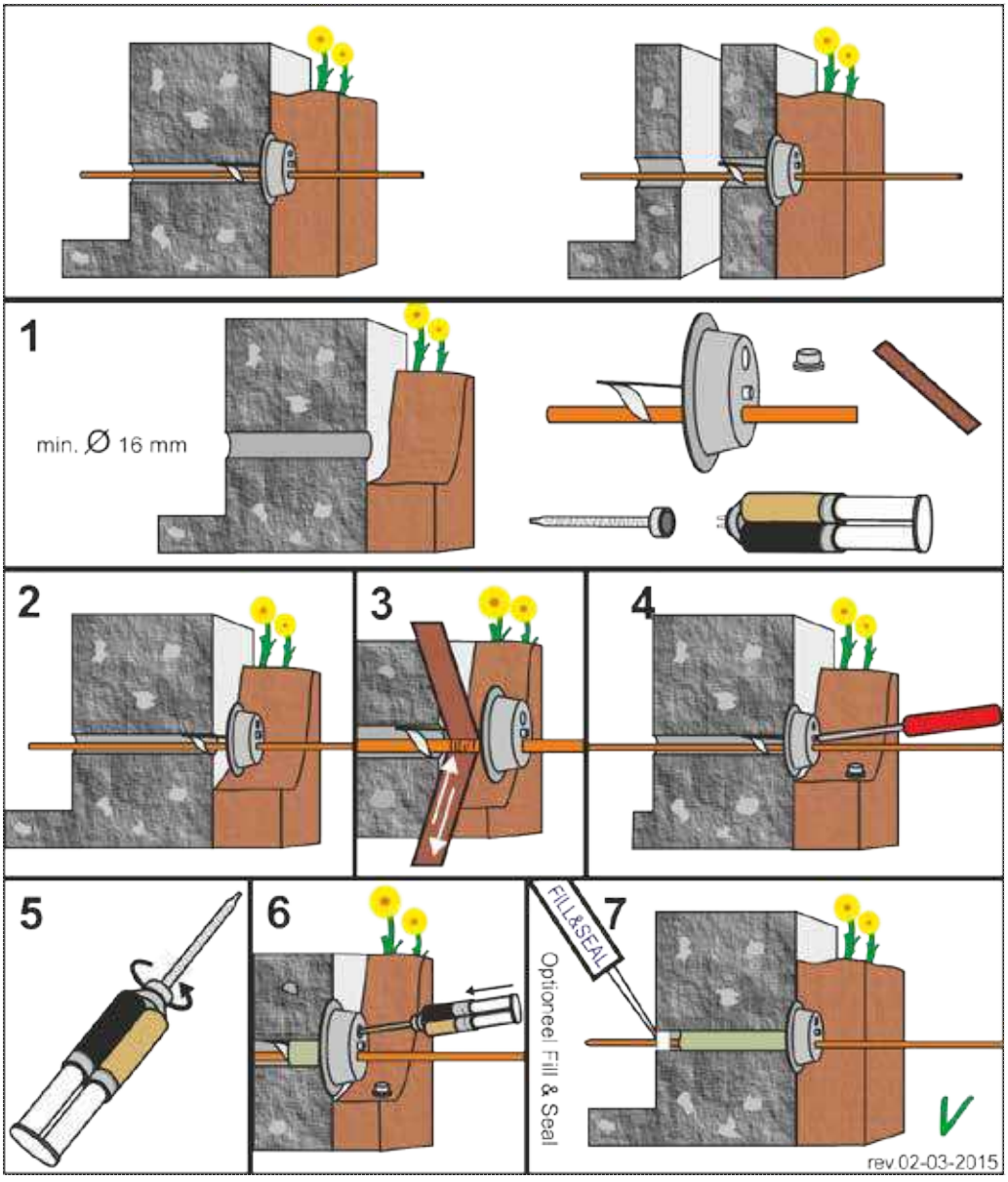
Item number	Description	Min. duct diameter	Max. duct diameter	Maximum cable diameter in the duct
80219	MDI FttH duct sealing	Ø 16mm	Ø 20mm	max. Ø 10mm

MDI FttH Duct sealing system

Specifications

Outer diameter	Inner diameter	Height
104 mm	72 mm	30 mm

Properties	Unit	Value
Start time expansion	seconds	20
End time expansion	minutes	2
Curing time	minutes	5
Compressive strength	N / cm²	> 60
Density	kg / m³	100
Gastightness	bar	> 1,0
Watertightness	m water column	> 10,0
Volume consistency	cube 10 x 10cm	no change
Temperature Cycles, -20°C tot +40°C	10 consecutive cycles	no leakage
Vibration test 10 Hz/amplitude 3mm	240 hours	no leakage
Axial tensile force	diameter x 10 N	no leakage
Pull out strength FttH cable / microduct	N	no leakage



Installation Video: vimeo.com/133958281

Divisible seal for HDPE ducts

Applications

Suitable for gas and watertight sealing of 32, 40, 50 and 63mm HDPE ducts, which contain mini ducts and / or (fibre optic) cables.

The modular system will guarantee easy installation of various different cable and duct configurations. Our system is divisible so can be applied at installation or afterwards.

The rubber inserts can be custom designed for your specific needs and configuration and will contain (temporary) blind plugs to make the system more flexible at the installation site.

Package Contents

· 2 pieces plastic shells
· 2 pieces closing keys
· 1 piece synthetic rubber plug for sealing round the mini tubes
· Illustrated installation instructions

Technical Specifications

Plastic scales:	Glassfibre reinforced polyamide
Closing key :	Glassfibre reinforced polyamide
Sealingplug :	TPE
Sealing:	up to 0,25 / 0,50 bar (depending on configuration)

Divisible seal for HDPE ducts

Divisible duct seals 32mm

Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822626F	Duct seal HDPE 32/1x10+3x7mm	32	1x10mm + 3x7mm	20 pcs/carton
822680F	Duct seal HDPE 32/2x7+1x12mm	32	2x7mm + 1x12mm	20 pcs/carton
822669F	Duct seal HDPE 32/7x7mm	32	7x7mm	20 pcs/carton
822627F	Duct seal HDPE 32/12-10-7,5mm	32	1x12mm + 1x10mm + 1x7,5mm	20 pcs/carton
822632F	Duct seal HDPE 32/3x10mm	32	3x10mm	20 pcs/carton
822660F	Duct seal HDPE 32/4x10mm	32	4x10mm	20 pcs/carton
822661F	Duct seal HDPE 32/2x10mm+1xC8-14mm	32	2x10mm + 1C8-14mm	20 pcs/carton
822667F	Duct seal HDPE 32/3x12mm	32	3x12mm	20 pcs/carton
822656F	Duct seal HDPE 32/1x14mm	32	1x14mm	20 pcs/carton

Divisible duct seals 40mm

Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822624F	Duct seal HDPE 40/10x7mm	40	10x7mm	10 pcs/carton
822623F	Duct seal HDPE 40/24x4mm	40	24x4mm	10 pcs/carton
822681F	Duct seal HDPE 40/2x7+1x12mm	40	2x7mm + 1x12mm	10 pcs/carton
822642F	Duct seal HDPE 40/1x10mm+3x7mm	40	1x10mm +3x7mm	10 pcs/carton
822621F	Duct seal HDPE 40/8x7mm+1x12mm	40	8x7mm + 1x12mm	10 pcs/carton
822640F	Duct seal HDPE 40/5x10mm	40	5x10mm	10 pcs/carton
822659F	Duct seal 40/7x10mm thin wall	40	7x10mm	10 pcs/carton
822662F	Duct seal HDPE 40/3x10mm+1C8-18mm	40	3x10mm + 1C8-18mm	10 pcs/carton
822625F	Duct seal HDPE 40/4x12mm	40	4x12mm	10 pcs/carton
822663F	Duct seal HDPE 40/2x12mm+1C8-18mm	40	2x12mm + 1C8-18mm	10 pcs/carton
822688F	Duct seal HDPE 40/1x14mm	40	1x14mm	10 pcs/carton
822643F	Duct seal HDPE 40/3x14mm	40	3x14mm	10 pcs/carton
822641F	Duct seal HDPE 40/2x15mm + 2x8,4-13,4mm	40	2x15mm + 2x8,4-13,4mm	10 pcs/carton

Divisible seal for HDPE ducts

Divisible duct seals 50mm

Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822684F	Duct seal HDPE 50/8x7mm+1x16mm	50	8x7mm + 1x16mm	10 pcs/carton
822683F	Duct seal HDPE 50/8x10mm	50	8x10mm	10 pcs/carton
822652F	Duct seal HDPE 50/18x7mm	50	18x7mm	10 pcs/carton
822670F	Duct seal HDPE 50/8x7mm+1x14mm	50	8x7mm + 1x14mm	10 pcs/carton
822651F	Duct seal HDPE 50/10x7mm+1x12mm	50	10x7mm + 1x12mm	10 pcs/carton
822676F	Duct sealHDPE 50/12x7mm+1x14mm	50	12x7mm + 1x14mm	10 pcs/carton
822671F	Duct seal HDPE 50/7x7mm+1C8-18,5mm	50	7x7mm + 1C8-18,5mm	10 pcs/carton
822629F	Duct seal HDPE 50/7x10mm	50	7x10mm	10 pcs/carton
822674F	Duct seal 50/9x10mm thin wall	50	9x10mm	10 pcs/carton
822673F	Duct seal HDPE 50/5x10mm+1C8-18,5mm	50	5x10mm + 1C8-18,5mm	10 pcs/carton
822650F	Duct seal HDPE 50/7x12mm	50	7x12mm	10 pcs/carton
822672F	Duct seal HDPE 50/5x12+1C8-18,5mm	50	5x12mm + 1C8-18,5mm	10 pcs/carton
822628F	Duct seal HDPE 50/1x15,5mm+3x12mm	50	1x15,5mm + 3x12mm	10 pcs/carton
822657F	Duct seal 50/7x14mm thin wall	50	7x14mm	10 pcs/carton
822666F	Duct seal HDPE 50/4x16mm	50	4x16mm	10 pcs/carton
822688F	Duct seal HDPE 50/2x20mm	50	2x20mm	10 pcs/carton

