

TECHNICAL CATALOGUE 2020



INDIA

ADVANCED FLOW
SYSTEMS™



hotwatersolutions

www.heliroma.pt





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FOUNDED IN 1996,
HELIROMA PLÁSTICOS
S.A. IS LOCATED IN THE
INDUSTRIAL AREA OF
ALBERGARIA-A-VELHA,
PORTUGAL.

AT THE BEGINNING OF ITS ACTIVITY, THE COMPANY FOCUSED ON THE PRODUCTION OF HIGH AND LOW DENSITY POLYETHYLENE PIPES FOR THE CONSTRUCTION AND AGRICULTURAL SECTORS.

With the development of the market, increasing competition and the company's strong market position, **HELIROMA** expanded its range of products, providing the market with more solutions and focusing on a market segment with higher demands for quality and avant-garde technologies; the company also invested in the production of pipe systems for hot/cold water and heating. This change encouraged the increase in highly qualified human resources and the outcome of product quality, making the company a reference in several EU countries, especially in the Iberian Peninsula, for manufacturing PP-R pipes and PP-R fittings

Today, **HELIROMA** is the leading Iberian manufacturer offering the widest range of products and the largest PP-R pipe diameter and fittings (currently Ø400mm).

Currently, **HELIROMA** is one of the few European manufacturers producing PP-R pipes with fiberglass compound (ROMAFASER), also known as the third generation pipe. This characteristic has allowed the company to conquer a very significant portion of the European market and to produce these pipes for many of the world-renowned manufacturers.

Additionally, **HELIROMA** manufactures crosslinked Polyethylene pipes (PE-Xa) with and without oxygen barriers, and is also one of the few Iberian manufacturers of multilayer pipes (PE-RT – Aluminium – PE-RT).

The quality of **HELIROMA's** products and services has been certified in several European countries, which have distinguished the company's excellence with their certifications: CERTIF (Portugal), AENOR (Spain), QB (France), DVGW and SKZ (Germany) Bulgarcontrol (Bulgaria), among others.



The recognition of the quality of **HELIROMA** products by these certifying entities has contributed to achieve company success in an increasingly competitive and demanding market such as the plumbing market. This recognition and the excellent performance of the **HELIROMA** community have greatly contributed to the company's success, which has been translated into continuous growth since 2003.

Every year, **HELIROMA** participates in the most important trade shows of the sector, both in Europe and in the Middle East, in order to promote and present the company, its products and services to a greater number of professionals. Currently, **HELIROMA** exports to 30 countries where it is physically present. **HELIROMA** invests strongly in the areas of quality, staff training, as well in the certification of the company and its products. These objectives have been achieved with integrated quality, health and safety and environmental management systems, assured by AENOR and IQNET certification.

All pipes and fittings manufactured by **HELIROMA** undergo Inspection Plans and Production Tests, guaranteeing product conformity. In order to enhance the results obtained at the **HELIROMA** laboratory, tests are carried out in accredited and internationally recognised laboratories.

Today, the company is organising itself to promote its products and services to a challenging new audience – design, supervision and architecture offices, as well.



mission

To offer **quality products and excellent services** to its clients, **providing added value**, comfort and trust to the end consumer.

vision

To become a **unique reference** on the **national and international** markets, consolidating **long-lasting relationships** with clients, suppliers and employees.

values

- respect, development and people training
- ethics
- excellent client service
- profitability



THE QUALITY
IMPROVEMENT
OF HELIROMA
PRODUCTS
DEPENDS
FUNDAMENTALLY
ON QUALITY
CONTROL

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HELIROMA S.A. has implemented a Quality Control System, in compliance with ISO 9001, for the purpose of demonstrating its ability to continuously and consistently manufacture a product that simultaneously meets client's needs and their applicable internal and/or legal regulatory requirements.

The systematic approach to **HELIROMA'S** activities, our process-based organization, as well as the definition of objectives and goals of continuous improvement are some of the relevant outcomes of the application of these procedures.

The manufacturing process can be observed using laboratory analysis and/or on-line collection of the product specification values under manufacture.

FOR LABORATORY ANALYSIS PURPOSES, SAMPLES OF THE DIFFERENT PRODUCTS ARE COLLECTED PERIODICALLY AND MEASURED IN THE LABORATORY.

To measure the specifications of the products, we also use tools that collect, store and process the information and provide the operator with data on the variability of the specifications.



QUALITY CONTROL OF HELIROMA PRODUCTS IS CARRIED OUT IN THREE PHASES:

1ST INSPECTION UPON RECEIPT OF RAW MATERIALS AND SUPPLIES

All raw materials received undergo inspection control (Receipt Inspection Control – P.I.E.R.), previously defined and according to regulatory requirements.

All raw materials are properly identified with regards to their compliance status.

