



HYDROTECH™ MS3

MULTI-LAYER PVC-U

a **LESSO** company

★ ★ ★
LEAD-FREE

PIPE SYSTEMS

SUITABLE FOR BUILDINGS,
HOUSES AND CIVIL
CONSTRUCTION PURPOSE.





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PRODUCT RANGE

HYDROTECH

MS 3 PIPES

FEATURES

- Multi-layer technology
- Hydrostatic strength
- Corrosion resistance
- Lead-free formulation
- SIRIM mark MS 628

ADVANTAGES

- Superior Abrasion Resistance
- Ductility and Flexibility
- High Performance Thermoplastic Pipes
- Higher Impact Resistance
- Greater Hydraulic Capacity

APPLICATION

Hydrotech MS3 Piping are recognised for their advantages, and are suitable for pressure applications for supplying potable water, irrigation and fire fighting.



Premium high grade polymer for strength and durability

Polymer matrix for additional strength

Hydrotech™ MS3

3 Layer Technology

To manufacture Hydrotech MS3, Piping is using the most advanced polymer pipe technology.

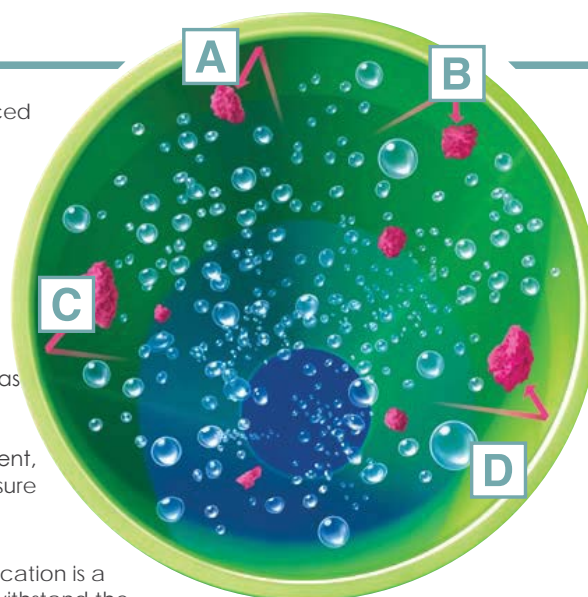
The 3 layer structure provides a comprehensive overall pipe wall resistance to internal and external mechanical stress.

Hydrotech MS3 is constructed from premium quality material, processed on modern extrusion tools, ensures the exceptional durability of the pipeline.

This technology has been in use for a more than 10 years overseas specifically in Britain, North America and South Africa.

With ISO 9001:2008 certification and Total Quality Management, the entire Manufacturing process is strictly controlled to ensure product reliability.

The use of Hydrotech MS3 Three Layer Pipe in water supply application is a logical progression to supply a cost effective product that can withstand the rigours of the water industry.



- A. **Hermetically sealed** - an effective barrier insulating the pipe from outside influences.
- B. Smooth walls **reject** stains and other deposits, preventing them from sticking.
- C. **Stops** chemicals and bacteria from reacting with the pipes.
- D. Above all else, Hydrotech MS3 pipes provides us with **pure water**.

Application

- Water Supply Distribution/Reticulation
- Pressure Sewer
- Irrigation
- General Conveyance of fluid under pressure

Approval

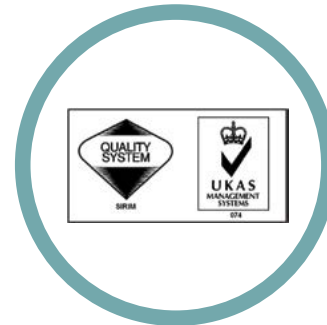
Approval for underground usage by **SIRIM** and **SPAN** for potable cold water lines

Standard and Specification

MS 628: PT1: 1999
MS 628: PT2: 1999



QUALITY & CERTIFICATION



SYSTEM CERTIFICATION

PIPES

1. Multi-layer Unplasticized Polyvinyl Chloride (PVC-U) pipes for water supply systems
2. Unplasticized Polyvinyl Chloride (PVC-U) pipes for water supply systems

FITTINGS

1. Unplasticized Polyvinyl Chloride PVC-U Fittings and Joints for water supply systems

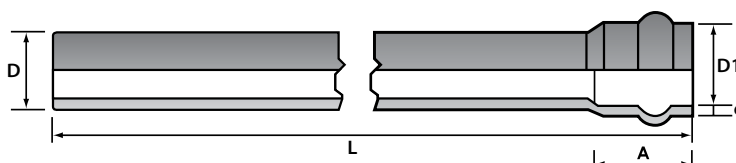
PIPE MARKING FOR TRACEABILITY

- | | | |
|--|--|-----------------------------|
| 1: The word "PALING" or Paling Logo with the word "PALING" | 3: SIRIM License number | 7: Batch |
| 2: The word SIRIM CERTIFIED or MS LOGO | 4: Standard conformance and year of standard | 8: Manufacturing date |
| | 5: Nominal size | 9: Manufacturing Shift code |
| | 6: Pressure rating | 10: Lead Free |
| | | 11: Quality Mark |



