MEGA-THERM BLUE POWER

CLIMA & HVAC SYSTEMS

→ PPRC TYPE 3 PIPES & FITTINGS SYSTEMS

WWW.MEGA-THERM.COM

About us

Ulkumen Ardila is one of the leading company in the development and manufacture of advanced plastic piping systems in Turkey. The company is established in 1992 and started the production of PPRC pipes and fittings in 1994, under the trade mark of , which is followed by Ground heating pipes, HDPE pressure pipes, HDPE RC (Resistance to Crack) pipes & fittings and Sprinkel Irrigation Pipes. All of our advanced and quality piping system made Mega-Therm one of the well known brand in the area and currently being exported to 35 countries, specially to Middle East, CIS countries, North Africa, Russia, Balkans among many others..

Our Company is the producer of all kind of plastic pipes including PPR, HDPE , HDPE RC pipes and fittings. Under the trade mark of MEGA-THERM

Ulkumen Ardila's advanced plastic pipes and fittings are made from the high quality raw materials and are manufactured with some of the most advanced plastic machinery in the world to meet most exacting standards. Our commitment to quality also extends to customer service. MEGA-THERM pipe and fittings has earned a reputation throughout the world. All our pipes and fittings are approved from the Ministry of Public Works & Housing in most of countries, has a health certificate ISO, EN TSE and International standarts.

INDEX

Mega-Therm PP-R Piping Systems

Mega-Therm piping systems are ideal for many pressurized applications due to their durability and versatility.

To accommodate projects of nearly any size, Mega-Therm pipe is available from ½" to 24" in diameter.

All of Mega-Therm's pipes and ittings are made from polypropylenerandom (PP-R), a thermoplastic that provides many advantages in piping systems, including heat-fused connections and naturally corrosion-resistant properties.

To facilitate integration with other systems, a wide range of transitions are available such as flanges, PEX adapters, brass and steel threads, and copper stub outs.

Each of the PP-R systems developed by Mega-Therm share the same material beneits, but are also engineered for speciic applications.

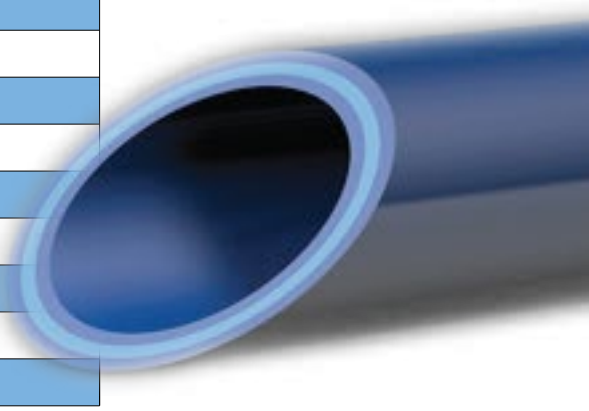
Mega-Therm is our signature product, suitable for potable and food-grade applications and much more.

Mega-Clima is the best choice for high-performance pressure piping systems for a wide range of non-potable

System is ideal for this application ✔
System is suitable for this application, but not ideal: ●

	Mega-Therm	Mega-Clima
Potable water and food-grade	✔	
Swimming pools	●	✔
Compressed air systems	✔	✔
Heating distribution	●	✔
Marine applications	✔	✔
Chilled water distribution	●	✔
Direct-buried applications	✔	✔
Recycled, reclaimed,and rainwater		
Irrigation	●	●
Industrial and chemical transport	●	✔
In-loorheating systems	●	✔
Multipurposeire sprinkler	✔	

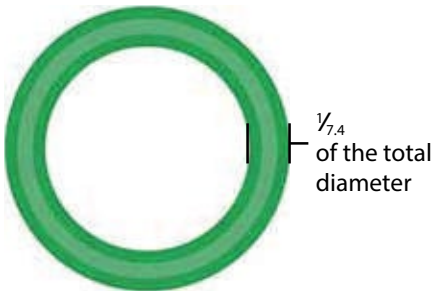
Fields of Application for Mega-Therm Piping systems



Standard Dimension Ratio

Mega-Therm pipes are manufactured using a standard dimension ratio (SDR), meaning the wall thickness is a ratio of the total diameter. This is different from schedules, which are commonly used in North America, but is typical of fusible plastics. As a result, all pipe sizes in a given SDR have the same pressure ratings. The ratings do not decrease with larger size SDR pipe as they do with schedule-based pipe.

Each SDR provides its own advantages. The SDR is one of the major factors used in engineering an Mega-Therm piping system for a specific application.

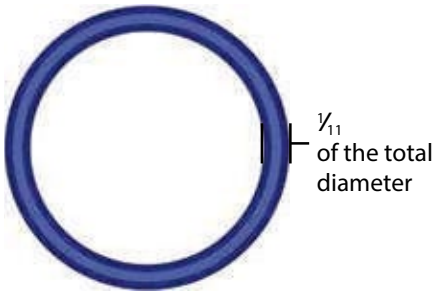


SDR 7.4

A heavy wall provides increased pressure and temperature ratings for high-stress applications such as hot water recirculation.

Mega-Therm MP

(all ½" and ¾" pipes are SDR 7.4 unless otherwise indicated)



SDR 11

A balanced wall thickness to provide higher flow rates while maintaining high pressures. Suitable for most applications.

Mega-Therm S

Mega-Therm MP

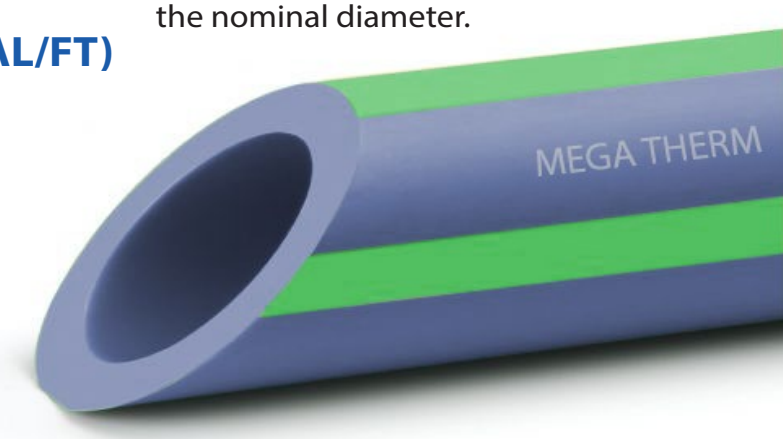
Nominal Imperial Sizing

All Mega-Therm piping systems are manufactured in metric sizes. In order to make the systems more intuitive to the North American market, Mega-Therm has converted each of its standard pipe sizes into an imperial nominal diameter based on comparable size and low rate.

The below tables give a standard nominal diameter for each metric size of pipe. Use the low rate tables given in chapter 3 to verify proper selection for an application based on SDR and low rate. The metric outside diameter (OD) is printed on the pipe and itting bags in addition to the nominal diameter.