Divisible duct seals 63mm

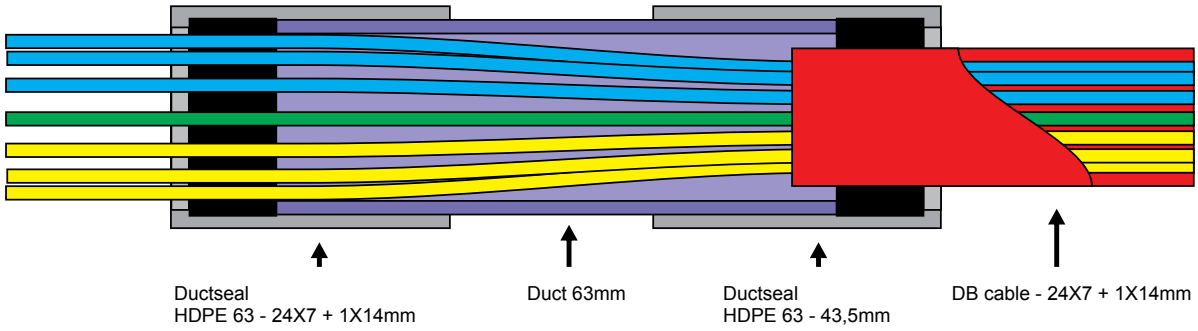
Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822658F	Duct seal HDPE 63/24x7mm	63	24x7mm	10 pcs/carton
822664F	Duct seal HDPE 63/22x7mm+1x12mm	63	22x7mm + 1x12mm	10 pcs/carton
822653F	Duct seal HDPE 63/24x7mm+1x14mm	63	24x7mm + 1x14mm	10 pcs/carton
822668F	Duct seal 63/15x10mm thin wall	63	15x10mm	10 pcs/carton
822675F	Duct seal HDPE 63/9x12mm	63	9x12mm	10 pcs/carton
822665F	Duct seal 63/12x12mm thin wall	63	12x12mm	10 pcs/carton
822654F	Duct seal HDPE 63/7x14mm	63	7x14mm	10 pcs/carton
822677F	Duct seal HDPE 63/6x16mm	63	6x16mm	10 pcs/carton
822686F	Duct seal HDPE 63/4x20mm	63	4x20mm	10 pcs/carton
822689F	Duct seal HDPE 63/7x16mm	63	7x16mm	10 pcs/carton

DB-bundle break out seal

Applications

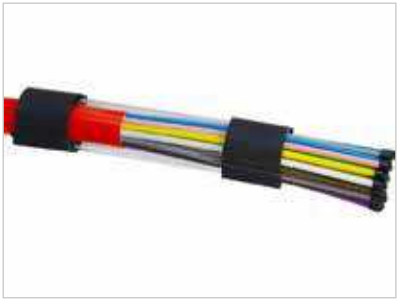
Filoform DB bundle breakout seals have been developed to provide an effective and simple solution to all gas and watertight duct sealing requirements.In a 32, 40, 50 and 63mm duct, depending on the type of DB bundle, space is created for spreading the miniducts from the DB bundle. These are sealed by the divisible duct sealing set. Subsequently, a similar seal is made between the DB-bundle and the HDPE duct.

The advantage of this solution is that in many underground closures standard ports for sealing to ducts with a diameter of 32, 40, 50 or 63mm are provided. With this solution, a simple waterproof entry of a DB bundle can be achieved..



Package Contents

· 2 pieces plastic shells
· 2 pieces closing keys
· 1 piece synthetic rubber plug for cavity shapes
· 1 pce PE duct, length 200mm
· Illustrated installation instructions



Technical Specifications

Plastic scales:	Glassfibre reinforced polyamide
Closing key :	Glassfibre reinforced polyamide
Sealingplug :	TPE
Sealing:	Up to 0,50 bar

Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822741	DB bundle breakout seal 3x14mm / 40mm	40	3x14mm	2 pcs/carton
822750	DB bundle breakout seal 7x12mm / 50mm	50	7x12mm	2 pcs/carton
822760	DB bundle breakout seal 7x14mm / 63mm	63	7x14mm	2 pcs/carton
822770	DB bundle breakout seal 24x7mm + 14mm / 63mm	63	24x7mm + 1x14mm	2 pcs/carton

Other sizes and configurations available upon request.

Divisible sealing set for subducts

Applications

Filoform divisible duct sealing sets for subducts have been developed to provide an effective and simple solution to all gas and watertight duct sealing requirements. This modular system enables you to instal it easily onto to new and existing installations. Due to the compact design the seals can be installed in all situations, even in locations with difficult access.

Package Contents

· 2 pieces plastic shells with click-mounting
· 1 piece cutting block
· Synthetic rubber seal
· Illustrated installation instructions
· Packaging 25 sets per box

Technical Specifications

Plastic scales:	Glassfibre reinforced polyamide
Closing key :	Glassfibre reinforced polyamide
Sealingplug :	TPE
Sealing:	Up to 0,50 bar

Item number	Description	Duct outside diameter (mm)	Configuration (qty x mm)	Order unit
822810.0	Duct seal 10mm / 2,5-1,5mm	10	2,5-1,5	25 pcs/carton
822810.1	Duct seal 10mm / 3,5-2,5mm	10	3,5-2,5	25 pcs/carton
822810.2	Duct seal 10mm / 5,0-3,5mm	10	5,0-3,5	25 pcs/carton
822810.3	Duct seal 10mm / 6,5-5,0mm	10	6,5-5,0	25 pcs/carton
822810.4	Duct seal 10mm / 7,5-6,5mm	10	7,5-6,5	25 pcs/carton
822812.0	Duct seal 12mm / 2,5-1,5mm	12	2,5-1,5	25 pcs/carton
822812.1	Duct seal 12mm / 3,5-2,5mm	12	3,5-2,5	25 pcs/carton
822812.2	Duct seal 12mm / 5,0-3,5mm	12	5,0-3,5	25 pcs/carton
822812.3	Duct seal 12mm / 6,5-5,0mm	12	6,5-5,0	25 pcs/carton
822812.4	Duct seal 12mm / 8,0-6,5mm	12	8,0-6,5	25 pcs/carton
822812.5	Duct seal 12mm / 8,5-7,0mm	12	8,5-7,0	25 pcs/carton
822814.7	Duct seal 14mm / 2,5-1,5mm	14	2,5-1,5	25 pcs/carton
822814.8	Duct seal 14mm / 3,5-2,5mm	14	3,5-2,5	25 pcs/carton
822814.0	Duct seal 14mm / 5,0-3,5mm	14	5,0-3,5	25 pcs/carton
822814.05	Duct seal 14mm / 6,5-5,0mm	14	6,5-5,0	25 pcs/carton
822814.1	Duct seal 14mm / 8,0-6,5mm	14	8,0-6,5	25 pcs/carton
822814.2	Duct seal 14mm / 10,0-8,0mm	14	10,0-8,0	25 pcs/carton
822816.7	Duct seal 16mm / 2,5-1,5mm	16	2,5-1,5	25 pcs/carton
822816.8	Duct seal 16mm / 3,5-2,5mm	16	3,5-2,5	25 pcs/carton
822816.0	Duct seal 16mm / 5,0-3,5mm	16	5,0-3,5	25 pcs/carton
822816.05	Duct seal 16mm / 6,5-5,0mm	16	6,5-5,0	25 pcs/carton
822816.1	Duct seal 16mm / 8,0-6,5mm	16	8,0-6,5	25 pcs/carton
822816.2	Duct seal 16mm / 10,0-8,0mm	16	10,0-8,0	25 pcs/carton
822818.5	Duct seal 18mm / 5,0-3,5mm	18	5,0-3,5	25 pcs/carton
822818.4	Duct seal 18mm / 6,5-5,0mm	18	6,5-5,0	25 pcs/carton
822818.3	Duct seal 18mm / 8,0-6,5mm	18	8,0-6,5	25 pcs/carton
822818.2	Duct seal 18mm / 10,0-8,0mm	18	10,0-8,0	25 pcs/carton
822818.1	Duct seal 18mm / 12,0-9,4mm	18	12,0-9,4	25 pcs/carton
822820.5	Duct seal 20mm / 5,0-3,5mm	20	5,0-3,5	25 pcs/carton
822820.4	Duct seal 20mm / 6,5-5,0mm	20	6,5-5,0	25 pcs/carton
822820.3	Duct seal 20mm / 8,0-6,5mm	20	8,0-6,5	25 pcs/carton
822820.2	Duct seal 20mm / 9,5-8,0mm	20	9,5-7,5	25 pcs/carton
822820.1	Duct seal 20mm / 12,0-9,4 mm	20	12,0-9,4	25 pcs/carton

Divisible mini/micro duct seals

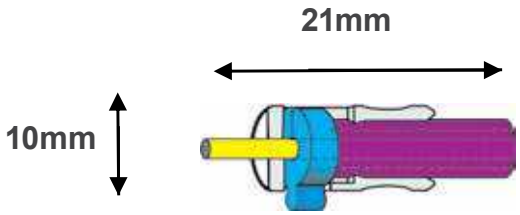
Applications

Filoform miniduct seals have been developed to provide a gas and watertight seal between a subduct with anoutside diameter of 4, 5, 6, 7 & 8mm and a optical fibre cable with an outside diameter from 0.9 > 2.5mm.

The miniduct seal is easy to instal on new installations and existing installations. Thanks to the clever design,sliding the rubber seal over the fibre compresses against the duct which gives it a water & gas tight seal. The compact design seal can be installed in all situations, even in locations with difficult access because of its ease of installation.

Package Contents

· 1 transparant housing
· 1 synthetic rubber seal
· Illustrated installation instructions
· Packaging 100 sets per bag



Technical Specifications

Plastic housing:	PCTPE
Sealing plug:	up to 0,50 bar

For further technical information please visit our website / contact your local sales office.

