

POLIPHON ACOUSTIC PIPE SYSTEMS



POLiphon

... the Polypropylene

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Acoustic Pipe System

POLIPHON COMBINES A NEW GENERATION OF MULTI-LAYERED MATERIAL OFFERING SILENCE WHEREVER YOU NEED IT...

ACOUSTIC COMFORT IS HIGHLY VALUED IN OUR EVERYDAY LIFE. OUR PHYSICAL AND MENTAL STATE, BOTH WHEN WE ARE ACTIVE DURING THE DAY AND WHEN WE REST AT NIGHT, TO A LARGE EXTENT DEPENDS ON THE NOISE LEVEL AROUND US. POLIPHON PROVIDES THIS COMFORT, OFFERING PEACE AND QUIET EVERYBODY CAN AFFORD.

ANTI-NOISE

Soundproof quality that reduces noise levels to acceptable volumes. Thanks to the multi-layer structure of the pipe wall and to a specially designed acoustic clamp, the waste system noise is shut down in the pipe lines. Vibrations between the sections of pipe are absorbed and the acoustic bridge between the pipe and the building structure are eliminated.

SUSTAINABILITY

- produced by ISO14001 certified manufacturer
- 100% recyclable

ANTI-CORROSIVE

Made from specifically selected materials POLIphon is resistant to:

- internal and external corrosion
- penetration of aggressive agents
- high temperature of the flowing waste

TROUBLE-FREE & PERFECT

- unique design
- easy to assemble, installer-friendly
- wide range of pipes and fittings
- compatible with existing PVC DWV systems, using Poliphon PP to PVC adaptors



POLiphon®

Acoustic pipe system

EXTERNAL LAYER

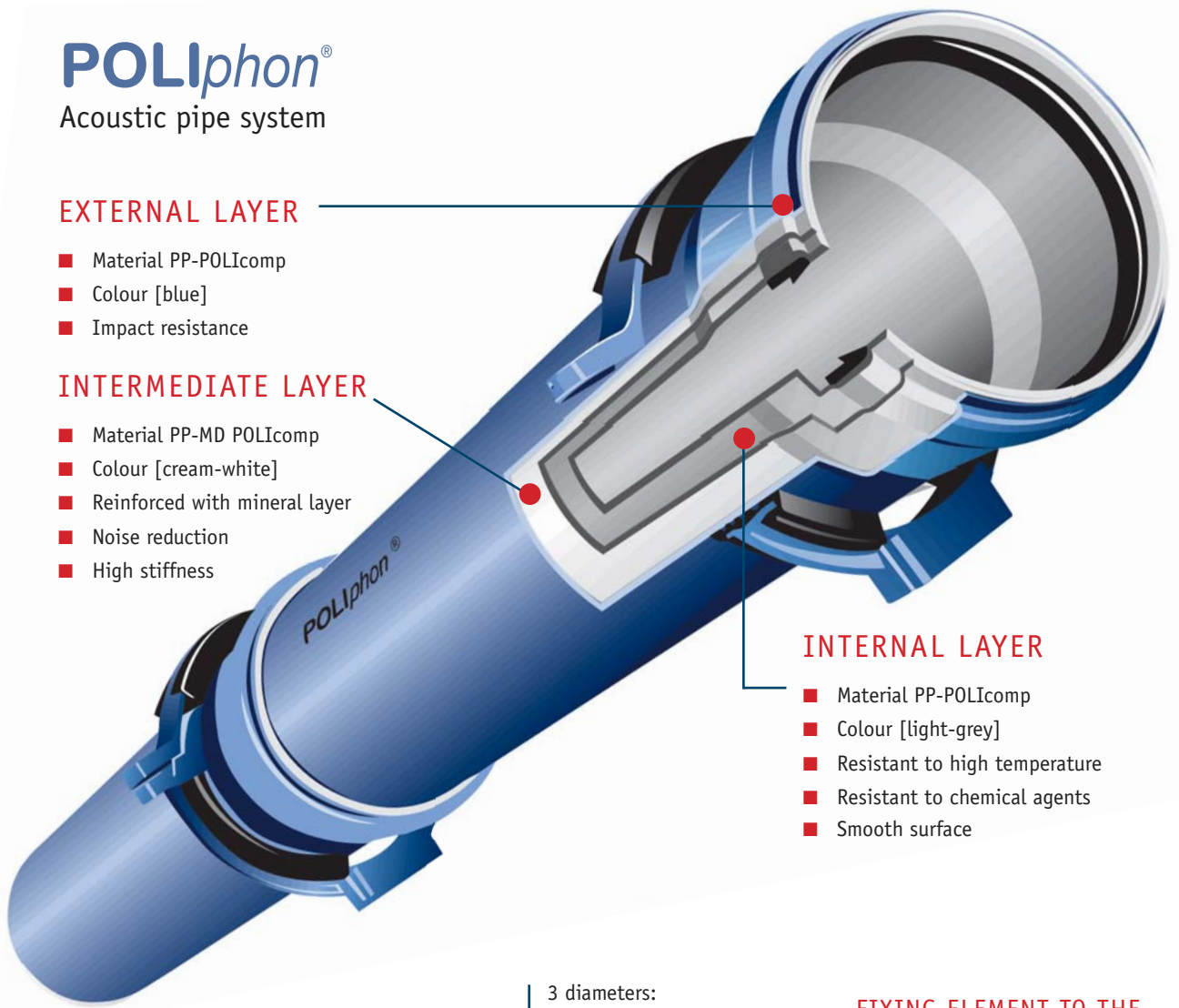
- Material PP-POLiComp
- Colour [blue]
- Impact resistance

