TECHNICAL DATA - REHAU PE-X(A) PIPES

At REHAU, all types of pipes are subjected to constant quality assurance and pass through numerous short and long-term tests to ensure the quality of the REHAU pipes. Several standard tests conducted in the REHAU test laboratory are described below.
For polymer pipe materials subjected to thermal and mechanical loads, it must be observed that deformation and the strength depend on the temperature and the exposure time. To determine the permissible conditions for long-term loads, it is necessary to investigate the mechanical behaviour over a long period and at different temperatures.
This also applies to pipes subjected to internal pressure.

BURST PRESSURE TEST

In the burst pressure test, the pipes are subjected to a rising pressure in a test apparatus until the pipe ruptures. The burst pressure at room temperature is approximately seven times the maximum operating pressure.

Result of a burst pressure test with the universal pipe RAUTITAN Flex

NOTCH IMPACT TEST

The resistance of the pipes to the effects of impact is tested in a notch impact testing device. A hammer-shaped pendulum strikes the tested pipe under controlled conditions. Pipes made of crosslinked polyethylene have a very high resistance to these severe mechanical effects. The depicted test example shows a notch impact strength of the pipe without breaking at a temperature of –30° C.


Universal pipe RAUTITAN Flex in the notch impact testing device

TENSION TEST

In a tension testing machine, the pipes are pulled longitudinally at high force under controlled conditions until they break. Pipes made of crosslinked polyethylene show an extremely high extensibility in comparison with metal pipes.
The length of the extended pipe can be several times the original pipe length. The compression sleeve jointing technique cannot pull out under operating conditions:
The pipe is not pulled out of the joint.


Procedure of tension test

LONG-TERM TEST

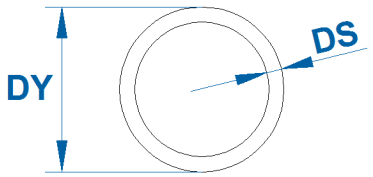
The use of pipes in domestic installations requires a service life of 50 years or more. To determine the long-term effects, e.g. by temperature fluctuations, pressure and mechanical loads, the pipes are subjected to extreme conditions of temperature and pressure in long-term tests and are tested periodically by the test methods described above. The pipes are then photo-optically examined.


Pipes in a long-term test (under pressure in a water bath

TECHNICAL DATA - REHAU PE-X(A) PIPES

TECHNICAL DATA	STANDARD	UNIT	PE-X(A)
Material	EN 15875, DIN 16892		PE-Xa EVAL
Colour (surface)			Red
Oxygen diffusion	DIN 4726		Oxygen-tight
Operating pressure (max)		Bar	6
Operating temperature		°C	80
Short-term maximum temp. (sliding)		°C	95
Thermal conductivity	ASTM C 1113	W/(m•K)	0.35
Pipe roughness		mm	0.007
Building material class	DIN 4102-1		B2
Construction product class	EN 13501-1		E
Material constant C			12
Available sizes		DY mm	25 - 125

TYPE	DY [MM]	DS [MM]	VOLUME [L/M]
PEX25	25	2.3	0.327
PEX32	32	2.9	0.539
PEX40	40	3.7	0.834
PEX50	50	4.6	1.307
PEX63	63	5.8	2.074
PEX75	75	6.8	2.959
PEX90	90	8.2	4.252
PEX110	110	10.0	6.359
PEX125	125	11.4	8.199



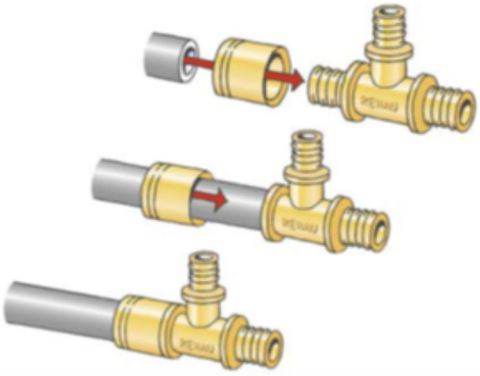
MIN. DEFLECTION RADII DURING INSTALLATION

The radius is depending on installation temperature. The following minimum deflection radii must be observed:

INSTALLATION TEMP.	MIN. DEFLECTION RADIUS
20 °C	10 x dy
10 °C	15 x dy
0 °C	25 x dy

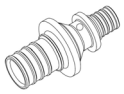
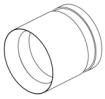
TECHNICAL DATA - REHAU COMPRESSION SLEEVE JOINT (PN6)

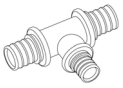
The compression sleeve jointing technique is a patented method developed by REHAU for the rapid, safe and permanently leaktight connection of PE-Xa pipes.
It consists simply of a fitting and the compression sleeve. Additional sealing elements are not required, as the pipe itself acts as a seal. Four sealing ribs guarantee a completely secure connection, which also withstands the tough application conditions on construction sites.
Specially designed ribs on the compression sleeves prevent the connection coming loose during operation.
The fittings are made from brass, red brass or steel. The compression sleeves are made from brass or red brass.