Item number	Description	Duct outside diameter (mm)	Cable diameter	Order unit
823554.1	Miniduct seal 4mm/0,9mm	4	see website for info	100 pcs/bag
823554.2	Miniduct seal 4mm/1,25mm	4	see website for info	100 pcs/bag
823554.3	Miniduct seal 4mm/1,6mm	4	see website for info	100 pcs/bag
823554.35	Miniduct seal 4mm/2,1mm	4	see website for info	100 pcs/bag
823555.1	Miniduct seal 5mm/0,9mm	5	see website for info	100 pcs/bag
823555.2	Miniduct seal 5mm/1,25mm	5	see website for info	100 pcs/bag
823555.3	Miniduct seal 5mm/1,6mm	5	see website for info	100 pcs/bag
823555.35	Miniduct seal 5mm/2,1mm	5	see website for info	100 pcs/bag
823555.4	Miniduct seal 5mm/2,5mm	5	see website for info	100 pcs/bag
823556.1	Miniduct seal 6mm/0,9mm	6	see website for info	100 pcs/bag
823556.2	Miniduct seal 6mm/1,25mm	6	see website for info	100 pcs/bag
823556.3	Miniduct seal 6mm/1,6mm	6	see website for info	100 pcs/bag
823556.35	Miniduct seal 6mm/2,1mm	6	see website for info	100 pcs/bag
823556.4	Miniduct seal 6mm/2,5mm	6	see website for info	100 pcs/bag
823557.1	Miniduct seal 7mm/0,9mm	7	see website for info	100 pcs/bag
823557.2	Miniduct seal 7mm/1,25mm	7	see website for info	100 pcs/bag
823557.3	Miniduct seal 7mm/1,6mm	7	see website for info	100 pcs/bag
823557.35	Miniduct seal 7mm/2,1mm	7	see website for info	100 pcs/bag
823557.4	Miniduct seal 7mm/2,5mm	7	see website for info	100 pcs/bag
823558.1	Miniduct seal 8mm/0,9mm	8	see website for info	100 pcs/bag
823558.2	Miniduct seal 8mm/1,25mm	8	see website for info	100 pcs/bag
823558.3	Miniduct seal 8mm/1,6mm	8	see website for info	100 pcs/bag
823558.35	Miniduct seal 8mm/2,1mm	8	see website for info	100 pcs/bag
823558.4	Miniduct seal 8mm/2,5mm	8	see website for info	100 pcs/bag

Sealing Caps

Filoform sealing caps have been developed to provide an effective and simple solution to all splash water and dirttight sealing requirements in HDPE ducts and protective sleeves.

The sealing caps are standard dirt and splash watertight. After mounting with sealing compoundFiloform Fill & Seal (art.nr. 80840) or Fire & Water-seal (art.nr. 80845) the Filoform sealing plugs easily exceed thespecifications of NEN 2768.

The Filoform sealing caps are made from a high quality TPE, this material has a hardness of 40 Shore A.

Item number	Description	Outside diam-eter HDPE duct (mm)	Maximum cable / pipe diameter in the duct (mm)	Order unit
822617	Sealing cap 16/2x4mm type16	16	2x4mm	10 pcs/carton
822410	Sealing cap 40/10x7mm(type7)	40	10x7mm	40 pcs/carton
822613	Sealing cap 40/5x10mm(type13)	40	5x10mm	40 pcs/carton
822615	Sealing cap 40/4x10-12 type14	40	4x10-12mm	10 pcs/carton
822616	Sealing cap flexb. 40 type15	40	closed end cap	25 pcs/carton
822507	Sealing cap 50/7x10mm(type10)	50	7x10mm	25 pcs/carton
822510	Sealing cap 50/5x12mm+2x12mm	50	5x12mm + 2x12mm	25 pcs/carton
822514	Sealing cap 50/14x7mm(type11)	50	14x7mm	25 pcs/carton

Universal HDPE sealing plugs

Filoform sealing plugs have been developed to provide an effective and simple solution to all splash water and dirttight sealing requirements in HDPE ducts, protective sleeves and diamond-drilled ducts.

The sealing plugs are formed from one part, with a seam part. Due to this unique construction, the plug can be usedas blind and sealing plug.

Furthermore, the sealing plug is inside specially shaped. This special shape enables you to adapt the plug easily tothe diameter of the cable or subduct. This enables you to obtain savings in inventory costs since only a very limitednumber of types of plugs are needed.

The Filoform sealing plug is directly applicable in situations where a blind plug temporarily without cable or subductinside the HDPE duct should be sealed or to seal openings for future transit extensions are provided.

To apply the sealing plug, the plug can be adjusted to the correct cable or subduct diameter by shortening the plugusing the size chart on the packaging.

The sealing plugs are standard dirt and splash watertight. After mounting with sealing compoundFiloform Fill & Seal (art.nr. 80840) or Fire & Water-seal (art.nr. 80845) the Filoform sealing plugs easily exceed thespecifications of NEN 2768.

The Filoform sealing plugs are made from a high quality TPE, this material has a hardness of 40 Shore A.

Item number	Description	Outside diam-eter HDPE duct (mm)	Maximum duct diameter (mm)	Maximum cable / pipe diameter in the duct (mm)	Order unit
82212	Sealingplug HDPE 32mm	32	27,0 - 28,5	6,0-16,0	40 pcs/carton
82217	Sealingplug HDPE 40mm HW	40	31,5 - 33,0	5,0-22,0	40 pcs/carton
82214	Sealingplug HDPE 40mm TW	40	34,4 - 36,0	6,0-22,0	30 pcs/carton
82215	Sealingplug HDPE 50mm	50	39,5 - 41,5	8,0-20,0	10 pcs/carton

Sealing plugs

Filoform sealing plugs have been developed to provide an effective and simple solution to all splash water and dirt tight sealing requirements in HDPE ducts, protective sleeves and diamond-drilled ducts.

The sealing plugs are standard dirt and splash watertight. After mounting with sealing compound Filoform Fill & Seal (art.nr. 80840) or Fire & Water-seal (art.nr. 80845) the Filoform sealing plugs easily exceed the specifications of NEN 2768.

The Filoform sealing plugs are made from a high quality TPE, this material has a hardness of 40 Shore A.

Item number	Description	Outside diameter HDPE duct (mm)	Maximum duct diameter (mm)	Maximum cable / pipe diameter in the duct (mm)	Order unit
822252	Sealingplug 50/43,6mm-25mm	25	20	3,5-4,5 and/or 7	50 pcs/carton
822620	Sealingplug 25/20 1x7mm with slit	25	20	7	50 pcs/carton
822252C	Sealingplug HDPE25/20 1x9mm	25	20	9	50 pcs/carton
822401	Plug 40/33 (Type 1)	40	33	17 or 22	50 pcs/carton
822405	Plug 40/33 (Type 5)	40	33	7 + 16,7 or 12,5 or 10,3	50 pcs/carton
822402	Plug 40/33 (Type 2)	40	33	7x7mm	100 pcs/carton
822406	Plug 40/33 (Type 6)	40	33	5x10mm	100 pcs/carton
822614	Internal plug 40mm HDPE 4x12mm	40	33	4x12mm	100 pcs/carton
822503	Sealingplug 50/43,6mm-7mm	50	43,6	7	50 pcs/carton
822502	Sealingplug 50/43,6mm-14mm	50	43,6	14	50 pcs/carton
822501	Plug 50/43,6mm-25mm (Type 4)	50	43,6	25	25 pcs/carton
82222	Sealingplug 58/50mm-32mm	58	50	32	50 pcs/carton

Yellow plugs

Application:
Filoform divisible sealing plugs for ducts have been developed to provide and effective and simple solution to all gas and watertight duct sealing requirements.

This modular system enables you to close it easily onto to new and existing installations. Due to the compact

design the seals can be installed in all situations, even in locations with difficult access.

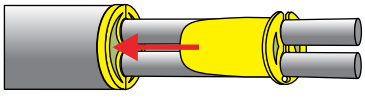
Package contents:
- 1 Synthetic rubber seal (TPE) plug

Number of openings depending on configuration:
- 1 ABS insert
- Silicone wipe
- Illustrated installation instructions
- Packaging: 1 set per bag

Properties:
- Gas and watertight up to 0.5 bar
- Divisible, no need to push over the ducts/cables
- Quick and easy installation
- High pull out strength
- Versions available for 25, 50 and 54mm ducts

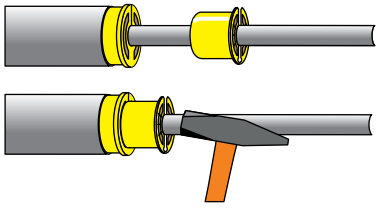
Item number	Description	Duct size O/D (mm)	Cable diam-eter	Length (mm)	Nett weight(gr.)
BTPLUGS 2	25mm / 2 x 6mm	25	2 x 6mm	32	6
BTPLUGS 1	50-54 / 18, 7, 2 x 6mm	50 / 54	(1 x 18) (1 x 7) (2 x 6mm)	58	90

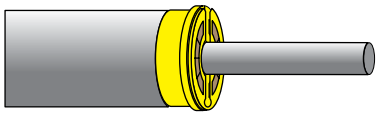
25mm seal
2 x 6 mm

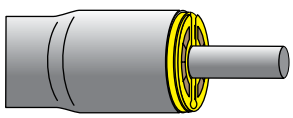


2 x 6 mm holes

50mm / 54mm seal
(1 x 18) (1 x 7) (2 x 6mm)







End caps

Applications

Filoform sealing caps are used for sealing and protection of glass fibre tubes against water penetration and dust.

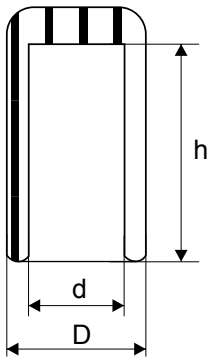
These sealing caps are also used for sealing and protection of vulnerable ends of several products. Filoform sealing caps are made out of very flexible PVC. This enables simple assembly and a perfectseal. The PVC material offers excellent mechanical protection and resists water, oil, grease andacids.

Item number	Description	Inside diameter d (mm)	Length	Outside diameter D (mm)	Colour	Order unit
822020	End cap 1,5mm²	2,5	15	5	black	250 pcs/bag
822025	End cap 2,5mm²	2,8	15	5,2	black	250 pcs/bag
822040	End cap 4mm	3,6	15	6,2	black	250 pcs/bag
822050	End cap 5mm	4,5	15	7	black	250 pcs/bag
822050G	End cap 5mm yellow	4,5	15	7	yellow	250 pcs/bag
822060	End cap 6mm	5,5	20	8	black	250 pcs/bag
822060.5	End cap 6mm transparent	5,5	20	8	transparent	250 pcs/bag
822070	End cap 7mm	6	20	8,9	black	250 pcs/bag
822080	End cap 10mm	9	20	12	black	250 pcs/bag
822090	End cap 12mm	11	20	15	black	250 pcs/bag
822095	End cap 14mm	13	25	17,4	black	250 pcs/bag
822097	End cap 16mm	15	25	17,5	black	250 pcs/bag
822099	End cap 18mm	17	30	19,5	black	250 pcs/bag
822100	End cap 20mm	19	25	22	black	250 pcs/bag
822220	End cap DB7x7mm	22	38	25	black	100 pcs/box
822250	End cap 25mm / DB2x14mm	23,8	38	27	black	100 pcs/box
822286	End cap DB12x7mm	28,6	38	32	black	100 pcs/box
822320	End cap 32mm / DB3x16 / DB12x7+1x14mm	31,8	38	34	black	100 pcs/box
822400	End cap 40mm / DB6x14 / DB22x7+1x12mm	38,1	38	42	black	100 pcs/box
822440	End cap DB7x14mm / DB24x-7+1x14mm	41,3	38	45,2	black	100 pcs/box
822500	End cap 50mm / DB6x16mm	47,6	38	52	black	50 pcs/box

Subject to change without notice.