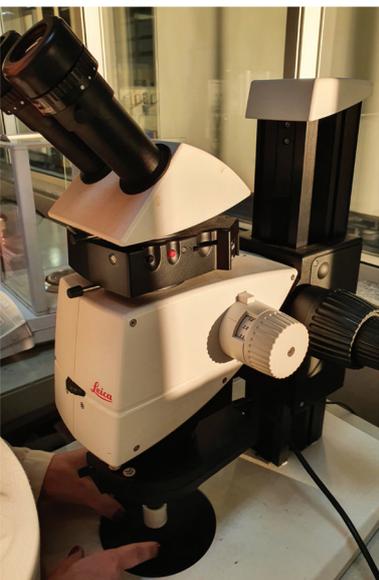
2ND PRODUCT INSPECTION (DURING MANUFACTURING PROCESS)

In compliance with the requirements imposed by standards and certifying entities, Heliroma implemented the Manufacturing Inspection Plans - P.I.E.P., which workers are duly informed of, so as to avoid failures during their practical application. Periodically, the dimensions and condition of the pipes and appearance of the fittings are measured and recorded on the computer system to obtain online data for the statistical control of the process.

3RD LABORATORY INSPECTION

After Manufacturing Inspection approval, all pipe and fitting systems are submitted to a number of specific tests for each product. For this phase, a number of Laboratory Inspection and Test plans (P.I.E.L.) were designed, based on regulatory provisions and other requirements imposed by certifying entities.

All equipment used for the approval of our products must comply with a calibration plan, ensuring the accuracy of the final measuring results.





HEL IKL IMA UNE-53960 EX PE-RT /
KL IMA UNE-53960 EX PE-RT / AL



**THE BEST
SOLUTION FOR**

Central Heating, Air
Conditioning, Hot and
Cold Sanitary Waters
and Floor Heating

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HELIKLIMA
PE-RT / AL / PE-RT



i ADDITIONAL INFORMATION **PAGE 28**

REFERENCE	DIAMETER	COIL	BAR / BAG
	(mm)	(m)	(un/m)
P-PERTAL16	16x2,0	100	-
P-PERTAL18	18x2,0	100	-
P-PERTAL20	20x2,0	100	-
P-PERTAL25	25x2,5	50	-
P-PERTAL32	32x3,0	50	-
P-PERTAL16B	16x2,0	-	4/200
P-PERTAL18B	18x2,0	-	4/160
P-PERTAL20B	20x2,0	-	4/160
P-PERTAL25B	25x2,5	-	4/100
P-PERTAL32B	32x3,0	-	4/80
P-PERTAL40B	40x4,0	-	5/75
P-PERTAL50B	50x4,5	-	5/50
P-PERTAL63B	63x6,0	-	5/25
PERTAL75B	75x7,5	-	5/15
PERTAL90B	90x8,5	-	5/10
PERTAL110B	110x10,0	-	5/5

SOCKET



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIAMETER	SMALL BOX	LARGE BOX
	(mm)	(un)	
K200016	16x16	45	360
K200018	18x18	30	240
K200020	20x20	30	240
K200025	25x25	20	160
K200032	32x32	10	80
K200040	40x40	1	-
K200050	50x50	1	-
K200063	63x63	1	-
K200075	75x75	1	-
K200075*	75x75	1	-
K200090*	90x90	1	-
K2000110*	110x110	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

REDUCER



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIAMETER	SMALL BOX	LARGE BOX
	(mm)		
K238018	18x16	37	296
K238020	20x16	37	296
K238021	20x18	30	240
K238025	25x16	20	160
K238027	25x18	20	160
K238026	25x20	20	160
K238032	32x20	12	96
K238033	32x25	12	96
K238042	40x25	1	-
K238043	40x32	1	-
K238053	50x32	1	-
K238054	50x40	1	-
K238064	63x40	1	-
K238065	63x50	1	-
K238076	75x63	1	-

FEMALE THREADED ADAPTOR



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS	SMALL BOX	LARGE BOX
	(mm x in)		
K234016	16x1/2"	40	320
K234018	18x1/2"	35	280
K234019	18x3/4"	30	240
K234020	20x1/2"	35	280
K234021	20x3/4"	30	240
K234026	25x1/2"	20	160
K234025	25x3/4"	20	160
K234027	25x1"	12	96
K234033	32x3/4"	12	96
K234032	32x1"	12	96
K234040	40x11/4"	1	-
K234050	50x11/2"	1	-
K234051	50x11/4"	1	-
K234063	63x2"	1	-
K234075	75x21/2"	1	-
K234075*	75x21/2"	1	-
K234090*	90x3"	1	-
K2340110*	110x4"	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

MALE THREADED ADAPTOR



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS	SMALL BOX	LARGE BOX
	(mm x in)		
K325016	16x1/2"	50	400
K325018	18x1/2"	40	320
K325019	18x3/4"	35	280
K325020	20x1/2"	40	320
K325021	20x3/4"	35	280
K325026	25x1/2"	20	160
K325025	25x3/4"	18	144
K325027	25x1"	16	128
K325033	32x3/4"	10	80
K325032	32x1"	8	64
K325040	40x11/4"	1	-
K325050	50x11/2"	1	-
K325063	63x2"	1	-
K325075	75x21/2"	1	-
K325075*	75x21/2"	1	-
K325090*	90x3"	1	-
K3250110*	110x4"	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