INTERMEDIATE LAYER

- Material PP-MD POLiComp
- Colour [cream-white]
- Reinforced with mineral layer
- Noise reduction
- High stiffness

INTERNAL LAYER

- Material PP-POLiComp
- Colour [light-grey]
- Resistant to high temperature
- Resistant to chemical agents
- Smooth surface



POLiclamp

Acoustic clamp system

3 diameters:

- ø 50
- ø 75
- ø 110 (metal)

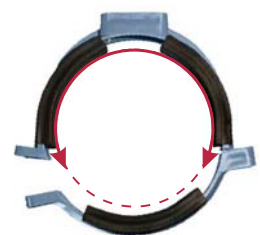
FIXING ELEMENT TO THE BUILDING'S STRUCTURE

Elimination of an acoustic bridge between the pipe and the building structure.

CLAMPS

Designed to be installed with an M10 screwed rod.

ASYMMETRIC SHAPE



Clamp lock-in

THREE ACOUSTIC RUBBER SOUND PROOFING INLAYS

Designed to absorb the acoustic vibration within the system.

REDUCING WASTE SYSTEM NOISE

THE NOISE LEVEL MEASUREMENT - PHONOMETRY TEST

The noise level of the POLiPhon system has been measured and tested by the renowned Institute of Construction Physics - FRAUNHOFER INSTITUT in Stuttgart in accordance with EN 14366 (Laboratory measurements of noise level from the waste system).



NOISE LEVEL MEASUREMENT

Noise level measurement in the POLiPhon system was performed in test rooms TF(b) and TF(f) (figure A). According to the applicable standards, the chart below (figure B) presents a comparison of noise levels measured in dB at the flow rate of $Q_p=4$ l/s, where the tested medium was water. The first column illustrates a noise level value measured on the POLiPhon system with open acoustic clamps, the second column shows a value measured with closed acoustic clamps. These results are compared with the noise level during the flow through a cast-iron system with closed fixing clamps.

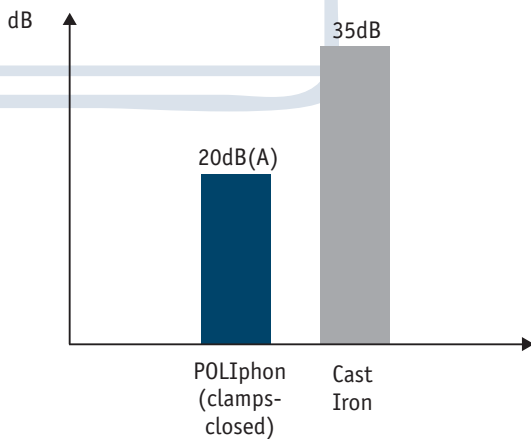
POLICLAMP – SYSTEM OF ACOUSTIC CLAMPS

Specially designed POLiClamp acoustic clamps were used for the installation of the POLiPhon system and for the noise level measurement purposes.

INSTALLATION WALL

The POLiPhon system was installed on a wall which was made from sandlime brick and plastered (220 kg/m²).

FIGURE B



EVERYDAY NOISE

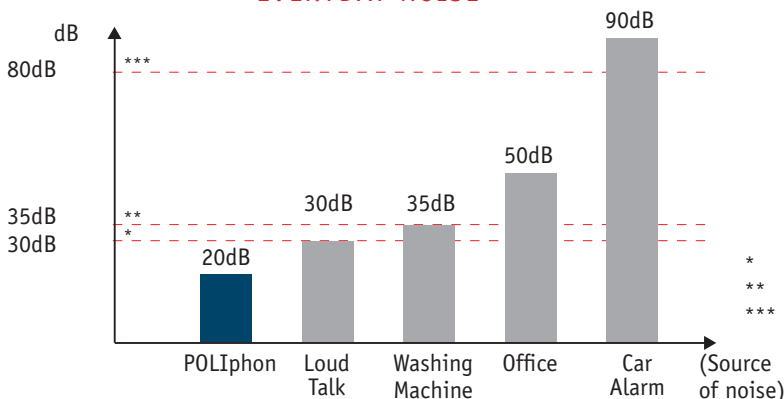
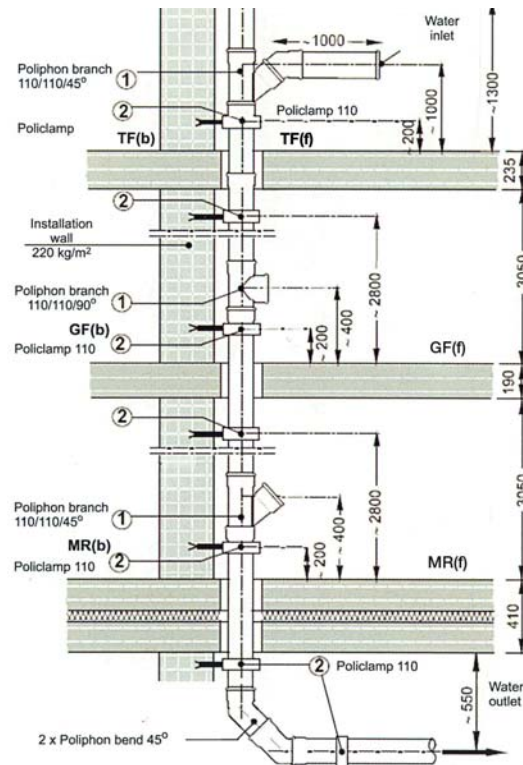