Characteristics

- Simple assembly
- Perfect sealing and mechanical protection
- Excellent chemical resistance
- High shock absorbing ability



Heat shrink components

Filoform heat shrink components are manufactured from high quality cross linked polyolefin material that offers an exceptional insulation and long term service reliability.

The components are supplied with standard internal hot melt adhesive coating which ensures a permanent seal on irregular cable sheats. The hot melt adhesive starts melting when the appropriate temperature for shrinking is achieved.
All products are compatible with most commonly used cable i.e. SWA, XLPE, PVC, PE or Rubber Sheated Cable. Accessories for paper-insulated cables are available.

After complete installation Filoform heat shrink components provide high mechanical strength and a permanent elasticity combined with excellent resistance to weathering, moisture, contamination and adverse environmental conditions.
The production process is closely monitored in accordance with ISO 9001.

Product range

End caps
Filoforms' extensive range of end caps are used to seal the ends of all types of cables. Internal adhesive coated end caps provide protection from ingress of water/moisture. End caps without hot melt are adhesive available too.

Low voltage break outs
Due to the internal coating, LV break outs provide a strong and permanent water/moisture proof seal to the crutch of 2, 3, 4, 5, 6 and 7 core cables.

Anode caps
For cathode protection.

Medium and heavy wall tubes
A wide range of adhesive coated tubes with optimal shrink ratios, for use in a variety of applications to seal & protect electrical connections, joints & terminations, whilst providing excellent mechanical protection.

Wrap-around sleeves
Adhesive coated heat shrinkable wrap-around sleeves with SS Rail or Rail-less option. Designed for re-jacketing and/or sealing of cables sheets after damage. Available in a variety of sizes & lengths with variants for general use or with reinforced jacket for specialist pressurised telecom applications.

Thin wall tubes
Flexible, flame retardant, heat shrinkable tubing available in a wide range of sizes, colours & shrink ratios' to meet an extensive range of application needs.

Heat-shrink End Caps

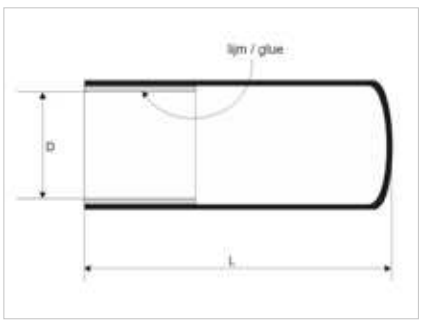
Filoform's HE range of heat-shrinkable End Caps offers an economical means of sealing power and control cable ends to ensure a water-tight seal. They are resistant to oxidation, ozone and UV radiation. Their internal surface has a layer of hot-melt adhesive, which retains its flexible properties after recovery.

Heat-shrinkable End Caps are recommended for use both in open air and on underground power distribution cables with PVC, lead or XLPE sheaths, aluminium or steel armoured.

Specifications

Physical characteristics	Value		Standard
Shrink temperature	°C	> 125	
Density	g / cm³	> 1,01	DIN 53479 / ISO 1183
Tensile strength	N / mm²	12	IEC-540
Elasticity	N / mm²	70	IEC-527
Elongation at break	%	300	IEC-540
Hardness	Shore D	42	DIN 53505 / ISO 868
Flexibility at low temperatures			ASTM D 2671
Thermal characteristics			
Altering(168h/150°C)			ISO 188
Continuous temperature limit	°C	-40 till +100	DIN 53 446
Electrical characteristics			
Dielectric strength	kV / mm	> 10	IEC-243
Volume resistivity	Ohm x cm	> 1 x 10^{12}	IEC-93 / ASTM D-257
Chemical characteristics			
Corrosion		none	ASTM D 2671
Waterabsorbtion	%	< 0,05	DIN 53 495/1L
Chemical resistance during 24h/23°C in Trafo-oil, Petroleum ISO 1817		Scale 1	ISO 846
Adhesive			
Waterabsorbtion	%	< 0,15	DIN 53 495
Dielectric strength	kV / mm	> 12	VDE 0303
Adhesion			DIN 30672
to PE	N / cm	> 350	
to PVC	N / cm	> 150	
to PU	N / cm	> 200	
op Zn, Cu and staal	N / cm	> 300	

Item number	Description	Application cable diameter	Diameter mm before shrink	Diameter mm after shrink	Length (mm)	Order unit
800201	Heat-shrink end cap type 1	4,0 - 8,0	12	4	38	100 pcs/bag
800202	Heat-shrink end cap type 2	8,0 - 18,0	20	7,5	75	50 pcs/bag
800203	Heat-shrink end cap type 3	15,0 - 38,0	40	15	90	10 pcs/bag
800204	Heat-shrink end cap type 4	25,0 - 50,0	55	25	124	5 pcs/bag
8002045	Heat-shrink end cap type 4B	35,0 - 70,0	75	35	140	5 pcs/bag
800205	Heat-shrink end cap type 5	45,0 - 95,0	100	45	157	5 pcs/bag
8002055	Heat-shrink end cap type 5B	45,0 - 115,0	120	45	200	2 pcs/bag
800207L	Heat-shrink end cap type 7L	63,0 - 150,0	155	63	300	2 pcs/bag



Heat-shrink break-out caps

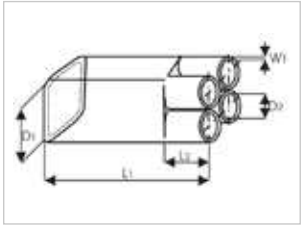
Medium wall Shrink tube with glue layer 3:1 & 4:1

Filoform's HB range of heat-shrinkable breakouts is ideal for insulating and sealing cable crutches, providing resistance to abrasion and weathering. The standard range is lined with hot-melt adhesive. Black mastic sealant is also available if required.

Specifications

Physical characteristics	Value		Standard
Shrink temperature	°C	> 125	
Density	g / cm³	> 1,01	DIN 53479 / ISO 1183
Tensile strength	N / mm²	12	IEC-540
Elasticity	N / mm²	70	IEC-527
Elongation at break	%	300	IEC-540
Hardness	Shore D	42	DIN 53505 / ISO 868
Flexibility at low temperatures			ASTM D 2671
Thermal characteristics			
Altering(168h/150°C)			ISO 188
Continuous temperature limit	°C	-40 till +100	DIN 53 446
Electrical characteristics			
Dielectric strength	kV / mm	> 10	IEC-243
Volume resistivity	Ohm x cm	> 1 x 10^{12}	IEC-93 / ASTM D-257
Chemical characteristics			
Corrosion		none	ASTM D 2671
Waterabsorbtion	%	< 0,05	DIN 53 495/1L
Chemical resistance during 24h/23°C in Trafo-oil, Petroleum ISO 1817		Scale 1	ISO 846
Adhesive			
Waterabsorbtion	%	< 0,15	DIN 53 495
Dielectric strength	kV / mm	> 12	VDE 0303
Adhesion			DIN 30672
to PE	N / cm	> 350	
to PVC	N / cm	> 150	
to PU	N / cm	> 200	
op Zn, Cu and staal	N / cm	> 300	

Item number	Description	D1 / D1* mm	D2 / D2* mm	L1 / L1* mm	L2 / L2* mm	Order unit
8.800200	Break-out cap 2-way, 2 x 4-25mm²	32/10,5	14/4	70/83	15/20	25 pcs/bag
8.800210	Break-out cap 2-way, 2 x 25-120mm²	60/20	24/7	95/120	25/34	3 pcs/bag
8.800215	Break-out cap 2-way, 2 x 95-185mm²	70/30	30/8	95/120	25/34	4 pcs/bag
8.800300	Break-out cap 3-way, 3 x 4-35mm²	37/16	14/4	80/100	15/21	15 pcs/bag
8.800310	Break-out cap 3-way, 3 x 35-120mm²	58/21	24/8	160/188	52/62	3 st./zal
8.800311	Break-out cap 3-way, 3 x 95-120mm²	80/33	36/13	180/220	55/70	2 pcs/bag
8.800312	Break-out cap 3-way, 3 x 120-300mm²	110/49	53/18	190/230	80/88	2 pcs/bag
800416	Break-out cap 4-way, 4 x 4-35mm²	50/16	16/4	75/95	15/23	10 pcs/bag
800410	Break-out cap 4-way, 4 x 4-35mm²	40/16	14/4	84/100	15/25	12 pcs/bag
8.800420	Break-out cap 4-way, 4 x 16-70mm²	57/28	20/7,5	140/170	32/47	10 pcs/bag
800430	Break-out cap 4-way, 4 x 25-150mm²	70/31	25/9	158/192	32/47	5 pcs/bag
800425	Break-out cap 4-way, 4 x 50-150mm²	70/28	25/8	130/165	32/46	5 pcs/bag
8.800440	Break-out cap 4-way, 4 x 95-240mm²	90/43	34/13	170/210	38/53	5 pcs/bag
8.800445	Break-out cap 4-way, 4 x 150-300mm²	110/45	40/14	175/210	40/53	2 pcs/bag
800440	Break-out cap 6-way, 6 x 16-95mm²	85/37	23/7	110/130	30/46	2 pcs/bag
800442	Break-out cap 7-way, 7 x 16-95mm²	95/37	23/7	110/130	30/46	2 pcs/bag



Anode Caps

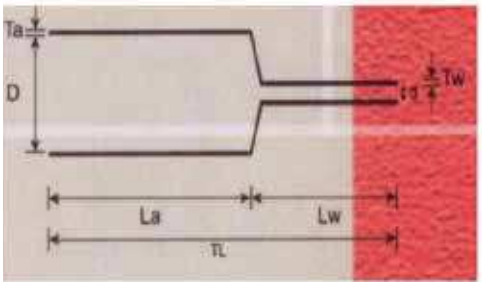
Specifications

Properties	Value	Standard
Physical		
Tensile strength	12 N/mm² (Mpa) (min)	ASTM D638
Ultimate elongation	350% (min)	ASTM D639
Density	1,1 gm/cm²	ASTM D792
Hardness	45 + 10 Shore D	ASTM D2240
Water absorption	0,2% (max)	ASTM D570
Corrosion	Non corrosive	ASTM D2671
Thermal		
Accelerated ageing	120°C for 500Hrs	ASTM D2671
Tensile strength	11 N/mm² (Mpa) (min)	ASTM D638
Ultimate elongation	300% (min)	ASTM D638
-40°C for 4Hrs	No cracking	ASTM D2671
250°C for 30 min	No cracking or flowing	ESI 09-11
Shrink temperature	125°C	IEC 216
Operating temperature	Minus 55°C to Plus 100°C	IEC 216
Electrical		
Dielectric strength	12 KV/mm (min)	ASTM D14
Volume resistivity	11 x 10¹? Ohm.cm (min)	ASTM D257
Dielectric constant	5 (max)	ASTM D150

Item number	Description
507810	Anode cap 108/40mm
507800	Anode cap 82/40mm

Selection Chart All dimensions are in mm.