Comparison of Water Capacity (GAL/FT)

Nominal diameter	SDR 7.4	SDR 11	SDR 17.6
½"	0.013	0.017	-
¾"	0.024	0.026	-
1"	0.034	0.043	-
1 ¼"	0.053	0.067	-
1 ½"	0.083	0.105	-
2"	0.133	0.167	-
2 ½"	0.187	0.237	-
3"	0.270	0.343	-
3 ½"	0.402	0.512	-
4"	0.521	0.661	0.776
6"	0.854	1.082	1.272
8"	1.333	1.692	1.986
10"	2.084	2.646	3.105
12"	3.340	4.201	4.930
14"	4.242	5.340	6.267
16"	-	6.787	7.952
18"	-	8.573	10.068
20"	-	-	12.422
22"	-	-	15.596
24"	-	-	19.733



Actual metric OD	Nominal diameter
20 mm	½"
25 mm	¾"
32 mm	1"
40 mm	1 ¼"
50 mm	1 ½"
63 mm	2"
75 mm	2 ½"
90 mm	3"
110 mm	3 ½"
125 mm	4"

Actual metric OD	Nominal diameter
160 mm	6"
200 mm	8"
250 mm	10"
315 mm	12"
355 mm	14"
400 mm	16"
450 mm	18"
500 mm	20"
560 mm	22"
630 mm	24"

Fields of Application

Mega-Therm and Mega-Clima are pressurized pipe systems with many applications due to their special characteristics and versatility.

• Hot and cold potable water systems for use in residential buildings, hospitals, hotels, office and school buildings, shipbuilding, sports facilities, high-rise construction, distribution mains, and any other application where the applicable codes require a piping system with 100 psi (7 bar) pressure rating at 180 (82) and materials that are safe to be used in direct contact with either food or potable water.

• Hydronic heating and cooling distribution for residential, commercial and industrial use with exceptional performance as manifolds and in boiler rooms due to the natural insulation value of the pipe walls and the convenience of fusion outlets.

• Ground-source heat pump systems and other applications where the pipe must be buried.

• Swimming pool systems and other applications where corrosive chemicals are constantly present in the water.

• Agricultural and horticultural applications where the air and soil tend to corrode other piping systems.

• Compressed-air systems for use in light industry, heavy industry, automotive mechanic shops, etc. because of Mega-Therm phenomenal pressure rating and resistance to corrosion. Also, Mega-Therm and Mega-Clima will not shatter if punctured.

• Industrial applications particularly the transport of aggressive materials because Mega-Therm and Mega-Clima resist most types of acids.

• Food processing for applications where preserving the quality of foodstuffs is essential. Mega-Therm PP-R material will never affect or leech into its medium.

• Recycled water and rainwater applications for non-potable service water, the Mega-Therm pipe is ideally suited due to resistance to corrosion, scaling, and microbiological growth

Pipe Labels and Sizing

All Mega-Therm piping systems are manufactured based on metric units of measurement. In order to make the systems more intuitive to the North American market, Mega-Therm hasconverted each of its standard pipe sizes into a nominal Imperial unit, based on comparable size and flow rate. The following table gives the accepted nominal Imperial size for each metric size of pipe. Unless additional engineering allows for a downsizing of the pipe, Mega-Therm recommends using this nominal pipe sizing as an equivalent to systems made from other materials.

Manufacrued Metric OD	Equivalent Imperial ID
16 mm	¾″
20 mm	½″
25 mm	¾″
32 mm	1″
40 mm	1 ¼″
50 mm	1 ½″
63 mm	2″
75 mm	2 ½″
90 mm	3″
110 mm	3 ½″
125 mm	4″
160 mm	6″
200 mm	8″
250 mm	10″

Note: The units have been converted from sizing based on OD to sizing based on ID. Metric OD will always be printed on the pipe and fittings.

Working Pressure

The following tables illustrate the permissible working pressures of the Mega-Therm piping systems based on a 50-year life cycle. The balance between working pressure and operating temperature varies based on the wall thickness of the pipe, as well as the presence of a faser-composite layer.

All wall thicknesses are determined by SDR (standard dimension ratio) in which the wall thickness is a ratio of the total diameter. For example, the wall of an SDR 6 pipe is 1/6 the total diameter of the pipe.

Potable Water Installations

Temperature °F	SDR 11	SDR 7,4	Faser Composite SDR 7,4
	Permissible working pressure (psi)		
70 °F	185	295	355
105 °F	135	210	255
120 °F	110	175	215
140 °F	95	145	175
180 °F	40	100	100

SDR = Standard Dimension Ratio (diameter/wall-thickness ratio).

Working pressure is valid for all pipe sizes of the same SDR.

Hydronic and industrial applications (water only, consult Mega-Therm for use with other fluids)

Conditions	SDR 11	SDR 7,4	Faser Composite SDR 7,4
	Permissible working pressure (psi)		
160 °F (71 °C) operating, plus up to 60 days at 175 °F (80 C)	105	130	160
160 °F (71 °C) operating, plus up to 60 days at 195 °F (90 C)	70	85	110
200 °F (93 °C) max.	20	35	40

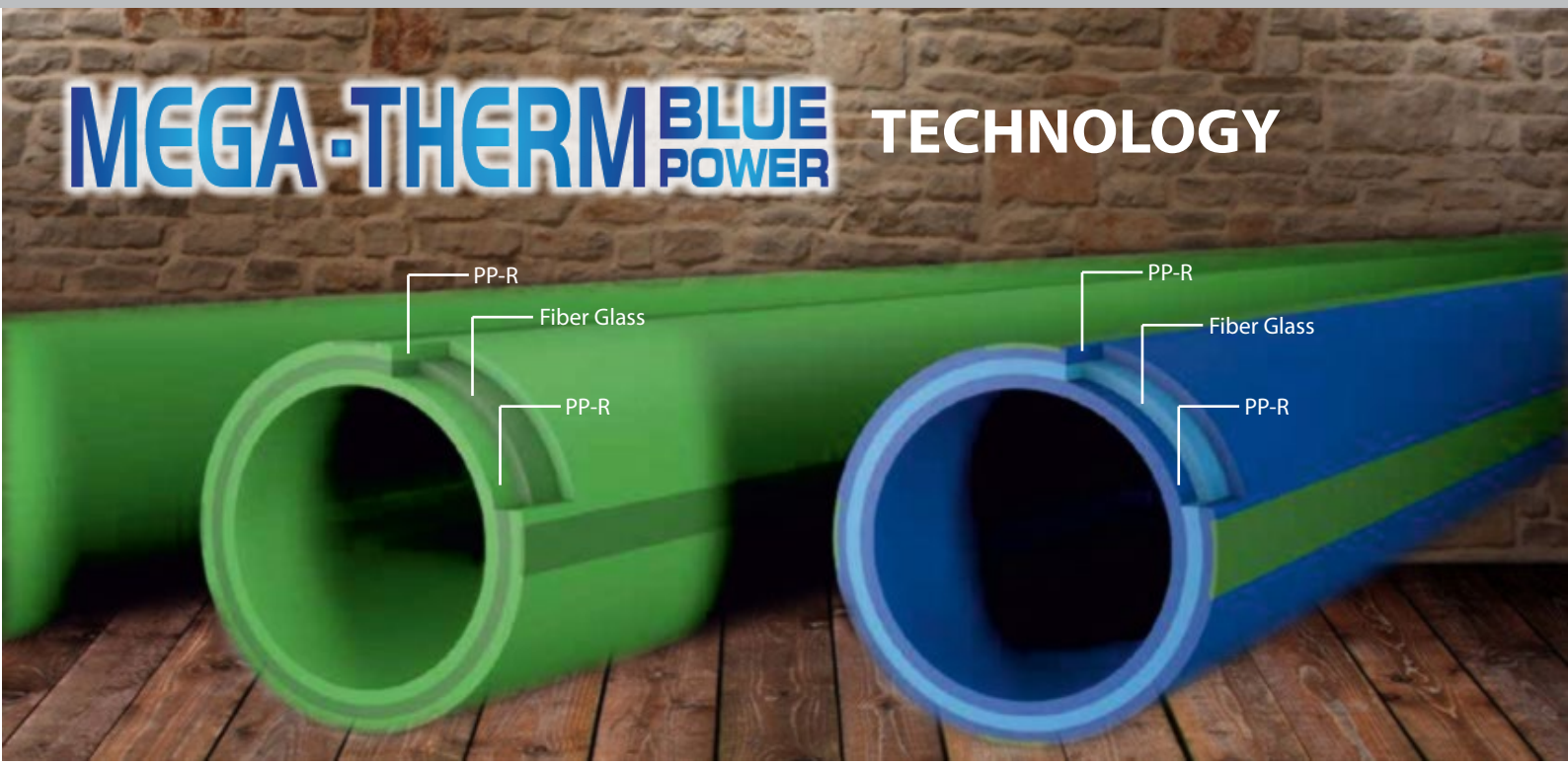
SDR = Standard Dimension Ratio (diameter/wall-thickness ratio).

