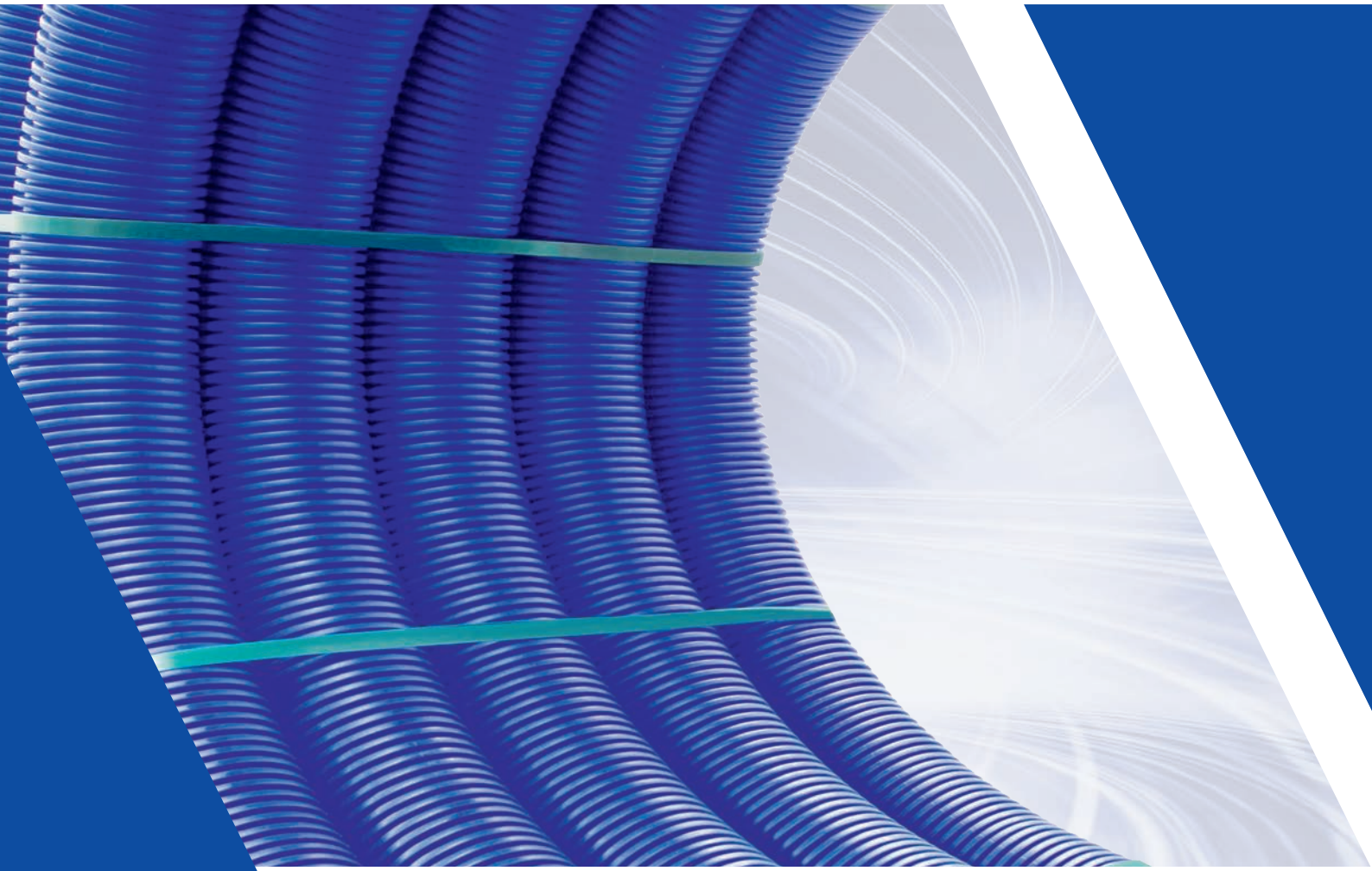
Microflex - Catalogue

Flexibility, all the way

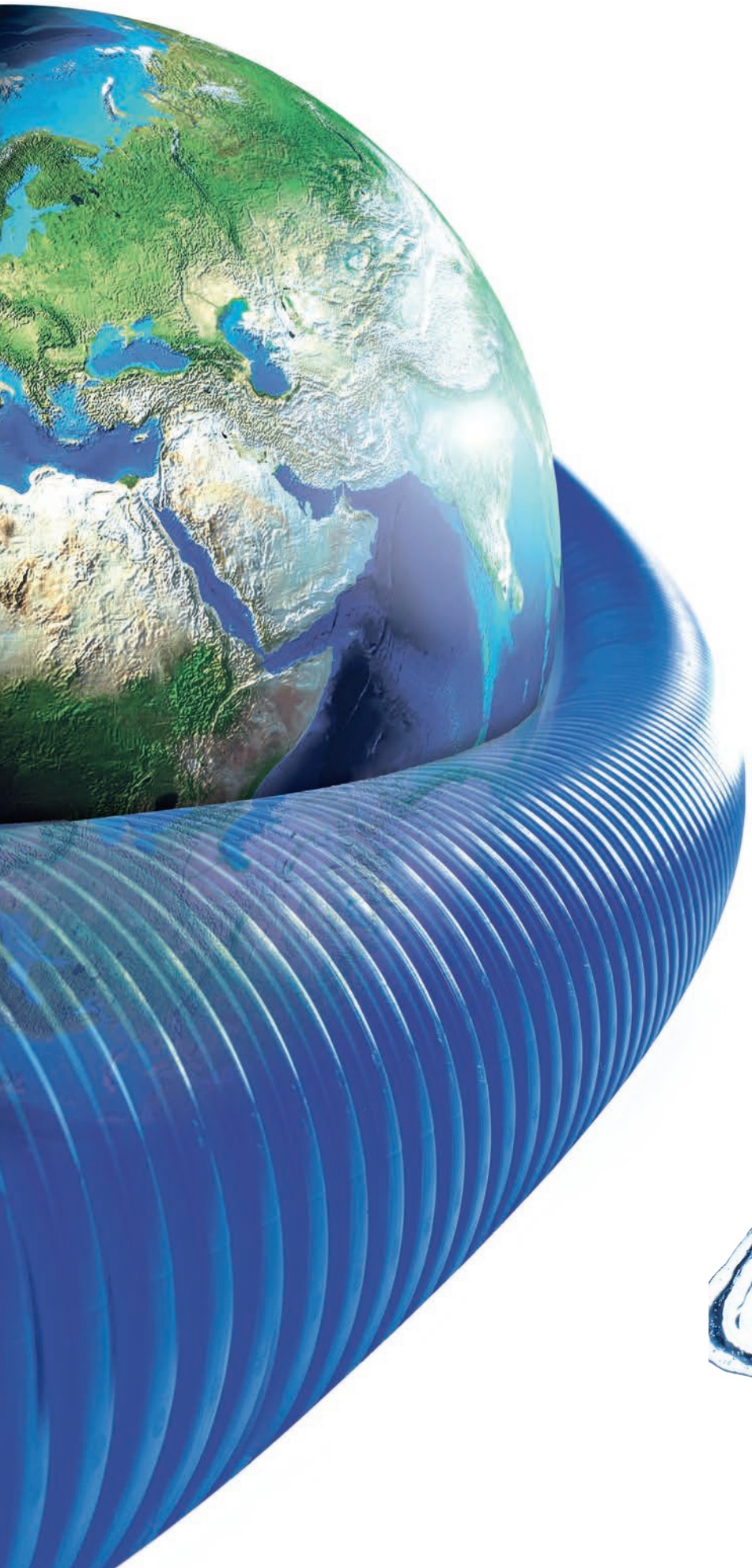


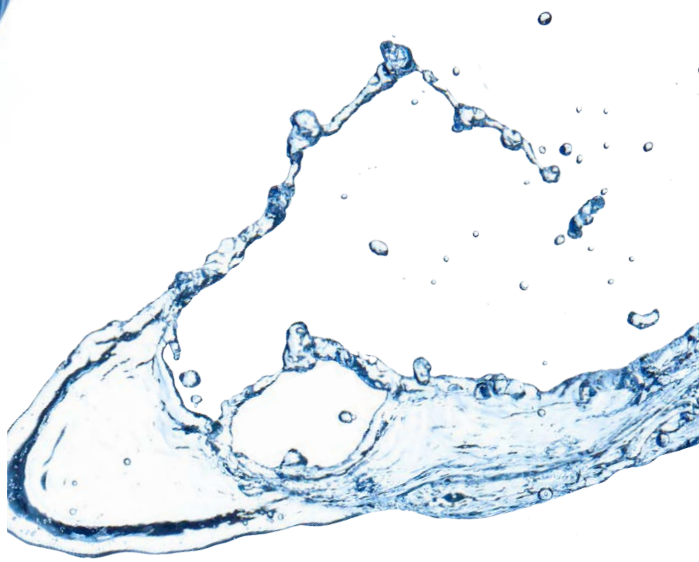
Microflex.be

MICROFLEX®

A WATTS Brand

MICROFLEX®
A WATTS Brand





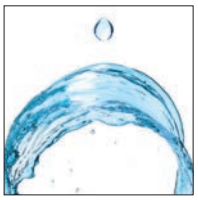
MICROFLEX®

Flexibility, all the way.

Watts Water Technologies EMEA B.V. is the European Holding and Division of Watts Water Technologies Inc., a leading multinational listed on the New York Stock Exchange. Watts develops and manufactures products that promote the comfort and safety of people, and the quality and protection of water in residential, commercial and industrial applications.

Over the past 20 years Watts has built up strong expertise in the development and manufacture of highly flexible pre-insulated PE-Xa pipes for hot and cold potable water, cooling water, wastewater and other fluids.

All our processes are ISO 9001 certified, and every part of the Microflex system is designed with care. Only the best materials are selected for our uniquely high-tech production line. Efficient logistics management guarantees very short delivery terms. We have a team of professionals that are motivated to give you the best possible advice every time.



Microflex, your expert partner in highly flexible energy saving piping systems!

Microflex.
Saving energy and preserving the environment

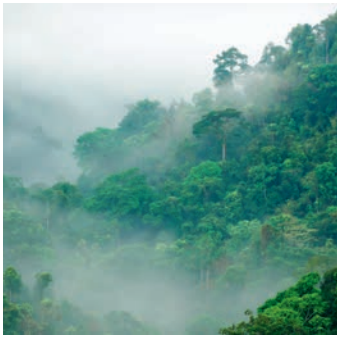
Microflex manufactures products that contribute to a sustainable future. Our products help keep energy consumption and CO_2 emissions to a minimum.

Microflex pipes are durable, contain no pollutants and are non-toxic. All materials used are produced without CFCs (chlorofluorocarbons) that can deplete the ozone layer. During the production process we are highly conscious of energy consumption and there is no pollution of air, water or soil.

Microflex. Ideal for renewable energy applications

Geothermal heat pumps

Heat pumps for air / ground water



Wood and pellet boilers

Biomass and biogas

Microflex's unique assets: flexibility, durability and product superiority

Flexibility, all the way

In order & delivery

- 200,000 metres of pipes in stock
- Local stocks at regional distributors close to your site
- All sizes available in full coils of 100 m or per metre
- All couplings and system accessories in stock

In installation

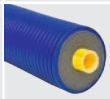
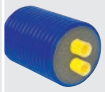
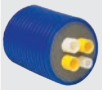
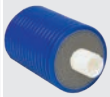
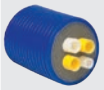
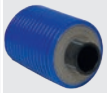
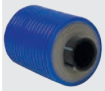
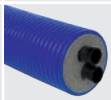
- No couplings or accessories necessary to overcome obstacles
- Faster assembly times
- No skilled welders required to make the connections
- No specific assembly tools required
- No expensive pre-insulated bends required
- Limited weight facilitates easy installation
- Simple and safe modular system of connections, including insulation and finishing kits
- Individual approach to market-specific demands outside of standard solutions

Durable and superior products & system solutions

- Very extensive range of pipes and accessories – complete system
- High quality standards backed up by ISO 9001 certification
- Couplings with the highest performance on the market
- Microflex cross-linked PE-X insulation sheet foam with closed cell structure, delivering significantly superior insulating properties
  In a heating network operating at a 80°C/60°C temperature regime, 100 m of our MD20063C pipe limits the temperature drop to only 0.2°C at its maximum capacity (235 kW)
- Outstanding aging resistance of the Microflex insulation material, a lifetime of high insulation performance
- Unique double wall outside casing in PE-HD providing extra protection to the inner part of the tube
- Sophisticated geometry of outside casing ensuring unparalleled flexibility and high resistance to impacts and pressure
- Corrosion-free system and transport pipes with extremely long life and high resistance to external influences such as stress, micro-organisms and temperature swings
- Total project supervision by experienced staff – engineering, planning, calculations, material selection and more

MICROFLEX®
A WATTS Brand

A solution for every application

Product selector	Uno (one pipe)	Uno V (one pipe + cable)	Duo (two pipes)	Quadro (four pipes)
Heating water (PE-Xa)	 > M-C		 > MD-C	 > MQ
Hot (potable) water (PE-Xa)	 > M-S		 > MD-S	 > MQ
Cold (potable) water and cooling water (PE100)	 > M-PE	 > MV-PE	 > MD-PE	
Accessories				

Microflex is the complete and ultra-flexible solution for a network of insulated pipes. These include heating pipes, hot sanitary water pipes, cooling water pipes, conduits to carry other fluids etc.

Medium pipes in PE-Xa of 25 mm (DN20) to 125 mm (DN100) in uno, duo or quadro versions.