FIGURE A



MARKING

- TF - top floor
- GF - ground floor
- MR - measurement room
- (f) - front
- (b) - back

* Annoying noise, problems with concentration
 ** Nervous system fatigue, sleep and rest disorders
 *** Health damage

TECHNICAL CHARACTERISTICS OF THE SYSTEM

BENEFITS OF THE POLIPHON MULTI-LAYER (PP) SYSTEM

- noise reduction down to 20dB
- dimensional compliance with the European EN 1451
- suitable for installation within the building's outline (up to the sewer connections)
- suitable for installation in temperatures below 0°C
- high resistance to waste temperatures up to 90°C (temporary 95°C)
- high resistance to chemical compounds contained in the waste
- smooth bore resists incrustation and blockages



RANGE OF PRODUCTS

- full range of pipes and fittings Ø50, Ø75, Ø110
- acoustic clamps

COLOUR

- external layer - blue
- intermediate layer - white(cream)
- internal layer - light-grey

MULTI-LAYER STRUCTURE

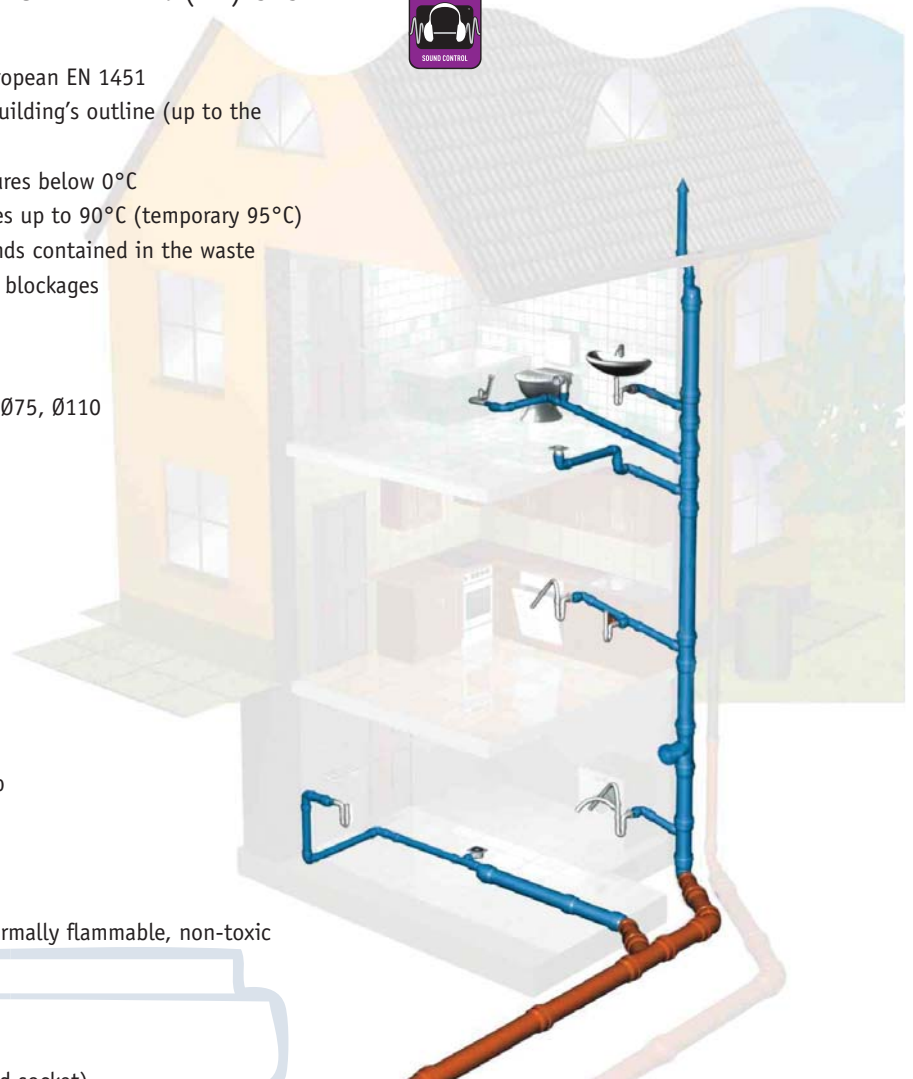
- external layer - PP-POLIcomp
- intermediate layer - PP-MD POLIcomp
- internal layer - PP-POLIcomp