Working pressure is valid for all pipe sizes of the same SDR.

Compressed Air Pressure Ratings

Mega-Therm piping systems are excellently suited to compressed air applications, due to their high creep strength and noncorroding composition.

For systems with no control on the air temperature, use 50% of the system's maximum working pressure as the compressed air rating. If the air input can be kept under 100°F, use 75% of the system's maximum working pressure as the compressed air rating.



MEGA POWER (MP) TECHNOLOGY

To increase maximum operating temperatures and improve overall performance, Mega-Therm has developed a multilayer fasercomposite (MP) extrusion process.

The result is a middle layer in the pipe that is a mixture of glass fibers and Mega-Therm's proprietary .This layer allows the pipe to Mega-Therm remain rigid at high temperatures and significantly reduce linear expansion.

Along with the benefit of reduced expansion, Mega-Therm MP pipes are still flexible and require fewer and smaller expansion controls. They can also be buried without any expansion controls or thrust blocking, as the weight of the soil will restrict any movement. Anchors may be required where the pipe penetrates a wall or foundation.

The MP technology allows for improved systems without sacrificing any of the other advantages of the pipe.

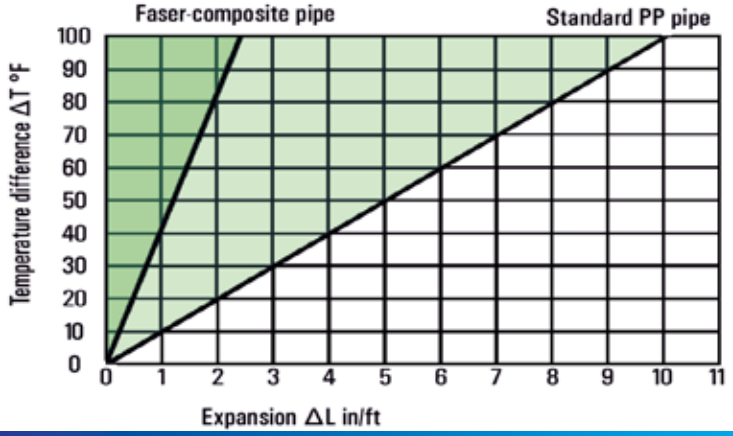
ADDITIONAL ADVANTAGES

In addition to reduced linear expansion, pipes made using the MP process also have the following advantages:

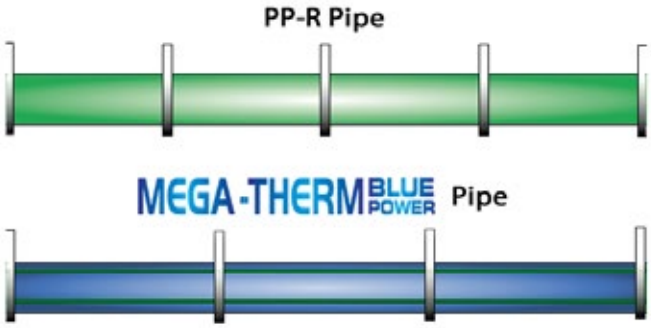
- Higher low rate due to increased inner diameter
- Fewer supports needed
- Less weight

The low concentration of glass fibers in the pipe does not interfere with the fusion process or the recycling process, so all other aspects of installation and use remain the same as with non-MP Mega-Therm pipes.

Linear expansion: PP pipe and Mega-Therm MP pipe



Support spacing for PP pipe and Mega-Therm MP pipe



MEGA-THERM BLUE POWER Pipe System

Advantages and fields of application

The Mega-Clima pipe system is engineered specifically for applications beyond potable water installations.

In addition to the general advantages of the PP-R pipe system Mega-Clima offers higher volumetric flow values due to smaller wall thickness.

The dimensions range from 1⁄2" to 10" nominal ID.

The system is best suited for chilled water, hydronic heating, and various industrial applications.

Detailed advantages of Mega-Clima and the material Mega-Therm PP-R C :

- absolutely corrosion resistant
- resistant against chemicals
- reduced linear expansion by 75% for Mega-Clima faser-composite pipe
- environmentally friendly
- high impact resistance
- reduced pipe friction
- heat and sound insulating characteristics
- excellent welding properties
- high heat-stabilized
- less insulation may be required
- increased flow rate

System components
The Mega-Clima pipe system is installed using the Mega-Therm fittings and consists of:

- pipes in length and/or coils
- standard fittings (tees, elbows, etc.)
- weldable flange adapter for flange connections
- armature connections and accessories
- transition pieces from PP-R to other piping systems
- fusion outlets
- manifolds
- shut-off devices
- welding tools

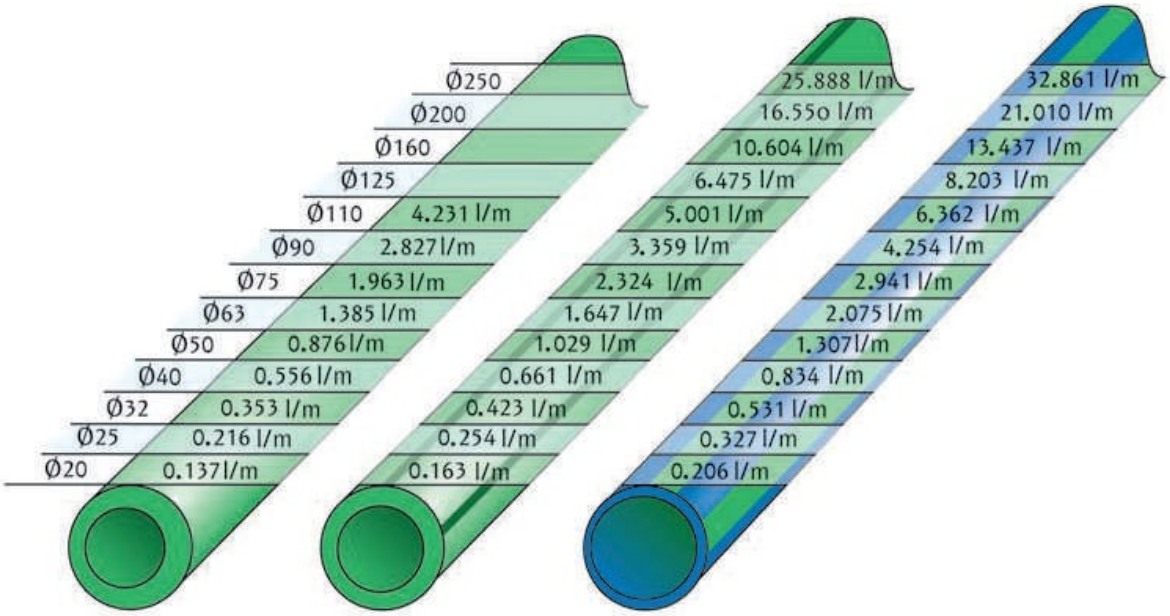
Using the exact same tools and fittings for the Mega-Clima as for the Mega-Therm greatly reduces the amount of training and on-hand materials required to work with both types of installations.