FEMALE THREADED ADAPTOR WHIT LOOSE NUT



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS (mm x in)	SMALL BOX	LARGE BOX
		(un)	
K234016-L	16x1/2"	48	384
K234018-L	18x1/2"	40	320
K234020-L	20x1/2"	40	320
K234021-L	20x3/4"	30	240
K234025-L	25x3/4"	18	144
K234032-L	32x1"	14	112

ELBOW 90°



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIAMETER	SMALL BOX	LARGE BOX
	(mm)	(un)	
K206016	16x16	32	256
K206018	18x18	22	176
K206020	20x20	22	176
K206025	25x25	11	88
K206032	32x32	6	48
K206040	40x40	1	-
K206050	50x50	1	-
K206063	63x63	1	-
K206075	75x75	1	-
K206075*	75x75	1	-
K206090*	90x90	1	-
K2060110*	110x110	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

FEMALE THREADED ELBOW



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS (mm x in)	SMALL BOX	LARGE BOX
		(un)	
K208016	16x1/2"	30	240
K208017	16x3/4"	18	144
K208018	18x1/2"	22	176
K208019	18x3/4"	20	160
K208020	20x1/2"	22	176
K208021	20x3/4"	20	160
K208025	25x3/4"	15	120
K208026	25x1/2"	10	80
K208027	25x1"	8	64
K208033	32x3/4"	8	64
K208032	32x1"	8	64
K208042	40x1 1/2"	1	-
K208041	40x1 1/4"	1	-
K208040	40x1"	1	-
K208051	50x1 1/2"	1	-
K208050	50x1"	1	-
K208063	63x2"	1	-
K208075	75x2 1/2"	1	-
K208075*	75x2 1/2"	1	-
K208090*	90x3"	1	-
K2080110*	110x4"	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

MALE THREADED ELBOW



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS	SMALL BOX	LARGE BOX
	(mm x in)		
K209016	16x1/2"	25	200
K209018	18x1/2"	20	160
K209020	20x1/2"	20	160
K209025	25x3/4"	12	96
K209026	25x1/2"	12	96
K209032	32x1"	8	64
K209075*	75x21/2"	1	-
K209090*	90x3"	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

WALL PLATE FEMALE THREADED ELBOW



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS (mm x in)	SMALL BOX	LARGE BOX
		(un)	
K212016	16x1/2"	14	112
K212018	18x1/2"	12	96
K212020	20x1/2"	12	96
K212025	25x3/4"	10	80

TEE



CHARACTERISTICS

PRESS PROFILE U

i ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS (mm)	SMALL BOX	LARGE BOX
		(un)	
K230016	16x16x16	20	160
K230018	18x18x18	14	112
K230020	20x20x20	14	112
K230025	25x25x25	8	64
K230032	32x32x32	4	32
K230040	40x40x40	1	-
K230050	50x50x50	1	-
K230063	63x63x63	1	-
K230075	75x75x75	1	-
K230075*	75x75x75	1	-
K230090*	90x90x90	1	-
K2300110*	110x110x110	1	-

* For these dimensions, the model is completely made of Brass. The application method is mechanical fit.

REDUCE TEE



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIAMETER (mm)	BOX	
		SMALL (un)	LARGE (un)
K231014	18x16x16	20	160
K231016	16x25x16	10	80
K231015	18x16x18	18	144
K231017	20x16x16	20	160
K231020	20x16x20	18	144
K231019	20x18x20	14	112
K231029	25x16x20	10	80
K231034	25x18x25	8	64
K231023	25x20x16	10	80
K231038	25x25x18	7	56
K231035	32x25x25	5	40
K231028	25x25x20	7	56
K231018	16x20x16	18	144
K231024	25x16x16	10	80
K231039	25x16x18	10	80

[MORE REFERENCES >](#)

REFERENCE	DIAMETER (mm)	BOX	
		SMALL (un)	LARGE (un)
K231021	20x20x16	18	144
K231022	20x25x20	7	56
K231027	25x20x20	10	80
K231025	25x16x25	10	80
K231026	25x20x25	8	64
K231031	25x32x25	7	56
K231030	32x16x32	8	64
K231037	32x18x32	5	40
K231032	32x20x32	5	40
K231033	32x25x32	5	40
K231042	40x25x40	1	-
K231043	40x32x40	1	-
K231053	50x32x50	1	-
K231055	50x40x50	1	-
K231064	63x40x63	1	-
K231065	63x50x63	1	-
K231076	75x63x75	1	-

FEMALE THREADED TEE



CHARACTERISTICS

PRESS PROFILE U



ADDITIONAL INFORMATION PAGE 28

REFERENCE	DIMENSIONS (mm x in x mm)	SMALL BOX	LARGE BOX
		(un)	
K232016	16x1/2"x16	16	128
K232018	18x1/2"x18	15	120
K232020	20x1/2"x20	15	120
K232025	25x3/4"x25	5	40
K232026	25x1/2"x25	10	80
K232032	32x1"x32	4	32
K232041	40x11/4"x40	1	-
K232040	40x1"x40	1	-
K232051	50x11/2"x50	1	-
K232050	50x1"x50	1	-
K232065	63x2"x63	1	-
K232063	63x1"x63	1	-
K232064	63x21/2"x63"	1	-
K232075	75x21/2"x75	1	-
K232075*	75x21/2"x75	1	-
K232090*	90x3"x90	1	-
K2320110*	110x4"x110	1	-

