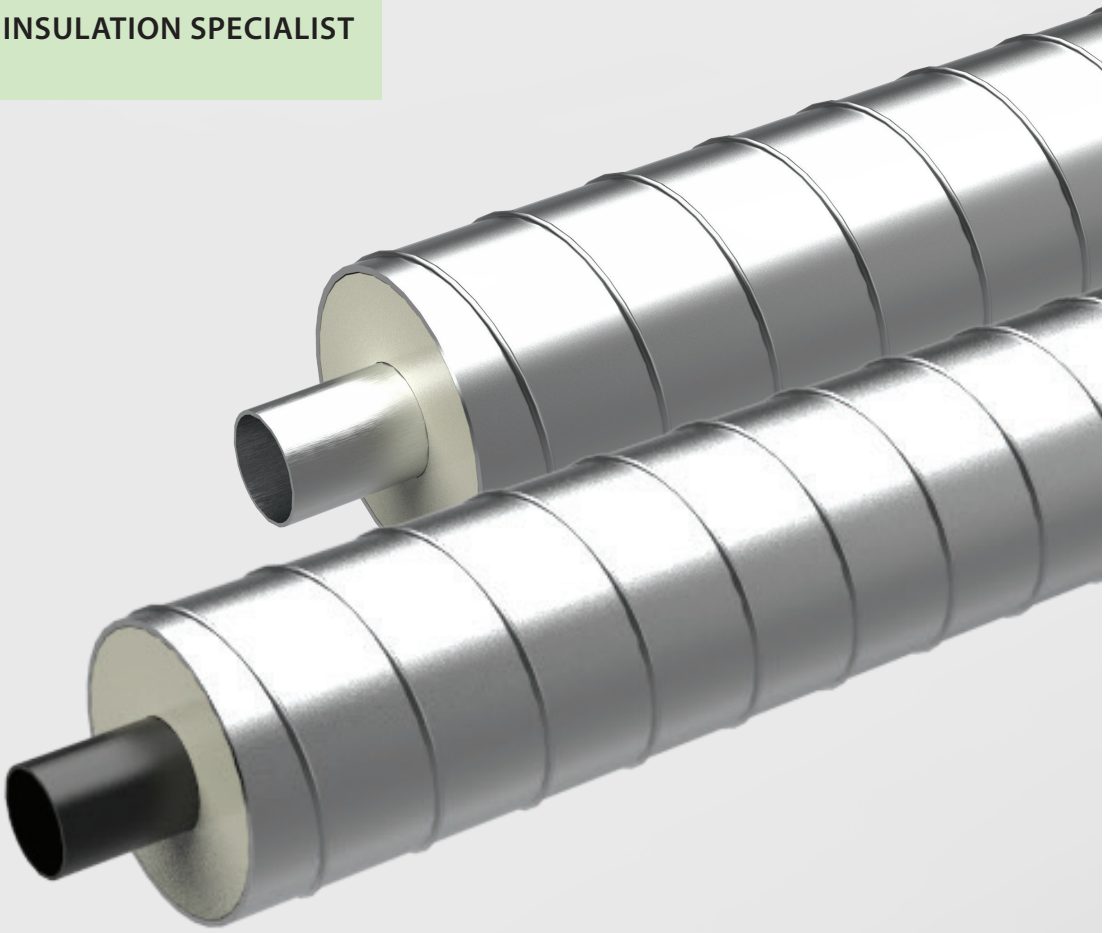
TASHI
INTERNATIONAL PTE LTD

YOUR THERMAL INSULATION SPECIALIST



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About us

The Tashi team of thermal insulation specialists has been at the forefront of innovation and excellence in the manufacturing industry for over 45 years. From humble beginnings as a four-man team in Ang Mo Kio Industry in the 1970s, we have continuously refined our production processes through customer feedback, leading the development of high-quality, ozone-friendly pre-insulated piping systems.

As market pioneers, we have adapted to new technologies and evolving customer needs with remarkable agility and foresight, weathering the storms of change and disruption. Our unwavering commitment to quality and customer satisfaction has earned us a reputation as a reliable and trustworthy partner in the industry.

Today, we utilize advanced polyurethane and spiral tube equipment to produce the finest and most reliable products that meet the highest standards of quality, safety, and sustainability. Tashi's legacy is a testament to our passion for excellence and our unwavering commitment to delivering value to our customers. We are excited to continue innovating and serve the thermal insulation industry.

2020s

LTA Circle Line

Micron

2010s

ION

Jewel

2000s

Esplanade

Marina Bay Sands

1990s

Suntec City Tower

Changi Airport T2

1980s

Parkway Shopping Centre

Hong Leong Finance Building

Applications

District Cooling

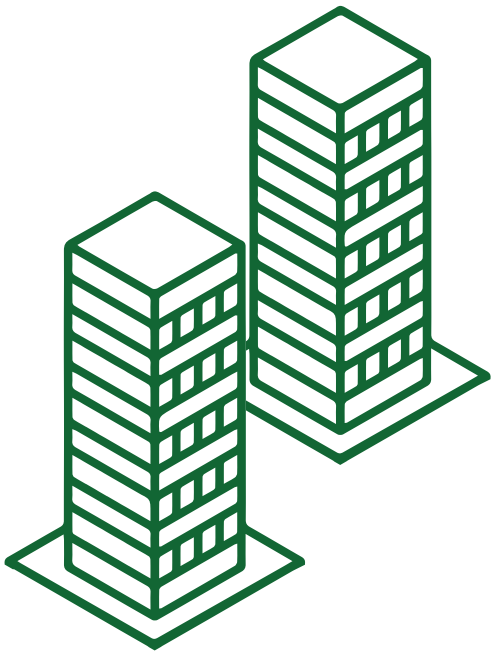
The Art of taking out energy from an enclose or human habitat to create a comfortable zone, defeating the excessive humidity and the high rise in outside temperature, purifying the air from dust and contaminants, with the lowest energy cost possible.