FIRE RESISTANCE CLASS

- according to DIN 4102 - class B-2 normally flammable, non-toxic
- according to EN 13501 - class E

TYPES OF CONNECTIONS

- push-fit rubber ring joints (spigot and socket)
- fusion welding

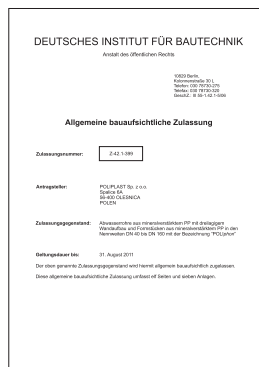


BRANZ



BRANZ Appraisal
No. 610(2008)

DIBT



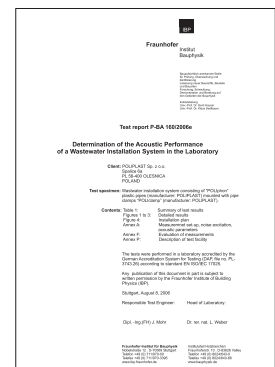
German Institute
of Building Technogy
in Berlin

SKZ



Testing Report
SKZ Institute

IBP



Institute of Building Physics
Fraunhofer-Stuttgart

BRANZ APPRAISALS

This is to Confirm that

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are holders of BRANZ Appraisal

No. 610 (2008)

Poliphon[®] Acoustic Pipe System

For use as a sanitary plumbing system that consists of discharge pipes and fittings that have been acoustically designed to reduce the noise caused by water and waste passing through the discharge system.

BRANZ Appraised

Appraisal No.610 [2008]

Issue Date: 29 April 2008



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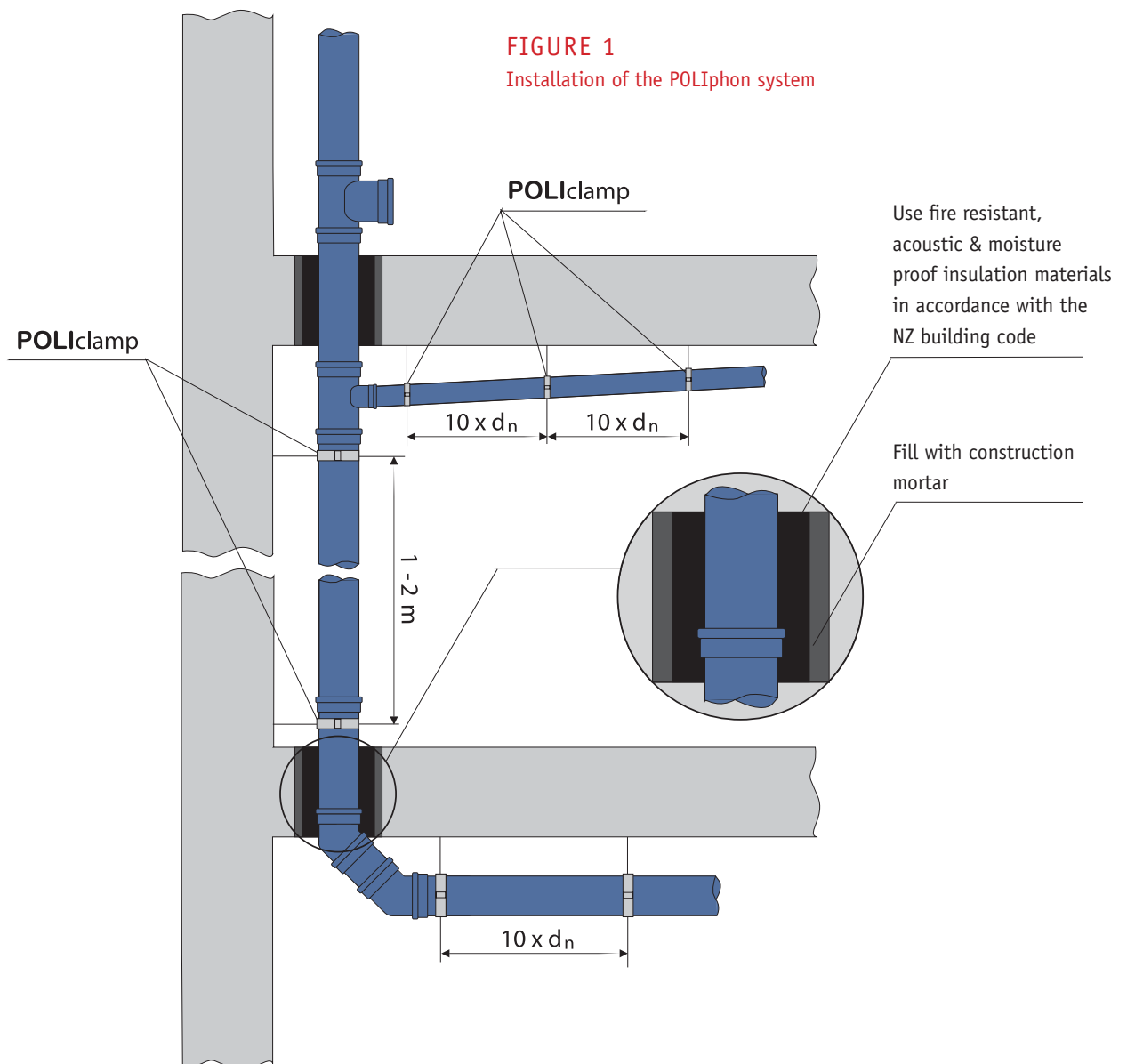
C Preston