MALE THREADED TEE



CHARACTERISTICS

PRESS PROFILE U

REFERENCE	DIMENSIONS (mm x in x mm)	BOX	
		SMALL	LARGE
		(un)	
K233016	16x1/2"x16	16	128
K233018	18x1/2"x18	12	96
K233020	20x1/2"x20	12	96
K233025	25x3/4"x25	5	40
K233026	25x1/2"x25	5	40
K233032	32x1"x32	4	32

STOP VALVE



CHARACTERISTICS

PRESS PROFILE U

REFERENCE	DIAMETER (mm)	BOX	
		SMALL	LARGE
		(un)	
K244016	16	5	40
K244018	18	10	80
K244020	20	5	40
K244025	25	5	40
K244032	32	4	40

DISTRIBUTOR



CHARACTERISTICS

PRESS PROFILE U

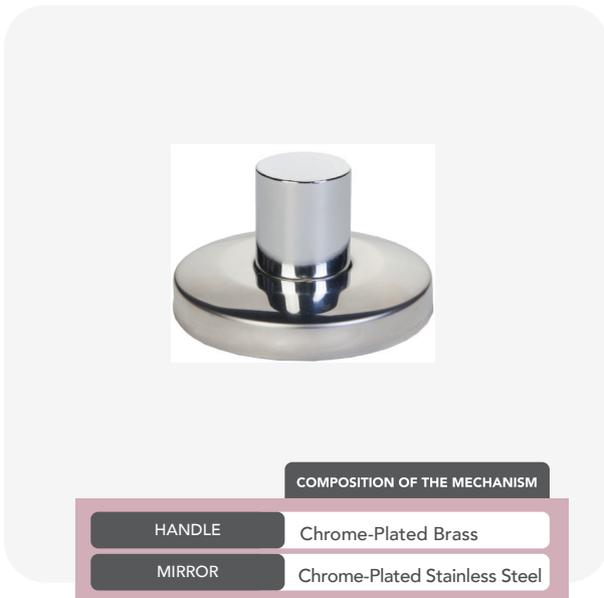
REFERENCE	DIAMETER (mm)	BOX	
		SMALL	LARGE
		(un)	
K2520201616	25x20x20x16x16	3	24
K2520161616	25x20x16x16x16	3	24

HANDLE MECHANISM



REFERENCE	DIAMETER	BOX	
		SMALL	LARGE
	(mm)	(un)	
K1632-CP	16-32	5	40

CHROMED UPPER PART



COMPOSITION OF THE MECHANISM

HANDLE	Chrome-Plated Brass
MIRROR	Chrome-Plated Stainless Steel

REFERENCE	DIAMETER	BOX	
		SMALL	LARGE
	(mm)	(un)	
K1632-RO	16-32	5	40

PRESS MACHINE



CHARACTERISTICS

PRESS PROFILE U

REFERENCE	UNIT
PRESS-ELECT POWER PRESS E BASIC	1
PRESS-ELECT.ACC POWER PRESS ACC BASIC	1
PRESS-BAT.ACC AKKU PRESS ACC BASIC	1

SHEAR KAPITAL



REFERENCE	DIAMETER	BOX
	(mm)	(un)
KC35	16 - 35	1

SHEAR RIDGID



REFERENCE	DIAMETER	BOX
	(mm)	(un)
TES 32/R	16 - 32	1

PRESS HEAD U



CHARACTERISTICS

PRESS PROFILE U / RF

REFERENCE	DIAMETER (mm)	REF
MORD-16 MK	16	A
MORD-18 MK	18	A
MORD-20 MK	20	A
MORD-25 MK	25	A
MORD-32 MK	32	A
MORD-40 MK	40	A
MORD-50 MK	50	A
MORD-63 MK	63	A
MORD-75 MK	75	A
MORD/RF-16 PEX	16	B
MORD/RF-20 PEX	20	B
MORD/RF-25 PEX	25	B
MORD/RF-32 PEX	32	B

A: PRESS PROFILE "U"
B: PRESS PROFILE "RF"

CALIBRATOR



REFERENCE	DIAMETER (mm)	BOX (un)
CALIBRAES-S32	16/20/25/32	1
CALIBRAES-S63	40/50/63	1
CALIBRAES-S75	75	1

TECHNICAL INFORMATION

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MULTILAYER PRODUCTS

PROPERTIES OF THE RAW MATERIAL

MULTILAYER PE-RT / AL / PE-RT pipes are part of a new generation of pipes where the advantages of metal and plastic pipes converge, minimising the inconveniences of both. This pipe is made up of five layers distributed as follows:

- 1st PE-RT type II layer
- 2nd Adhesive layer
- 3rd Overlapping aluminium welded by ultrasounds or aluminium butt welded by laser
- 4th Adhesive layer
- 5th PE-RT type II layer

PE-RT type II (temperature-resistant polyethylene) is a polyethylene resin with a unique molecular structure consisting of a main ethylene chain and controlled ramifications that provide excellent long-term hydrostatic strength. Through overlapping aluminium welding, a wider connection is created, which increases the safety index. Ultrasound welding does not require significant thickness of the aluminium to form a blade.