Expert advice tailored to your needs

Got a question about our products or delivery terms?
Need help to calculate your material needs?
Do you have a special requirement?
Our staff will be delighted to help you.

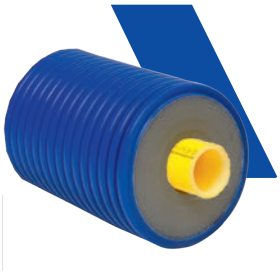
Please contact your WATTS Sales Office.
See list at page 40.

Sales conditions (Refer to price list)

- All our prices are without VAT and ex works.
- Our sales and delivery conditions apply to all our products.
- This document replaces all previous editions.
- Technical and substantive changes may be made without prior notice.
- Cut to length tubes are not taken back.

MICROFLEX®
A WATTS Brand

CENTRAL HEATING
MICROFLEX® UNO



Single flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for heating water, but also for (hot) potable water, wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875, with yellow oxygen diffusion barrier in accordance with DIN 4726. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

- Max operating pressure: 6 bar
- Max fluid temperature: + 95°C
- PE-Xa pipes: SDR 11
- Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

COUPLINGS

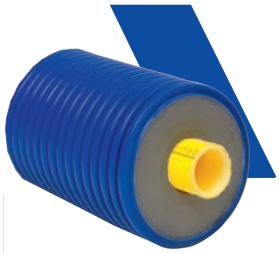
Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)	Heat emission (2) (kW)	Microflex PE-X coupling Art. No.	Thread (inch)
M7525 C	25/2.3	20	75	0.68	0.20	~30	MJ3413425/23	3/4" M
M9032 C	32/2.9	25	90	1.00	0.25	~60	MJ3414432/29	1" M
M16040 C	40/3.7	32	160	2.32	0.35	~90	MJ3415440/37	1 1/4" M
M16050 C	50/4.6	40	160	2.48	0.45	~140	MJ3416450/46	1 1/2" M
M16063 C	63/5.8	50	160	2.78	0.55	~220	MJ341263/58	2" M
M20075 C	75/6.8	65	200	4.16	0.80	~330	MJ34121275/68	2 1/2" M
M20090 C	90/8.2	75	200	4.73	1.10	~480	MJ341390/82	3" M
M200110 C	110/10.0	90	200	5.64	1.20	~700	MJ3414110/100	4" M
M200125 C	125/11.4	100	200	6.00	1.40	~900	MJ3414125/114	4" M

(1)Applicable practical values without risk of pipe distortion or damage.
(2)Average heat emission in kW at T_{water} of 80°C and ΔT of 20°C.

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MS Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No	Fix point MFP Art. No.	Thread (inch)
M7525 C	MS7525	MK2000	MG751832	MFP34	3/4" M
M9032 C	MS9032	MK2100	MG901840	MFP44	1" M
M16040 C	MS16040	MK2340	MG1603250	MFP54	1 1/4" M
M16050 C	MS16050	MK2340	MG1603250	MFP64	1 1/2" M
M16063 C	MS16063	MK2500	MG1603390	MFP2	2" M
M20075 C	MS20075	MK2600	M20075125	MFP212	2 1/2" M
M20090 C	MS20090	MK2600	MG20075125	MFP3	3" M
M200110 C	MS200110	MK2600	MG20075125	MFP4	4" M
M200125 C	MS200125	MK2600	MG20075125	MFP4	4" M



MICROFLEX® PRIMO UNO

Single flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for heating water, but also for (hot) potable water, wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875, with yellow oxygen diffusion barrier in accordance with DIN 4726. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

- Max operating pressure: 6 bar
- Max fluid temperature: + 95°C
- PE-Xa pipes: SDR 11
- Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)	Heat emission (2) (kW)
M9040 C	40/3.7	32	90	1.11	0.30	~90
M12540 C	40/3.7	32	125	1.72	0.30	~90
M12550 C	50/4.6	40	125	1.92	0.40	~140
M12563 C	63/5.8	50	125	2.16	0.50	~220
M16075 C	75/6.8	65	160	3.20	0.75	~330
M16090 C	90/8.2	75	160	3.85	1.00	~480

(1)Applicable practical values without risk of pipe distortion or damage.
(2)Average heat emission in kW at T_{water} of 80°C and ΔT of 20°C.

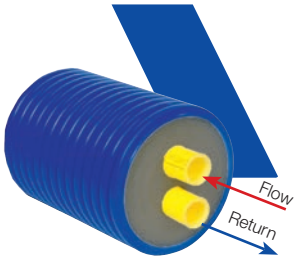
COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3415440/37	1 1/4" M
MJ3415440/37	1 1/4" M
MJ3416450/46	1 1/2" M
MJ341263/58	2" M
MJ34121275/68	2 1/2" M
MJ341390/82	3" M

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MS Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP Art. No.	Thread (inch)
M9040 C	MS9040	MK2100	MG901840	MFP54	1 1/4" M
M12540 C	MS12540	MK2200	MG1254063	MFP54	1 1/4" M
M12550 C	MS12550	MK2200	MG1254063	MFP64	1 1/2" M
M12563 C	MS12563	MK2400	MG1254063	MFP2	2" M
M16075 C	MS16075	MK2500	MG1606390	MFP212	2 1/2" M
M16090 C	MS16090	MK2500	MG1606390	MFP3	3" M



MICROFLEX® DUO

Double flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for heating water, but also for (hot) potable water, wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875, with yellow oxygen diffusion barrier in accordance with DIN 4726. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Insulating PE centrepiece guarantees an effective separation of flow and return pipes. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

- Max operating pressure: 6 bar
- Max fluid temperature: + 95°C
- PE-Xa pipes: SDR 11
- Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)	Heat emission (2) (kW)
MD16025 C	2 x 25/2.3	20	160	2.21	0.50	~30
MD16032 C	2 x 32/2.9	25	160	2.41	0.50	~60
MD16040 C	2 x 40/3.7	32	160	2.63	0.60	~90
MD20050 C	2 x 50/4.6	40	200	4.03	0.80	~140
MD20063 C	2 x 63/5.8	50	200	4.64	1.20	~220

(1)Applicable practical values without risk of pipe distortion or damage.
(2)Average heat emission in kW at T_{water} of 80°C and ΔT of 20°C.

COUPLINGS

Microflex PE-X coupling (*) Art. No.	Thread (inch)
MJ3413425/23	3/4" M
MJ3414432/29	1" M
MJ3415440/37	1 1/4" M
MJ3416450/46	1 1/2" M
MJ341263/58	2" M

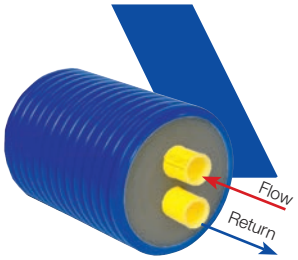
(*) For Duo pipes, two couplings required.

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MSD Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP (*) Art. No.	Thread (inch)
MD16025 C	MSD16025	MK3350-01	MGD1602550	MFP34	3/4" M
MD16032 C	MSD16032	MK3350-01	MGD1602550	MFP44	1" M
MD16040 C	MSD16040	MK3350-02	MGD1602550	MFP54	1 1/4" M
MD20050 C	MSD20050	MK3350-03	MGD2004063	MFP64	1 1/2" M
MD20063 C	MSD20063	MK3350-05	MGD2004063	MFP2	2" M

(*) For Duo pipes, two fix points required.



MICROFLEX® PRIMO DUO

Double flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for heating water, but also for (hot) potable water, wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875, with yellow oxygen diffusion barrier in accordance with DIN 4726. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Insulating PE centrepiece guarantees an effective separation of flow and return pipes. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

– Max operating pressure: 6 bar
– Max fluid temperature: + 95°C
– PE-Xa pipes: SDR 11
– Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)	Heat emission (2) (kW)
MD12525 C	2 x 25/2.3	20	125	1.62	0.30	~30
MD12532 C	2 x 32/2.9	25	125	1.82	0.30	~60
MD16040 C	2 x 40/3.7	32	160	2.63	0.60	~90
MD16050 C	2 x 50/4.6	40	160	3.10	0.60	~140

(1)Applicable practical values without risk of pipe distortion or damage.
(2)Average heat emission in kW at T_{water} of 80°C and ΔT of 20°C.

COUPLINGS

Microflex PE-X coupling (*) Art. No.	Thread (inch)
MJ3413425/23	3/4" M
MJ3414432/29	1" M
MJ3415440/37	1 1/4" M
MJ3416450/46	1 1/2" M

(*) For Duo pipes, two couplings required.

ACCESSORIES

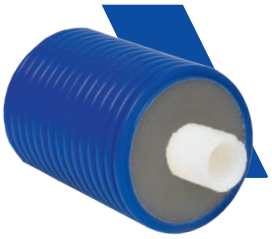
Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MSD Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP (*) Art. No	Thread (inch)
MD12525 C	MSD12525	MK3250-P604	MGD1251832	MFP34	3/4" M
MD12532 C	MSD12532	MK3280	MGD1251832	MFP44	1" M
MD16040 C	MSD16040	MK3350-02	MGD1602550	MFP54	1 1/4" M
MD16050 C	MSD16050	MK3350-03	MGD1602550	MFP64	1 1/2" M

(*) For Duo pipes, two fix points required.

MICROFLEX®
A WATTS Brand

SANITARY
MICROFLEX® UNO



Single flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for hot and cold potable water, but also for waste-water and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

– Max operating pressure: 10 bar
– Max fluid temperature: + 95°C
– PE-Xa pipes: SDR 7.4
– Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
M7525 S	25/3.5	20	75	0.75	0.20
M9032 S	32/4.4	25	90	1.12	0.25
M12540 S	40/5.5	32	125	1.89	0.40
M12550 S	50/6.9	40	125	2.19	0.50
M12563 S	63/8.7	50	125	2.59	0.60
M20075 S	75/10,3	65	200	4.83	0.90
M20090 S	90/12,3	75	200	5.63	1.20
M200110 S	110/15,1	90	200	6.85	1.30

(1)Applicable practical values without risk of pipe distortion or damage.

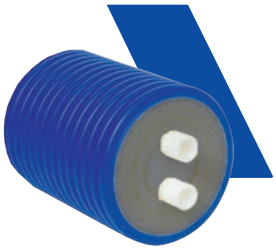
COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3413425/35	3/4” M
MJ3414432/44	1” M
MJ3415440/55	1 1/4” M
MJ3416450/69	1 1/2” M
MJ341263/87	2” M
MJ34121275/103	2 1/2” M
MJ341390/123	3” M
MJ3414110/151	4” M

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MS Art. No.	Shrink cap MK Art. No	Rubber End cap EPDM Art. No.	Fix point MFP Art. No.	Thread (inch)
M7525 S	MS7525	MK2000	MG751832	MFP34	3/4” M
M9032 S	MS9032	MK2100	MG901840	MFP44	1” M
M12540 S	MS12540	MK2200	MG1254063	MFP54	1 1/4” M
M12550 S	MS12550	MK2200	MG1254063	MFP64	1 1/2” M
M12563 S	MS12563	MK2400	MG1254063	MFP2	2” M
M20075 S	MS20075	MK2600	MG20075125	MFP212	2 1/2” M
M20090 S	MS20090	MK2600	MG20075125	MFP3	3” M
M200110 S	MS200110	MK2600	MG20075125	MFP4	4” M



MICROFLEX® DUO

Double flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for hot and cold potable water, but also for wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Insulating PE centrepiece guarantees an effective separation of sanitary hot water pipe and pipe for circulation loop. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

– Max operating pressure: 10 bar
– Max fluid temperature: + 95°C
– PE-Xa pipes: SDR 7.4
– Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
MD16025 S	2 x 25/3.5	20	160	2.35	0.50
MD1603225 S	1 x 32/4.4 1 x 25/3.5	25 20	160	2.50	0.50
MD1604025 S	1 x 40/5.5 1 x 25/3.5	32 20	160	2.71	0.60
MD1605025 S	1 x 50/6.9 1 x 25/3.5	40 20	160	2.89	0.60
MD1605032 S	1 x 50/6.9 1 x 32/4.4	40 25	160	3.04	0.60

(1)Applicable practical values without risk of pipe distortion or damage.

COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3413425/35 (*)	3/4" M
MJ3414432/44	1" M
MJ3413425/35	3/4" M
MJ3415440/55	1 1/4" M
MJ3413425/35	3/4" M
MJ3416450/69	1 1/2" M
MJ3413425/35	3/4" M
MJ3416450/69	1 1/2" M
MJ3414432/44	1" M

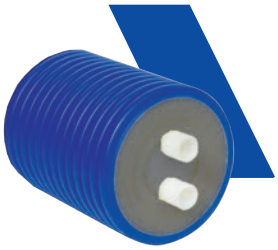
(*) Two couplings required.

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MSD Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP Art. No.	Thread (inch)
MD16025 S	MSD16025	MK3350-01	MGD1602550	MFP34 (*)	3/4" M
MD1603225 S	MSD1603225	MK3350-01	MGD1602550	MFP44 MFP34	1" M 3/4" M
MD1604025 S	MSD1604025	MK3350-02	MGD1602550	MFP54 MFP34	1 1/4" M 3/4" M
MD1605025 S	MSD1605025	MK3360-01	MGD1602550	MFP64 MFP34	1 1/2" M 3/4" M
MD1605032 S	MSD1605032	MK3350-03	MGD1602550	MFP64 MFP44	1 1/2" M 1" M

(*) Two fix points required.