Chief Executive

INSTALLATION INSTRUCTIONS

INSTALLATION OF THE POLIPHON SYSTEM

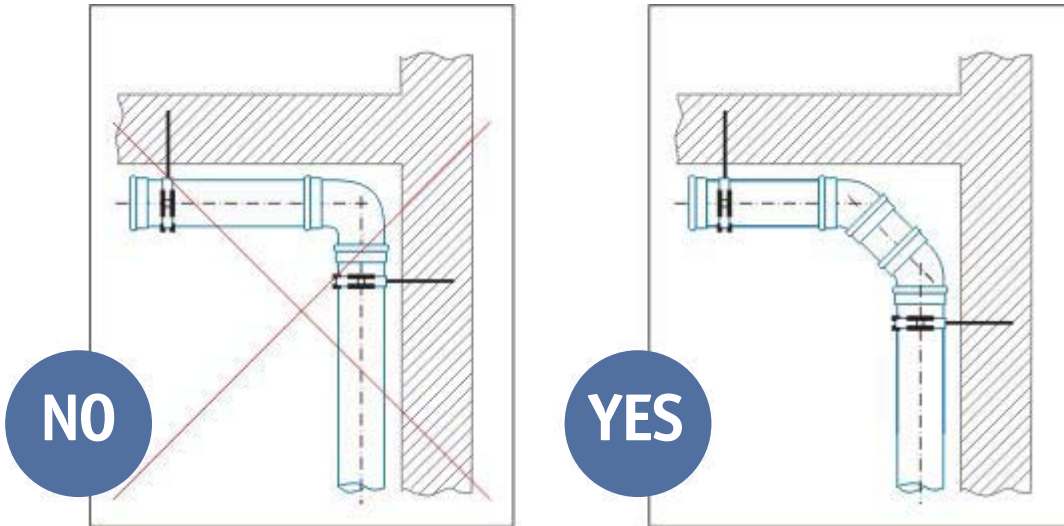
- To ensure the integrity of the system, specially designed acoustic clamps –POLiClamp should be installed. The required distance between the POLiClamp brackets is outlined below (figure 1). Use an M10 screwed rod.
- The installation of a sound-proof pipe through an obstacle (concrete slab/floor) in a building is illustrated below (figure 1). The section needs to be protected with a “sleeve” made from material which ensures acoustic insulation (to prevent acoustic bridges) and moisture insulation.
- The floor waste gully and boss junction need to be supported by a vibration control lining between the strap and the floor waste gully.



HORIZONTAL CHANGE OF THE FOLLOWING WASTE WATER DIRECTION (FIGURE 2)

Ensure the 45° fittings (instead of 90°) are used for laying the pipeline while changing the direction of waste water flow by 90°. Such a small change in the flow direction may cause some loss in the energy of the flowing waste water, making the acoustic properties of the system more efficient.

FIGURE 2



STABILISING SECTIONS (FIGURE 3)

A 'short' stabilising section.

In the case of a stack up to 10m high, a change of direction from the stack to a horizontal connection should be made with 2 x 45° bend connections and one pipe section $L < 240\text{mm}$ of a given diameter.

A 'long' stabilising section.

In the case of a stack over 10m high, the length of the section between bend connections should be $L = 240\text{mm}$.