Therefore, the thickness of the aluminium does not make the pipe harder, making post-production handling very easy.

MULTILAYER PE-RT / AL / PE-RT pipes are produced with an optimised aluminium blade thickness, so that stability is maintained when bending. In this way, the assembly of the pipe is easier as it does not require a lot of strength to bend and can be done manually.

The aluminium blade gives the pipe a very important property: the ability to resist to expansion. As the polyethylene and aluminium pipes are fixed, pipe expansion is reduced as the aluminium expansion factor is low. The performance of the HELIKLIMA pipe is similar that of a metal pipe.

Given that the inner and outer layers of the pipe are made of PE-RT, we obtain a temperature-resistant pipe with reduced roughness, ensuring that no sediments build up and, thus, preventing the formation of limescale.



WORK CAPACITY	CLASS
Maximum operating temperature during short periods	110°C
Minimum operating temperature	-40°C
Minimum assembly temperature	-10°C
Burst pressure	80bar
Thermal conductivity	0,40W/m°C
Pipe roughness	0,0004 mm
Expansion coefficient	0,025 m/m°C

SUPPLY SYSTEMS

APPLICATIONS	MAXIMUM OPERATING PRESSURE (bar)	OPERATING TEMP. (C°)	APPROVED
Drinking water	10	0 - 70 ¹⁾	✓
Heating water (closed circuit systems)	10	0 - 80 ^{2) 3)}	✓
Saltwater	10	0 - 70	✓
Ultrapure water (except pharmaceutical water)	10	0 - 40	✓
Rainwater with a pH value of >6.0	10	0 - 40	✓
Extinguishing water ⁴⁾	10	0 - 70	✓
Chilled water with antifreeze agent	10	0 - 70 ⁵⁾	✓
Compressed air (oil purity class 0-3) ⁶⁾	10	0 - 70 ⁶⁾	✓
Inert gases (eg nitrogen)	10	0 - 40	✓

1) Malfunction temperature in accordance with BS EN 806-2:
T_{mal} = 95 °C, total 100 h over the course of the service life;

2) 3) Malfunction temperature in accordance with EN ISO 10508:2006:
T_{mal} = 100°C, total 100 h over the course of the service life;

4) Only use approved inhibitors;

5) Only use approved antifreeze agents;

6) Oil purity class in accordance with EN ISO 8573-1:2010E.



PIPE CHARACTERISTICS

NOMINAL DIMENSIONS	THICKNESS	INNER DIAMETER	FLOW LIMIT		WEIGHT	SERIES
			(l/h)	(l/s)		
	(mm)				(kg/m)	
16x2,0	2,0	12,0	814	0,226	0,108	3.5
18x2,0	2,0	14,0	1108	0,308	0,12	4.0
20x2,0	2,0	16,0	1447	0,402	0,142	4.5
25x2,5	2,5	20,0	2261	0,628	0,202	4.5
32x3,0	3,0	26,0	3821	1,061	0,32	4.8
40x4,0	4,0	32,0	5788	1,608	0,52	4.5
50x4,5	4,5	41,0	9501	2,639	0,76	5.1
63x6	6,0	57,0	14701	4,084	1,26	4.8
75x7,5	7,5	60,0	20347	5,652	1,75	4.5
90x8,5	8,5	73,0	30120	8,367	2,556	4.8
110x10	10,0	90,0	45781	12,717	3,625	5

ADVANTAGES OF THE SYSTEM

 LOW ROUGHNESS	 SIMPLE AND FAST INSTALLATION
 CORROSION RESISTANT	 DOES NOT TRANSMIT NOISE
 INSIGNIFICANT THERMAL EXPANSION	 PLEASANT AESTHETICS
 100% ANTI-DIFFUSION OF OXYGEN	 EXTREMELY BENDABLE
 GOOD AGEING PERFORMANCE	 HIGH CHEMICAL RESISTANCE
 SUPPLIED IN BARS AND COILS	 HIGH RESISTANCE TO WORK STRAIN
 EXCELLENT LONG-TERM BURST RESISTANCE	 PURENESS AND NONTOXIC
 STABLE FORM AFTER MOULDING AND/OR BENDING	 PREVENTS THE FORMATION OF LIMESCALE

The performance requirements for multilayer piping systems conforming to EN ISO 21003 are specified for four different application classes as shown in Table 1. For any application, the selection of the applicable class conforming to Table 1 shall be agreed by the parties concerned. Each application class shall be combined with a design pressure, (DP), of 4 bar, 6 bar, 8 bar or 10 bar, as accordingly (1 bar = 0,1 MPa).