DIMENSION

PIPES
(BELL MOUTH SOCKET AT ONE END)



PN 6/ CLASS B

CODE NO.	NOM. SIZE (mm)	Mean Outside Diameter D (mm)		Wall Thickness e (mm)		Length		
		(min)	(max)	(min)	(max)	L (m)	A (mm)	D1 (mm)
1111 100 60 P6 11	100	114.1	114.5	3.4	4.0	6	128	114.8
1111 155 60 P6 11	155	168.0	168.5	4.5	5.2	6	150	168.9
1111 200 60 P6 11	200	218.8	219.4	5.3	6.1	6	168	219.8
1111 250 60 P6 11	250	272.6	273.4	6.6	7.6	6	191	273.9
1111 300 60 P6 11	300	323.4	324.3	7.8	9.0	6	211	324.8

PN 9/ CLASS C

CODE NO.	NOM. SIZE (mm)	Mean Outside Diameter D (mm)		Wall Thickness e (mm)		Length		
		(min)	(max)	(min)	(max)	L (m)	A (mm)	D1 (mm)
1111 080 60 P9 11	80	88.7	89.1	3.5	4.1	6	80	89.4
1111 100 60 P9 11	100	114.1	114.5	4.5	5.2	6	128	114.8
1111 155 60 P9 11	155	168.0	168.5	6.6	7.6	6	150	168.9
1111 200 60 P9 11	200	218.8	219.4	7.8	9	6	168	219.8
1111 250 60 P9 11	250	272.6	273.4	9.7	11.2	6	191	273.9
1111 300 60 P9 11	300	323.4	324.3	11.5	13.3	6	211	324.8

PN 12/ CLASS D

CODE NO.	NOM. SIZE (mm)	Mean Outside Diameter D (mm)		Wall Thickness e (mm)		Length		
		(min)	(max)	(min)	(max)	L (m)	A (mm)	D1 (mm)
1111 080 60 P12 11	80	88.7	89.1	4.6	5.3	6	80	89.4
1111 100 60 P12 11	100	114.1	114.5	6	6.9	6	128	114.8
1111 155 60 P12 11	155	168.0	168.5	8.8	10.2	6	150	168.9
1111 200 60 P12 11	200	218.8	219.4	10.3	11.9	6	168	219.8
1111 250 60 P12 11	250	272.6	273.4	12.8	14.8	6	191	273.9
1111 300 60 P12 11	300	323.4	324.3	15.21	17.5	6	211	324.8

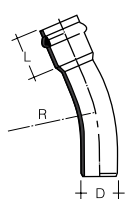
PN 15/ CLASS E

CODE NO.	NOM. SIZE (mm)	Mean Outside Diameter D (mm)		Wall Thickness e (mm)		Length		
		(min)	(max)	(min)	(max)	L (m)	A (mm)	D1 (mm)
1111 100 60 P15 11	100	114.1	114.5	7.3	8.4	6	128	114.8
1111 155 60 P15 11	155	168.0	168.5	10.8	12.5	6	150	168.9
1111 200 60 P15 11	200	218.8	219.4	12.6	14.5	6	168	219.8
1111 250 60 P15 11	250	272.6	273.4	15.7	18.1	6	191	273.9
1111 300 60 P15 11	300	323.4	324.3	18.7	21.6	6	211	324.8

FITTINGS (BELL MOUTH SOCKET AT ONE END)

A wide range of complimentary fittings is available for use with Hydrotech MS 3 pressure pipes. There are variety bends and socket for sizes up to 250mm diameter.