MICROFLEX® PRIMO DUO

Double flexible, pre-insulated, self-compensating, underground pipe. Especially suitable for hot and cold potable water, but also for wastewater and other fluids.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Insulating PE centrepiece guarantees an effective separation of sanitary hot water pipe and pipe for circulation loop. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

- Max operating pressure: 10 bar
- Max fluid temperature: + 95°C
- PE-Xa pipes: SDR 7.4
- Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
MD1252520 S	1 x 25/3.5 1 x 20/2.8	20 15	125	1.68	0.30
MD1253225 S	1 x 32/4.4 1 x 25/3.5	25 20	125	1.91	0.30

(1)Applicable practical values without risk of pipe distortion or damage.

COUPLINGS

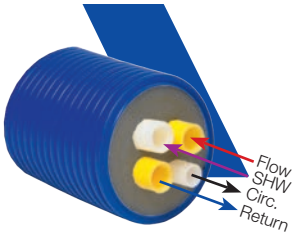
Microflex PE-X coupling Art. No.	Thread (inch)
MJ3413425/35 MJ3413420/28	3/4" M 3/4" M
MJ3414432/44 MJ3413425/35	1" M 3/4" M

ACCESSORIES

Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MSD Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP Art. No.	Thread (inch)
MD1252520 S	MSD1252520	MK3250-P604	MGD1251832	MFP34 MFP34	3/4" M 3/4" M
MD1253225 S	MSD1253225	MK3250-P604	MGD1251832	MFP44 MFP34	1" M 3/4" M

CENTRAL HEATING AND SANITARY
MICROFLEX® QUADRO



Flexible pre-insulated, self-compensating underground pipe comprising two heating pipes and two sanitary pipes. Designed for heating water (flow and return), and equipped with a sanitary hot water pipe and a pipe for the circulation loop.
Corrosion-resistant transport pipe in cross-linked PE-Xa in accordance with EN ISO 15875, with yellow oxygen diffusion barrier in accordance with DIN 4726 for the heating water pipes. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Insulating PE centrepiece guarantees an effective separation of flow, return, hot water and circulation pipes. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

Heating pipes
– Max operating pressure: 6 bar
– Max fluid temperature: + 95°C
– PE-Xa pipes: SDR 11

Sanitary pipes
– Max operating pressure: 10 bar
– Max fluid temperature: + 95°C
– PE-Xa pipes: SDR 7.4

– Standard full coil length: 100 m

Specific combinations?
Please contact us.

WRAS approval

PIPES

Art. No.	PE-Xa d_{out}/s (mm)	PE-Xa d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
MQ16025C2520S	2 x 25/2.3 1 x 25/3.5 1 x 20/2.8	20 20 15	160	2.54	0.60
MQ16032C2520S	2 x 32/2.9 1 x 25/3.5 1 x 20/2.8	25 20 15	160	2.72	0.60
MQ16032C3225S	2 x 32/2.9 1 x 32/4.4 1 x 25/3.5	25 25 20	160	2.95	0.60
MQ20040C4032S	2 x 40/3.7 1 x 40/5.5 1 x 32/4.4	32 32 25	200	5.00	1.30

(1)Applicable practical values without risk of pipe distortion or damage.

COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3413425/23 (*)	3/4" M
MJ3413425/35	3/4" M
MJ3413420/28	3/4" M
MJ3414432/29 (*)	1" M
MJ3413425/35	3/4" M
MJ3413420/28	3/4" M
MJ3414432/29 (*)	1" M
MJ3414432/44	1" M
MJ3413425/35	3/4" M
MJ3415440/37(*)	1 1/4" M
MJ3415440/55	1 1/4" M
MJ3414432/44	1" M

(*) Two couplings required.

ACCESSORIES

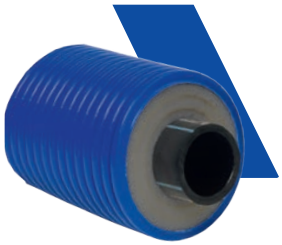
Fix points must be installed to absorb the possible effects of thermal expansion/shrinkage of the PE-Xa transport pipes.

Pipe Art. No.	Dust cap MSQ Art. No.	Rubber End cap EPDM Art. No.	Fix point MFP Art. No.	Thread (inch)
MQ16025C2520S	MSQ160252520	MGQ1602532	MFP34 (*) MFP34 MFP34	3/4" M 3/4" M 3/4" M
MQ16032C2520S	MSQ160322520	MGQ1602532	MFP44 (*) MFP34 MFP34	1" M 3/4" M 3/4" M
MQ16032C3225S	MSQ160323225	MGQ1602532	MFP44 (*) MFP44 MFP34	1" M 1" M 3/4" M
MQ20040C4032C	MSQ200404032	n.a.	MPF54 (*) MFP54 MFP44	1 1/4" M 1 1/4" M 1" M

(*) Two fix points required.

MICROFLEX®
A WATTS Brand

COLD AND COOLING WATER
MICROFLEX® COOL



Single flexible, pre-insulated, self-compensating, underground pipe. Suitable for cold potable water, cooling water and waste-water.
Corrosion-resistant transport pipe in PE 100 in accordance with EN 12201. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

DUO COOL only available on request

– Max operating pressure: 16 bar
– Max fluid temperature: -10°C … +25°C
– PE pipes: SDR 11
– Standard full coil length: 100 m

Specific combinations? Please contact us.

WRAS approval

PIPES

Art. No.	PE d_{out}/s (mm)	PE d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
M9032 PE	32/2.9	25	90	1.00	0.25
M9040 PE	40/3.7	32	90	1.11	0.30
M12550 PE	50/4.6	40	125	1.92	0.40
M12563 PE	63/5.8	50	125	2.16	0.50
M16075 PE	75/6.8	65	160	3.20	0.75
M16090 PE	90/8.2	75	160	3.85	1.00
M200110 PE	110/10.0	90	200	5.74	1.20
M200125 PE	125/11.4	100	200	6.10	1.40

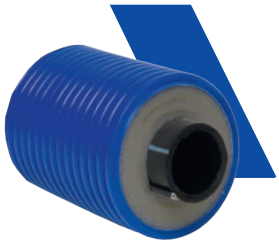
(1)Applicable practical values without risk of pipe distortion or damage.

COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3414432/29	1” M
MJ3415440/37	1 1/4” M
MJ3416450/46	1 1/2” M
MJ341263/58	2” M
MJ34121275/68	2 1/2” M
MJ341390/82	3” M
MJ3414110/100	4” M
MJ3414125/114	4” M

ACCESSORIES

Pipe Art. No.	Dust cap MS Art. No.	Shrink cap MK Art. No.	Rubber End cap EPDM Art. No.	Couplings MPP Art. No.	Thread (inch)
M9032 PE	MS9032	MK2100	MG901840	MPP3414432/29	1” M
M9040 PE	MS9040	MK2100	MG901840	MPP3415440/37	1 1/4” M
M12550 PE	MS12550	MK2200	MG1254063	MPP3416450/46	1 1/2” M
M12563 PE	MS12563	MK2400	MG1254063	MPP341263/58	2” M
M16075 PE	MS16075	MK2500	MG1606390	MPP34121275/68	2 1/2” M
M16090 PE	MS16090	MK2500	MG1606390	MPP341390/82	3” M
M200110 PE	MS200110	MK2600	MG20075125	MPP3414110/100	4” M
M200125 PE	MS200125	MK2600	MG20075125	n.a.	n.a.



MICROFLEX® COOL with self-regulating heating cable

Single flexible, pre-insulated, self-compensating, underground pipe. Suitable for cold potable water, cooling water and waste-water.
Corrosion-resistant transport pipe in PE 100 in accordance with EN 12201. The transport pipe is in contact with a self-regulating heating cable. Thermal, elastic, CFC-free foam insulation made from cross-linked PE-X with closed microcellular structure. Minimal water absorption capacity of < 1% in accordance with ISO 2896. Corrugated outside casing in HDPE, made in accordance with the closed chamber principle to provide high-grade protection to the piping system.

- Max operating pressure: 16 bar
- Max fluid temperature: -10°C … +25°C
- PE pipes: SDR 11
- Heating cable power: 10 W/m (18W/m in option)
- Standard full coil length: 100 m

Specific combinations? Please contact us.

WRAS approval

PIPES

Art. No.	PE d_{out}/s (mm)	PE d_{in} DN	Outside casing d_{out} (mm)	Weight (kg/m)	Bending radius (1) (m)
MV7532 PE	32/2.9	25	75	0.84	0.20
MV9040 PE	40/3.7	32	90	1.20	0.30
MV12550 PE	50/4.6	40	125	2.00	0.40
MV12563 PE	63/5.8	50	125	2.25	0.50
MV16075 PE	75/6.8	65	160	3.30	0.75
MV16090 PE	90/8.2	75	160	3.95	1.00
MV200110 PE	110/10.0	90	200	5.84	1.20
MV200125 PE	125/11.4	100	200	6.10	1.40

(1)Applicable practical values without risk of pipe distortion or damage.

COUPLINGS

Microflex PE-X coupling Art. No.	Thread (inch)
MJ3414432/29	1” M
MJ3415440/37	1 1/4” M
MJ3416450/46	1 1/2” M
MJ341263/58	2” M
MJ34121275/68	2 1/2” M
MJ341390/82	3” M
MJ3414110/100	4” M
MJ3414125/114	4” M

ACCESSORIES

Pipe Art. No.	Dust cap MS Art. No.	Shrink cap MK Art No.	Rubber End cap EPDM Art. No.	Couplings MPP Art. No.	Thread (inch)
MV7532 PE	MS7532	MK2100	MG751832	MPP3414432/29	1” M
MV9040 PE	MS9040	MK2100	MG901840	MPP3415440/37	1 1/4” M
MV12550 PE	MS12550	MK2200	MG1254063	MPP3416450/46	1 1/2” M
MV12563 PE	MS12563	MK2400	MG1254063	MPP341263/58	2” M
MV16075 PE	MS16075	MK2500	MG1606390	MPP34121275/68	2 1/2” M
MV16090 PE	MS16090	MK2500	MG1606390	MPP341390/82	3” M
MV200110 PE	MS200110	MK2600	MG20075125	MPP3414110/100	4” M
MV200125 PE	MS200125	MK2600	MG20075125	n.a.	n.a.

MICROFLEX® Connection kit for heating cable

This connection kit is used to connect the heating cable to the Microflex Cool pipes. Contents:

MVTH

An ambient thermostat that interrupts the heating cable depending on changing temperature influences. The use of this thermostat is strongly recommended, because it prevents the heating cable from being live at all times and so cuts energy consumption.

– Operation: automatic / EN 60730-1
– Protection level: IP 54 / EN 60529
– Regulating range: -10°C…+40°C
– Differential: 1 - 2 K
– Switch power: 16A / 230 VAC
– Voltage: 230 VAC

MVBOX

A PVC distribution box in which the heating cable is connected to the current feed.

– Protection level: IP 55

MVKITGR

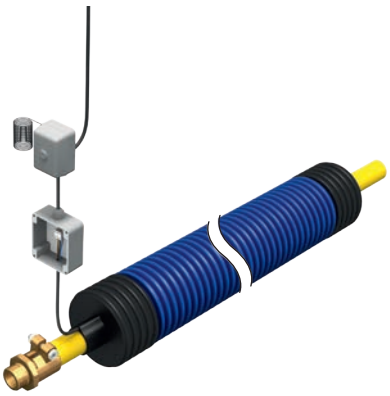
One kit comprising:
– 3 shrink sleeves to insulate the feed wire and the earthing of the heating cable
– 1 long shrink sleeve to insulate the heating cable at the connection
– 2 short shrink sleeves to insulate the end of the heating cable
– 1 swivel for bulkhead in the MVBOX

Art. No.	Description
MVTH	Ambient thermostat
MVBOX	Distribution box
MVKITGR	Set of insulating shrink sleeves
MVKITM	1 x MVBOX + 2 x MVKITGR
MVKITT	1 x MVBOX + 3 x MVKITGR

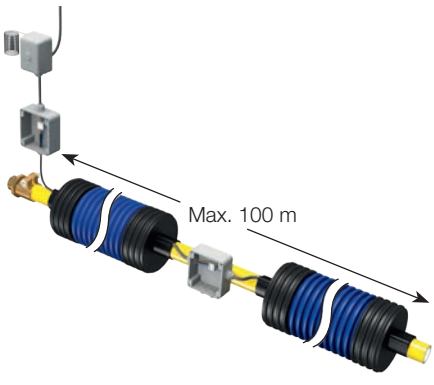
The heating cable must be connected to a 230 VAC network. The circuit must be protected with a 16A fuse and a 30mA RCD. We recommend that the trigger ambient temperature must be set to 2°C (by means of the thermostat).

NB:
At a temperature of 0°C the heating cable must not be longer than 100 m. If this length is exceeded, the heating cables must be fed individually.

MVTH + MVBOX + MVKITGR



MVKITM



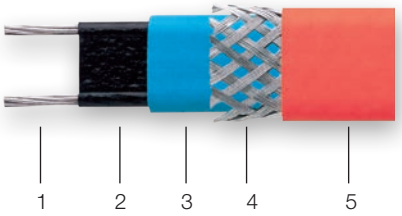
MVKITT

Heat loss table for MICROFLEX® COOL with self-regulating heating cable

This table shows the heat losses at negative temperatures around the outside casing.
If heat losses exceed 9 Watt/m the pipe is in danger of freezing.