Mega Blue Power
Faser Pipe

The Mega-Clima system has been developed especially for applications beyond the potable water installation.

In addition to the general advantages of the PP-R pipe system Mega-Clima in comparison with the Mega-Therm system offers higher volumetric current values due to smaller wall thickness. The dimensions range from 20 mm to 160 mm and also 200 and 250 mm external diameter. The system includes all elements for the pipe system installation for chilled, hot fluid and various industrial applications.

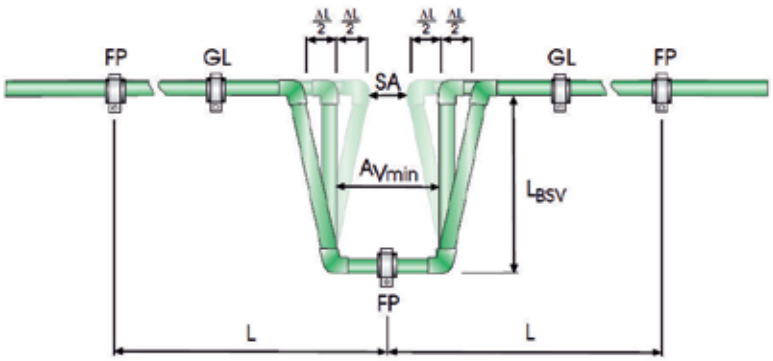
Water content per meter by comparision



Expansion bends with pre-stress

Where space is limited, it is possible to shorten the total width Amin as well as the length of the bending side LBSV verkürzt werden. Pre-stress installations, if planned and installed exactly, result in an optically perfect installation, as the linear expansion is hardly visible.

The complete Mega-Therm pipe system should be installed both in the field of hot water and cold water application with expansion bends or bending sides.



MEGA-THERM BLUE POWER

This alternative to metal is

EXPANSION CONTROLLED, CORROSION-FREE, AND BETTER

than the piping material it replaces.

A Better Choice For Hydronics, Compressed Air, and Industrial Applications

Mega-Clima is specifically engineered for applications beyond potable water installations. It offers a tougher, longer lasting, more environmentally responsible solution to other nonpotable pressure systems.

In addition to the general advantages of the PP-R pipe system, offers higher volumetric flow rates due Mega-Clima to thinner walls and is high-heat stabilized for short exposures to temperatures beyond the intended design. PP-R piping is also extremely resistant to impact, corrosion, and seismic stresses.

Mega-Clima uses the same socket fittings and tools as Mega-Therm , making installation simple and easy. The dimensions range from ½" to 24" ND. Mega-Clima is also available with UV protection for outdoor installations and faser-composite (MF) technology, which reduces linear expansion.

Corrosion and Scale Resistance

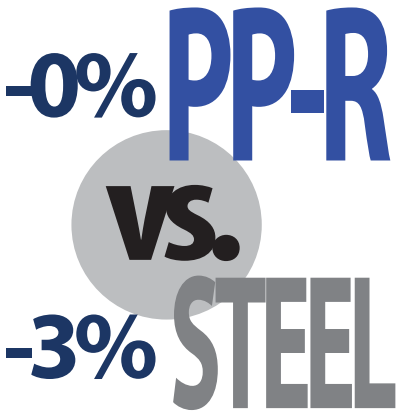
While other piping materials lose performance over time to scaling and corrosion, Mega-Therm's PP-R material resists any form of change to the material wall. Even after decades of use, the Mega-Therm pipe will retain its original low characteristics. This prevents the loss of eficiency that occurs when using a pipe that can scale or corrode and will save energy over the life of the system. No chemical treatments are needed to protect the Mega-Clima saving maintenance costs and reducing waste.

Advantages

- Resistant to most chemicals
- Excellent flow rate
- Fast, welded connections
- Light, impact-resistant material
- Corrosion-free pipe and fittings
- Natural sound and heat insulation
- Long lasting
- Fully recyclable
- High-heat stabilized

Corrosion and scaling can reduce the inside of steel pipes by an average of 3% per year, resulting in lost eficiency and up to 10% increased pumping energy annually. This can add up to thousands of dollars in hidden energy costs over the life of the system.

Mega-Therm's PP-R pipes don't corrode or scale, so they continue delivering eficiency and performance year after year.



Heating Distribution

For commercial, industrial and residential use, Mega-Clima with faser-composite (MP) is an ideal choice due to its reduced linear expansion and resistance to corrosion, which increases performance and extends service life. Non-faser coils are also available for use in snow-melt applications in concrete or asphalt.

Chilled Water Distribution

For residential, commercial, and industrial use, Mega-Clima has a natural insulation value that helps reduce heat gain and often eliminates problems with condensation, making it an excellent choice for cooling towers and condenser water.

Industrial Applications

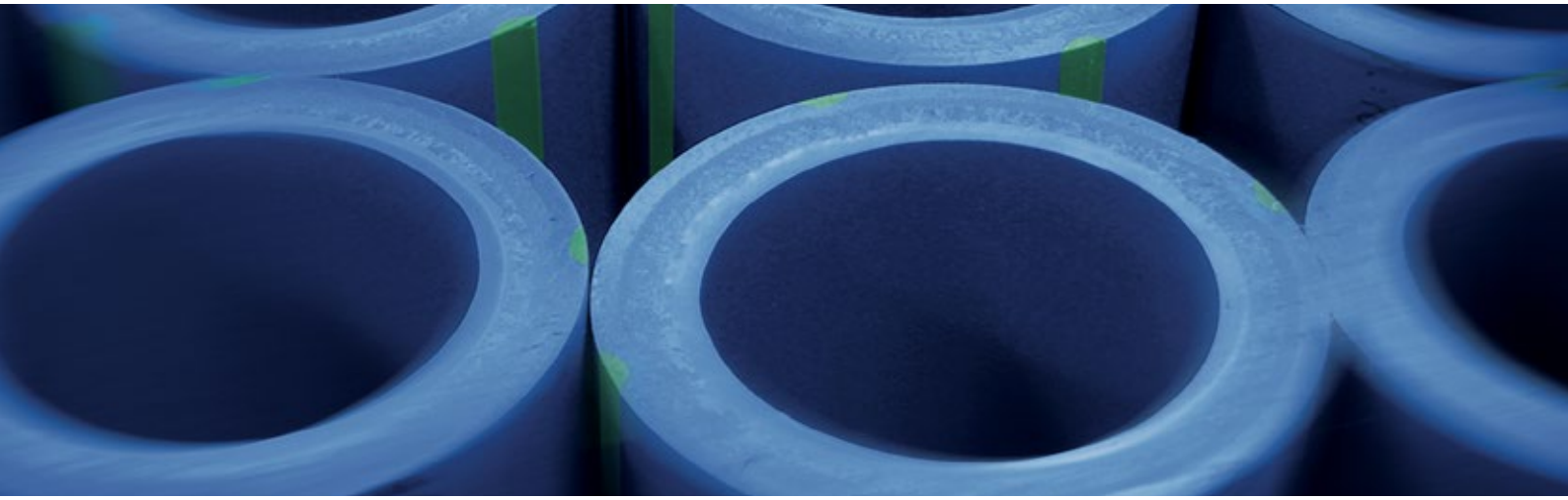
For the processing and transport of aggressive mediums and materials, and Mega-Therm, Mega-Clima resist many types of chemicals.