Application Class	Design Temperature T_D (°C)	Time ^b at T_D (years)	T_{max} (°C)	Time at T_{max} (years)	T_{mal} (°C)	Time at T_{mal} (h)	Typical area of application
1 ^a	60	49	80	1	1	100	Hot water supply (60 °C)
2 ^a	70	49	80	1	1	100	Hot water supply (70 °C)
4 ^b	20	2,5	70	125	2,5	100	Underfloor heating and low-temperature radiators
	40	20					
	60	25					
5 ^b	20	14	90	90	1	100	High-temperature radiators
	60	25					
	80	10					

a) A country may select either class 1 or class 2 according to its national regulations

b) Where more than one design temperature for time and associated temperature appears for any class, they should be aggregated.

"Plus cumulative" in the table implies a temperature profile of the mentioned temperature over time (e.g. the design temperature profile for 50 years for class 5 is 20 °C for 14 years followed by 60 °C for 25 years, 80 °C for 10 years, 90 °C for 1 year and 100 °C for 100 h).

Note: For values of DT, Tmax and Tmal in excess of those in the table, this International Standard does not apply.

All systems that meet the conditions specified in Table 1 are also suitable for cold water supply for a period of 50 years at a temperature of 20 °C and a design pressure of 10 bar.

MARKING AND CERTIFICATION

The pipes envisaged in this experimental standard should be marked legibly and at a minimum of one meter intervals with the following information:

DESCRIPTION	MARKED SYMBOL
Reference standard	According to the certifier
Name of manufacturer and/or trademark	HELIROMA / HELIKLIMA
Nominal outer diameter and thickness of the nominal wall	e.g. 16x2,0
Pipe structure	PE-RT/AL/PE-RT
Material	PE-RT TYPE II
Application class combined with operating pressure	Areas of application and pressure
Manufacturer's information	Order of pressure and time

PRODUCT	DOCUMENT NO	CERTIFYING ENTITY
HELIKLIMA	001/847	AENOR
	A571	SKZ



KLIMAPRESS FITTINGS

The body of the fitting is made of a special treated brass, to ensure greater resistance to corrosion and oxidation.

The stainless steel ring is pre-assembled on the body of the fitting and has a hole that allows you to check if the pipe has been completely inserted.

The clamping between the ring and the body of the fitting provides protection against possible wear and tear of the 'O' rings. After assembly, the connection can support loads of torsion forces without any leak occurring.

To ensure the total safety of the installation, the use of HELIKLIMA fittings and tools is recommended, as any change in the dimensions and/or characteristics of these elements may alter the performance of the connections.



The fitting is made up of two brass parts: an EPDM 'O' ring, a catch for the 'O' ring, a compression ring and a stainless steel interior, which provides greater robustness to the pipe/fitting transition area.

The mechanical clamp is created by 4 metal screws that connect the fitting body to its pipe.

THERMAL EXPANSION AND DISTANCE BETWEEN FIXING POINTS

Due to the temperature in a hot water installation, the pipe is subjected to the expansion/contraction phenomena, depending on the LENGTH of the pipe and temperature differences. Throughout the installation, to compensate the expansion, certain points have to be taken into account.

APPLICATION OF CLAMPS

The HELIKLIMA pipe can be fixed to structural elements of the building by means of fixture points and sliding points.

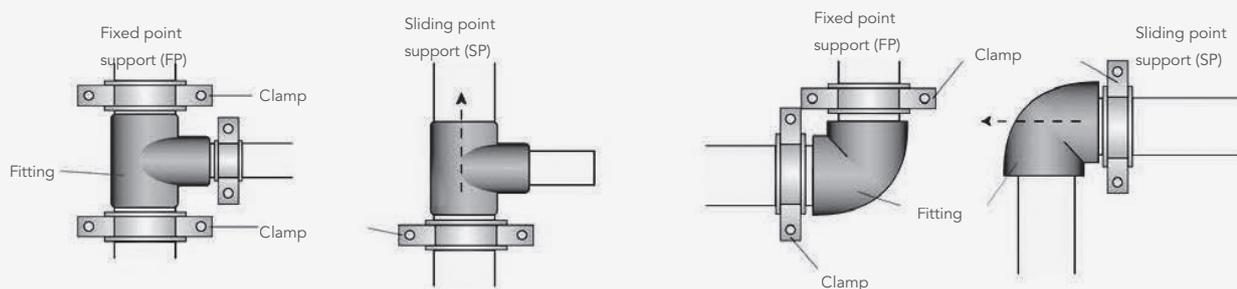
FIXED POINT (F.P.): a fixed point it is impossible for the pipe to move.

SLIDING POINT (S.P.): a sliding point is when the only function of a point is to support or guide the pipe, allowing it to move.