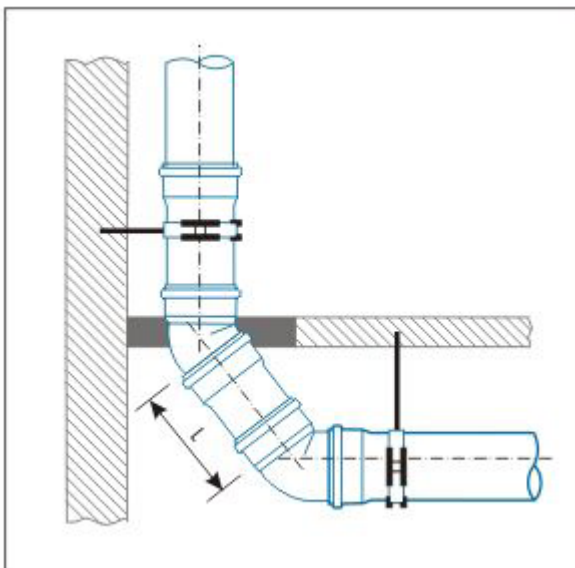


FIGURE 3

SYSTEM CHEMICAL RESISTANCE TABLE

Chemical or Product	Concentration	Temperature °C			Chemical or Product	Concentration	Temperature °C		
		20°C	60°C	90°C			20°C	60°C	90°C
Acetic acid	Up to 40%	S	S	-	Magnesium chloride	Sat.sol	S	S	-
Acetic acid	50%	S	S	L	Magnesium sulphate	Sat.sol	S	S	-
Acetic acid, glacial	>96%	S	L	NS	Milk		S	S	S
Acetic anhydride	100%	S	-	-	Monochloroacetic acid	>85%	S	S	-
Acetone	100%	S	S	-	Nitric acid	Up to 30%	S	NS	NS
Acrylonitrile	100%	S	-	-	Nitric acid	From 40 to 50%	L	NS	NS
Allyl alcohol	100%	S	S	-	Oleic acid	100%	S	L	-
Ammonia, aqueous	Sat.sol	S	S	-	Oleum		S	L	-
Ammonia, dry gas	100%	S	-	-	(sulphuric acid with 60% of So3)				
Ammonia, liquid	100%	S	-	-	Oxalic acid	Sat.sol	S	L	NS
Ammonium acetate	Sat.sol	S	S	-	Oxygen, gas		S	-	-
Ammonium chloride	Sat.sol	S	S	-	Phenol	90%	S	-	-
Ammonium nitrate	Sat.sol	S	S	S	Potassium bromate	Up to 10%	S	S	-
Ammonium sulphate	Sat.sol	S	S	S	Potassium chlorate	Sat.sol	S	S	-
Aniline	100%	S	S	-	Potassium chromate	Sat.sol	S	S	-
Beer		S	S	-	Potassium cyanide	Sol	S	-	-
Benzene	100%	L	NS	NS	Potassium dichromate	Sat.sol	S	S	S
Benzoic acid	Sat.sol	S	S	-	Potassium ferricyanide	Sat.sol	S	S	-
Borax	Sol	S	S	-	Potassium hydroxide	Up to 50%	S	S	S
Boric acid	Sat.sol	S	-	-	Potassium nitrate	Sat.sol	S	S	-
Bromine, liquid	100%	NS	NS	NS	Potassium permanganate	(2 N) 30%	S	-	-
Butane, gas	100%	S	-	-	Propane, gas	100%	S	-	-
Butanol	100%	S	L	L	Pyridine	100%	L	-	-
Butyl acetate	100%	L	NS	NS	Seawater		S	S	S
Calcium carbonate	Sat.sol	S	S	S	Sodium chlorate	Sat.sol	S	S	-
Calcium nitrate	Sat.sol	S	S	-	Sodium hydroxide	From 10 to 60%	S	S	S
Carbon dioxide, dry gas		S	S	-	Sodium hypochlorite	10%-15%	S	-	-
Chlorine, dry gas	100%	NS	NS	NS	Sodium sulphite	40%	S	S	S
Chlorine, liquid	100%	NS	NS	NS	Sulphuric acid	Up to 10%	S	S	S
Chloroform	100%	L	NS	NS	Sulphuric dioxide, dry or wet	100%	S	S	-
Chlorosulphonic acid	100%	NS	NS	NS	Tartaric acid	Sat.sol	S	S	-
Chromic acid	Up to 40%	S	L	NS	Tin (IV) chloride	Sol	S	S	-
Citric acid	Sat.sol	S	S	S	Tin (II) chloride	Sat.sol	S	S	-
Copper (II) chloride	Sat.sol	S	S	-	Toluene	100%	L	NS	NS
Cyclohexanone	100%	L	NS	NS	Trichloroethylene	100%	NS	NS	NS
Dextrin	Sol	S	S	-	Urea	Sat.sol	S	S	-
Dichloroethylene (A and B)	100%	L	-	-	Vinegar		S	S	-
Dichloromethane	100%	L	NS	-	Wines		S	S	-
Ethanolamine	100%	S	-	-	Xylene	100%	NS	NS	NS
Ethyl alcohol	Up to 95%	S	S	S					
Ethyl ether	100%	S	L	-					
Ethylene glycol	100%	S	S	S					
Formaldehyde	40%	S	-	-					
Formic acid	10%	S	S	L					
Gasoline, petrol (aliphatic hydrocarbons)		NS	NS	NS					
Glycerine	100%	S	S	S					
Glycolic acid	30%	S	-	-					
Hexane	100%	S	L	-					
Hydrochloric acid	Up to 20%	S	S	S					
Hydrochloric acid	30%	S	L	L					
Hydrogen peroxide	Up to 30%	S	L	-					
Hydrogen sulphide, dry gas	100%	S	S	-					
Lactic acid	Up to 90%	S	S	-					

MARKING:

- S** - satisfactory
- L** - limited
- NS** - not satisfactory
- Sat.sol** - Saturated aqueous solution, prepared at 20°C
- Sol** - Aqueous solution at a concentration higher than 10% but not saturated

Poliphon pipes, fittings and rubber gaskets are meant for transporting waste water ranging from acids (pH 2) to alkalis (pH 12) present in households. However in the case of industrial waste water, its chemical composition and concentration should be analysed.