Code	Anode End		Lead Wire End		Thickness (After recovery)		Length		
	D		d		T		Total	Anode	Wire End
	Ds	Df	ds	df	Ta	Tw	TL	La	Lw
	Min	Max	Min	Max	f+10%	f+10%	f+2%	f+2%	f+2%
82 / 40mm	82	40	14	5	4	4	190	123	67
108 / 40mm	108	40	14	5	5	4	190	123	67



D,d: Internal Diameters; as supplied; f after free recovery;
Ta, Tw; Thickness of anode & Lead Wire End

LV Heatshrink Tubing

Thin wall heat shrink tube 2:1 & 3:1 / Black & Green-Yellow

Filoform's H range of thin wall heatshrink tubes is made of cross-linked semi-flexible polyolefin which shrinks uniformly to form a permanent insulating covering. Upon recovery, thin wall tube will conform to the shape it is applied over. Ideal for low voltage electrical insulation up to 1000V.

Specifications

Material	Polyolefine	
Shrink temperature	70°C till 100°C	
Continous temperature range	-55°C till +125°C	
Dielectric strength	≥ 20 kV/mm	IEC 243
Volume resistivity	> 1 x 10^{14} ohm cm	IEC 93
Tensile strength	≥ 14 Mpa	ASTM D 638-98
Elongation at break	≥ 400%	ASTM D 638-98
Longitudinal change	≤ 5%	UL 224

Item number	Description	Diameter mm before shrink	Diameter mm after shrink	Wall thickness mm after shrink	Order unit
8.108100	Shrink tube TW black 1,5/0,5	1,5	0,5	0,45	50 pcs x 1200mm
8.108104	Shrink tube TW black 1,6/0,8	1,6	0,8	0,35	50 pcs x 1200mm
8.108105	Shrink tube TW black 2,4/1,2	2,4	1,2	0,40	50 pcs x 1200mm
8.108106	Shrink tube TW black 3,2/1,6	3,2	1,6	0,40	50 pcs x 1200mm
8.108107	Shrink tube TW black 4,8/2,4	4,8	2,4	0,50	50 pcs x 1200mm
8.108108	Shrink tube TW black 6,4/3,2	6,4	3,2	0,55	25 pcs x 1200mm
8.108109	Shrink tube TW black 9,5/4,8	9,5	4,8	0,55	25 pcs x 1200mm
8.108103	Shrink tube TW black 12/4	12,0	4,0	0,80	50 pcs x 1200mm
8.108110	Shrink tube TW black 12,7/6,4	12,7	6,4	0,65	25 pcs x 1200mm
8.108111	Shrink tube TW black 19,1/9,5	19,1	9,5	0,80	25 pcs x 1200mm
8.108112	Shrink tube TW black 25,4/12,7	25,4	12,7	0,90	25 pcs x 1200mm
8.108113	Shrink tube TW black 38,1/19	38,1	19	1,00	25 pcs x 1200mm
8.100300.11	Shrink tube TW green/yellow 3,2-1,6	3,2	1,6	0,43	200m roll
8.100500.11	Shrink tube TW green/yellow 6,4-3,2	6,4	3,2	0,56	100m roll
8.100700.11	Shrink tube TW green/yellow 12,7-6,4	12,7	6,4	0,56	50m roll
8.100800.11	Shrink tube TW green/yellow 19,0-9,5	19,0	9,5	0,69	50m roll

LV Heatshrink Tubing

Medium wall Shrink tube with glue layer 3:1 & 4:1

Filoform's HM range is a cross-linked medium wall heatshrink polyolefin tubing with a shrink ratio 3:1 to 4:1. The medium wall thickness provides a tough and semi-flexible insulation making the product ideal for the protection of underground cable joints, crimped terminal ends and cable terminations. The HMA range has a hot-melt adhesive lining which ensures an environmental seal that prevents the ingress of water.

Specifications

Material	Polyofine	
Shrink temperature	> 125°C	
Continuous temperature	-55°C till +90°C	
Dielectric strength	≥ 15 kV/mm	ASTM D 2671-98
Volume resistivity	> 1 x 10^{12} ohm cm	ASTM D 257-98
Heatshock (30 min/200°C)	No damage	ASTM D 2671-98
Tensile strength	≥ 12 Mpa	ASTM D 2671-98
Elongation at break	≥ 400%	ASTM D 2671-98
Longitudinal change	≤ 15%	ASTM D 2671-98
Waterabsorbtion	≤ 0,5%	ASTM D 570

Item number	Description	Diameter mm before shrink	Diameter mm after shrink	wall thickness mm after shrink	Order unit
8413005	Shrink tube MW 9/3	9	3	1,6	10 pcs x 1200mm
8413010	Shrink tube MW 12/4	12	4	1,8	10 pcs x 1200mm
8413015	Shrink tube MW 16/5	16	5	2,0	10 pcs x 1200mm
8413017	Shrink tube MW 19/6	19	6	2,4	10 pcs x 1200mm
8413019	Shrink tube MW 28/6	28	6	2,5	10 pcs x 1200mm
8413020	Shrink tube MW 25/8	25	8	2,5	10 pcs x 1200mm
8413030	Shrink tube MW 33/9	33	9	2,5	10 pcs x 1200mm
8413040	Shrink tube MW 40/12	40	12	2,5	10 pcs x 1200mm
8413050	Shrink tube MW 55/16	55	16	2,7	10 pcs x 1200mm
8413060	Shrink tube MW 65/19	65	19	2,7	10 pcs x 1200mm
8413070	Shrink tube MW 75/22	75	22	2,7	10 pcs x 1200mm
8413080	Shrink tube MW 100/25	100	25	3,2	5 pcs x 1200mm
8413090	Shrink tube MW 115/34	115	34	3,2	5 pcs x 1200mm
8413100	Shrink tube MW 140/42	140	42	3,3	5 pcs x 1200mm

LV Heatshrink Tubing

Heavy wall shrink tube with adhesive 3:1 & 4:1

Filoform's HTH range is a cross-linked heavy-wall heatshrink polyolefin tubing with a shrink ratio 3:1 to 4:1. The toughness and weatherability of the tubes makes them well-suited for exposed applications for the protection of cable joints. The HTHA range contains hot-melt adhesive coating.

Specifications

Material	Polyofine	
Shrink temperature	> 125°C	
Continuous temperature	-55°C till +90°C	
Dielectric strength	≥ 15 kV/mm	ASTM D 2671-98
Volume resistivity	> 1 x 10^{12} ohm cm	ASTM D 257-98
Heatshock (30 min/200°C)	No damage	ASTM D 2671-98
Tensile strength	≥ 12 Mpa	ASTM D 2671-98
Elongation at break	≥ 400%	ASTM D 2671-98
Longitudinal change	≤ 15%	ASTM D 2671-98
Waterabsorbtion	≤ 0,5%	ASTM D 570

Item number	Description	Diameter mm before shrink	Diameter mm after shrink	wall thickness mm after shrink	Order unit
8414010	Shrink tube HW 9/3	9	3	2,2	10 pcs x 1200mm
8414020	Shrink tube HW 13/4	13	4	2,3	10 pcs x 1200mm
8414030	Shrink tube HW 19/6	19	6	2,6	10 pcs x 1200mm
8414035	Shrink tube HW 33/8	33	8	3,2	10 pcs x 1200mm
8414050	Shrink tube HW 40/12	40	12	3,2	10 pcs x 1200mm
8414060	Shrink tube HW 55/16	55	16	4,0	10 pcs x 1200mm
8414070	Shrink tube HW 65/21	65	21	4,0	10 pcs x 1200mm
8414080	Shrink tube HW 85/25	85	25	4,0	10 pcs x 1200mm
8414090	Shrink tube HW 100/30	100	30	4,0	5 pcs x 1200mm
8414100	Shrink tube HW 125/40	125	40	4,0	5 pcs x 1200mm
8414105	Shrink tube HW 130/36	130	36	4,0	5 pcs x 1200mm
8414110	Shrink tube HW 160/50	160	50	4,0	5 pcs x 1200mm

LV Wraparound Repair Sleeve

Filoform's HWS range of heatshrinkable wraparound repair sleeves is manufactured from a highly cross-linked polyolefin compound. The sleeves are coated with hot-melt adhesive and are supplied with a metallic channel for closure.

Specifications

Material	Polyofine	
Shrink temperature	> 125°C	
Continuous temperature	-40°C till +125°C	
Dielectric strength	≥ 22 kV/mm	ASTM D 149-97a
Volume resistivity	> 1 x 10^{14} ohm cm	ASTM D 257-98
Heatshock (225°C)	No damage	ASTM D 2671-98
Tensile strength	≥ 18 Mpa	ASTM D 638-98
Elongation at break	≥ 500%	ASTM D 638-98
Waterabsorbtion	≤ 0,5%	ISO 62-86
Mould resistance	No growth	ASTM G21-96 / ASTM D 638-98
Oil resistance	Execellent	ISO 175-99

Item number	Description	Diameter mm before shrink	Diameter mm after shrink	wall thickness mm after shrink	Order unit
44400	Wrap around sleeve 43/8 x 500mm	43	8	2,0	per piece
44401	Wrap around sleeve 50/15 x 500mm	50	15	2,0	per piece
44411	Wrap around sleeve 105/30 x 600mm	105	30	2,0	per piece
44412	Wrap around sleeve 146/38 x 800mm	146	38	2,0	per piece

Resins

Filoform is a specialist formulator of polyurethane and epoxy resin systems for low voltage cable jointing and duct sealing solutions. Our resins are used in a variety of applications to protect, bond, seal and insulate low voltage cable connections and duct seals in the networks of utilities throughout Europe.

