

ROHRSYSTEME  
MADE IN  
GERMANY



# COMPANY BROCHURE



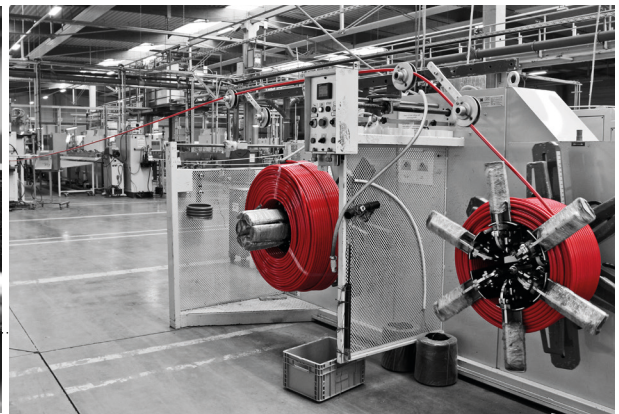
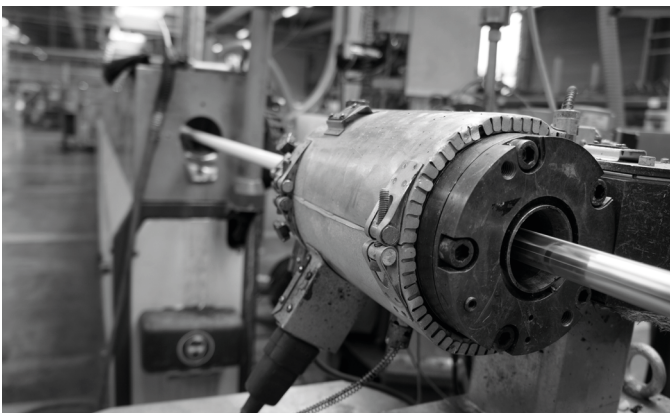
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## Company profile

With a total of 270 employees MAINCOR Rohrsysteme GmbH & Co. KG produces plastic pipes for the most different fields of application, such as Heating & Plumbing, Automotive Applications and White Goods.

The pipe production is completely “Made in Germany” and established worldwide.

SERVICE FOR YOU is the guiding principle at MAINCOR and our company philosophy. The core product of MAINCOR is customer satisfaction. The goal is to achieve the best possible results with utmost motivation using state-of-the-art technology. This includes the prompt and effective settling of each order as well as the support of implementation and processing, efficient job order production and the direct and straightforward supply to customers of the heating and sanitary sector right on the construction site.

Within the business division Pipe Systems Building Solutions MAINCOR offers products for plumbing installations as well as water based panel heating and cooling installations.

## General information about our pipes

### **“Made in Germany“**

#### **Raw material PE-RT**

PE-RT (Polyethylene of raised temperature resistance) is an advanced type of polyethylene which benefits from latest technologies like constrained geometry catalyst, polymerization solution technology and ethylene octene comonomer to add extra performance characteristics such as enhanced strength at high temperatures to the traditional properties of polyethylene.

Because of its enhanced mechanical properties at elevated temperature, PE-RT resins can be used in all hot water & heat distribution, like underfloor heating, radiator heating and drinking water, either as a plastic pipe or as a multilayer composite pipe combined with aluminium.

PE-RT has an excellent long term performance at high temperatures and greater flexibility than other materials. It has no need to crosslink (like PE-X materials), has excellent processability without processing aids, no loss of start up material as grind can be used, and easy installation in terms of flexibility and weldability.

PE-RT type materials have been used successfully in domestic hot and cold water piping systems for more than 20 years, and in application areas such as underfloor heating and radiator connections.

# Pipe production

The pipes are extruded in a pipe extrusion process on state-of-the-art manufacturing plants, which have been optimized for the processing of polyethylene for plastic and multilayer composite pipes. Multilayer structures are created by a specially developed co-extrusion process. Thereby, the EVOH (Ethylene vinyl alcohol copolymer) layer is protected against mechanical influences (like damages during transport or during installations on the construction site) by the outer layer of the pipe.

During the production all MAINCOR pipes have to undergo strict controls according to the relevant product standards. In MAINCOR's own laboratories permanent and continuous creep behaviour tests and long term hydrostatic stress tests are carried out to guarantee the compliance of the international standards. External third party inspection is done by independent institutes like SKZ and KIWA to ensure the long term quality of the pipes.

## Classification of pipes

### - according to ISO 10508

Pipe performance requirements are specified for five different application classes.

The applicable classes are shown in the table below:

Application class	T <sub>D</sub>		T <sub>max</sub>		T <sub>mal</sub>		Typical area of application
	°C	Years	°C	Years	°C	Hours	
1	60	49	80	1	95	100	Hot water supply (60°C)
2	70	49	80	1	95	100	Hot water supply (70°C)
4	20	2.5	70	2.5	100	100	Underfloor heating and low temperature radiator connections
	40	20					
	60	25					
5	20	14	90	1	100	100	High temperature radiator connections
	60	25					
	80	10					

T = Temperature, T<sub>D</sub> = Design temperature, T<sub>max</sub> = Maximum design temperature, T<sub>mal</sub> = Fault temperature

Each application class relates to a typical area of application and takes into account a service life of 50 years. Classification corresponds to the requirements in ISO 10508-4. All specified typical fields of application are recommendations and for guidance only.