In-Floor Heating Systems

Mega-Therm's fused connections, low pressure drops, and 8 to 1 bending radius (non-faser only) make for a safe and efficient installation. Mega-Therm's fusion outlets allow for an extended manifold layout, which helps reduce costs and improve performance.

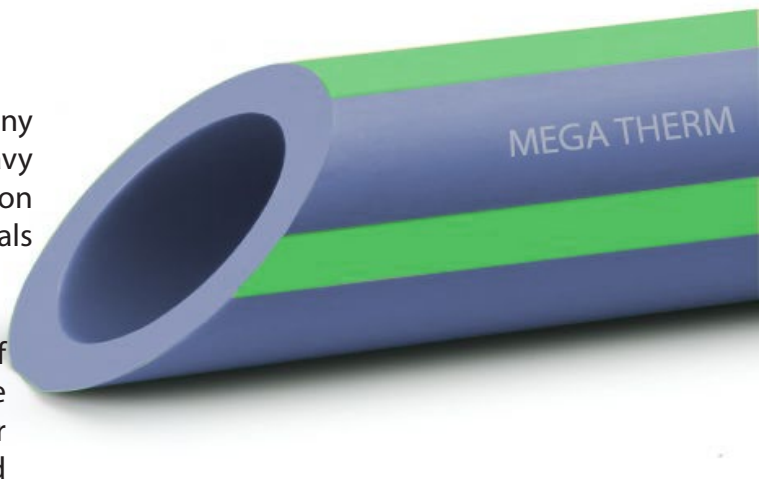
Geothermal

While all Mega-Therm pipe can be safely buried in soil, sand or concrete, is available in larger diameters Mega-Clima and has heat stabilization, making it a perfect match for geothermal applications. Mega-Therm pipe is also suitable for directional boring.



SYSTEM PROPERTIES

Hygienic Suitability



The Mega-Therm system is chemically inert and does not in any way alert the quality of the water passing through it (no heavy metals) and since the connections are made using heat fusion of the polypropylene material, there are no harmful chemicals in the water from solvent cements, glues, fluxes or solders.

The Mega-Therm systems do not support the formation of mineral deposits. Harmful chemicals will not leach from the pipe wall into the water. The water delivered to the faucet or appliance is always the same quality as it was when it entered the system.

Heat Fusion Connections

The joining method requires no additives such as solvents, glues or solder. The connections are made by socket, fusion outlet, butt and electro fusion.

The connections in an Mega-Therm piping system are made using heat fusion, a simple process which actually turns the pipe and fitting into a single piece of PP-R. There are no solders, solvents, or glues added to the connection, eliminating weak points and harmful chemicals from the system.

Potable Water and Food Safe

The Mega-Therm piping systems are made from the same type of polypropylene used in highpurity systems, making them ideal for potable water and food-grade applications. The Mega-Therm PP-R will never leach chemicals into its medium, keeping food and water safe for human consumption.

High-Temperature Stabilization

The long-term heat stabilization has been increased to resist the harmful effects of peak temperatures and provide higher safety parameters.

60+ Year Lifespan

Mega-Therm piping systems resist the scaling and corrosion that reduce the performance of other piping systems.

The walls of the PP-R piping systems generate less friction than other systems, eliminating the abrasion that can cause pinhole leaks and shorten the life cycle of the pipe.

The heat fusion joints maintain the same properties as the pipe itself, so physical stresses will not damage their integrity.

Mega-Therm piping systems last longer with less maintenance than other systems, adding greater value to each installation. With proper design, Mega-Therm systems can last for over 60 years.

Potable Water Rating

Mega-Therm piping systems meet the requirements of NSF Standard 14 and meets NSF Standard 61, showing Mega-Therm that it is safe for direct contact with drinking water.

Has been tested to NSF 51 and is Mega-Therm acceptable for direct food contact and food processing applications up to 212 °F.

Mega-Therm piping systems meet the stringent requirements for strength, material quality, dimension, damage resistance, marking, and quality control of ASTM F2389 and CSA B137.11.

Application-Specific Engineering

Mega-Therm piping systems are engineered for optimal performance based on the application type.

- is rated for potability, and comes Mega-Therm with MF and non-MF variations to optimize eficiency and economics.

- is high-heat stabilized to have a Mega-Clima higher safety factor while maintaining superior low rates.

Full System Range

Mega-Therm piping systems can be used in nearly any pressure application and range in size from ½" to 24". This allows installers to use one type of pipe for an entire system rather than mixing multiple materials and joining methods.

An entire project can be done using Mega-Therm pipes, eliminating the need for multiple tool sets and maintenance programs.

Transitions to ANSI langes, NPT threads, PEX piping, and copper tube make combining Mega-Therm pipe with other systems and components simple and easy.

PP-R

All Mega-Therm pipes and fittings are made of PP-R. The PP-R material is both physically and chemically resilient to the abuse that can damage other materials. It is also a low friction material, protecting it from abrasion and reducing pressure loss.

The superior welding properties of PP-R result in a permanent, leak-proof connection that is chemically indistinguishable from the rest of the pipe. This and countless other innovations have made the Mega-Therm pipe systems and the raw material Mega-Therm PP-R succesful and respected worldwide.

ADVANTAGES

Uniformity

The system includes all necessary pipes, valves and fittings for a complete installation from the water meter up to the last tap. Mixed installations are things of the past.

Longevity

The Mega-Therm greenpipe and Mega Clima systems resist the scaling and corrosion that reduces the performance of other piping systems. The walls of the PP-R piping systems generate less friction than other systems, eliminating the abrasion that can cause pin-holing and shorten the life cycle of the pipe. The heat-fusion joints maintain the same properties as the pipe itself, so physical stresses will not damage their integrity. Overall, the Mega-Therm piping systemslast longer with less maintenance than other systems, adding greater value to each installation.

Simplied installation

The Mega-Therm and Mega-Clima systems offer a unique and unrivaled connection process: material union by heat fusion. The short welding times speak for themselves: 1/2" ID - 20 mm OD = 5 sec. Fusion connections can be pressure tested or put into operation almost immediately after their fusion. There are no extended waiting times. See page 3.05 fora complete list of connection times.

Quality

All of Mega-Therm's many national and international certifications speak volumes regarding its quality and performance, but the satisfaction of Mega-Therm clients, installers, and planners says even more..

Value

By integrating industry-leading strength and reliability with stable and economic pricing, Mega-Therm 's piping systems allow building owners to improve the quality of their piping systems while increasing their bottom line.