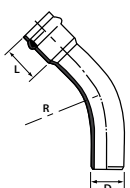
22.5° LONG BEND BELL MOUTH



CODE NO.	NOM. SIZE (mm)	MEAN OUTSIDE DIAMETER D (mm)		SOCKET LENGTH L (mm)	TOTAL LENGTH TL (mm)
		(min)	(max)		
2132 100 P12 11Δ	100	114.1	114.5	145	385
2132 155 P12 11Δ	155	168.0	168.5	165	700

Δ Fabrication item

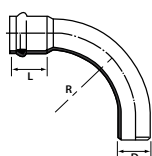
45° LONG BEND BELL MOUTH



CODE NO.	NOM. SIZE (mm)	MEAN OUTSIDE DIAMETER D (mm)		SOCKET LENGTH L (mm)	RADIUS R (mm)
		(min)	(max)		
2105 100 P12 11Δ	100	114.1	114.5	145	385
2105 155 P12 11Δ	155	168.0	168.5	165	700

Δ Fabrication item

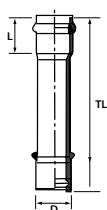
90° LONG BEND BELL MOUTH



CODE NO.	NOM. SIZE (mm)	MEAN OUTSIDE DIAMETER D (mm)		SOCKET LENGTH L (mm)	RADIUS R (mm)
		(min)	(max)		
2104 100 P12 11Δ	100	114.1	114.5	145	385
2104 155 P12 11Δ	155	168.0	168.5	165	700

Δ Fabrication item

DOUBLE END SOCKET BELL MOUTH



CODE NO.	NOM. SIZE (mm)	MEAN OUTSIDE DIAMETER D (mm)		SOCKET LENGTH L (mm)	TOTAL LENGTH TL (mm)
		(min)	(max)		
2133 100 P12 11Δ	100	114.1	114.5	145	341
2133 155 P12 11Δ	155	168.0	168.5	165	382
2133 200 P12 11Δ	200	218.8	219.4	185	425
2133 250 P12 11Δ	250	272.6	273.4	210	481

Δ Fabrication item

ASSEMBLY OF PIPES WITH RUBBER RING JOINTS



The assembly of one pipe to another may be performed using various methods. One of the most successful methods employs a rubber ring joint. The rubber ring joint may be either of integral socket design (formed as a continuous, homogeneous entity with the pipe) or it may consist of a separate sleeve-type coupling. The joint provides the following advantages:

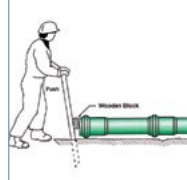
- Allowance for expansion and contraction.
- Reliably assembled in poor weather conditions.
- Consistent reliability.
- Flexibility and resiliency.
- Labour saving and overall economical.
- Ease of installation.

JOINTING METHOD



Use only the lubricant supplied by Paling Industries Sdn Bhd

When the rings are colour coded, be sure to consult the pipe manufacturer or their literature for the difference. In all cases, clean the ring, the socket or the coupling interior, especially the groove (except when the ring is permanently installed) and the spigot with a rag, brush or paper towel to remove any dirt or foreign material before assembling. Inspect the ring, pipe spigot chamber, ring groove and sealing surfaces for damages or deformation. Use only rings which are designed for and supplied with the pipe. Insert them as recommended by the manufacturer.



Lubricant should be applied as specified by the pipe manufacturer. Bacterial growth, damage to gaskets or the pipe, may result from the use of non-approved lubricants. Use only the lubricant supplied by the pipe manufacturer.

While keeping the lengths in paper alignment, brace the socket and push the spigot into the bell. The spigot should be inserted until the reference mark on the pipe barrel is even with the edge of the socket.

JOINTING METHOD FOR RUBBER RING JOINT



1. Clean dirt and grit from socket



2. Clean the exterior of the pipe before applying the lubricant



3. Apply lubricant on spigot

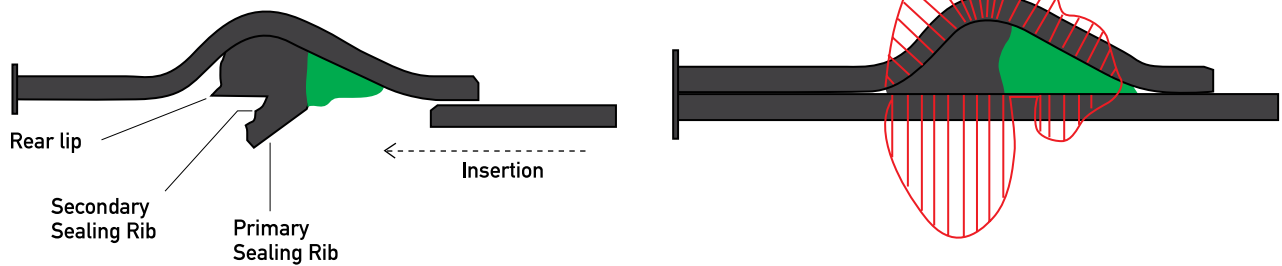


4. Insert the pipe until the white line

JOINT WITH DUAL HARDNESS PIPE SEAL

Application advantages of Paling Bell-Mouth Rubber Ring Joint (RRJ) piping fitted with the locked-in pipe seal:

- One piece constriction seal with Hard and Soft rubber bonded firmly together.
- Hard rubber for retaining. Soft rubber for sealing.
- No loose retaining ring or device needed.
- Designed to be retained tightly in the socket groove and yet, can be removed for cleaning purposes prior to assembly.
- The exclusive "DOUBLE COMPRESSION LIPS" design gives extra compression, hence provides additional sealing performance against spigot and socket.
- The sealing lip is designed to prevent sand and/or other foreign particles from penetrating the joint.