Each application class has a corresponding permissible operating pressure of 4 bar, 6 bar, 8 bar or 10 bar, depending on the particular application. The concept of the application class defines the purpose of ISO 10508-4 - the theoretical description of dynamic conditions within the application classes accurately reflects the reality compared to structural data.

Manufacturers, planners and installers are provided with a basis for the selection of suitable pipes for specific areas of application. The application classes 4 and 5 are valid specifically for heating applications, while classes 1 and 2 are valid for hot water supply. The product standards DIN EN ISO 15875, DIN EN ISO 22391 and DIN EN ISO 21003 define the application classes for geometrical conditions.



# The different types of pipes

## PE-RT pipe (5-layers)



All 5-layer PE-RT pipes from MAINCOR are oxygen tight according to DIN 4726 due to the embedded EVOH layer. Thanks to the unique molecular structure a crosslinking is not necessary to achieve long term stability. During the Coextrusion all layers are being produced simultaneously; therefore a homogeneous and very stable material bonding is created.

Advantages of MAINCOR PER-RT pipes are high flexibility and the 5-layer pipe technology where an outer PE-RT layer is protecting the inner oxygen barrier against mechanical influences, like damages during transport and damages during installation on the construction site. An additional environmental advantage is given by PE-RT pipes against PE-X pipes can be recycled after their life time cycle. The recycled material can be used in other applications and has not to be treated as special waste like PEX pipes.

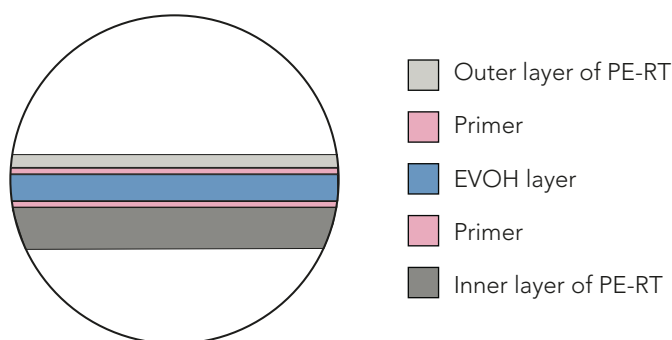
### Areas of application

Drinking water installations  
Radiator connection  
Underfloor heating  
Wall heating  
Floor cooling  
Ceiling cooling

### Advantages / Properties

Oxygen tight according to DIN 4726  
Flexible and easy to install  
Chemical-resistant  
Corrosion-resistant  
Temperature-resistant  
Resistant to mechanical impacts  
Encrustation-free  
Hygienically safe

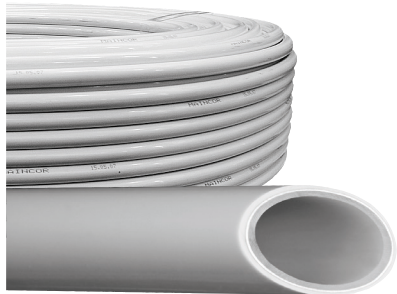
### Pipe construction



### Technical data

Description/Dim.	10 x 1.3	14 x 2.0	16 x 1.5	16 x 2.0	17 x 2.0	20 x 2.0
Colour	transparent	transparent	transparent	transparent	transparent	transparent
Max. temperature load	100°C	100°C	100°C	100°C	100°C	100°C
Max. continuous temperature load	70°C	70°C	70°C	70°C	70°C	70°C
Max. operating pressure (ISO 10508) at 70°C	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar
Application class (ISO 10508)	class 4	class 4	class 4	class 4	class 4	class 4
Water capacity l/m	0.043 l/m	0.079 l/m	0.133 l/m	0.113 l/m	0.133 l/m	0.201 l/m
Bending radius	5 x d	5 x d	5,5 x d	5 x d	5 x d	5 x d
Surface roughness	40 nm	40 nm	40 nm	40 nm	40 nm	40 nm

# Multilayer composite pipe PE-RT / AL / PE-RT



MAINCOR multilayer composite pipes are made of overlapped welded aluminium surrounded by PE-RT layers connected by adhesives.

The inner aluminium layer of multilayer composite pipes leads to higher temperatures and pressure resistance in comparison to standard plastic pipes.