Faser-composite technology

To increase maximum operating temperatures and overall performance, Mega-Therm developed a revolutionary manufacturing method: Faser-composite technology. The faser-composite material is a mixture of special fiberglas and Mega-Therm PP-R . This material is extruded as the middle layer of the pipe. This layer allows the pipe to remain rigid at high temperatures without sacrificing any of the other benefits of the pipe..

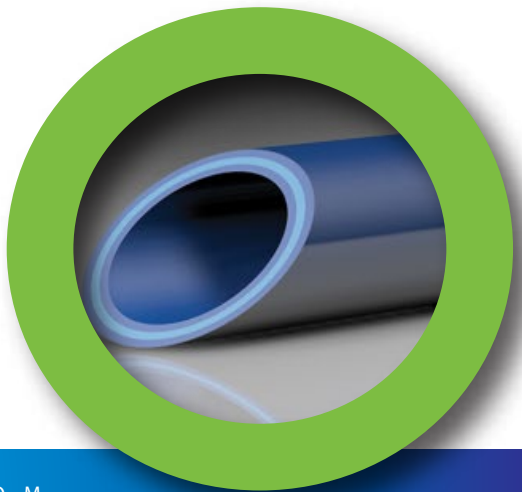
Shatter resistant

Unlike other rigid plastics, which shatter under-impact, Mega-Therm's piping systems remain flexible and resilient at normal operating temperatures. Whether hit by a high-speed projectile or struck by a slower, heavier object, Mega -Therm piping systems will not shatter. Even if brought to the breaking point, systems made from Mega-Therm PP-R will only flatten and split, rather than throwing dangerous shrapnel. This makes the pipe extremely safe to use, even in high-risk applications..

An unmatched guarantee

As proof of Mega-Therm's demanding quality standards, all properly installed Mega-Therm pipe systems carry a 10-year warranty for pipe and fittings with a combined personal injury and property damage liability coverage of up to 13.5 million per damage event. This warranty also covers any incidental damage caused by material failure.

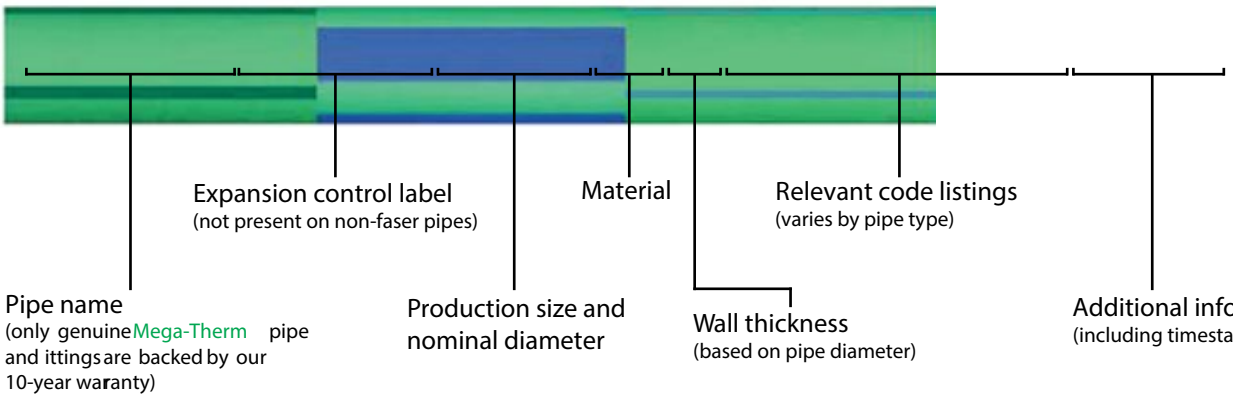
Note:
Warranty only valid if installed by an Mega-Therm trained and certified installer, using Mega-Therm approved tools. A final pressure test report must be submitted to verify proper installation.



QUALITY ASSURANCE

Mega-Therm has several lines of pipe that are specically engineered for certain applications. Stripes and color indicate the type of pipe.

Mega-Therm MP Mega-Therm MP Mega-Therm S



LABELING

All Mega-Therm pipes are labeled every three feet to identify the size and type of pipe and the test standards which they meet. Refer to the diagram above for a thorough explanation.

Fittings are sorted according to the designated packing units and are packaged in bags with coded labels to make storage and identiication easier.

Fittings also have their size and production run stamped on them for easy identiication outside their packaging.

CARE AND HANDLING OF PIPES AND FITTINGS

» Always handle the ends of the pipe carefully. If the pipe is exposed to impact or stress, inspect it for damage. Damaged ends or sections should be marked and removed before installation. Surface scratches deeper than 10% of the wall thickness are considered damage.

» Always store the pipe on a flat surface. When storing the pipe on racks, always have at least three supports under 13 ft lengths and four supports under 19 ft lengths.

» It is best to place plywood or something similar on top of the supports to keep the pipe from warping.

» When storing the pipe outdoors, leave it in the factory-issued protective bag as much as possible. If the pipe is removed from its bag, do not store it uncovered for more than six months. Pipe that is exposed to direct sunlight longer than six months is no longer covered under the warranty. The black-coated UV pipe may be stored outdoors indefinitely.

» Never place the forks of a forklift into the ends of the pipe. This will damage the pipe and can cause it to crack. Handlers may use a padded rug ram inside the pipe. Otherwise, it is recommended to use a crane or lift to handle larger pipes.

» In cold weather, take extra care when handling the pipe. Cold temperatures reduce the pipe's flexibility, making it more susceptible to impact damage.

» Keep the fittings in their original bags. Many of the fittings do not have detailed labels printed on them and can get mixed up if they are not stored with their bags. When storing loose fittings in boxes or bins, attach a label from the packing bag to identify the fitttings.

» When shipping the pipe, always load it onto a flasturface or one which is evenly supported. Only strapth e pipe at a place where it is supported to prevent bowing.

» When covering the pipe, always use a light colored tarp such as blue or white. Do not use a black tarp, as this may cause heat damage to the pipe. Pipe may also be covered with a structure that provides shade.

INSTALLATION PRINCIPLES

All risers and distribution pipes are designed and planned as usual, but the Mega-Therm piping systems offer a number of advantages to reduce installation

Distribution piping with composite

The increased dimensional stability of the Mega-Therm and Mega faser-composite piping systems allows for wider hanger spacing than other plastics.

Fusion outlets (tee taps) generally replace reducing tees for branches, allowing the take-offs to be installed after the main lines. This often makes installation faster and simpler.

Because fewer fittings are needed in Mega-Therm and Mega-Clima systems (when compared to other piping materials), the number of connections is reduced and so is the required time for installation.

With careful planning, Mega-Therm and Mega-Clima sturdy, lightweight materials are ideal for pre-fabrication, another time saver on the job site.

Floor distribution with distribution

The distribution blocks also offer further installation options: A simple opening of a side branch by drilling (18 mm bit) enables the connection of an additional pipe.

INSTALLATION ADVANTAGES

FAST CONNECTION TIMES

Mega-Therm pipes and fittings are assembled with heat fusion, a fast and simple process that involves heating the materials and sliding them together for a perfect connection every time.

Heat fusion can save over 50% on labor time compared to traditional welding and soldering and is comparable to the quickest laborsaving connection methods.

FUSION OUTLETS

This innovation allows for branch lines to be added after the mains are already in place, reducing labor times and giving the installer unparalleled lexibility.