CUTTING & PIPE PREPARATION

- Ensure the pipe is cut square (figure 2)
- Ensure the rubber ring and spigot are clean.

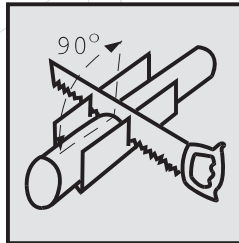


FIG 2

- The end of the pipe should be smooth and clean.
- Fully chamfer the pipe at 15°.

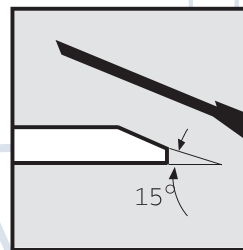


FIG 3

PIPE & FITTING JOINTING

- Clean and generously lubricate with Marley pipe jointing lubrication
- Align the spigot and socket before insertion
- Firmly push the pipe spigot into the socket

Pull the pipe/spigot back 10mm out of the socket to allow for thermal expansion.

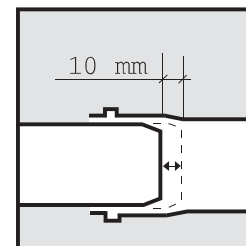
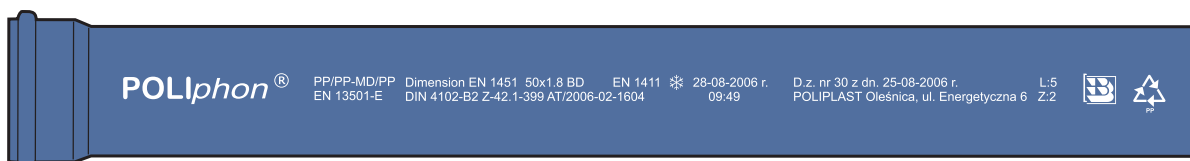


FIG 4

IDENTIFICATION

Marking of the POLiPhon system

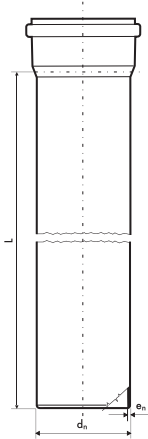


PACKING, STORAGE AND TRANSPORT OF THE POLIPHON SYSTEM

- POLiPhon pipes and fittings must not be transported loose with other building materials as this may result in their damage whilst in transit.
- Pipes should be transported horizontally. Utmost care needs to be taken while unloading pipes to prevent damage, particularly in low temperatures.
- Pipes are supplied in bundles and secured with straps to prevent sliding. Shorter-length pipes and fittings are packed in fixed quantities in cardboard boxes.
- Pipes should be stored horizontally on an even surface in stacks up to 1,5 m high.
- All the products must be protected against exposure to sunshine. They can be kept in open storehouses for up to 12 months.

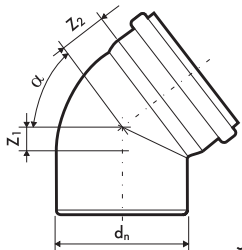
PRODUCT RANGE

POLIPHON PIPE WITH SOCKET



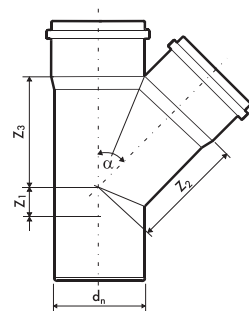
d_n (mm)	Product Code	e_n (mm)	L(mm)	Pack
50	PA.100.50.0.15	1.8	150	20
50	PA.100.50.1.0	1.8	1000	10
50	PA.100.50.1.5	1.8	1500	10
50	PA.100.50.3.0	1.8	3000	10
75	PA.100.75.1.0	2.3	1000	10
75	PA.100.75.1.5	2.3	1500	10
75	PA.100.75.3.0	2.3	3000	10
110	PA.100.110.0.15	3.4	150	15
110	PA.100.110.1.0	3.4	1000	10
110	PA.100.110.1.5	3.4	1500	10
110	PA.100.110.3.0	3.4	3000	10

POLIPHON BEND



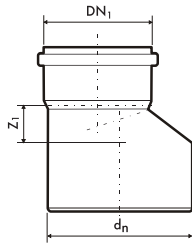
α°	d_n (mm)	Product Code	Z_1 (mm)	Z_2 (mm)	Pack
15°	50	PA.101.50.15	5	9	20
	75	PA.101.75.15	7	10	20
	110	PA.101.110.15	9	14	8
30°	50	PA.101.50.30	9	12	20
	75	PA.101.75.30	12	15	20
	110	PA.101.110.30	17	22	8
45°	50	PA.101.50.45	12	16	20
	75	PA.101.75.45	18	21	20
	110	PA.101.110.45	25	29	14
87.5°	50	PA.101.50.88	28	31	20
	75	PA.101.75.88	40	43	20
	110	PA.101.110.88	57	61	14