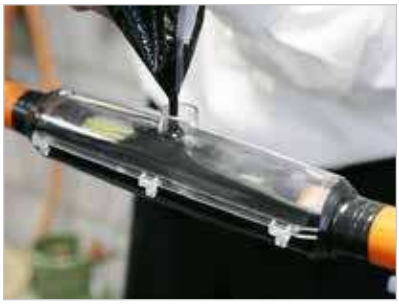
Our products are developed and manufactured at our modern manufacturing facilities in the Netherlands. Filoforms' R&D engineers have more than 40 years of experience in resin formulating and production.

All resins have excellent insulation resistance in both the liquid and solid phase. This value is also monitored & checked after each production batch.

Constant high quality of the resin packs itself, due to electronically monitored sealing process and intensive quality checking during production. Making the resin packs suitable for use in pressure pumps. High flexibility of the resin packs and the absence of side seals ensure easy kneading of the components. The special divider strip ensures safe separation of the two components, and is easy to open upon usage with no unnecessary burden to the the resin pack. Filoform resins are developed in accordance with HD631-1 S2 and other standards

Our standard range of LV resins:

· Polyurethane resins for both cast resin injection joints and taped resin injection joints
· Epoxy resins for taped resin injection joints
· Removable gel resins re-enterable insulating clear gel designed for the protection of electrical / electronic enclosures
· Flexible flame retardant resins for cast resin joints
· Resins for cabinet base sealing
· Expanding polyurethane resins for duct sealing
· Bonding resins for bonding sensors in concrete or asphalt roads
· Epoxy connector resin for the installation of glass fibre connectors to glass fibre cables



Filofill P2654 Polyurethane casting resin

Filofill P2654 is specially designed for cablejoints up to 1kV. Filofill P2654 had good anti corrosionproperties abd shows a good adhesion to metald, ceramics, and many different plastics, and can be utilized on all plastic- and paper isolated cable-types.

Item number	Description	Content	Colour	Order unit
804652	Filofill P2654 200ml	200ml	black	15 pcs/carton
804655	Filofill P2654 350ml	350ml	black	10 pcs/carton
804656	Filofill P2654 450ml	450ml	black	10 pcs/carton
804658	Filofill P2654 750ml	750ml	black	6 pcs/carton
804663	Filofill P2654 1200ml	1200ml	black	2 pcs/carton
804664	Filofill P2654 1500ml	1500ml	black	1 pcs/carton
804665	Filofill P2654 2000ml	2000ml	black	2 pcs/carton

Properties	Unit	Value
Potlife (process time)		
5°C	minutes	30
23°C	minutes	10
35°C	minutes	7
Viscosity mixture 25°C	Mpa.s	3000 - 6000
Gel-time	minutes	14
Density	g / cm^3	1,5
Hardness	Shore D	45
Tensile strength	N / mm^2	4
Elongation at break	%	30
Water absorption (30d/23°C)	%	< 1,0
Aging (Weight loss) 28d/120°C	%	< 1,0
Surface structure cured under water		no bubbles
Dielectric strength	kV / mm	> 20
Specific resistance	Ohm	$1x10^{13}$
Electrical resistance	Ohm	$1x10^{12}$
Volume shrinkage	%	0,33
Temperature resistance	°C	-25 tot +120
Shelf life	months	24
colour		black
Mixing time	minutes	2
Resistance against moisture after storage in water at 90°C		
Tensile strength	N / mm^2	3,3
Elongation at break	%	49
Hardness	Shore D	32

Filofill P2600 polyurethane resin

Specially designed for taped resin injection cablejoints up to 10kV. The resin contains polyether polyols, estherpolyols, and fire retardant additives. The hardner is a high quality MDI type. Filofill P2600 does not contain halogens or plasticizers. Filofill P2600 has good anti-corrosion properties and provides good adhesion to metals, ceramics, many different plastics and can be used on all plastic and paper isolated cable types.

Item number	Description	Content	Colour	Order unit
804606	Filofill P2600 184ml	184ml	black	10 pcs/carton
804610	Filofill P2600 355ml	355ml	black	10 pcs/carton
804630	Filofill P2600 710ml	710ml	black	10 pcs/carton

Properties	Unit	Value	Standard (DIN VDE 0291, part 2)
Potlife (process time) 5°C	minutes	45	As specified by manufacturer (±30%)
Potlife (process time) 23°C	minutes	17	As specified by manufacturer (±30%)
Potlife (process time) 35°C	minutes	13	As specified by manufacturer (±30%)
Gel-time	minutes	23	As specified by manufacturer (±30%)
Density	g/cm³	1,3	> 1,05 (DIN 53479)
Compression strength	N/mm²	20	> 8
Crack resistance	N/mm²	6,5	> 5
Hardness	Shore D	49	> 30
Tensile strength	N/mm²	9	As specified by manafacturer (20%)
Elongation at break	%	60	As specified by manafacturer (±30%)
Water absorption (24h/23°C)	mg	18	max. 25
Water absorption (42d/50°C)	mg	243	max. 400
Disruptive strength	kV/mm	> 20	
Temperature resistance	°C	-25 till +120	
Shelf life	months	18	
Colour		black	
Mixing time	minutes	2	
Thermal resistance (28d/120°C)			
Compression set to 30%	N/mm²	25	< 50
Deformation 24h after the test	%	1	< 10 deformation
Impact resistance	kJ/m²	20	> 10
Weight loss	%	0,8	< 5
Resistance against moisture after storage in water at 90°C			
Tensile strength	N/mm²	6,3	> 5,85 (65%)
Elongation at break	%	72	> 39 Elongation at break (65%)
Hardness	Shore D	45	> 39 (80%)

Filogel resin

Re-enterabe insulating clear gel designed for the protection of electrical / electronic enclosures, boxes, terminal blocks, trunking, pipes and mechanicle parts against water, moisture, dirt, dust, and mechanicle shock.

- Potting of electronic components
- Telecommunication applications to avoid damage caused by moisture
- Insulation of low voltage connections
- Resin can be removed very easily
- Free of iso-cyanates, epoxides and silicones
- Non toxic
- Long Shelf life
- Not classified according to the EC regulations
- Medium viscosity while pouring
- Good adhesion to metals, minerals and many plastics
- Excellent hydrophobic behaviour

Item number	Description	Content	Colour	Order unit
804316	Filogel gel resin 1000ml	1000ml	amber transparent	3 pcs/carton
804309	Filogel gel resin 200ml	200ml	amber transparent	10 pcs/carton

Properties	Unit	Value
Potlife (process time) 20°C	minutes	20
Gel-time 20°C	minutes	50
Viscosity 20°C	cps	1000
Exothermic peak (ASTM D2471)	°C	28
Density	g / cm^3	0,91
Elongation at break	%	95
Temperature resistance	°C	80°C (short 120°C)
Corrosion of copper (MS 17000, 1139)		non corrosive
Insulation resistance at 500 V DC	ohm	1,2 x 10^{12}
Volume resistivity bij 500 V DC	ohm.cm	0,6 x 10^{13}
Water absorption (ASTM D570)	%	0,36
Water sensitivity (TA-NWT-000354)	%	0
Chemical resistant against		2n, H2SO4, CaCO3
colour		Transparent amber

Filofill P2610 polyurethane resin

Fast curing polyurethane resin designed for casting and adhesive purposes.

Item number	Description	Content	Colour	Order unit
804603	Filofill P2610 355ml	355ml	black	10 pcs/carton

Properties	Unit	Value	Standard
Potlife (process time) 23°C	minutes	5	As specified by manafacturer (±30%)
Gel-time	minutes	10	As specified by manafacturer (±30%)
Density	g / cm³	1,4	> 1,05 (DIN 53479)
Compression strength	N / mm²	25	> 8
Crack resistance	N / mm²	6,6	> 5
Hardness	Shore D	53	> 30
Tensile strength	N / mm²	8	As specified by manafacturer (20%)
Elongation at break	%	100	As specified by manafacturer (±30%)
Water absorption (24h/23°C)	mg	18	max. 25
Water absorption (42d/50°C)	mg	243	max. 400
Disruptive strength	kV / mm	> 20	
Temperature resistance	°C	-25 tot +120	
Shelf life	months	18	
colour		anthracite	
Mixing time	minutes	2	
Thermal resistance (28d/120°C)			
Compression set to 30%	N / mm²	34	< 50
Deformation 24h after the test	%	1	< 10 deformation
Impact resistance	kJ / m²	18	> 10
Weight loss	%	0,23	< 5
Resistance against moisture after storage in water at 90°C			
Tensile strength	N / mm²	8	> 5 (65%)
Elongation at break	%	88	> 70 Elongation at break (65%)
Hardness	Shore D	45	> 40 (80%)

Kabeline 1611 epoxy resin

Kabeline 1611 is a unfilled 2-component epoxy resin used in low voltage injection joints up to 4 kV.

Item number	Description	Content	Colour	Order unit
80135	Kabeline 1611 A-Pack	87 gram	red	10 pcs/carton
80136	Kabeline 1611 B-pack	197 gram	red	10 pcs/carton
80137	Kabeline 1611 C-pack	380 gram	red	10 pcs/carton

Properties	Unit	Value	Standard (DIN VDE 0291, part 2 / NEN 3602)
Potlife (process time) 5°C	minutes	60	As specified by manufacturer (+30%)
Potlife (process time) 23°C	minutes	19	As specified by manufacturer (+30%)
Potlife (process time) 35°C	minutes	10	As specified by manufacturer (+30%)
Gel-time	minutes	32	NEN 3602 / Annex A
Density	g/cm³	1,107	DIN 53479 / ISO 1675
Compression strength	N/mm²	12	> 8 N/mm² (DIN EN 20604)
Hardness	Shore D	83	> 70 (DIN 53505 / ISO 868)
Tensile strength	N/mm²	55	DIN EN ISO 527
Water absorption (24h/23°C)	%	0,12	DIN 53495
Weight loss after thermal ageing (7d/120°C)	%	0,48	NEN EN ISO 179 / NEN 3602 / Annex C
Electrical resistance (24h 50% RH 23°C)	Ohm	3,2 E + 13	DIN 53482
Electrical resistance (24h in H2O 23°C)	Ohm	2,6 E + 13	DIN 53482
Specific resistance (24h 50% RH 23°C)	Ohm x cm	1,4 E + 15	DIN 53482
Tracking resistance		KA 3c	DIN 53480
Dielectric strength	kV/mm	> 20	DIN 53481
Flame point in open cup resin	°C	> 175	> 55
Flame point in open cup hardener	°C	> 175	> 55
Shrink during hardening	%	2,6	< 6,5 (DIN 16945)
Impact resistance	kJ/m²	12,5	> 6 (DIN 53454)
Shelf life	months	18	
Hardening under water	ml/gas	3	< 10 (point 13 VDE 0291-2)
Colour		orange / red	
Mixing time	minutes	2	
Raw materials		unfilled epoxy resin	

Kabeline 2444 epoxy resin

Specially developed for bonding sensors in concrete or asphalt roads.

tem number	Description	Content	Colour	Order unit
80094	Kabeline 2444, 360 gram black	360 gram	black	10 pcs/carton

Properties	Unit	Value	Standard (DIN VDE 0291, part 2 / NEN 3602)
Potlife (process time) 23°C	minutes	15	As specified by manufacturer (+30%)
Gel-time 23°C	minutes	30	As specified by manufacturer (+30%)
Curing time 40°C	minutes	30	As specified by manufacturer (+30%)
Density	g / cm³	1,50	NEN 3602 / Annex A
Compression strength	N / mm²	90	DIN 53479 / ISO 1675
Hardness	Shore D	88	> 8 N/mm² (DIN EN 20604)
Tensile strength	N / mm²	75	> 70 (DIN 53505 / ISO 868)
Impact resistance	kJ / mm²	20	DIN EN ISO 527
Shrink	%	< 1	DIN 53495
Shelf life	months	12	NEN EN ISO 179 / NEN 3602 / Annex C
Mixing time	minutes	3	DIN 53482

Kabeline 2375 GLM epoxy resin

The Kabeline 2375 Resin is specially developed for the potting of electrical components. Conductivity sensors for alarm slipperiness systems of RWS.