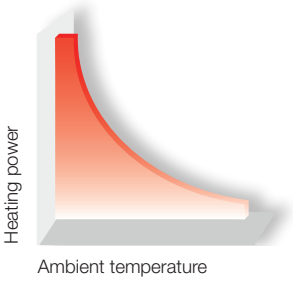
temperature around the outside casing	Casing d_{out} / Pipe d_{out}	75/25	125/25	75/32	90/32	125/32	90/40	125/40	160/40	125/50	160/50	125/63	160/63	160/75	200/75	160/90	200/90	200/110	200/125
	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	-2	1	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	2	2
	-3	1	1	1	1	1	2	1	1	2	1	2	1	2	1	3	2	2	2
	-4	2	1	2	2	1	2	2	1	2	1	3	2	2	2	3	2	2	3
	-5	2	1	2	2	1	2	2	1	2	2	3	2	3	2	4	3	3	3
	-6	2	1	2	2	2	3	2	2	3	2	3	2	3	2	4	3	3	4
	-7	2	2	2	3	2	3	2	2	3	2	4	2	3	3	5	3	4	4
	-8	3	2	3	3	2	4	3	2	3	2	4	3	4	3	5	4	4	5
	-9	3	2	3	3	2	4	3	2	4	3	5	3	4	3	6	4	5	5
	-10	3	2	3	3	3	4	3	2	4	3	5	4	5	3	6	4	5	6
	-11	4	2	4	4	3	5	3	3	4	3	6	4	5	4	7	5	6	7
	-12	4	3	4	4	3	5	4	3	5	3	6	4	5	4	7	5	6	7
	-13	4	3	4	4	3	5	4	3	5	4	7	4	6	4	8	5	7	8
	-14	4	3	5	5	3	6	4	3	5	4	7	5	6	5	8	6	7	8
	-15	5	3	5	5	4	6	4	3	6	4	7	5	6	5	9	6	7	9
	-16	5	3	5	5	4	6	5	4	6	4	8	5	7	5	9	6	8	9
	-17	5	3	5	6	4	7	5	4	6	5	8	6	7	5	10	7	8	10
	-18	5	4	6	6	4	7	5	4	6	5	9	6	8	6	10	7	9	10
	-19	6	4	6	6	4	8	5	4	7	5	9	6	8	6	10	7	9	11
	-20	6	4	6	6	5	8	6	4	7	5	9	7	8	6	11	8	10	11
	-21	6	4	7	7	5	8	6	5	7	6	10	7	9	7	11	8	10	12
	-22	6	4	7	7	5	9	6	5	8	6	10	7	9	7	12	8	10	13
	-23	7	4	7	7	5	9	6	5	8	6	11	7	9	7	12	9	11	13
	-24	7	5	8	7	6	9	7	5	8	6	11	8	10	7	13	9	11	14
	-25	7	5	8	8	6	10	7	5	9	6	12	8	10	8	13	9	12	14
	-26	7	5	8	8	6	10	7	6	9	7	12	8	10	8	14	10	12	15
	-27	8	5	8	8	6	10	7	6	9	7	12	8	11	8	14	10	13	15
	-28	8	5	9	9	6	11	7	6	10	7	13	9	11	9	15	10	13	16
	-29	8	5	9	9	7	11	8	6	10	7	13	9	12	9	15	11	14	16
	-30	8	6	9	9	7	11	8	6	10	8	14	9	12	9	16	11	14	17
	-31	9	6	10	9	7	12	8	6	10	8	14	10	12	9	16	11	15	18
	-32	9	6	10	10	7	12	8	7	11	8	14	10	13	10	17	12	15	18
	-33	9	6	10	10	7	12	9	7	11	8	15	10	13	10	17	12	15	19
	-34	9	6	10	10	8	13	9	7	11	8	15	10	13	10	18	12	16	19
	-35	10	6	11	10	8	13	9	7	12	9	16	11	14	10	18	13	16	20
	-36	10	7	11	11	8	13	9	7	12	9	16	11	14	11	18	13	17	20
	-37	10	7	11	11	8	14	10	8	12	9	16	11	14	11	19	13	17	21
	-38	10	7	12	11	8	14	10	8	13	9	17	11	15	11	19	14	18	21
	-39	11	7	12	12	8	14	10	8	13	10	17	12	15	11	20	14	18	22
non-recommended temperatures	-40	11	7	12	12	9	15	10	8	13	10	18	12	15	12	20	14	18	22
	-41	11	7	13	12	9	15	10	8	13	10	18	12	16	12	21	15	19	23
	-42	11	8	13	12	9	15	11	8	14	10	18	13	16	12	21	15	19	24
	-43	12	8	13	13	9	16	11	9	14	10	19	13	16	12	22	15	20	24
	-44	12	8	13	13	9	16	11	9	14	11	19	13	17	13	22	16	20	25
	-45	12	8	14	13	10	16	11	9	15	11	19	13	17	13	23	16	21	25
	-46	12	8	14	13	10	17	12	9	15	11	20	14	17	13	23	16	21	26
	-47	13	8	14	14	10	17	12	9	15	11	20	14	18	13	23	16	22	26
	-48	13	9	15	14	10	17	12	10	15	11	21	14	18	14	24	17	22	27
	-49	13	9	15	14	10	17	12	10	16	12	21	14	18	14	24	17	23	27
	-50	13	9	15	14	11	18	12	10	16	12	21	15	19	14	25	17	23	28

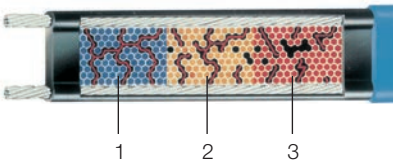
Self-regulating heating cable - structure and operation



1. Tin-coated copper conductor
2. Self-regulating heating element
3. Electric insulation mantle
4. Safety plait in tin-coated copper
5. External safety cover

Schematic diagram





1. In the cold sections of the heating cable, the structure of the plastic will draw together, generating a large number of electrical currents through the carbon particles. The current is converted into heat in the heating element.
2. In the warmer sections, the structure of the plastic expands and progressively interrupts the currents in the carbon particles. This increases the resistance and reduces the current draw and thus the heating capacity.
3. In the hot sections, the expansion of the plastic structure breaks the currents almost entirely. This creates a very high electrical resistance and the heating capacity falls to almost 0.

Robust construction

The heating cable is a self-regulating cable with two parallel, multiwire tin-coated copper conductors and an intermediate semiconducting heating element. This heating element is electrically insulated by means of a synthetic polyolefine or fluoropolymer cover. It is also covered by a plaited, tin-coated copper cord. This plaiting provides the earthing (safety conductor) for the heating cable, complies with prevailing safety standards (VDE 0100) and is fitted with an additional mechanical protection.

Proven lifespan

These self-regulating heating cables have been intensively tested in our laboratories using international standard tests and recognised scientific methods and procedures. These tests found that the self-regulating heating cable has a lifespan of over 40 years.

Licenses

All self-regulating heating cables are manufactured in accordance with the strictest quality norms and are subjected to ongoing quality controls. They are VDE-certified as well as with a variety of production, control and other licenses from many countries.

Parallel circuits

The current flows between two parallel copper conductors, regardless of where the heating cable is and right through the semiconducting, molecularly refined heating element. The electrical circuit diagram is similar to a parallel circuit in many temperature-dependent resistances.
The system's straightforward design and even simpler installation process will save you considerable expense. The heating cable is always connected to a 230 VAC output, regardless of its length.

Operation

The heating element consists of a specially formulated, molecularly refined plastic cover embedded with carbon particles which generate electrical currents between two parallel copper conductors. When the temperature rises, the plastic expands due to molecular expansion.
The carbon particles move further and further apart, resulting in the interruption of the electrical currents and a rise in the electrical resistance of the heating element. The current draw and the heating capacity fall proportionally. When the element cools, the process is reversed and the heating capacity rises in response to low temperatures. The molecular refinement of the heating element gives it duroplastic properties, making the expansion behaviour at molecular level exactly reproducable, even under fluctuating temperatures. The self-regulating properties of the heating cable are thus incorporated into the material itself.
Thanks to this self-regulation, the heating cable responds to temperature fluctuations along the entire length of the system.

Energy conservation

Because the heating capacity adjusts to local temperatures, energy consumption is always adapting to prevailing requirements. The heating cables therefore save energy and costs through self-regulation.

Safe and reliable

Due to these self-regulating properties, the system cannot overheat or burn through, even if the heating cable overlaps.

MICROFLEX® PE-X
Couplings - 6/16 Bar

Straight coupling for use in piping systems equipped with transport pipes for heating, cold or cooling water applications.
The coupling has a long supporting pipe for optimal clamping, a conical outside thread connection and a clamping ring with stainless steel bolt. The included remote plate makes it easier to fit the coupling.
Assembly instructions: see our technical manual.

– Max operating pressure: 6 bar (16 bar)
– Max fluid temperature: +95°C (+25°C)
– PE-Xa and PE pipes: SDR 11
– Supporting pipe material: CW602N
– Clamping ring material: CW602N

PE-X coupling

Microflex PE-X coupling Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	Weight (kg)
MJ3413425/23	25/2.3	3/4" M	0.22
MJ3414432/29	32/2.9	1" M	0.35
MJ3415440/37	40/3.7	1 1/4" M	0.61
MJ3416450/46	50/4.6	1 1/2" M	0.82
MJ341263/58	63/5.8	2" M	1.39
MJ34121275/68	75/6.8	2 1/2" M	1.80
MJ341390/82	90/8.2	3" M	2.98
MJ3414110/100	110/10.0	4" M	3.77
MJ3414125/114	125/11.4	4" M	4.75

PE-X x PE-X coupling

Art. No.	PE-X d_{out}/s (mm)	PE-X d_{out} x d_{out} (mm)	Weight (kg)
MJ27025/23	25/2.3	25 x 25	0.35
MJ27032/29	32/2.9	32 x 32	0.45
MJ27040/37	40/3.7	40 x 40	0.80
MJ27050/46	50/4.6	50 x 50	1.35
MJ27063/58	63/5.8	63 x 63	2.10
MJ27075/68	75/6.8	75 x 75	2.90
MJ27090/82	90/8.2	90 x 90	5.10
MJ270110/100	110/10.0	110 x 110	6.90
MJ270125/114	125/11.4	125 x 125	9.95

PE-X x PE-X elbow coupling

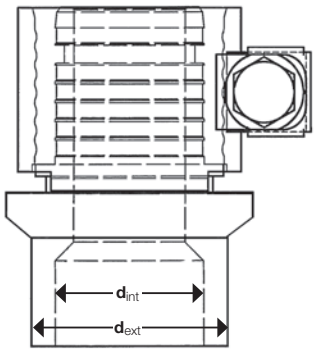
Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	PE-X d_{out} x d_{out} (mm)
MJ9025/23	25/2.3	2 x 3/4"	25 x 25
MJ9032/29	32/2.9	2 x 1"	32 x 32
MJ9040/37	40/3.7	2 x 1 1/4"	40 x 40
MJ9050/46	50/4.6	2 x 1 1/2"	50 x 50
MJ9063/58	63/5.8	2 x 2"	63 x 63
MJ9075/68	75/6.8	2 x 2 1/2"	75 x 75
MJ9090/82	90/8.2	2 x 3"	90 x 90
MJ90110/100	110/10.0	2 x 4"	110 x 110
MJ90125/114	125/11.4	2 x 4"	125 x 125

3 x PE-X T-coupling

Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	PE-X d_{out} x d_{out} x d_{out} (mm)
MJ13025/23	25/2.3	3 x 3/4”	25 x 25 x 25
MJ13032/29	32/2.9	3 x 1”	32 x 32 x 32
MJ1304032/37	40/3.7 + 32/2.9	2 x 1 1/4” + 1 x 1”	40 x 32 x 40
MJ13040/37	40/3.7	3 x 1 1/4”	40 x 40 x 40
MJ1305040/46	50/4.6 + 40/3.7	2 x 1 1/2“ + 1 x 1 1/4”	50 x 40 x 50
MJ13050/46	50/4.6	3 x 1 1/2”	50 x 50 x 50
MJ1306350/58	63/5.8 + 50/4.6	2 x 2” + 1 x 1 1/2”	63 x 50 x 63
MJ13063/58	63/5.8	3 x 2”	63 x 63 x 63
MJ13075/68	75/6.8	3 x 2 1/2”	75 x 75 x 75
MJ13090/82	90/8.2	3 x 3”	90 x 90 x 90
MJ130110/100	110/10.0	3 x 4”	110 x 110 x 110
MJ130125/114	125/11.4	3 x 4”	125 x 125 x 125

Weld-end coupling

Art. No.	PE-X d_{ext}/s (mm)	Weld-end d_{ext} (mm)	Weld-end d_{int} (mm)
MJ3412725/23L	25/2.3	26.90	21.50
MJ3413332/29L	32/2.9	33.70	27.00
MJ3414240/37L	40/3.7	42.40	36.00
MJ3414550/46L	50/4.6	48.30	42.00
MJ3415763/58L	63/5.8	60.30	53.00
MJ3417675/68L	75/6.8	76.10	68.00
MJ3418990/82L	90/8.2	88.90	80.00
MJ341110110/10L	110/10.0	114.30	105.00
MJ341114125/114L	125/11.4	114.30	105.00



Couplings - 10 Bar

Straight coupling for use in piping systems equipped with transport pipes for sanitary, cold or hot water applications. The coupling has a long supporting pipe for optimal clamping, a conical outside thread connection and a clamping ring with stainless steel bolt. The included remote plate makes it easier to fit the coupling. Assembly instructions: see our technical manual.