Expansion Coefficient: $\alpha = 0,025 \text{ mm}/(\text{m}^\circ\text{C})$
Specific constant of the pipe: $C = 30$

EXPANSION IN mm/m OF PIPE ACCORDING TO TEMPERATURE RANGE

TEMPERATURE RANGE (°C)	EXPANSION PER METER (mm)
10	0,25
20	0,5
30	0,75
40	1,0
50	1,25
60	1,5
70	1,75
80	2,0
90	2,25
100	2,5



The position of the FP depends on where the pipe expansion absorption devices are located. The distance between the SP depends on the temperature of the fluid. The higher the operating temperature, the greater the expansion. The pipe

support clamps are only considered FP's when they are changing direction, opposing the expansion or contraction movement of the pipe. When they do not limit the expansion or contraction of the longitudinal direction, we consider it to be an SP.

PIPE FIXTURE DISTANCES		MINIMUM PIPE LENGTH BETWEEN FITTINGS	
NOMINAL DIMENSION	MINIMUM DISTANCE L (m)	NOMINAL DIMENSION	PIPE LENGTH (mm)
16x2,0	1,2	16x2,0	minimum 160
20x2,0	1,3	20x2,0	minimum 160
25x2,5	1,5	25x2,5	minimum 170
32x3,0	1,6	32x3,0	minimum 170
40x4,0	1,7	40x4,0	-
50x4,5	2	50x4,5	-
63x6,0	2,2	63x6,0	-
75x7,5	2,4	75x7,5	-
90x8,5	2,4	90x8,5	-
110x10	2,4	110x10	-

BENDING

The HELIKLIMA pipe in the 16, 20 and 25 sizes can easily be bent manually using the inner spring or corresponding outer spring or using a bending machine.

HAND BENDING

Separate the pipe manually at a distance of approximately 40 cm and bend to the desired radius.

HAND BENDING WITH THE USE OF THE INSIDE SPRING

Calibrate the pipe and place the spring inside until it protrudes a few centimetres. When making the bend, the spring should not mark the outside of the pipe.

HAND BENDING WITH THE USE OF THE EXTERIOR SPRING

Insert the outer spring through the pipe until it reaches the desired point. Once placed at the bending point, bend the pipe manually, considering the minimum curvature radius listed in the table below:

MINIMUM BENDING RADIUS IN mm (ACCORDING TO TOOL)			
PIPE DIMENSION	RADIUS OF THE MANUAL CURVATURE	RADIUS OF THE CURVATURE W/ SPRING	RADIUS OF THE CURVATURE W/ TOOL
(mm)			(mm)
16	5x Outer Diameter	4x Outer Diameter	60
20	5x Outer Diameter	4x Outer Diameter	105
25	5x Outer Diameter	4x Outer Diameter	105

For the 32 diameter, the use of joints is recommended for changes in directions or a bending machine should be used.

BENDING WITH THE BENDING MACHINE

Using the bending machine, the HELIKLIMA pipe can be bent with a high degree of accuracy.





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**TECHNICAL
INFORMATION**

MULTILAYER PRODUCTS
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MULTILAYER PRODUCTS **HANDLING AND APPLICATION**

HANDLING AND APPLICATION



1) CUT THE PIPE

Use appropriate scissors for plastic or pipe-cutters and cut in a right angle.



2) CALIBRATE THE PIPE

DIAMETERS 16-25 mm

Use a calibrator to calibrate the inside of the pipe so that a circular chamfer at least 2mm deep is obtained. To ease the work, you may use the calibrator to adapt a power drill (the maximum number of rotations should not exceed 450 rpm to avoid damage inside the pipe as a result of overheating).

DIAMETERS 32- 63 mm

Create a circular chamfer at a depth of at least 2.5mm inside the pipe with the aid of a calibrator. Visually check if there is a uniform circular chamfer at the end of the pipe.



3) ASSEMBLY OF THE KLIMAPRESS FITTINGS

FOR DIAMETERS AT ≤ 75 – PRESS FITTINGS

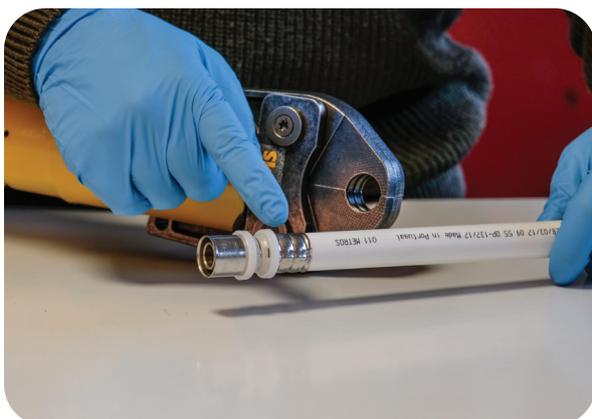
Lubricate the kernel of the fitting with an appropriate lubricant, inserting the pipe in the fitting until the top (plastic catch). The correct insertion should be visually checked through the hole of the fitting. PPSU fittings do not require lubricant.

Open the jaw head and adjust to the compression ring until reaching the fitting's catch. Close the jaw head and compress with the machine until the audible alarm of the retreat of the piston sounds.