Item number	Description	Content	Colour	Order unit
80090	Kabeline 2375 GLM 550 gram	550 gram	anthracite	10 pcs/carton

Kabeline 2217 epoxy Resin

Specially developed for applications into traffic installations, cable joints, for public lightning and telecommunications. Potting of electronic components.

Item number	Description	Content	Colour	Order unit
80090	Kabeline 2375 GLM 550 gram	550 gram	anthracite	10 pcs/carton

Properties	Unit	Value	Standard
Potlife (process time) 23°C	minutes	15	As specified by manafacturer (+30%)
Gel-time	minutes	16 - 35	NEN 3602
Viscosity after 2min.	mPA.s	5000 - 8000	thixotropic
Hardness	Shore D	70	DIN 53505 / ISO 868
Tensile strength	N/mm²	> 20	DIN & ISO 527
Water absorption 24h/23°C	%	< 0,5	DIN 53495
Volume resistivity	Ohm cm	> $1x10^{14}$	
Aging 7d/100°C		no cracks	
colour		anthracite	
Mixing Ratio		100 : 67	
Mixing time	minutes	2	
Shelf life	months	18	

Epoxy-connector resin

For the installation of glassfibre connectors to glassfibre cables.

Item number	Description	Content	Order unit
80145	Kabeline 2487 Connector adhesive 4,5g	4,5 gram	per set of 2 pcs
80146	Kabeline 2488Tr.Connector adhesive 4,5g	4,5 gram	per set of 2 pcs

Properties	Kabeline 2487	Kabeline 2487-Tr
Hardness	> 70 Shore D	> 70 shore D
Curing time at 130°C	5 minutes	10 minutes
Curing time at 90°C	20 minutes	only cures at 130°C
Viscosity resin mixture	> 2000 mPa.s	> 2000 mPa.s
Potlife (process time) 23°C	4 hours	7 hours
Mixing time	2 minutes	2 minutes
Material	Epoxy resin	Epoxy resin

Cabinet Base Sealant MV

The Filoform Cabinet Base Sealant is designed for use in LV distribution cabinets, public lighting cabinets, cabinets for traffic control, and outdoor transformer station installations.

The casting resin prevents ingress of pests and weed growth or the penetration of the roots of plants. In addition, a solid floor improves the climate within the stations. This ensures less chance of interference and extends the life of the components.

Item number	Description	Content	Colour	Order unit
804675	Cabinet Base Sealant 2 x 2,5Ltr. MV	5000ml	black	per set

Properties	Unit	Value
Potlife (process time) 5°C	minutes	90
Potlife (process time) 23°C	minutes	75
Potlife (process time) 35°C	minutes	60
Viscosity (mixture) 25°C	Pa.s	1
Gel-time	minutes	120
Density	g / cm³	1.3
Hardness	Shore D	18
Water absorption (30d/23°C)	%	< 1.0
Weight loss 28d/120°C	%	0.8

Cabinet Base Sealant Transparent

For use in LV distribution cabinets, public lighting cabinets, cabinets for traffic control, and outdoor transformer station installations.

Properties	Unit	Value
Potlife (process time)		
5°C	minutes	30
23°C	minutes	20
35°C	minutes	10
Gel-time 5°C	minutes	35
Gel-time 35°C	minutes	13
Viscosity (mixture) 25°C	Pa.s	1,68
Density	g / cm³	1,00
Hardness	Shore A	65
Water absorption (30d/23°C)	%	< 1,0
Aging (Weight loss) 16h/70°C	%	< 0,5
Surface structure cured under water		no bubbles

Item number	Description	Content	Colour	Order unit
804661	Cabinet Base Sealant Transparent 1KG	1000 gram	transparent	6 pcs/carton

Cabinet base sealant - Black

Two component sealant used to seal the base of street cabinets. For use in LV distribution cabinets, public lighting cabinets, cabinets for traffic control, and outdoor transformer station installations.

Properties	Unit	Value
Potlife (process time) 5°C	minutes	30
Potlife (process time) 23°C	minutes	10
Potlife (process time) 35°C	minutes	7
Gel-time	minutes	23
Viscosity (mixture) 25°C	Pa.s	ca. 3
Density	g / cm³	1.4
Hardness	Shore D	52
Tensile strength	N / mm²	4
Water absorption (30d/23°C)	%	< 1.0
Weight loss 28d/120°C	%	0.8
Surface structure cured under water		no bubbles

Item number	Description	Content	Colour	Order unit
205882	Cabinet Base Sealant Black 940ml	940ml	black	6 pcs/carton

Tapes

Nitto tape 15 self fusing butyl rubber tape

Nitto 15 is a self fusing rubber tape, widely used for electrical insulation, protection, splicing and termination of 6 to 22KV cables.

· Used for termination, splicing & corrosion protection to cables.
· Completly self-amalgimates in two hours.

Item number	Description	Dimensions	Colour	Order unit
80046UK	Self-fusing butylrubbertape 38mm x 10m x 0,50mm	38mm x 10m x 0,50mm	black	50 rollen / carton
800452UK	Self-fusing butylrubbertape 19mm x 5m x 0,75mm	19mm x 5m x 0,75mm	black	100 rollen / carton

Nitto tape 12FB

Nitto 12FB is a self amalgamating putty tape. By strectching and wrapping around pipefittings, cables, or other objects, the putty will instantly amalgamate into itsself, thus creating a waterproof barrier to prevent corrosion. 12 FB is suitable for in and outdoors.

Item number	Description	Dimensions	Colour	Order unit
81070UK	Putty tape type 12FB, 38mm x 1,5m	38mm x 1,5m x 3,0mm	black	10 rollen / carton

Wrap around tape

Liquid tight wrapping of the mesh with tape creates a secure means for injecting the resin into injection joints. For binding of cables and pipes.

Item number	Description	Colour	Order unit
800350.5	Wrap-around tape 25mm x 20m	transparent	96 pcs/carton
80467	Wrap-around tape 38mm x 20m	transparent	60 pcs/carton
80469	Wrap-around tape 50mm x 10m	transparent	80 pcs/carton
80470	Wrap-around tape 50mm x 20m	transparent	48 pcs/carton

Tapes

Glass fibre reinforced tape

· Used as a reinforcement tape for bigger injection joints during the summer to prevent the PVC tape from stretching too much whilst injecting the resin.

· Very suitable for bundling of cables, tubes and profiles

Item number	Description	Dimensions	Colour	Order unit
80153UK	Filamenttape 38mmx 10m	38mm x 10m x 0,13mm	transparent	48 pcs/carton

Sealpass

· Provides an excellent watertight seal
· Adjusts automatically to every shape
· Sealpass is used for protection of pipelines, cables and cable connections
· Very good adhesion on steel, plastics and on uneven surfaces
· Provides corrosion protection

Item number	Description	Dimensions	Colour	Order unit
81203UK	Sealpass 50mm x 10m	50mm x 10m x 2mm	black/brown	per piece

Mastic tape

· Watertight sealing of taped resin injection joints & cast resin joints
· Electrical insulating and moisture sealing applications
· Watertight gasket in glass and steel constructions

Item number	Description	Dimensions	Colour	Order unit
80190UK	Mastic tape 10mm x 160mm	10mm x 160mm x 1mm	black	100 pcs/carton
80200UK	Mastic tape 20mm x 160mm	20mm x 160mm x 1mm	black	100 pcs/carton
80185UK	Mastic tape 10mm x 15m	10mm x 15m x 1mm	black	per piece
910110	Wrap-around tape 50mm x 10m transparent	50mm x 10m x 0,19mm	transparent	80 pcs/carton

Aluminium foil

Item number	Description	Dimensions	Colour	Order unit
81110UK	Alu-foil self-adhesive 100mm x 50m	100mm x 50m x 0,058mm	aluminium	12 pcs/carton

Nitto Tapes

Nitto 21 PVC tape 19mm x 20m

· Electrical isolation
· Colour coding
· Cable bundling
· Corrosion prevention

Item number	Description	Dimensions	Colour	Order unit
800100.1UK	Nitto tape 21, 19mm x 20m black	19mm x 20m x 0,19mm	black	120 pcs/carton
800100.2UK	Nitto tape 21, 19mm x 20m blue	19mm x 20m x 0,19mm	blue	120 pcs/carton
800100.3UK	Nitto tape 21, 19mm x 20m green	19mm x 20m x 0,19mm	green	120 pcs/carton
800100.4UK	Nitto tape 21, 19mm x 20m red	19mm x 20m x 0,19mm	red	120 pcs/carton
800100.6UK	Nitto tape 21, 19mm x 20m yellow	19mm x 20m x 0,19mm	yellow	120 pcs/carton
800100.7UK	Nitto tape 21, 19mm x 20m white	19mm x 20m x 0,19mm	white	120 pcs/carton
800100.8UK	Nitto tape 21, 19mm x 20m grey	19mm x 20m x 0,19mm	grey	120 pcs/carton
800100.9UK	Nitto tape 21, 19mm x 20m yellow/green	19mm x 20m x 0,19mm	yellow/green	120 pcs/carton
800100.11UK	Nitto tape 21, 19mm x 20m brown	19mm x 20m x 0,19mm	brown	120 pcs/carton
800100.12UK	Nitto tape 21, 19mm x 20m orange	19mm x 20m x 0,19mm	orange	120 pcs/carton