- Max operating pressure: 10 bar
- Max fluid temperature: +95°C
- PE-Xa pipes: SDR 7.4
- Supporting pipe material: CW602N
- Clamping ring material: CW602N

PE-X coupling

Microflex PE-X coupling Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	Weight (kg)
MJ3413420/28	20/2.8	3/4" M	0.17
MJ3413425/35	25/3.5	3/4" M	0.22
MJ3414432/44	32/4.4	1" M	0.35
MJ3415440/55	40/5.5	1 1/4" M	0.59
MJ3416450/69	50/6.9	1 1/2" M	0.90
MJ341263/87	63/8.7	2" M	1.47
MJ34121275/103	75/10.3	2 1/2" M	1.80
MJ341390/123	90/12.3	3" M	2.98
MJ3414110/151	110/15.1	4" M	3.77

PE-X x PE-X coupling

Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	PE-X d_{out} x d_{out} (mm)
MJ27025/35	25/3.5	2 x 3/4"	25 x 25
MJ27032/44	32/4.4	2 x 1"	32 x 32
MJ27040/55	40/5.5	2 x 1 1/4"	40 x 40
MJ27050/69	50/6.9	2 x 1 1/2"	50 x 50
MJ27063/87	63/8.7	2 x 2"	63 x 63
MJ27075/103	75/10.3	2 x 1 1/2"	75 x 75
MJ27090/123	90/12.3	2 x 3"	90 x 90
MJ270110/151	110/15.1	2 x 4"	110 x 110

PE-X x PE-X elbow coupling

Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	PE-X d_{out} x d_{out} (mm)
MJ9025/35	25/3.5	2 x 3/4"	25 x 25
MJ9032/44	32/4.4	2 x 1"	32 x 32
MJ9040/55	40/5.5	2 x 1 1/4"	40 x 40
MJ9050/69	50/6.9	2 x 1 1/2"	50 x 50
MJ9063/87	63/8.7	2 x 2"	63 x 63
MJ9075/103	75/10.3	2 x 2 1/2"	75 x 75
MJ9090/123	90/12.3	2 x 3"	90 x 90
MJ90110/151	110/15.1	2 x 4"	110 x 110

3 x PE-X T-coupling

Art. No.	PE-X d_{out}/s (mm)	Thread (inch)	PE-X d_{out} x d_{out} x d_{out} (mm)
MJ13025/35	25/3.5	3 x 3/4"	25 x 25 x 25
MJ13032/44	32/4.4	3 x 1"	32 x 32 x 32
MJ1304032/55	40/5.5 + 32/4.4	2 x 1 1/4" + 1 x 1"	40 x 32 x 40
MJ13040/55	40/5.5	3 x 1 1/4"	40 x 40 x 40
MJ1305040/69	50/6.9 + 40/5.5	2 x 1 1/2" + 1 x 1 1/4"	50 x 40 x 50
MJ13050/69	50/6.9	3 x 1 1/2"	50 x 50 x 50
MJ1306350/87	63/8.7 + 50/6.9	2 x 2" + 1 x 1 1/2"	63 x 50 x 63
MJ13063/87	63/8.7	3 x 2"	63 x 63 x 63
MJ13075/103	75/10.3	3 x 2 1/2"	75 x 75 x 75
MJ13090/123	90/12.3	3 x 3"	90 x 90 x 90
MJ130110/151	110/15.1	3 x 4"	110 x 110 x 110

Accessories

Anti-seize copper based lubricant

An anti-seize copper based lubricant, available in a handy stick. Provides a shield against seizing and galling.

Art. No.	Content
LOCTITE8065	0.02

Fix point

Suitable for applications where the ends of pipes need to be anchored.
Fix points must be installed to absorb the possible effects of thermal expansion / shrinkage of the PE-Xa transport pipes. The non-application of fix points may result in serious damage.

Art. No.	Thread (inch)
MFP34	3/4" MF
MFP44	1" MF
MFP54	1 1/4" MF
MFP64	1 1/2" MF
MFP2	2" MF
MFP212	2 1/2" MF
MFP3	3" MF
MFP4	4" MF

Sleeve

Art. No.	Thread (inch)
VW27034	3/4" FF
VW27044	1" FF
VW27054	1 1/4" FF
VW27064	1 1/2" FF
VW2702	2" FF
VW270212	2 1/2" FF
VW2703	3" FF
VW2704	4" FF

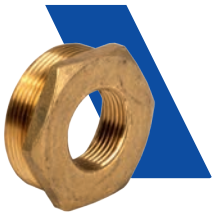
Elbow piece 90°

Art. No.	Thread (inch)
VW9034	3/4" FF
VW9044	1" FF
VW9054	1 1/4" FF
VW9064	1 1/2" FF
VW902	2" FF
VW90212	2 1/2" FF
VW903	3" FF
VW904	4" FF

T-piece

Art. No.	Thread (inch)
VW13034	3/4” FFF
VW13044	1” FFF
VW13054	1 1/4” FFF
VW13064	1 1/2” FFF
VW1302	2” FFF
VW130212	2 1/2” FFF
VW1303	3” FFF
VW1304	4” FFF

Reducing bush MxF



Art. No.	Thread (inch)
VW2414434	1” M x 3/4” F
VW2415434	1 1/4” M x 3/4” F
VW2415444	1 1/4” M x 1” F
VW2416434	1 1/2” M x 3/4” F
VW2416444	1 1/2” M x 1” F
VW2416454	1 1/2” M x 1 1/4” F
VW241234	2” M x 3/4” F
VW241244	2” M x 1” F
VW241254	2” M x 1 1/4” F
VW241264	2” M x 1 1/2” F
VW24121254	2 1/2” M x 1 1/4” F
VW24121264	2 1/2” M x 1 1/2” F
VW2412122	2 1/2” M x 2” F
VW241344	3” M x 1” F
VW241354	3” M x 1 1/4” F
VW241364	3” M x 1 1/2” F
VW24132	3” M x 2” F
VW2413212	3” M x 2 1/2” F
VW24142	4” M x 2” F
VW2414212	4” M x 2 1/2” F
VW24143	4” M x 3” F

Nipple

Art. No.	Thread (inch)
VW28034	3/4” M
VW28044	1” M
VW28054	1 1/4” M
VW28064	1 1/2” M
VW2802	2” M
VW280212	2 1/2” M
VW2803	3” M
VW2804	4” M

Plug

Art. No.	Thread (inch)
VW29034	3/4” M
VW29044	1” M
VW29054	1 1/4” M
VW29064	1 1/2” M
VW2902	2” M
VW290212	2 1/2” M
VW2903	3” M
VW2904	4” M

Ball valve

Art. No.	Thread (inch)
VW35034	3/4” M
VW35044	1” M
VW35054	1 1/4” M
VW35064	1 1/2” M
VW3502	2” M
VW350212	2 1/2” M
VW3503	3” M
VW3504	4” M

Flange

Art. No.	Thread (inch)
MDF34	3/4” F
MDF44	1” F
MDF54	1 1/4” F
MDF64	1 1/2” F
MDF2	2” F
MDF212	2 1/2” F
MDF3	3” F
MDF4	4” F

PLASTIC COUPLINGS FOR PE-PIPES

Polypropylene coupling for use in cold and cooling water systems, sea water and chlorine water systems. Suitable for connection to PE transport pipes.

– Max operating pressure at 20°C: 16 bar for 32-63 mm
– Max operating pressure at 20°C: 10 bar for 75-110 mm
– PE pipes: SDR 11
– Material: polypropylene

Male-threaded coupling

Art. No.	PE-D d_{out}/s (mm)	Thread (inch)
MPP3414432/29	32/2.9	1" M
MPP3415440/37	40/3.7	1 1/4" M
MPP3416450/46	50/4.6	1 1/2" M
MPP341263/58	63/5.8	2" M
MPP34121275/68	75/6.8	2 1/2" M
MPP341390/82	90/8.2	3" M
MPP3414110/100	110/10.0	4" M

PE x PE pipe coupling

Art. No.	PE-D d_{out}/s (mm)	PE-D d_{out} x d_{out} (mm)
MPP27032/29	32/2.9	32 x 32
MPP27040/37	40/3.7	40 x 40
MPP27050/46	50/4.6	50 x 50
MPP27063/58	63/5.8	63 x 63
MPP27075/68	75/6.8	75 x 75
MPP27090/82	90/8.2	90 x 90
MPP270110/100	110/10.0	110 x 110

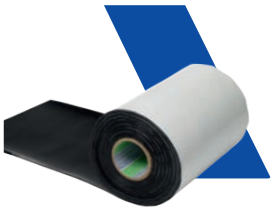
PE x PE Elbow piece

Art. No.	PE-D d_{out}/s (mm)	PE-D d_{out} x d_{out} (mm)
MPP9032/29	32/2.9	32 x 32
MPP9040/37	40/3.7	40 x 40
MPP9050/46	50/4.6	50 x 50
MPP9063/58	63/5.8	63 x 63
MPP9075/68	75/6.8	75 x 75
MPP9090/82	90/8.2	90 x 90
MPP90110/100	110/10.0	110 x 110

3 x PE T-piece

Art. No.	PE-D d_{out}/s (mm)	PE-D d_{out} x d_{out} x d_{out} (mm)
MPP13032/29	32/2.9	32 x 32 x 32
MPP13040/37	40/3.7	40 x 40 x 40
MPP13050/46	50/4.6	50 x 50 x 50
MPP13063/58	63/5.8	63 x 63 x 63
MPP13075/68	75/6.8	75 x 75 x 75
MPP13090/82	90/8.2	90 x 90 x 90
MPP130110/100	110/10.0	110 x 110 x 110

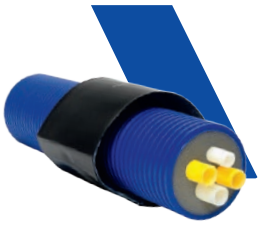
Accessories outside casing



Repair tape

Used to repair incidental local damage to the outside casing.
MHB200: Heat-shrinkable wrapping tape
MHK150: Cold-applied wrapping tape

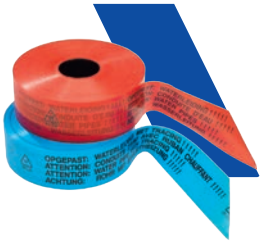
Art. No.	Repair tape	L x W (m)
MHB200	Heat-shrinkable tape	10 x 0.20
MHK150	Cold-applied tape	10 x 0.15



Shrink sleeve

Used to repair incidental local damage to the outside casing. Slide the sleeve over the damaged area, heat with hot air (be sure not to burn the outside casing) and apply gentle pressure wearing protective gloves.

Art. No.	Outside casing d_{out} (mm)	Width (mm)
MHM75/90	75 - 90	220
MHM125	125	220
MHM160	160	220
MHM200	200	220



Warning tape

Used to show the location of underground pipes during excavation work. The tape is placed in the trenches above the pre-insulated pipe.

Art. No.	Warning tape	L x W (m)
MTRW	Attention: water pipe (red)	250 x 0.08
MTRB	Attention: water pipe with heating cable (blue)	250 x 0.08

WALL FEED-THROUGHS

MICRO SEAL (for pressurised water)

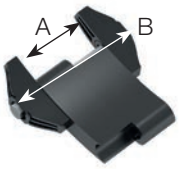
This pressurised water-impermeable wall seal can be applied directly in drilled holes and bricked-up, plastic and fibre cement wall feed-throughs.
The Micro Seal chain comprises a number of links that expand when tightened to produce a very tight seal.

Drill a hole according to minimum and maximum dimensions (see column wall opening).

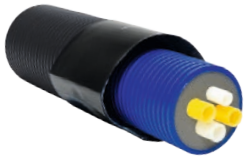
Apply the Micro Seal chain around the outer jacket. Make sure that a straight line of at least 60 cm is maintained before and after the belt. Bends are not allowed.

Slide the pipe with Micro Seal chain into the wall opening.

By tightening the bolts of the evenly spaced links, the pressure plates are uniformly compressed, filling the annular space between the pipe and the wall opening.

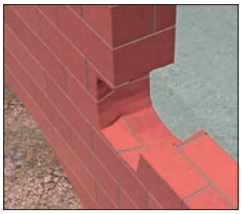


Art. No.	Outside casing d_{out} (mm)	Micro Seal size (mm)		Wall opening (mm)	Torque Nm (Nm)
		Rubber A	Length bolts B		Max.
9LS200	75	43	75	100 - 102	2
7LS300	75	62	100	110 - 115	6
8LS300	90	62	100	128 - 132	6
9LS315	90	62	100	134 - 136	6
7LS475	125	84	135	194 - 210	20
6LS325	125	65	125	175 - 180	6
7LS325	160	65	125	209 - 212	6
7LS400	160	86	135	240 - 245	20
13LS300	160	62	100	200 - 202	6
9LS325	200	65	125	250 - 255	6
8LS400	200	86	135	275 - 282	20
10LS575	200	96	145	301 - 320	50



MMDV Wall feed-through (for non-pressurised water)

The MMDV wall feed-through comprises a profiled HDPE pipe and shrink sleeve. After the pipe is bricked in (protruding 10 cm out of the wall), the Microflex pipe is fed through and sealed with the shrink sleeve. The minimum wall thickness is 40 cm.




Art. No.	Microflex pipe with casing d_{out} (mm)	Wall feed-through pipe d_{out} (mm)	Wall hole (mm)
MMDV75/90	75/90	110	210
MMDV125	125	160	260
MMDV160	160	200	300
MMDV200	200	235	350

UNDERGROUND INSULATION KITS

Inspection chamber

Used to connect Uno, Duo and Quadro pipes. The HDPE inspection chamber has 6 connection points, enables connections of different pipes and integration of shut off valves. Kit comprises inspection chamber, lid, stainless steel bolts, sealer kit and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	Diameter MIS (mm)	H (mm)	Weight (kg)
MIS	200/160/125	810	770	35

Heat shrinkable caps to be ordered separately!

Shrink sleeve for use with inspection chamber

Art. No.	Outside casing d_{out} (mm)	Length (mm)
MHM125	125	220
MHM160	160	220
MHM235	200	220

Assembly instructions: see our technical manual.

