Brymec Malleable Iron Technical Specification

System Overview

Suitable for use in commercial and industrial applications, capable of supplying high pressure heating and cooling services as well as the safe transportation of fuels, and water for fire defence.

Malleable Iron is one of the most trusted pipe materials used in the construction industry. Connections are made using strong threaded connections to recognised international standards, or by flange adapters.

The Brymec Malleable Iron system covers sizes from ½" to 4", with nominal pipe lengths available at 3.25m. The comprehensive range of fittings provides you with freedom to design the optimum system to suit the needs of your project.

Brymec Malleable Iron is ideally suited for use on high pressure systems or where the environment requires the utmost of strength, corrosion resistance, and durability for the installation.

Certification

CE

Technical information

Brymec Thick Walled, Welded Carbon Steel Tubes Technical Information									
Inch (")	**1/2"**	**3/4"**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	**2 1/2"**	**3"**	**4"**
DN (mm)	15mm	20mm	25mm	32mm	40mm	50mm	65mm	80mm	100mm
OD (mm)	21.3	26.9	33.7	42.4	48.3	60.3	76.1	88.9	114.3
Nominal Wall Thickness - mm	3.2	3.2	4.0	4.0	4.0	4.5	4.5	5.0	5.4
Internal Diameter - mm	14.9	20.5	25.7	34.4	40.3	51.3	67.1	78.9	103.5
Pipe Weight - Kg/m	1.4	1.9	2.9	3.8	4.4	6.2	7.9	10.3	14.5
Water Volume - L/m	0.17	0.33	0.52	0.93	1.28	2.07	3.54	4.89	8.41
Pipe Weight With Water - Kg/m	1.57	2.23	3.42	4.73	5.68	8.27	11.44	15.19	22.91
Max. Operating Pressure	See table of Operating Conditions overleaf								
Operating Temperatures	low -10°C, and elevated temperature applications up to 300°C - see table of Operating Conditions overleaf								
Thermal Expansion Coefficient	0.012 mm (m*K)								
Thermal Conductivity	50 W/(m*K) @ 20°C								
Internal Roughness	0.045mm								
Pipe Material	P235GH (1.0345) to BS EN 10217-2 - Welded steel tubes for pressure purposes.								
Thread	Tube ends prepared with BSP - R threads to BS EN10226:-1 2004 (supplied with one socket)								
Pipe Reaction To Fire	A1 to BS EN 13501-1								
Pipe Identification Markings	Markings as required by BS EN 10217 Part 2: 2019								
Manufacturing Standard	BS EN 10217 Part 2: 2019 - BS EN 10255, hot-finished welded								
Approvals	CE Mark to Pressure Equipment (Safety) Regulations:2016 GB, Compliant to PED EN10217-2 and CPR EN10255								

Brymec Malleable Cast Iron Fittings Technical Information	
Body Material	GJNB-350-10 Blackheart Malleable Cast Iron to EN1562
Flat Sealing Gaskets	CNAF compressed fibre washers to BS EN 1514-1 PN 16
Thread Standard	BSP - R & Rp BS EN10226:-1 2004 or ISO 228-1 where sealing with a flat gasket
Manufacturing Standard	ISO 49 & BS EN 10242:1995 Design Symbol A, BS 143 & 1256 or to BS EN 10241 for small items
Surface finish	Natural black, or Hot Dipped Galvanised to BS EN 10242 (minimum 500 g/m2)
Certification	Compliant with the PED & Pressure Equipment (Safety) Regulations:2016 GB

Operating Conditions

Brymec Malleable Iron Operating Conditions			
Application	**Comments**	**Max. Pressure**	**Max. Temp.**
Heating - LTHW & MTHW	For space heating and / or low to medium temperature processes and heat networks	25 Bar	40°C - 119°C
Heating - HTHW	For space heating and / or high temperature processes and heat networks	Interpolated*	120°C - 300°C
Steam	Steam systems typically used to supply heat exchangers, sterilising processes or kitchen equipment	Interpolated*	100°C - 200°C
Chilled water (CHW) and cooling	For use in space cooling and cooling processes	25 Bar	5°C - 18°C
Harvested Rainwater (HRW)	For services applications that do not require potable water	25 Bar	7°C - 20°C
Compressed Air	To class 1 -3 to ISO 8753-1	25 Bar	7°C - 50°C
Fuel Gasses	Supply of fuel gasses such as Natural gas and LPG	5 Bar	5°C - 23°C
Fuel Oil	Movement of fuel oils, typically Gravity fed from a vessel	5 Bar	5°C - 23°C
Fire Defence	Water based dry and wet risers and sprinker systems	25 Bar	5°C - 25°C
The above applications are typical industry conditions of use. Please refer to Brymec Technical for any applications other than those mentioned in the above table.			
* Interpolated maximum pressure figures must be calculated using information within the full Brymec Malleable Iron Technical Brochure			
Maximum permissible system conditions -20°C - 300°C at 25 Bar maximum (See note on interpolated pressure above)			

Warranty

The Brymec Malleable Iron system is covered by a comprehensive 3 year warranty. Please refer to the Brymec terms and conditions for full details.

Installation and Tooling

For manufacturer's warranties to apply, all products must be installed to Brymec's latest installation instructions.

Protection from Freezing

If risk of damage from freezing, a suitable anti-freeze additive must be used which should be suitable for use with P235GH steel and GJNB-350-10 cast Iron.

Protection from Corrosion

Brymec steel tubes are externally coated with durable red protective paint which has been specifically developed to provide enhanced corrosion resistance and protection during handling. It is advised that this protective surface is re-instated if it becomes damaged due to manual handling. Once pressure tests are completed, fittings may also be painted to provide extra protection from corrosion.

Sealing of Thread Connections

Where suitable for the application, for sealing of the treaded connections we recommend the use of Brymec Ultra Tight sealing thread - to BS EN 751-2 Sealing Materials for Metallic Threaded Joints in Contact with 1st, 2nd and 3rd Family Gases and Hot Water Part 2: Non-Hardening Jointing Compounds.

Equipotential Bonding

Where required, Brymec's Malleable Iron systems should be bonded in line with the requirements of the current edition of the IEE wiring regulations BS 7671: 2018.

Manufacturer details

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Brymec 3 Year Warranty

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Scan to download the Brymec Malleable Iron Brochure and Technical Data Sheets.

Brymec reserves the right to make changes, without prior notification, to the specification of our Malleable Iron products in line with our policy of continuous improvement and development.