Nitto 21 PVC tape 25mm x 20m

· Electrical isolation
· Colour coding
· Cable bundling
· Corrosion prevention

Item number	Description	Dimensions	Colour	Order unit
800100.1UK	Nitto tape 21, 19mm x 20m black	19mm x 20m x 0,19mm	black	120 pcs/carton
800100.2UK	Nitto tape 21, 19mm x 20m blue	19mm x 20m x 0,19mm	blue	120 pcs/carton
800100.3UK	Nitto tape 21, 19mm x 20m green	19mm x 20m x 0,19mm	green	120 pcs/carton
800100.4UK	Nitto tape 21, 19mm x 20m red	19mm x 20m x 0,19mm	red	120 pcs/carton
800100.6UK	Nitto tape 21, 19mm x 20m yellow	19mm x 20m x 0,19mm	yellow	120 pcs/carton
800100.7UK	Nitto tape 21, 19mm x 20m white	19mm x 20m x 0,19mm	white	120 pcs/carton
800100.8UK	Nitto tape 21, 19mm x 20m grey	19mm x 20m x 0,19mm	grey	120 pcs/carton
800100.9UK	Nitto tape 21, 19mm x 20m yellow/green	19mm x 20m x 0,19mm	yellow/green	120 pcs/carton
800100.11UK	Nitto tape 21, 19mm x 20m brown	19mm x 20m x 0,19mm	brown	120 pcs/carton
800100.12UK	Nitto tape 21, 19mm x 20m orange	19mm x 20m x 0,19mm	orange	120 pcs/carton

Nitto Tapes

Nitto 21 PVC tape 38mm x 20m

· Electrical isolation
· Colour coding
· Cable bundling
· Corrosion prevention

Item number	Description	Dimensions	Colour	Order unit
800450.1UK	Nitto tape 21, 38mm x 20m black	38mm x 20m x 0,19mm	black	60 pcs/carton
800450.2UK	Nitto tape 21, 38mm x 20m blue	38mm x 20m x 0,19mm	blue	60 pcs/carton
800450.3UK	Nitto tape 21, 38mm x 20m green	38mm x 20m x 0,19mm	green	60 pcs/carton
800450.4UK	Nitto tape 21, 38mm x 20m red	38mm x 20m x 0,19mm	red	60 pcs/carton
800450.5UK	Nitto tape 21, 38mm x 20m transparent	38mm x 20m x 0,19mm	transparent	60 pcs/carton
800450.6UK	Nitto tape 21, 38mm x 20m yellow	38mm x 20m x 0,19mm	yellow	60 pcs/carton
800450.7UK	Nitto tape 21, 38mm x 20m white	38mm x 20m x 0,19mm	white	60 pcs/carton
800450.8UK	Nitto tape 21, 38mm x 20m grey	38mm x 20m x 0,19mm	grey	60 pcs/carton
800450.9UK	Nitto tape 21, 38mm x 20m yellow/green	38mm x 20m x 0,19mm	yellow/green	60 pcs/carton
800450.11UK	Nitto tape 21, 38mm x 20m brown	38mm x 20m x 0,19mm	brown	60 pcs/carton
800450.12UK	Nitto tape 21, 38mm x 20m orange	38mm x 20m x 0,19mm	orange	60 pcs/carton

Nitto 21 PVC tape 50mm x 10m

Nitto tape 21 is a heavy duty general purpose tape which is ideal for wire and cable harnessing, color coding, duct sealing, corrosion preventing, holding and protection.

Item number	Description	Dimensions	Colour	Order unit
800600.5UK	Nitto tape 21, 50mm x 10m transparent	50mm x 10m x 0,19mm	transparent	80 pcs/carton
800600.1UK	Nitto tape 21, 50mm x 10m black	50mm x 10m x 0,19mm	black	80 pcs/carton

Nitto Tapes

Nitto 21 PVC tape 50mm x 20m

· Electrical isolation
· Colour coding
· Cable bundling
· Corrosion prevention

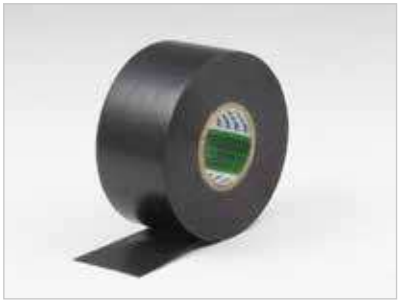
Item number	Description	Dimensions	Colour	Order unit
800650.1UK	Nitto tape 21, 50mm x 20m black	50mm x 20m x 0,19mm	black	48 pcs/carton
800650.2UK	Nitto tape 21, 50mm x 20m blue	50mm x 20m x 0,19mm	blue	48 pcs/carton
800650.3UK	Nitto tape 21, 50mm x 20m green	50mm x 20m x 0,19mm	green	48 pcs/carton
800650.4UK	Nitto tape 21, 50mm x 20m red	50mm x 20m x 0,19mm	red	48 pcs/carton
800650.5UK	Nitto tape 21, 50mm x 20m transparent	50mm x 20m x 0,19mm	transparent	48 pcs/carton
800650.6UK	Nitto tape 21, 50mm x 20m yellow	50mm x 20m x 0,19mm	yellow	48 pcs/carton
800650.7UK	Nitto tape 21, 50mm x 20m white	50mm x 20m x 0,19mm	white	48 pcs/carton
800650.8UK	Nitto tape 21, 50mm x 20m grey	50mm x 20m x 0,19mm	grey	48 pcs/carton
800650.11UK	Nitto tape 21, 50mm x 20m brown	50mm x 20m x 0,19mm	brown	48 pcs/carton
800650.12UK	Nitto tape 21, 50mm x 20m orange	50mm x 20m x 0,19mm	orange	48 pcs/carton

Nitto 21 PVC tape 100mm x 20m

Nitto tape 21 is a heavy duty general purpose tape which is ideal for wire and cable harnessing, color coding, duct sealing, corrosion preventing, holding and protection.

Item number	Description	Dimensions	Colour	Order unit
800700.1UK	Nitto tape 21, 100mm x 10m black	100mm x 10m x 0,19mm	black	40 pcs/carton

Nitto tape 51



Anticorrision Tape No. 51 has been developed for prevention of corrosion to various types of pipeslines, power & communication cables.

· Offers superior durability and corrosion resistance
· Consists of a flexible film and thick adhesive
· Adheres well to joints and curved objects
· Provides excellent sealing and cushioning

Item number	Description	Dimensions	Colour	Order unit
81050UK	Nitto tape 51, 38mm x 10m	38mm x 10m x 0,4mm	black	100 rollen / carton

Nitto Tapes

Nitto tape 225

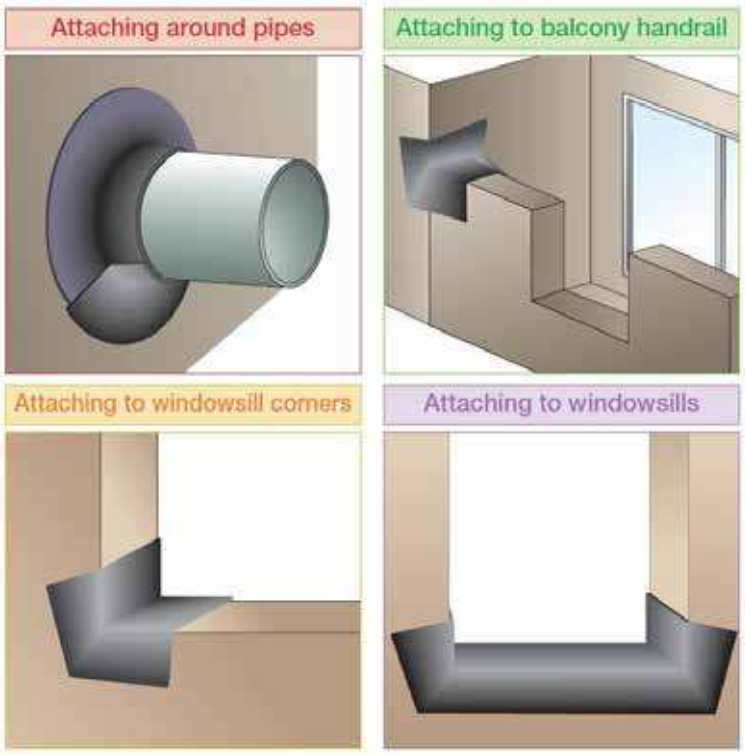
Nitto tape 225 is a high grade flame retardant electrical insulating tape.

Item number	Description	Dimensions	Colour	Order unit
800102.1UK	Nitto tape 225, 19mm x 20m	19mm x 20m x 0,19mm	black	120 pcs/carton

Nitto tape Hyperflash 695

Filoform Hyper Flash No.695 is a combination of deformable rubber substrate, butyl rubber adhesive, and release paper. It fits tightly around irregular shapes like sewage pipes and corner joints to shut out water and air.

Item number	Description	Dimensions	Colour	Order unit
800485UK	Hyperflash 6951A, 75mm x 5m	75mm x 5m x 1,3mm	black	18 pcs/carton



Tools

Injection Pump 710ml

Filoform injection pumps are used to pump the resin under pressure (±2 Bar) into injection joints. The injection pump has a continuously variable piston displacement enabling an optimal flow of the resin into the joint. The injection pump type 710ml has a larger capacity than the injection pump type CN-E4 (355ml) and is therefore suitable for all resin bags to 710ml.

- Suitable for resin packs A, B, C & D

Item number	Description	Order unit
80396UK	Injection gun GN-E4 with ball bearing mechanism	per piece
80800UK	Luborsil silicon spray 500ml	12 pcs/carton

Injection Pump GN-E4

Filoform injection pumps are used to pump the resin under pressure (±2 Bar) into injection joints. The injection pump has a continuously variable piston displacement enabling an optimal flow of the resin into the joint. The ball bearing mechanism reduces the manual effort required to fill the joint.

- Suitable for resin packs A, B & C

Item number	Description	Order unit
80800UK	Luborsil silicon spray 500ml	12 pcs/carton
80394KUK	Injection gun GN-E4 with ball bearing mechanism	per piece

Hot air gun

· For installing heat shrink components
· Suitable for use under adverse weather conditions and in confined spaces

Item number	Description	Order unit
86010UK	Gas Cartridge	12 pcs/carton
86000UK	Hot air gun with cartridge	per piece

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