Insulated T-piece kit

Guarantees complete insulation and sealing of branch connections between Uno, Duo and Quadro pipes. Kit comprises 2 halves in HDPE, rock wool insulation, sealer kit, stainless steel bolts and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	W (mm)	H (mm)	Weight (kg)
MT129075	125/90/75	960	590	200	5.5
MT201612	200/160/125	1170	750	270	8.0

Heat shrinkable caps to be ordered separately!

Insulated double T-piece kit

Guarantees complete insulation and sealing of branch connections between Uno, Duo and Quadro pipes. Kit comprises 2 halves in HDPE, rock wool insulation, sealer kit, stainless steel bolts and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	W (mm)	H (mm)	Weight (kg)
MDT201612	200/160/125	1200	1200	270	14

Heat shrinkable caps to be ordered separately!

Reduction for insulated T-piece kit MT201612 and MDT201612

Used where the difference in diameter at a transition is too big. Reductions comprise an outside casing with interior insulation and a shrink sleeve. The reduction is pressed into the insulated T-piece kit.

Art. No.	Description
MR24116075	160 to 75 / 90 reduction

Insulated I-piece kit

Guarantees complete insulation and sealing of straight extensions of Uno, Duo and Quadro pipes. Kit comprises 2 halves in HDPE, rock wool insulation, sealer kit, stainless steel bolts and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	W (mm)	H (mm)	Weight (kg)
MM129075	125/90/75	960	290	200	4.5
MM201612	200/160/125	1170	345	270	5.5

Heat shrinkable caps to be ordered separately!

Insulation kit I variant

Guarantees complete insulation and sealing of straight extensions of Uno, Duo and Quadro pipes. Kit comprises a smooth black HDPE pipe, rock wool insulation, 2 shrink sleeves, adhesive tape and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	MM insulation kit d_{out} (mm)	Weight (kg)
MM75/90	75/90	700	110	1.8
MM125	125	850	140	2.5
MM160	160	1000	180	4.0
MM200	200	1000	225	6.0

Heat shrinkable caps to be ordered separately!

Insulated elbow 90° kit

Guarantees complete insulation and sealing of perpendicular connections between Uno, Duo and Quadro pipes. Kit comprises 2 halves in HDPE, rock wool insulation, sealer kit, stainless steel bolts and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	W (mm)	H (mm)	Weight (kg)
MH201612	200/160/125	740	740	270	7.5

Heat shrinkable caps to be ordered separately!

Insulated Y-connection kit

Guarantees complete insulation and sealing of straight extensions between 1 Quadro and 2 Duo or 1 Duo to 2 Uno pipes. Kit comprises 2 halves in HDPE, rock wool insulation, sealer kit, stainless steel bolts and assembly instructions.

Art. No.	Microflex pipe with casing d_{out} (mm)	L (mm)	W (mm)	H (mm)	Weight (kg)
MBR201612	200/160/125	1170	460	230	7.0
IN OUT	200/160/125 160/125				

Heat shrinkable caps to be ordered separately!

CERTIFICATES

Mediumpipes PE-Xa / PEHD

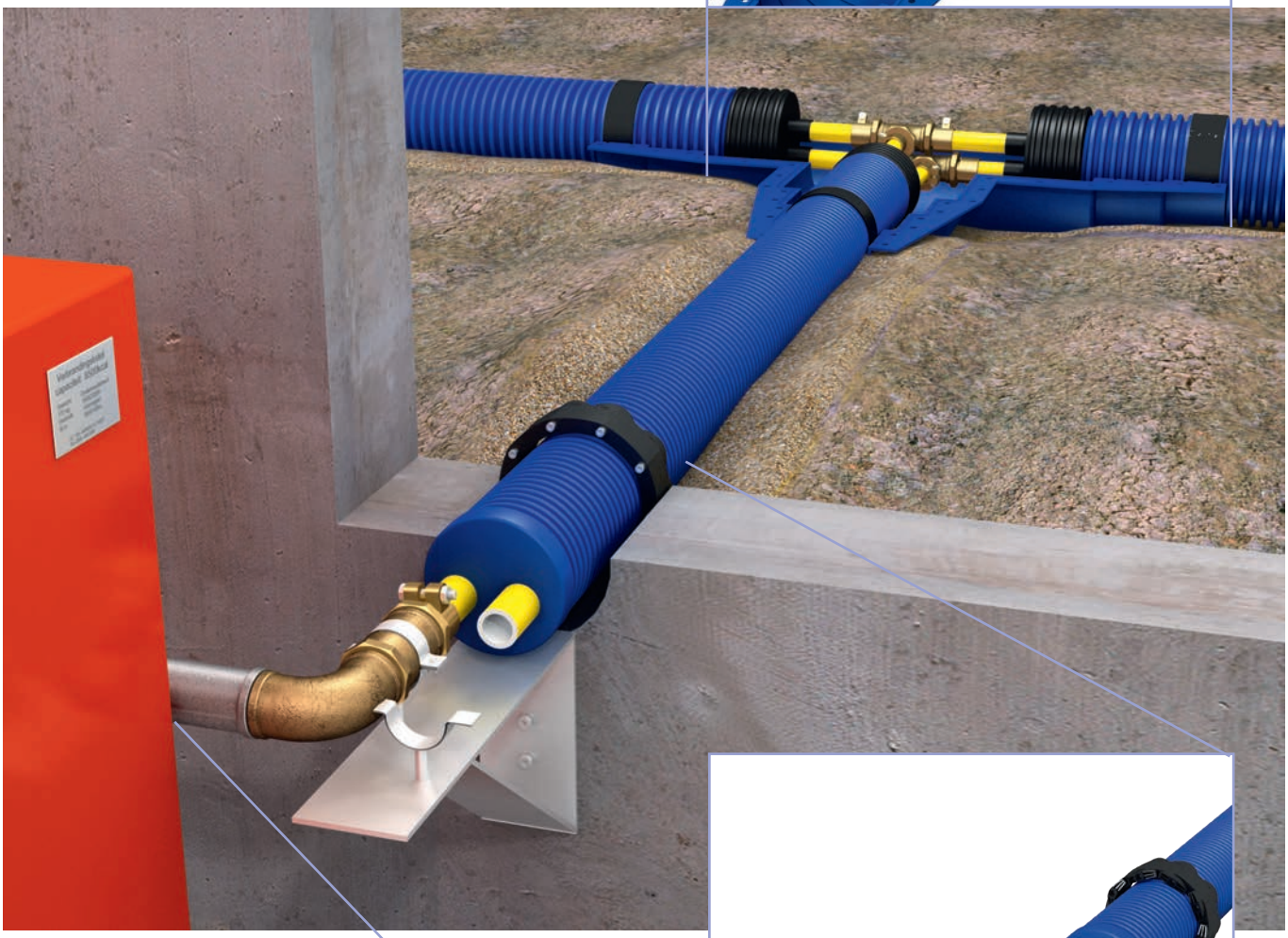
Worldwide Approvals Selection

BELGAQUA	Belgian Standard Institute Approva
SKZ	Suddeutsches Kunststoff-Zentrum Amtlich anerkannte Prufanstalt fur Kunststoffe GERMANY
ETA DANMARK	Danish Technical Institute for Building Purposes Approvals (Ind. drinking water approval)
DVGW CERT	Deutscher Verein des Gas-und Wasser-faches e.V. (Incl. drinking water approval)
CBBCC CERTIFIED ISO 9001:2008	International ISO 9001 Approval
NSF	America Standard Food Approval For Drinking Water
WRAS Water Regulations Advisory Scheme	UK Drinking Water Approval
SP SITAC	Swedish Standard Institute Approval
kiwa Partner for progress	Dutch Standard Institute Approval
	France Avis Technique n° 14/11-1690
GHOSTR	Russian Standard Institute Approval
CSTBat	Centre Scientifique et Technique du bâtiment
ACS	Attestion de Conformité Sanitaire

Other certificats on request

INSTALLATION EXAMPLES

Examples of connections



Installation time

The installation time is highly dependant on local conditions. Obstacles, use of tools and weather can have a significant impact on the installation.

Outside casing d_{out} (mm)	PE(X-a) d_{out} (mm)	Time (minutes*)	Number of workers
UNO (100 m)			
75	25	40	3
90	32	40	3
90/125/160	40	60	3
125/160	50	60	3
125/160	63	60	4
160/200	75	75	4
160/200	90	90	5
200	110	90	5
200	125	90	6
DUO (100 m)			
125/160	25	40	3
125/160	32	40	3
160	40	60	3
160/200	50	60	3
200	63	60	4
QUADRO (100 m)			
160	25	60	4

* All installation times are approximate. Transport and digging not included.

Description	Time (minutes*)	Number of workers
Terminal connections PE-X/PE-X up to DN 50	15 min.	1
Terminal connections PE-X/PE-X from DN 63 up to DN 100	20 min.	1
Tees PE-X up to DN 50	30 min.	1
Tees PE-X from DN 63 up to DN 100	40 min.	1
Insulation casings Ø 125 – 200 type MM/MH	20 min.	1
Insulation casings Ø 125 – 200 type MT/MBR	30 min.	1
Shrink caps Ø 125 – 200 mm	15 min.	1

* All installation times are approximate. Transport and digging not included.

Outside casing d_{out}	Microflex pipes							
	20 m		50 m		75 m		Full coil	
(mm)	w (m)	d (m)	w (m)	d (m)	w (m)	d (m)	w (m)	d (m)
75	0.25	1.55	0.25	1.85	0.30	2.00	0.30	2.10
90	0.25	1.55	0.35	1.85	0.40	2.10	0.50	2.10
125	0.25	1.75	0.40	2.10	0.56	2.10	0.70	2.10
160	0.40	1.90	0.55	2.20	0.70	2.35	0.80	2.35
200	0.50	2.00	0.80	2.30	1.15	2.35	1.40	2.35

Accessories

Coil sizes

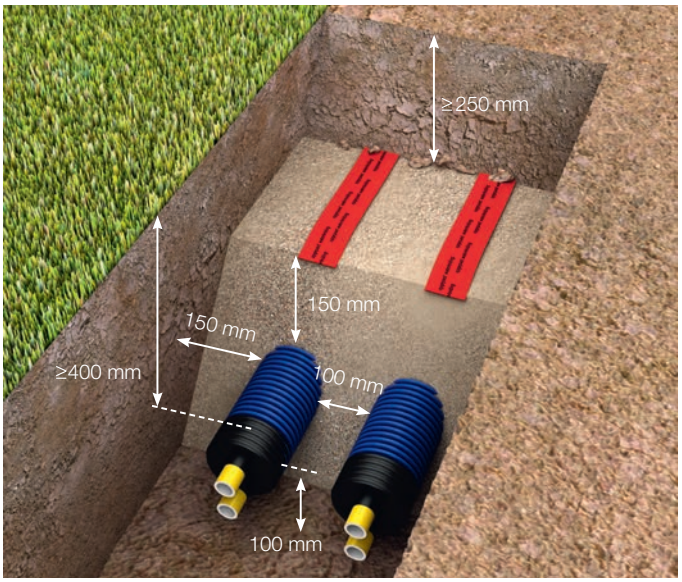
Groundwork

The Microflex pipes are laid in trenches in the ground. It is most practical to lay the excavated ground alongside the trench. The following steps can be performed from the other side:

- Position the roll alongside the trench
- Remove the packaging foil
- Place the end of the pipe in position
- Cut the outermost straps
- Roll the pipe alongside or straight into the trench
- Cut the middle straps
- Roll out further
- Cut the innermost straps
- Roll out completely
- Apply the dust caps or shrink caps
- Connect the couplings on the pipes
- Conduct the pressure test – fill in the report
- Partially fill the trench with a first layer
- Apply the warning tape
- Fill up the trench completely

The following guidelines should be followed during pipe installation:

- Lay the pipes in a bed of sand
- Avoid damaging the casing, remove sharp objects from the ground
- Always grasp the transport pipe and not the outer tube
- Keep to the stated bending radii
- Lay the line in a serpentine course
- The code of good craftsmanship for installing underground pipes must be observed. Read our installation instructions
- Sketch how and where the pipe network runs on a plan (including branches and connections), which you should keep



A Microflex pipe buried at a depth of no less than 50 cm and no more than 6 metres can bear a load of up to 60 tonnes. Placement must be performed in compliance with the prevailing ATV-DVWK-A127 guidelines for buried pipes.

TECHNICAL FEATURES

Heat loss

The use of PE-X pipes has proved successful for years in many installations worldwide. Data in the tables reflect principal standards and directives that have been established for cross-linked PE-X pipes by competent national and international authorities.

The values used in calculating the heat loss charge are:
λ Insulation: 0.036 W/m.K at 10°C
0.040 W/m.K at 40°C
λ Ground: 1 W/m.K
λ PE-Xa pipe: 0.35 W/m.K
Depth of cover over top of pipe: 80 cm
With the ΔT being calculated, the heat loss per metre of piping can easily be read along the corresponding line of the table.