FREQUENTLY ASKED QUESTIONS



WHAT ARE THREE-LAYERED HYDROTECH MS3 PIPES ?

Produced using European technologies, three-layered Hydrotech MS3 pipes are becoming increasingly popular around the world. These are made of high grade polymers with improved UV, bacterial and mechanical impact resistance. These qualities are present in both inside and outside layers, along with high-strength polymer matrix intermediate layers.

WHAT ARE THE MAIN FEATURES OF THREE-LAYERED TECHNOLOGY ?

Multiple layers have higher resistance to overall failure arising from deformation and buckling. They are also more effective in accommodating pressure and absorbing impact.

DOES A THREE-LAYERED PIPE REQUIRE DIFFERENT OR SPECIALIZED INSTALLATION TECHNIQUES ?

The method of installation is similar to that used for ordinary, single-layered PVC pipes. In fact, three-layered pipe installations have more flexible requirements and are more practical for contractors to install.

ARE THREE-LAYERED PIPES COMPATIBLE WITH OTHER WATERWORKS FITTINGS ?

The sizes of three-layered pipes are compatible with other commonly available waterworks components, including those made of metal. They do not require any special adaptors or additional jointing works in order to connect with pipes made of other materials.



ABOUT LESSO MALAYSIA INDUSTRIES SDN. BHD.

These systems are suitable for various applications and building types, including domestic, commercial, industrial and civil construction projects. Lesso Malaysia Industries products are accurately designed to consistently exceed the performance aspects specified under widely recognized standards.

Along with ISO 9001 certification and various approvals by SIRIM and IKRAM, Lesso Malaysia Industries products are accredited by NSF, an authority in water industry standards.

Lesso Malaysia Industries products are manufactured under an effective system of inspection, testing, supervision and control.



ABOUT CHINA LESSO GROUP HOLDINGS LIMITED

(Stock Name: China Lesso, Stock Code: 02128.HK)

China Lesso Group Holdings Limited is a large industrial group of home furnishings and building materials in China. China Lesso offers products, services and channels involving piping, building materials and home furnishings, environmental protection, and modern agriculture. With the rapid development of internationalization and globalization, China Lesso boasts more than 80 holding subsidiaries and more than 23 production bases distributed in 17 provinces across China, and in Canada and Indonesia. China Lesso remains committed to improving its strategic layout, broadening its sales network and expanding the market. This is how it provides products and services for customers in a timely and efficient way.

NOTE :

: DATE



PALING

RAINWATER SYSTEM & GYROJOINT

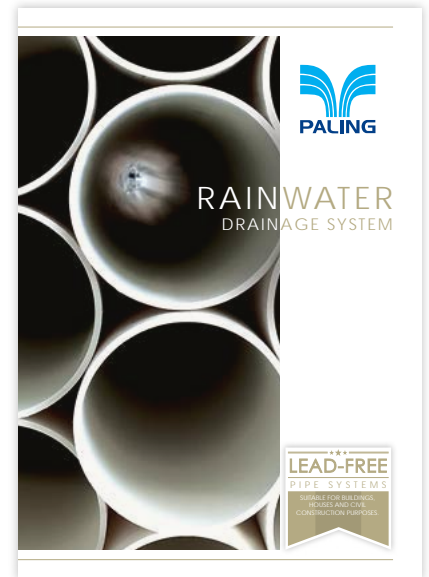
LEAD-FREE PIPE SYSTEMS
SUITABLE FOR BUILDINGS, HOUSES AND CIVIL CONSTRUCTION PURPOSES.



PALING

PRESSURE PIPING SYSTEM

LEAD-FREE PIPE SYSTEMS
SUITABLE FOR BUILDINGS, HOUSES AND CIVIL CONSTRUCTION PURPOSES.



PALING

RAINWATER DRAINAGE SYSTEM

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PALING

SOIL, WASTE & VENT SYSTEM

LEAD-FREE PIPE SYSTEMS
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PALING

UNDERGROUND DRAINAGE & SEWER SYSTEM

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PALING

Elegance RAINGUTTERS

LEAD-FREE PIPE SYSTEMS
SUITABLE FOR BUILDINGS AND HOUSES.

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