Fusion outlets replace standard reducing tees and offer many advantages such as replacing two connections with one, having a lower pressure drop, and using less material.

RIGID HANGING PIPE

Mega-Therm pipes are designed to remain rigid on hangers, giving the pipe a clean, conventional layout with elbows and tees. This allows installers to create a craftsman's appearance in the inal product.

LIGHTWEIGHT MATERIAL

Mega-Therm's PP-R pipes and ittings can weigh as little as 1/8th of an equivalent metal part, making it much easier to lift and carry around the jobsite. Installing larger spools and carrying the materials in fewer trips will speed the overall installation process and reduce worker fatigue.

FLEXIBLE LENGTHS AND CONNECTIONS

Heat fusion connections have the same properties as the pipes and fittings, so there is a certain level of lexibility in the assembled pipe that makes it easy to prefabricate and move on-site without the risk of the joints cracking and leaking. This lexibility also allows for a wider range of applications and protects the pipe from seismic stresses.

CONSISTENT RESULTS

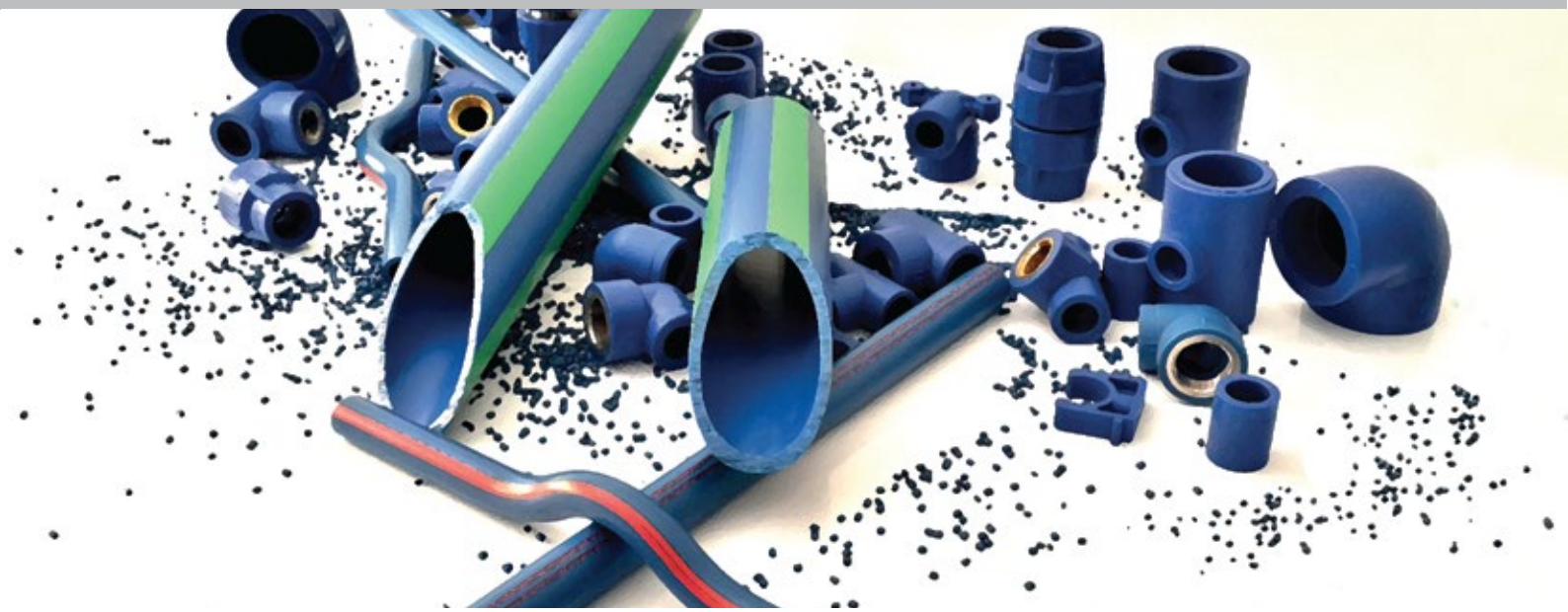
One of the major advantages of using PP-R and heat fusion is that the results are both reliable and consistent. The double bead of plastic allows for accurate visual inspection.

ADVANTAGES

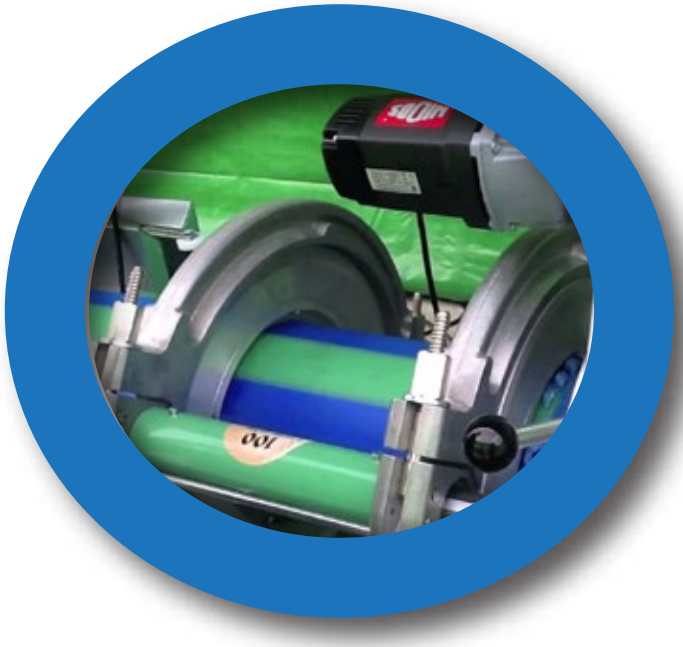
Lightweight pipe and fittings

- Durable material
- Full system compatibility
- Rigid hanging pipe
- Flexible lengths and connections
- Easily prefabricated
- Consistent results
- Simple expansion control
- Suitable for air testing

Damaged pipe or improper joining may cause the pipe or ittings to break apart during pressure testing. Follow all safety precautions when conducting a pressure test.



POTABLE WATER AND FOOD-GRADE



Mega-Therm is approved for direct contact with food and potable water and is an ideal distribution main system used in hospitals, schools, high-rise buildings, hotels, ship-building, sports facilities, residences, and many other projects.

COMPRESSED AIR SYSTEMS

Both Mega-Therm and can be Mega-Clima safely used in light industry, heavy industry, automotive mechanic shops and more. Because Mega-Therm is also available in the thicker-walled SDR 7.4, it provides superior pressure ratings and resistance to shattering. Additionally, Mega-Therm piping systems do not corrode, protecting the attached equipment from rust and debris.

MULTIPURPOSE FIRE SPRINKLERS

For light hazard occupancies, Mega-Therm can be integrated with the potable water system to provide fire protection. The high flow rates allow for mains and branches to be run through the building rather than many individual pipes, keeping the system simple and efficient.

MARINE APPLICATIONS

Mega-Therm is made from a hydrophobic, low-friction material that is unaffected by the dissolved minerals contained in seawater, freshwater, and brine.

OTHER APPLICATIONS

Although Mega-Therm can also be used in chilled water distribution, industrial projects and in-floor heating systems, Mega-Clima is better suited for these applications.