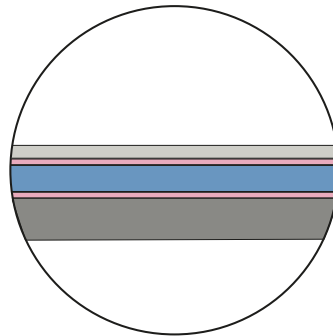
## Areas of application






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## Advantages / Properties

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## Pipe construction



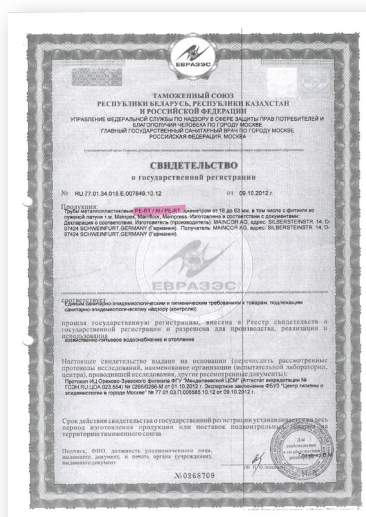
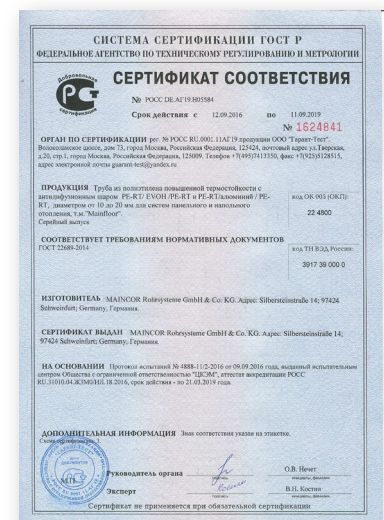
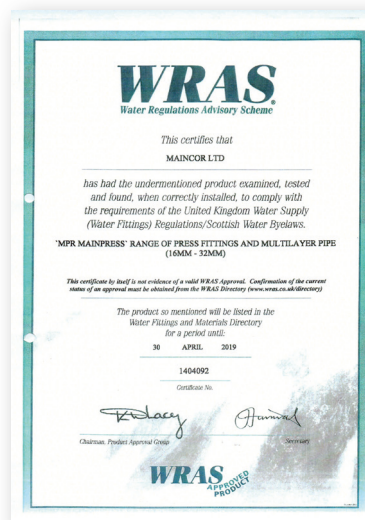
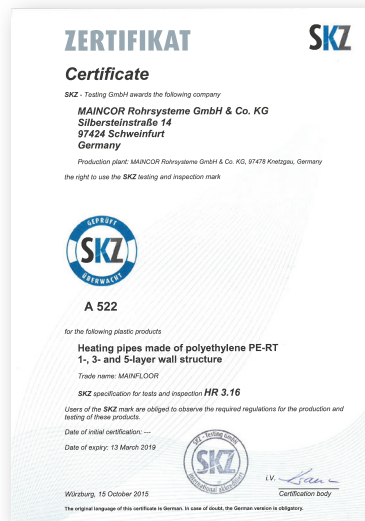
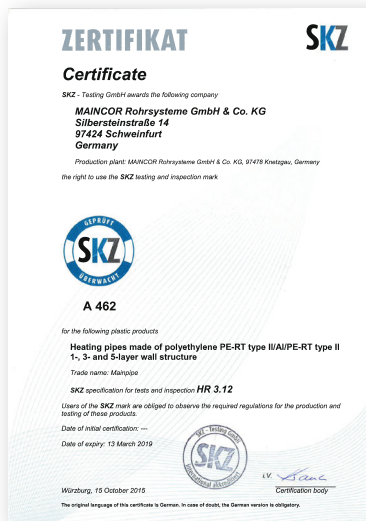
-  Outer layer of PE-RT
-  Primer
-  EVOH layer
-  Primer
-  Inner layer of PE-RT

## Technical data

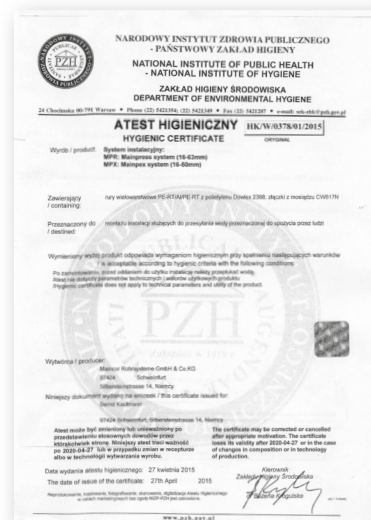
Max. continuous temperature load	70°C
Max. temperature load	100°C
Max. operating pressure (ISO 10508) at 70°C	10 bar
Standard colour inside	transparent
Standard colour outside	white
Other colours	on request
Pipe printing	customer-specific
Packing	box or foil
Application class (ISO 10508)	class 1,2

diameter	outerdiameter (mm)	wall thickness (mm)	aluminium thickness (mm)	max. coil length (m)
14 x 2.0	14 + 0.3	2.0 + 0.3	0.2	500
16 x 2.0	16 + 0.3	2.0 + 0.3	0.2	500
20 x 2.25	20 + 0.3	2.25 + 0.3	0.24	250
25 x 2.5	25 + 0.3	2.5 + 0.3	0.3	100
32 x 3.0	32 + 0.3	3.0 + 0.3	0.35	50

# Certificates











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