For UNO

$\mathbf{D}T = T_v - T_o$

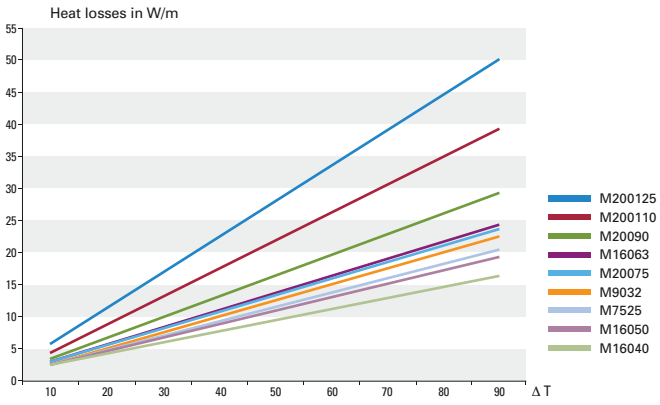
T_v : Flow temperature
T_o : Ground temperature

For DUO

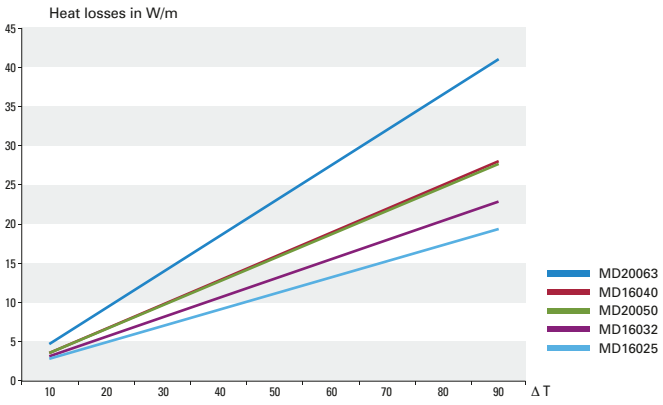
$$\Delta T = \frac{(T_v + T_r)}{2} - T_o$$

T_v : Flow temperature
T_r : Return temperature
T_o : Ground temperature

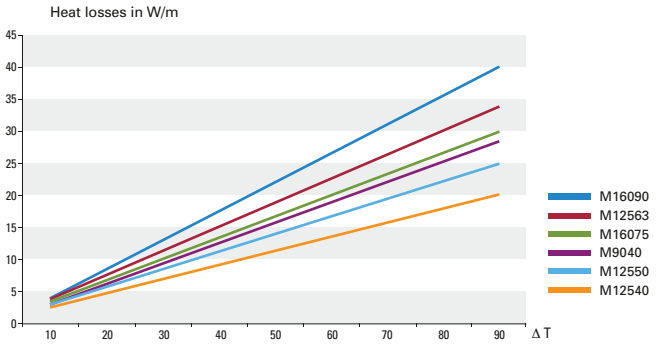
MICROFLEX® UNO range



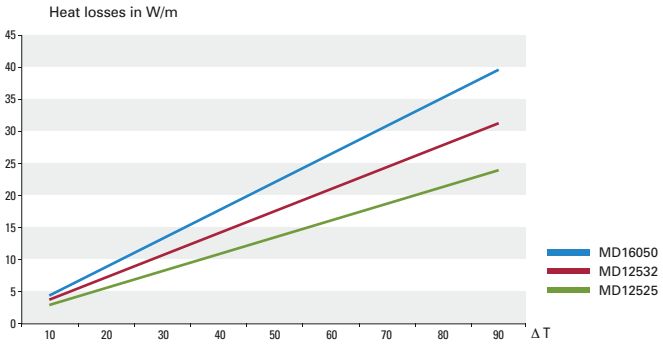
MICROFLEX® DUO range



MICROFLEX® PRIMO UNO range



MICROFLEX® PRIMO DUO range



Pressure loss

Heating capacity in Watts calculated at a ΔT of 20°C

Pipe rugosity: 0,007 mm, Water density: 0.97190 g/cm³, Water temperature: 80°C

		PE-Xa Pipe								PE-Xa Pipe			
		25 x 2,3		32 x 2,9		40 x 3,7				50 x 4,6		63 x 5,8	
l/s	Δt : 20°C Kw	v m/s	R Pa/m	v m/s	R Pa/m	v m/s	R Pa/m	l/s	Δt : 20°C Kw	v m/s	R Pa/m	v m/s	R Pa/m
1	2	5	6	7	8	9	10	11	12	13	14	15	16
0,030	2,5	0,09	7,5	-	-	-	-	0,100	8,4	0,08	2,3	0,05	0,7
0,035	2,9	0,11	9,8	-	-	-	-	0,150	12,6	0,11	4,6	0,07	1,5
0,040	3,3	0,12	12,3	-	-	-	-	0,200	16,7	0,15	7,6	0,10	2,5
0,045	3,8	0,14	15,1	-	-	-	-	0,250	20,9	0,19	11,2	0,12	3,7
0,050	4,2	0,16	18,2	0,09	5,5	-	-	0,300	25,1	0,23	15,5	0,14	5,0
0,055	4,6	0,17	21,5	0,10	6,5	-	-	0,350	29,3	0,27	20,4	0,17	6,6
0,060	5,0	0,18	25,0	0,11	7,6	-	-	0,400	33,5	0,31	25,9	0,19	8,4
0,065	5,4	0,20	28,7	0,12	8,7	-	-	0,450	37,7	0,34	31,9	0,22	10,3
0,070	5,9	0,21	32,7	0,13	9,9	-	-	0,500	41,9	0,38	38,6	0,24	12,5
0,075	6,3	0,23	36,9	0,14	11,2	0,09	4,0	0,550	46,1	**0,42**	**45,8**	0,26	14,8
0,080	6,7	0,24	41,4	0,15	12,5	0,10	4,4	0,600	50,2	**0,46**	**53,5**	0,29	17,3
0,085	7,1	0,26	46,0	0,16	13,9	0,10	4,9	0,650	54,4	**0,50**	**61,8**	0,31	19,9
0,090	7,5	0,28	50,9	0,17	15,4	0,11	5,4	0,700	58,6	**0,54**	**70,7**	0,33	22,8
0,095	7,9	0,29	56,0	0,18	16,9	0,11	6,0	0,750	62,8	**0,57**	**80,1**	0,36	25,8
0,100	8,4	0,31	61,4	0,19	18,5	0,12	6,5	0,800	66,9	**0,61**	**90,0**	0,38	28,9
0,120	10,0	0,37	84,8	0,22	25,6	0,14	9,0	0,850	71,2	**0,65**	**100,4**	0,41	32,3
0,140	11,7	0,43	111,5	0,26	33,6	0,17	11,8	0,900	75,4	**0,69**	**111,4**	0,43	35,8
0,160	13,4	0,49	141,6	0,30	42,5	0,19	14,9	0,950	79,5	**0,73**	**122,9**	0,45	39,4
0,180	15,1	0,55	174,9	0,33	52,4	0,22	18,4	1,000	83,7	**0,76**	**134,9**	**0,48**	**43,2**
0,200	16,7	0,61	211,3	0,37	63,2	0,24	22,1	1,050	87,9	**0,80**	**147,4**	**0,50**	**47,2**
0,220	18,4	0,67	250,9	0,41	74,9	0,26	26,2	1,100	92,1	**0,84**	**160,5**	**0,53**	**51,4**
0,240	20,1	0,73	295,3	0,45	87,5	0,29	30,6	1,150	96,3	**0,88**	**174,0**	**0,55**	**55,7**
0,260	21,8	0,80	339,3	0,48	101,0	0,31	35,3	1,200	100,5	**0,92**	**188,1**	**0,57**	**60,1**
0,280	23,4	0,86	388,1	0,52	115,4	0,34	40,3	1,250	104,7	**0,96**	**202,7**	**0,60**	**64,7**
0,300	25,1	0,92	439,9	0,56	130,7	0,36	45,5	1,300	108,9	**0,99**	**217,8**	**0,62**	**69,5**
0,320	26,8	0,98	494,7	0,59	146,8	0,38	51,1	1,350	113,0	**1,03**	**233,4**	**0,65**	**74,4**
0,340	28,5	1,04	552,4	0,63	163,7	0,41	57,0	1,400	117,2	**1,07**	**249,5**	**0,67**	**79,5**
0,360	30,1	1,10	613,2	0,67	181,5	0,43	63,1	1,450	121,4	**1,11**	**266,1**	**0,69**	**84,8**
0,380	31,8	1,16	676,9	0,70	200,2	0,46	69,5	1,500	125,6	**1,15**	**283,2**	**0,72**	**90,2**
0,400	33,5	1,22	743,5	0,74	219,6	0,48	76,3	1,550	129,8	**1,19**	**300,8**	**0,74**	**95,7**
0,420	35,2	1,28	813,1	0,78	240,0	0,50	83,2	1,600	133,9	**1,22**	**318,8**	**0,77**	**101,4**
0,440	36,8	1,35	885,6	0,82	261,1	0,53	90,5	1,650	138,2	**1,26**	**337,4**	**0,79**	**107,3**
0,460	38,5	1,41	961,0	0,85	283,1	0,55	98,1	1,700	142,4	**1,30**	**356,5**	**0,81**	**113,3**
0,480	40,2	1,47	1.039,3	0,89	305,8	0,58	105,9	1,750	146,5	1,34	376,1	**0,84**	**119,4**
0,500	41,9	1,53	1.120,5	0,93	329,4	0,60	114,0	1,800	150,7	1,38	396,2	**0,86**	**125,8**
0,550	46,1	1,68	1.336,0	1,02	392,0	0,66	135,4	1,900	159,1	1,45	437,8	**0,91**	**138,8**
0,600	50,2	1,84	1.569,5	1,11	459,6	0,72	158,6	2,000	167,5	1,53	481,3	**0,96**	**152,5**
0,650	54,4	1,99	1.820,8	1,21	532,2	0,78	183,4	2,100	175,8	1,61	526,9	**1,00**	**166,8**
0,700	58,6	-	-	1,30	609,8	0,84	209,8	2,200	184,2	1,68	574,3	**1,05**	**181,6**
0,750	62,8	-	-	1,39	692,3	0,90	237,9	2,300	192,6	1,76	623,8	**1,10**	**197,1**
0,800	66,9	-	-	1,48	779,8	0,96	267,7	2,400	200,9	1,84	675,1	**1,15**	**213,1**
0,850	71,2	-	-	1,58	872,2	1,02	299,0	2,500	209,3	1,91	728,4	**1,20**	**229,8**
0,900	75,4	-	-	1,67	969,4	1,08	332,0	2,600	217,7	1,99	783,6	**1,24**	**247,0**
0,950	79,5	-	-	1,76	1.071,5	1,14	366,6	2,700	226,1	-	-	**1,29**	**264,8**
1,000	83,7	-	-	1,85	1.178,5	1,20	402,8	2,800	234,5	-	-	**1,34**	**283,2**
1,050	87,9	-	-	1,95	1.290,3	1,26	440,6	2,900	242,8	-	-	1,39	302,2
1,100	92,1	-	-	2,04	1.406,9	1,32	480,0	3,000	251,2	-	-	1,43	321,8
1,150	96,3	-	-	-	-	1,38	521,0	3,100	259,6	-	-	1,48	341,9
1,200	100,5	-	-	-	-	1,44	563,5	3,200	268,0	-	-	1,53	362,6
1,250	104,7	-	-	-	-	1,50	607,6	3,300	276,3	-	-	1,58	383,9
1,300	108,9	-	-	-	-	1,56	653,3	3,400	284,7	-	-	1,63	405,8
1,350	113,0	-	-	-	-	1,62	700,6	3,500	293,1	-	-	1,67	428,2
1,400	117,2	-	-	-	-	1,68	749,4	3,600	301,4	-	-	1,72	451,2
1,450	121,4	-	-	-	-	1,74	799,8	3,700	309,8	-	-	1,77	474,8
1,500	125,6	-	-	-	-	1,80	851,7	3,800	318,2	-	-	1,82	498,9
1,550	129,8	-	-	-	-	1,86	905,2	3,900	326,6	-	-	1,86	523,7
1,600	133,9	-	-	-	-	1,92	960,3	4,000	334,9	-	-	1,91	549,0
1,650	138,2	-	-	-	-	1,98	1.016,9	4,100	343,3	-	-	1,96	574,8
1,700	142,4	-	-	-	-	2,04	1.075,0	4,200	351,7	-	-	-	-