ECOLOGICAL Advantages

- Improved efficiency
- No toxic materials such as PVC, BPAs, dioxins, phthalates or VOCs
- Fully recyclable pipe and fittings
- Extended service life
- Free of heavy metals
- Chemically inert
- Emission-free installation

High-Opacity Pigmentation

PP-R is intentionally pigmented to be opaque, preventing light from entering the pipe. This helps protect the pipe from microbiological build-up and increases the service life of the system.heating, and various industrial applications.

Low-Impact Lifecycle

PP-R is fully recyclable and can be ground, melt ed, and re-used in car parts, home products, food packaging, medical equipment, and other applications.

There are no harmful waste products created by the processing or disposal of PP-R. The pipe and fittings made with PP-R have an estimated service life of over 60 years. As a result, Mega-Therm's pipe systems rarely require maintenance or costly repairs.

Proven Worldwide

Mega-Therm piping systems have been tested, listed, and certiied by numerous national and international organizations, including:

- NSF, ICC, IAPMO, ASTM, FM, BNQ, CFIA (North America)
- DVGW, SKZ (Germany)
- WRAS (UK)
- SVGW (Switzerland)
- SAI-Global (Australia)
- SITAC (Sweden) … and many more!

Environmental Safety

Since its founding in 1993, Mega-Therm has worked hard to ensure that our products and manufacturing processes do not pollute the earth's sensitive ecosystems. Being green isn't just a fad with Mega-Therm; it's our way of doing business.

Mega-Therm believes that ecological and economic interests should go hand-in-hand, both in the production and installation of our products. Mega-Therm's PP-R pipes and ittings are even fully recyclable, minimizing their impact from start to finish.

To ensure its environmental compatibility, the base PP-R material and additives (color pigments and stabilizers) are extensively tested by Mega-Therm's own laboratory as well as independent researchers to ensure that nothing harmful is ever put into our pipes.

Mega-Therm and LEED Credits

Mega-Therm pipe has been used in many LEED certified projects. Although there are no direct LEED credits for using a particular piping material, there are several points which the right piping system can address.

Please refer to the Mega-Therm LEED Planning Guide on our website at **www.mega-therm.com** for further details. Information regarding LEED projects that have used Mega-Therm pipes can be found in the Case Studies section.

MEGA-THERM BLUE POWER
CLIMA & HVAC SYSTEMS

Mega-Therm's Polypropylene (PP-R)
Piping System With Fusion Connections

"Check Out The Advantages"

PIPE MATERIAL	PP-R	Stainless Steel	Copper	Steel	PEX	CPVC
Impact resistant	✓	✓	✓	✓	-	-
Chemically resistant	✓	✓	❍	❍	❍	-
Abrasion resistant	✓	✓	-	-	❍	✓
Scale resistant	✓	✓	-	-	❍	❍
No toxic metals or plastics	✓	❍	-	-	❍	-
Corrosion resistant	✓	✓	-	-	❍	❍
Non-Toxic	✓	❍	-	-	❍	❍
Non-toxic combustion products	✓	✓	✓	✓	-	-
Resists chemical leaching into water	✓	✓	✓	✓	-	-
50- year system rating	✓	-	-	-	-	-
Controlled male expansion	✓	✓	✓	✓	-	-
Recyclable	✓	✓	✓	✓	❍	-
Opaque to block algae and bacteria	✓	✓	✓	✓	❍	❍
Self insulating	✓	-	-	-	❍	❍
Quiet	✓	-	-	-	✓	✓
Does not easily sweat	✓	-	-	-	❍	❍
Stable competitive pricing	✓	-	-	-	✓	✓
Environmentally friendly system	✓	-	-	-	❍	-
Potential LEED innovation credits	✓	-	-	-	-	-

CONNECTIONS & FITTINGS	Fusion	Weld	Gasket**	Solder	Gasket**	Weld	Gasket**	Crimp/ Compression	Glue
Leak-proof connections	✓	❍	-	❍	-	❍	-	-	-
No foreign materials	✓	❍	-	-	-	❍	-	❍	-
Joints stronger than pipe	✓	❍	-	❍	-	❍	-	-	-
Saddle or other low cost branches	✓	✓	-	❍	-	✓	-	-	-
Low cost connections	✓	-	-	-	-	-	-	-	❍
Non-toxic connections	✓	✓	❍	❍	❍	-	-	❍	-
No open lames	✓	-	✓	-	✓	-	✓	✓	✓
Connections usable in < 1 hour	✓	✓	✓	✓	✓	✓	✓	✓	-
Full R ange 1/2" to 12"	✓	✓	-	❍	-	✓	-	-	-

✓ Excellent
❍ Sometimes
- Not Recommended

* Please provide details of intended application including chemical(s), concentrations, pressures and temperatures, to verify compatibility.

STANDARDS, REGULATIONS, AND LISTINGS

The following national and international standards, regulations, and listings are applicable to Mega-Therm piping systems.

- **NSF Standard 61 (C.HOT 180 °F/82 °C)**

Suitable for potable water

- **NSF Standard 14**

Meets piping performance requirements

- **NSF Standard 51**

Suitable for food processing up to 212 °F (100 °C)

- **ICC ESR-1613 / PMG Listing 1014**

Polypropylene pipe and fittings meet or exceed North American standards

- **DIN EN ISO 9001**

Quality management systems: requirements

- **IPC 2009 Sec. 605**

Water distribution & Water service

- **IMC 2009 Chapter 12**

Hydronic piping

- **IRC 2009 Chapter 21 & 26**

Hydronic piping & Plumbing

- **UMC 2009 Chapter 12**

Hydronic piping

- **UPC 2012 Chapter 6**

Water distribution & Building supply

- **IAPMO File M-6022**
- **ASTM F2389**

Standard specification for pressure rated polypropylene (PP) piping systems

- **CSA B137.11**

Polypropylene (PP-R) pipe and fittings for pressure applications

- **CSA B214**

Polypropylene (PP-R) pipe and fittings for hydronic applications

- **BNQ 3660-950**

Safety of products and materials in contact with drinking water

- **ISO 15874**

Plastic pipe system for hot and cold water installation: polypropylene

- **ASTM F2023**

Standard test method for evaluating the oxidative resistance of plastic piping to hot chlorinated water

- **ASTM D 635**

Standard test method for rate of burning and/or extent and time of burning of plastics in a horizontal position

- **FM 1635**

For wet pipe automatic sprinkler systems in light-hazard occupancies

- **NFPA 13, 13D and 13R**

Standard for the installation of sprinkler systems in one/twofamily dwellings & manufactured homes

- **DIN EN ISO 14001**

Standard for environmental management

MEGA-THERM BLUE POWER

CLIMA & HVAC SYSTEMS

WWW.MEGA-THERM.COM

info@mega-therm.com
export@mega-therm.com
sales@mega-therm.com

FACTORY & HEAD OFFICE
Prof. Muammer Aksoy St. No:92 İskenderun - Hatay / TURKEY
+90 (326) 615 10 86 - 89
+90 (326) 615 10 83

ISTANBUL OFFICE
Petunya St. No:13 Sarıyer - İstanbul / TURKEY
+90 (543) 623 31 41
+90 (212) 229 13 58

USA OFFICE
5000 Brich St, West Tower Suite 3000 Newport Beach, CA 92660
+1 (949) 476 37 00
+1 (949) 476 37 58
+1 (949) 735 27 22 (Cell) - usa@mega-therm.com