



HYDROTECH™ MS3

MULTILAYER PVC-U

a **LESSO** company

★★★
LEAD-FREE
PIPE SYSTEMS

SUITABLE FOR BUILDINGS,
HOUSES AND CIVIL
CONSTRUCTION PURPOSE.

LESSO





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PRODUCT RANGE

HYDROTECH

MS3 MULTILAYER PVC-U PIPES

FEATURES

- Multi-layer technology
- Hydrostatic strength
- Corrosion resistance
- Lead-free formulation
- SIRIM mark MS 2713:2021



ADVANTAGES

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



APPLICATION

The PALING HYDROTECH MS3 MULTILAYER PVC-U pipe significantly improves the tensile and impact strength and provides excellent weather resistance, ensuring durability in both underground and exposed outdoor installations.



Inner / Outer Layers - Formulated with enhanced mechanical strength and UV protection, ensuring long-term durability for above-ground installations

Middle Layer - Designed to provide high tensile and impact strength, delivering reliable performance under internal and external pressure conditions.

Hydrotech™ MS3

MULTI-LAYER TECHNOLOGY

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

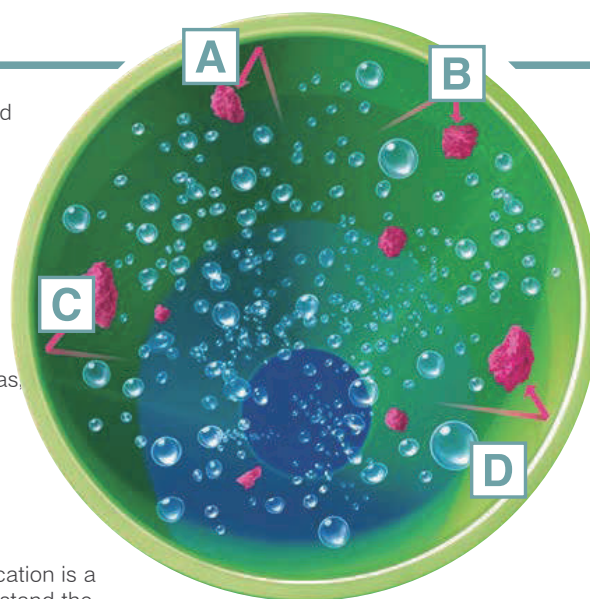
The Multi-layer structure overall pipe wall resistance to internal and external mechanical stress.

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 9001:2015 certification and Total Quality Management, the entire Manufacturing process is strictly controlled to ensure product reliability.

The use of Hydrotech MS3 Multilayer PVC-U 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

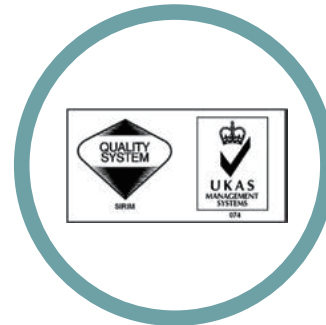
MS 2713-2:2021 AMD.1 : 2023
MS 2713-3:2021



QUALITY & CERTIFICATION



**SPAN
LISTED**



SYSTEM CERTIFICATION

PIPES

Multilayer Unplasticized Poly(Vinyl Chloride) (PVC-U) pipes for Water Supply and for Buried and Above Ground Drainage and Sewerage Under Pressure Application

PIPE MARKING FOR TRACEABILITY

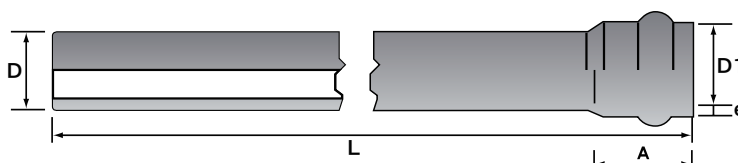
- | | | |
|--|--|--------------------------------|
| 1: The word "PALING" or Paling Logo with the word "PALING" | 3: The word SIRIM certified or MS Logo | 7: Nominal size |
| 2: Trademark name 'Hydrotech MS3' | 4: SIRIM License Number | 8: Pressure Rating |
| | 5: Material, MULTILAYER PVC-U | 9: Manufacturing date and time |
| | 6: Standard conformance | 10: Intended use: WATER/SEWER |
| | | 11: LEAD FREE |
| | | 12: MADE IN MALAYSIA |



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		D1 (mm)
		(min)	(max)	(min)	(max)	L (m)	A (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		D1 (mm)
		(min)	(max)	(min)	(max)	L (m)	A (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	9.0	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 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	6.0	6.0	6	128	114.8
1111 155 60 P12 11	155	168.0	168.5	8.8	10.2	6	150	168.9
1111 200 69 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

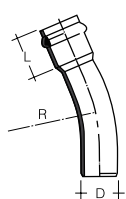
PN 15/ CLASS E

CODENO.	NOM. SIZE (mm)	Mean Outside Diameter D (mm)		Wall Thickness e (mm)		Length 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 MS3 Multilayer PVC-U pipes. There are variety bends and socket for sizes up to 250mm diameter.