Conversion: 1 Watt = 0,860 kCal

		PE-Xa Pipe						PE-Xa Pipe					
		75 x 6,8		90 x 8,2				110 x 10,0		125 x 11,4		160 x 14,6	
l/s	Δt : 20°C Kw	v m/s	R Pa/m	v m/s	R Pa/m	l/s	Δt : 20°C Kw	v m/s	R Pa/m	v m/s	R Pa/m	v m/s	R Pa/m
17	18	19	20	21	22	23	24	25	26	27	28	29	30
0,30	25,1	0,10	2,2	0,07	0,9	2,00	167,4	0,31	10,3	-	-	-	-
0,35	29,3	0,12	2,9	0,08	1,2	2,40	200,9	0,38	14,3	-	-	-	-
0,40	33,5	0,14	3,7	0,09	1,5	2,80	234,4	0,44	18,9	-	-	-	-
0,45	37,7	0,15	4,5	0,11	1,9	3,20	267,9	**0,50**	**24,1**	-	-	-	-
0,50	41,9	0,17	5,4	0,12	2,3	3,60	301,4	**0,57**	**29,8**	-	-	-	-
0,55	46,0	0,19	6,4	0,13	2,7	4,00	334,9	**0,63**	**36,2**	-	-	-	-
0,60	50,2	0,20	7,5	0,14	3,1	4,40	368,4	**0,69**	**43,0**	0,55	25,0	-	-
0,65	54,4	0,22	8,6	0,15	3,6	4,80	401,9	**0,75**	**50,5**	0,58	28,0	-	-
0,70	58,6	0,24	9,9	0,16	4,1	5,20	435,3	**0,82**	**58,4**	0,62	33,0	-	-
0,75	62,8	0,25	11,2	0,18	4,7	5,60	468,8	**0,88**	**66,9**	0,69	39,0	-	-
0,80	66,9	0,27	12,5	0,19	5,2	6,00	502,3	**0,94**	**76,0**	0,73	42,0	-	-
0,85	71,2	0,29	14,0	0,20	5,8	6,40	535,8	**1,01**	**85,6**	**0,75**	**46,0**	-	-
0,90	75,3	0,30	15,5	0,21	6,5	6,80	569,3	**1,07**	**95,7**	**0,84**	**53,0**	-	-
0,95	79,5	0,32	17,0	0,22	7,1	7,20	602,8	**1,13**	**106,3**	**0,87**	**58,0**	-	-
1,00	83,7	0,34	18,7	0,24	7,8	7,50	627,9	**1,18**	**114,6**	**0,91**	**62,0**	-	-
1,05	87,9	0,35	20,4	0,25	8,5	8,00	669,8	**1,26**	**129,2**	**0,98**	**71,0**	**0,60**	**24,0**
1,10	92,1	0,37	22,2	0,26	9,3	8,40	703,3	**1,32**	**141,4**	**1,02**	**75,0**	**0,62**	**25,0**
1,15	96,3	0,39	24,0	0,27	10,0	8,80	736,7	**1,38**	**154,1**	**1,08**	**83,0**	**0,65**	**27,0**
1,20	100,5	0,41	25,9	0,28	10,8	9,20	770,2	**1,45**	**167,4**	**1,13**	**90,0**	**0,69**	**30,0**
1,30	108,8	**0,44**	**30,0**	0,31	12,5	9,40	786,9	1,48	174,2	**1,15**	**93,0**	**0,71**	**31,0**
1,40	117,2	**0,47**	**34,3**	0,33	14,3	9,60	803,7	1,51	181,1	**1,17**	**96,0**	**0,73**	**33,0**
1,50	125,6	**0,51**	**38,8**	0,35	16,2	9,80	820,5	1,54	188,2	**1,20**	**101,0**	**0,74**	**34,0**
1,60	133,9	**0,54**	**43,6**	0,38	18,2	10,00	837,2	1,57	195,4	**1,24**	**106,0**	**0,76**	**35,0**
1,70	142,3	**0,57**	**48,7**	0,40	20,3	10,50	879,1	1,65	214,0	**1,29**	**114,0**	**0,79**	**37,0**
1,80	150,7	**0,61**	**54,0**	0,42	22,5	11,00	920,9	1,73	233,4	**1,34**	**123,0**	**0,82**	**40,0**
1,90	159,1	**0,64**	**59,6**	**0,45**	**24,8**	11,50	962,8	1,81	253,5	**1,40**	**132,0**	**0,85**	**43,0**
2,00	167,4	**0,68**	**65,4**	**0,47**	**27,2**	12,00	1.004,7	1,89	274,5	**1,46**	**141,0**	**0,89**	**46,0**
2,10	175,8	**0,71**	**71,5**	**0,49**	**29,7**	12,50	1.046,5	1,96	296,3	**1,53**	**154,0**	**0,93**	**51,0**
2,20	184,2	**0,74**	**77,9**	**0,52**	**32,3**	13,00	1.088,4	2,04	318,8	**1,60**	**166,0**	**0,98**	**55,0**
2,30	192,6	**0,78**	**84,4**	**0,54**	**35,0**	13,50	1.130,2	-	-	**1,65**	**177,0**	**1,01**	**58,0**
2,40	200,9	**0,81**	**91,3**	**0,56**	**37,9**	14,00	1.172,1	-	-	**1,71**	**187,0**	**1,05**	**62,0**
2,50	209,3	**0,84**	**98,3**	**0,59**	**40,8**	14,50	1.213,9	-	-	**1,77**	**197,0**	**1,08**	**65,0**
2,60	217,7	**0,88**	**105,7**	**0,61**	**43,8**	15,00	1.255,8	-	-	**1,82**	**208,0**	**1,11**	**69,0**
2,70	226,0	**0,91**	**113,2**	**0,63**	**46,9**	15,50	1.297,7	-	-	**1,89**	**223,0**	**1,16**	**73,0**
2,80	234,4	**0,95**	**121,0**	**0,66**	**50,1**	16,00	1.339,5	-	-	**1,97**	**238,0**	**1,20**	**78,0**
2,90	242,8	**0,98**	**129,1**	**0,68**	**53,4**	16,50	1.381,4	-	-	**2,00**	**251,0**	**1,23**	**82,0**
3,00	251,2	**1,01**	**137,4**	**0,71**	**56,8**	17,00	1.423,3	-	-	**2,04**	**264,0**	**1,27**	**87,0**
3,20	267,9	**1,08**	**154,7**	**0,75**	**63,9**	17,50	1.465,1	-	-	**2,11**	**275,0**	**1,30**	**90,0**
3,40	284,7	**1,15**	**172,9**	**0,80**	**71,4**	18,00	1.506,9	-	-	**2,18**	**286,0**	**1,33**	**94,0**
3,60	301,4	**1,22**	**192,2**	**0,85**	**79,3**	18,50	1.548,8	-	-	-	-	**1,38**	**100,0**
3,80	318,1	**1,28**	**212,3**	**0,89**	**87,6**	19,00	1.590,7	-	-	-	-	**1,42**	**106,0**
4,00	334,9	**1,35**	**233,4**	**0,94**	**96,2**	19,50	1.632,6	-	-	-	-	**1,45**	**110,0**
4,20	351,6	1,42	255,5	**0,99**	**105,3**	20,00	1.674,4	-	-	-	-	**1,49**	**114,0**
4,40	368,4	1,49	278,5	**1,03**	**114,7**	20,50	1.716,3	-	-	-	-	**1,52**	**119,0**
4,60	385,1	1,55	302,4	**1,08**	**124,4**	21,00	1.758,1	-	-	-	-	**1,56**	**124,0**
4,80	401,9	1,62	327,3	**1,13**	**134,6**	21,50	1.800,0	-	-	-	-	**1,60**	**130,0**
5,00	418,6	1,69	353,1	**1,18**	**145,1**	22,00	1.841,9	-	-	-	-	**1,64**	**136,0**
5,20	435,3	1,76	379,8	**1,22**	**156,0**	22,50	1.883,7	-	-	-	-	**1,67**	**141,0**
5,40	452,1	1,82	407,5	**1,27**	**167,3**	23,00	1.925,0	-	-	-	-	**1,71**	**146,0**
5,60	468,8	1,89	436,1	**1,32**	**178,9**	24,00	2.000,0	-	-	-	-	**1,79**	**158,0**
5,80	485,6	1,96	465,6	**1,36**	**190,9**	25,00	2.100,0	-	-	-	-	**1,87**	**170,0**
6,00	502,3	2,03	496,0	1,41	203,3	26,00	2.180,0	-	-	-	-	**1,93**	**180,0**
6,20	519,1	2,09	527,4	1,46	216,0	27,00	2.270,0	-	-	-	-	**2,00**	**191,0**
6,40	535,8	2,16	559,6	1,50	229,1	28,00	2.350,0	-	-	-	-	**2,09**	**207,0**
6,60	552,6	2,23	592,8	1,55	242,6	29,00	2.430,0	-	-	-	-	**2,15**	**219,0**
6,80	569,3	2,30	626,9	1,60	256,5	30,00	2.500,0	-	-	-	-	**2,22**	**231,0**
7,00	586,0	2,36	661,9	1,65	270,7	-	-	-	-	-	-	-	-
7,20	602,8	2,43	697,9	1,69	285,2	-	-	-	-	-	-	-	-
7,40	619,5	2,50	734,7	1,74	300,2	-	-	-	-	-	-	-	-

Conversion: 1 Watt = 0,860 kCal

MICROFLEX®
A WATTS Brand

CONTACTS

Watts Water Technologies EMEA B.V.
EMEA Headquarters
Strawinskylaa 3099
1077 ZX Amsterdam
The Netherlands
tel.: +31 (0)20 2626700
fax: +31 (0)20 2626799
www.wattsindustries.com

Austria, Germany, Switzerland
Watts Industries Deutschland GmbH
Godramsteiner Hauptstr. 167
76829 Landau
Germany
tel.: +49 (0) 6341 9656 0
fax: +49 (0) 6341 9656 560
WIDE@wattswater.com

Belgium, The Netherlands
Watts Benelux
Beernemsteenweg 77A
8750 Wingene
tel: +32 51658708
fax: +32 51658720
info@wattsindustries.be

Denmark, Sweden, Finland, Norway
Watts Industries Nordic AB
Godthaabsvej 83
8660 Skanderborg, Denmark
tel.: + 45 86 52 00 32
www.wattswater.com
http://wattswater.eu

France
WATTS INDUSTRIES France
1590 avenue d'Orange CS 10101 SORGUES
84275 VEDENE cedex - (France)
tel.: +33 (0)4 90 33 28 28
fax: +33 (0)4 90 33 28 29/39

Italy
Watts Industries Italia S.r.l.
Via Brenno, 21
20853 Biassono (MB) - Italy
tel.: +39 039 4986.1
fax: +39 039 4986.222
infowattsitalia@wattswater.com

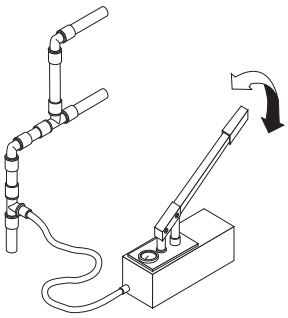
Poland, Russia
Watts Industries Polska sp.z o.o.
ul.Puławska 40A
05-500 Piaseczno
e-mail: biuro@wattswater.com
tel.: + 48 22 702 68 60
fax: + 48 22 702 68 61

Spain
Watts Ind. Ibérica, S.A.
Pol. Ind. La Llana - Av. La Llana, 85
08191 Rubí (Barcelona)
Spain
tel.: +34 902 431 074
fax: +34 902 431 075
info@wattsiberica.es

UK
Watts Industries UK Ltd
Colmworth Business Park
Eaton Socon
St. Neots
PE19 8YX
United Kingdom
tel.: +44 (0) 1480 407074
fax: +44 (0) 1480 407076
wattsuk@wattswater.com

PRESSURE TEST

Pressure test according to DIN 1988 Part 2



ATTENTION! The pressure test procedure is obligatory before closing the trench. The report of this test , fully completed and signed, has to be sent to local Watts sales org, to validate guarantee.

1. Pressure test. Constitute contractually agreed auxiliary work essential to the accomplishment of the contract and also form part of the contractor's performance without being stated in the performance specification. Prior to concealing, fill the finished pipework with water, taking care to avoid air locks. The pressure test must be conducted in two parts, starting with the preliminary test, followed by the main test.

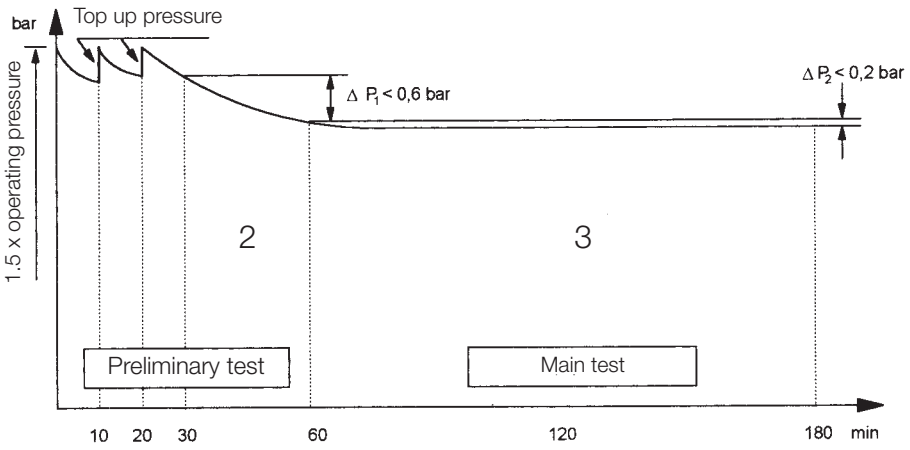
2. Preliminary test. The preliminary test involves applying a test pressure equal to 1.5 times the admissible operating pressure. This pressure must be regenerated twice within the space of 30 minutes at intervals of 10 minutes. Following a rest period of at least 30 minutes at full pressure, the test pressure must not have fallen by more than 0.6 bar (0.1 bar every 5 minutes). Leakages must not occur at any point in the system being tested.

3. Main test. The main test has to be conducted immediately after the preliminary test. The test takes 2 hours. At the end of this period, the test pressure recorded after the preliminary test must not have fallen by more than 0.2 bar. Leakages must not occur at any point in the system being tested.

In order to validate the pressure test, send the report to WATTS Sales Office.
See page 40

2 Preliminary Test	bar / psi	3 Main Test	bar / psi
2.1 Operating pressure x 1.5		3.1.1 Beginning	
2.2 After 10 min (restore 2.1)		3.1.2 End	
2.3 After 20 min (restore 2.1)		3.2 Test pressure	
2.4 After 30min		3.3 After 120 min	
2.5 After 60 min admissible pressure drop < 0.6 bar		3.4 Admissible pressure drop < 0.2 bar	

Leakage Testing - DIN 1988



Test the finished pipe-work before concealing! The correct execution and documentation of the pressure test for the entire piping system are requirements for the warranty.

To ensure that the underground network is completely watertight, we advise you to heat the system at 85°C for one hour, regularly checking that the connections are secure. Let the system cool down to 20°C before conducting a final check of all pipe connections.

MICROFLEX®

A WATTS Brand

Watts Industries Italia S.r.l.
Via Brenno, 21 • 20853 Biassono (MB) • Italy
Tel. +39 039 4986.1 • Fax +39 039 4986.222
infowattsitalia@wattswater.com • www.wattsindustries.com

MICROFLEX-CT-IT-M-UK-07-17-Rev0