POLIPHON JUNCTION



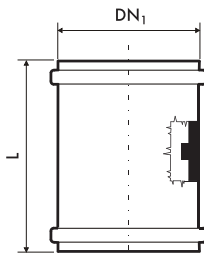
α°	d_n (mm)	Product Code	Z_1 (mm)	Z_2 (mm)	Z_3 (mm)	Pack
45°	50/50	PA.104.50.45	12	61	61	20
	75/50	PA.104.75.50.45	-	79	74	10
	75/75	PA.104.75.45	18	91	91	10
	110/50	PA.104.110.50.45	-	104	91	6
	110/110	PA.104.110.45	25	134	134	7

POLIPHON LEVEL INVERT



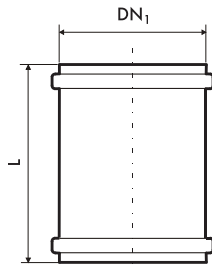
d_n/DN_1 (mm)	Product Code	Z_1 (mm)	Pack
75/50	PA.123.75.50	20	20
110/50	PA.123.110.50	40	17
110/75	PA.123.110.75	26	15

POLIPHON STOP COUPLER

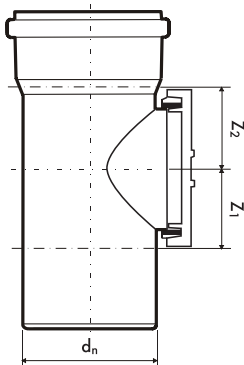


DN_1 (mm)	Product Code	L (mm)	Pack
50	PA.121.50	105	20
75	PA.121.75	144	20
110	PA.121.110	128	6

POLIPHON SLIP COUPLER

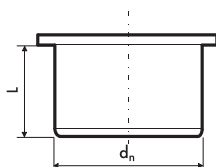


POLIPHON INSPECTION PIPE



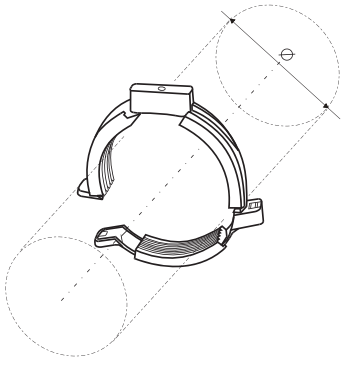
d_n (mm)	Product Code	Z_1 (mm)	Z_2 (mm)	Pack
110	PA.129.110	58	62	6

POLIPHON SOCKET PLUG



d_n (mm)	Product Code	L (mm)	Pack
50	PA.137.50	39	20
75	PA.137.75	39	20
110	PA.137.110	46	20

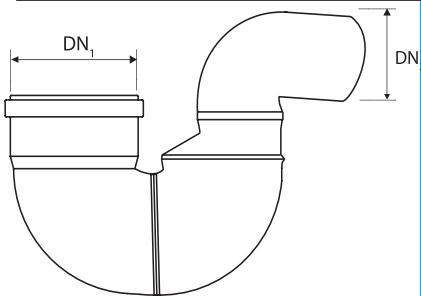
POLIPHON - PIPE ACOUSTIC CLAMP



Ø(mm)	Product Code	Pack
50	PA.140.50	10
75	PA.140.75	10
110	PA.140.110	5
110	PA.140.110M*	

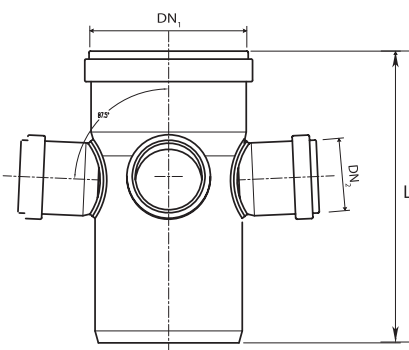
*Metal acoustic clamp

POLIPHON ADJUSTABLE FLOOR WASTE GULLY



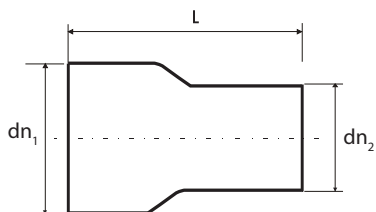
DN ₁ /DN ₂ (mm)	Product Code
110/75	PA.159.110.75

POLIPHON BOSS JUNCTION



DN ₁ /DN ₂ (mm)	Product Code	L (mm)	Outlets/degree
110/50	PA.170.110.50.2.88	220	2 x 88°
110/50	PA.170.110.50.2	220	2 x 180°
110/50	PA.170.110.50.3	220	3 x 88°

POLIPHON PP-PVC REDUCER



PP-PVC d _{n1} /d _{n2} (mm)	Product Code	L (mm)
50/40	PA.50.40.400	400
50/50	PA.50.50.200	200
75/65	PA.75.65.200	200



WORKING WITH MARLEY
FOR A BETTER TOMORROW

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