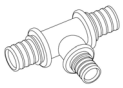
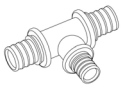
Only make compression sleeve joints with RAUTOOL tools.

The tool will be provided by Elgocell, **without** additional charge.



COUPLER STRAIGHT	COUPLER REDUCING	SLEEVE	ADAPTER MALE	TEE - EQUAL
20 x 2.0		20 x 2.0	20 - R15/20	20-20-20
25 x 2.3	25 - 20	25 x 2.3	25 - R20/25	25-25-25
32 x 2.9	32 - 25	32 x 2.9	32 - R25	32-32-32
40 x 3.7	40 - 32	40 x 3.7	40 - R32	40-40-40
50 x 4.6	50 - 40	50 x 4.6	50 - R40	50-50-50
63 x 5.8	63 - 50	63 x 5.8	63 - R50	63-63-63
75 x 6.8	75 - 63	75 x 6.8	75 - R63	75-75-75
90 x 8.2	90 - 75	90 x 8.2	90 - R75	90-90-90
110 x 10.0	110 - 90	110 x 10.0	110 - R90	110-110-110

TEE - REDUCED			TEE - REDUCED	
25-20-25	50-40-50	75-63-75	20-25-20	63-40-50
32-20-32	63-20-63	90-32-90	25-20-20	63-50-50
32-25-32	63-25-63	90-40-90	25-25-20	63-75-63
40-20-40	63-32-63	90-63-90	32-25-25	75-32-63
40-25-40	63-40-63	110-32-110	32-32-25	75-50-63
40-32-40	63-50-63	110-50-110	50-25-40	75-63-63
50-20-50	75-32-75	110-63-110	50-32-40	
50-25-50	75-40-75		63-32-50	
50-32-50	75-50-75		63-40-40	

INNOVATION CENTRE, GALLOWS HILL
WARWICK CV34 6UW

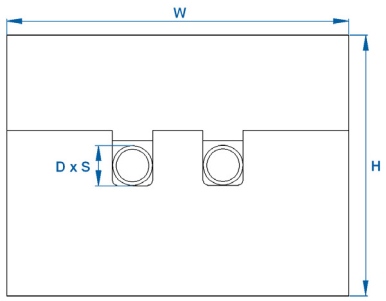
ELGOCELL

INFO@ELGOCELL.CO.UK WWW.ELGOCELL.CO.UK

TECHNICAL DATA - INSULATION EXPANDED POLYSTYRENE

Expanded Polystyrene (EPS) is widely recognised as a highly cost-effective construction and building material. Due to its exceptional load bearing, it is used in civil engineering projects like embankments for road construction and bridge work, etc.
The insulation also offers outstanding benefits in construction projects. The performance of the insulation will not degrade over time, ensuring full thermal efficiency across the lifetime of the building.

Using EPS as insulation for pipework is a fairly new phenomenon, however doing it correctly it will provide you with a super-insulated pipe network.



MAIN BENEFITS OF USING EPS AS INSULATION FOR UNDERGROUND PIPEWORK:

LIGHT WEIGHT:

- 2% expanded polystyrene and 98% air
- Easy to handle

ENVIRONMENT:

- Non-toxic, biological inert and contains no CFCs or HCFCs
- Reusable
- Recyclable up to seven times

VERSATILE AND DURABLE:

- Adaptable; easy to cut and adjust
- Does not support fungal, bacteriological or animal growth
- Non-hydroscopic*
- Rot-proof**

SPECIFICATION	STANDARDS	UNITS	EPS S200
CE Approval code	NS/SS/EN 13163		F305433, F311433-1
Thermal conductivity, Lamdba value (λ)	NS/SS 12667 el. NS/	W/mK	0.034
Water absorption, by immersion	NS12087	vol.%	2-3%
Compressive stress, short-term load	NS826	kPa	≥ 200
Compressive stress, long-term load 3 % total deformation 50 yrs	SS/EN1606	kPa	≥ 70
Density		Kg/m^3	30
Euroclass			F
Block length		m	2.40
Max temperature		C	80
BRE Rating	BRE		A+

* Minimum absorption and no capillarity
** Ideal for substructure applications

V17-08-18