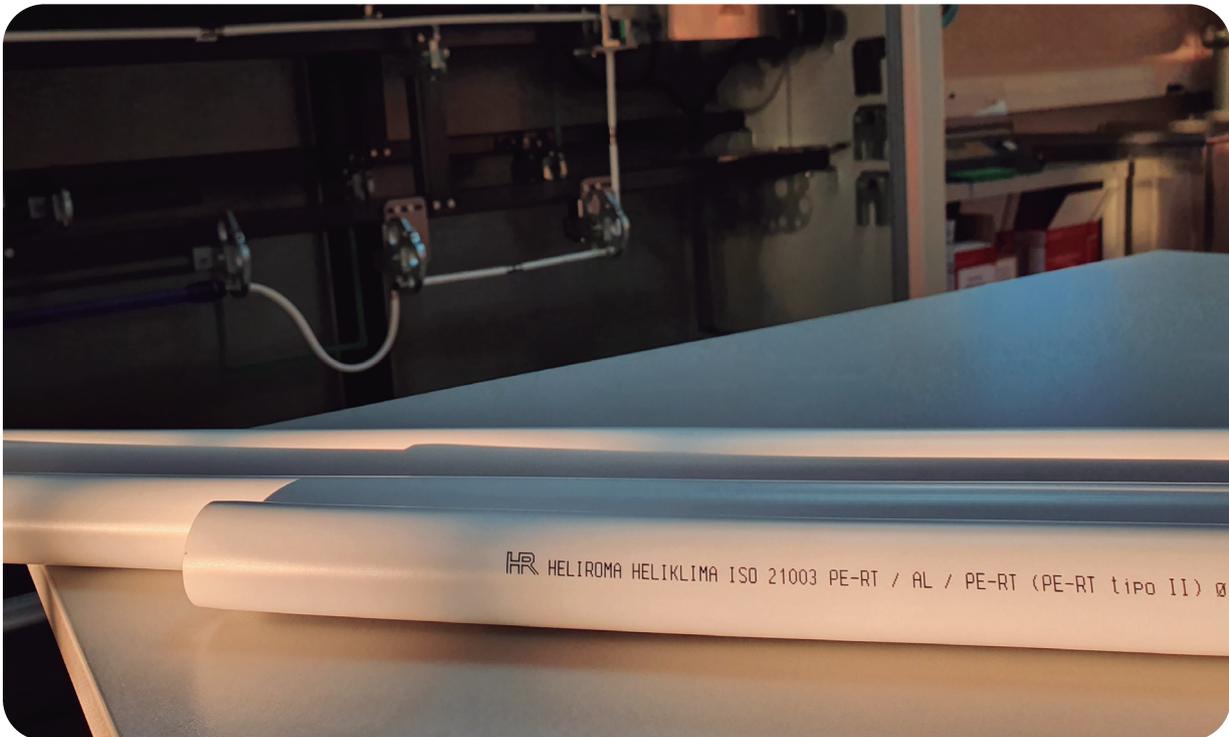
Very important note: To ensure that all crimping has been done correctly, the compression process must be completed. This means that when starting the process, the cycle should be completed, without any interruption until the audible alarm indicates that the piston has been released.

FOR DIAMETERS AT ≥ 75 – MECHANICAL CLAMPING FITTINGS

Check all the elements that make up the fittings. Place the brass flange, then the brass nickel ring, the catch and the 'O' ring at the end of the outside of the pipe. Insert the aluminium core inside the pipe. Join the brass flanges and tighten the metal screws.



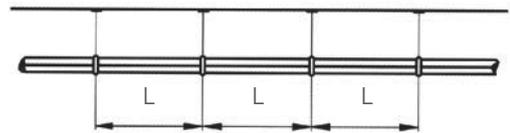
All pipes have to be installed in such a way that they can expand. Pipe expansion between two fixed points can be compensated with an expansion bend or by changing its direction (absorption arm).



FIXING THE PIPE

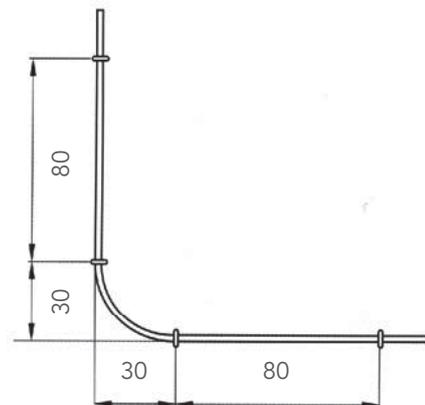
ON THE CEILING

If the HELIKLIMA pipe is fixed to the ceiling with clamps, it is not necessary to use any other type of support structure. The distance between fixing points according to pipe size will vary between 1.20 and 2.40 m.



ON THE GROUND

If the HELIKLIMA pipe is fixed to the ground, a minimum distance of 80 cm between the fixing points should be taken into account. Before and after a curve, the pipe should be fixed at a distance of 30 cm. If the pipe crosses walls or ceilings, make sure it does not pass through areas with square corners that might cut or damage the pipe.



Note:

Built-in installations: in this case, the fittings must be very well insulated to prevent contact with concrete or other elements, thus avoiding a possible reaction in the future.



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