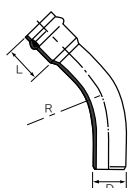
22.5° LONG BEND BELL MOUTH



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

Δ Fabrication item

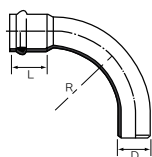
45° LONG BEND BELL MOUTH



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

Δ Fabrication item

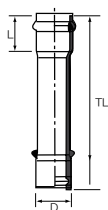
90° LONG BEND BELL MOUTH



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

Δ Fabrication item

DOUBLE END SOCKET BELL MOUTH



CODENO.	NOM. SIZE (mm)	MEAN OUTSIDE DIAMETER D (mm)		SOCKET LENGTH L (mm)	TOTAL LENGTH TL (mm)
		(min)	(max)		
2133 100 P12 11	100	114.1	114.5	145	341
2133 155 P12 11	155	168.0	168.5	165	382
2133 200 P12 11	200	218.8	219.4	185	425
2133 250 P12 11	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



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

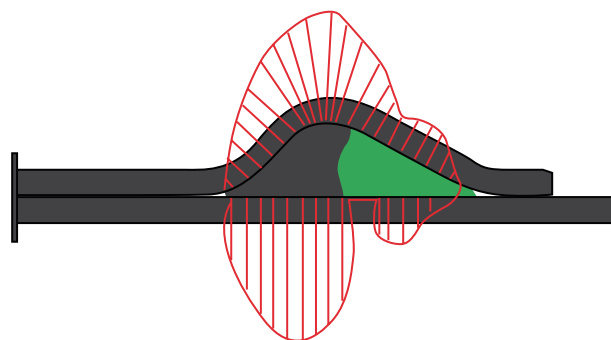
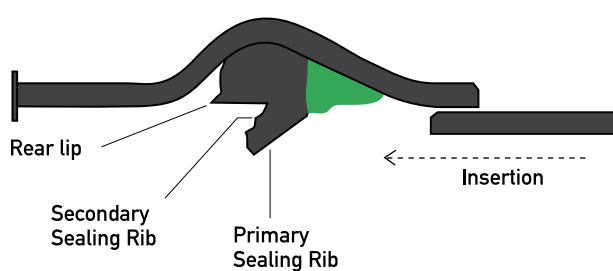


4. Insert the pipe until the white line

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.





WHAT ARE MULTI-LAYER HYDROTECH MS3 PIPES ?

Produced using European technologies, Multi-Layer 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 MULTI-LAYER 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 MULTI-LAYER PIPE REQUIRE DIFFERENT OR SPECIALIZED INSTALLATION TECHNIQUES ?

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

ARE MULTI-LAYER PIPES COMPATIBLE WITH OTHER WATERWORKS FITTINGS ?

The sizes of Multi-Layer 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 :

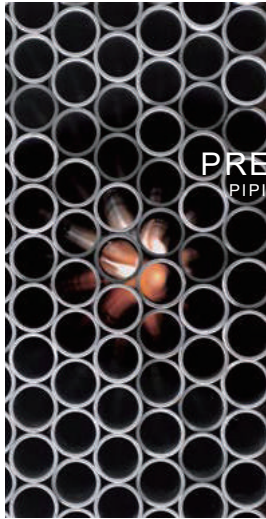
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PALING

**RAIN WATER
SYSTEM & GYROJOINT**

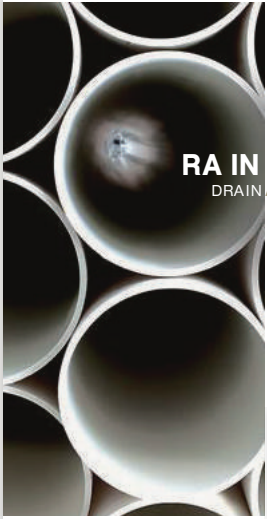
**LEAD-FREE
PIPE SYSTEMS**
SUITABLE FOR BUILDINGS,
HOUSES AND CIVIL
CONSTRUCTION PURPOSES.



PALING

**PRESSURE
PIPING SYSTEM**

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



PALING

**RAIN WATER
DRAINAGE SYSTEM**

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



PALING

**SOIL, WASTE
& VENT SYSTEM**

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



PALING

**UNDERGROUND
DRAINAGE & SEWER
SYSTEM**

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



PALING

**Elegance
in RAIN WATER**

**LEAD-FREE
PIPE SYSTEMS**
SUITABLE FOR BUILDINGS
AND HOUSES

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