District Heating

District heating provides entire building with energy-efficient heating from one central source such as CHP excess heat, via a network of branching pipes.

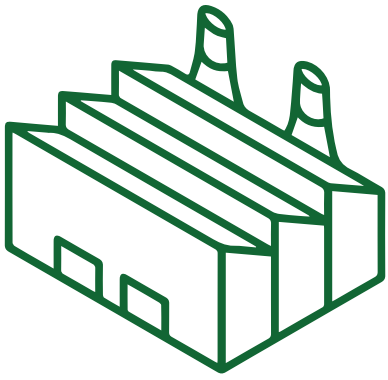
Hot Insulation

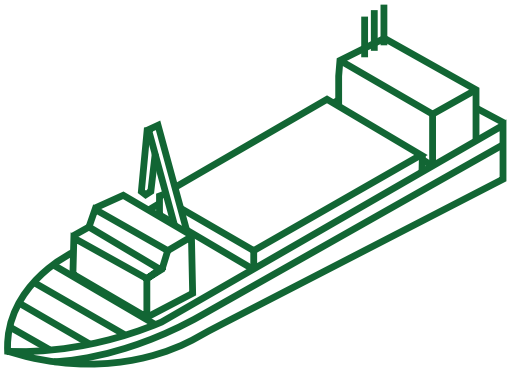
One of the most important insulation tasks is in the production and storage of hot water which requires less energy when stored in appropriately insulated boilers.



Oil & Gas

In the oil & gas, and petrochemical industries, fluids and gases in pipes, vessels and process equipment must be maintained at constant temperatures during the treatment process.



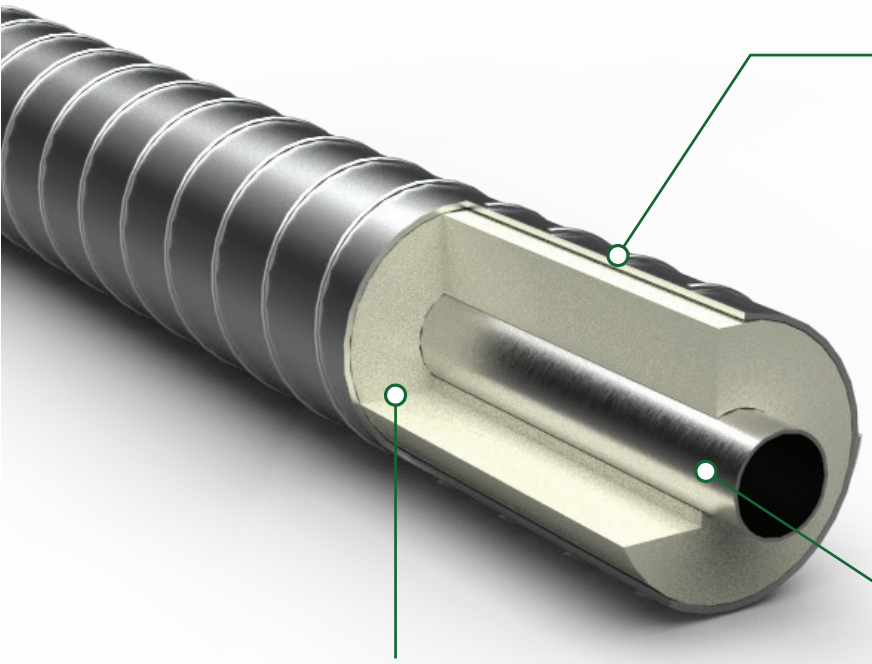


Marine

By thermally insulating subsea equipment, especially in deep and ultra-deep-water field developments, production and operating efficiency can be enhanced by the reduction of wax formation, reduction of hydrate formation and reduction of processing costs.

TASHI-TD

Tashi-TD piping system is a material with a proven track record. Versatility is demonstrated by the ability to insulate pipe systems across a wide range of temperature from -160°C to 280°C. Tashi provides unparallel thermal efficiency of in-house fabrication protected by multitude of jacket materials. Metal jackets of aluminium, galvanized stainless steel and U.V. insulated jacket of PVC and polyurethame are available.



Outer Jacket Options:

Galvanized Iron

HDPE

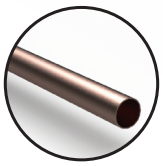
Stainless Steel

Carrier Pipe Options:

Carbon Steel

Stainless Steel

Ductile Iron



Copper

HDPE

Epoxy Cast Iron

Polyurethane Insulation

Machine injected polyurethane foam that foams in place, fills up the entire space between carrier pipe and outer jacket.

Polyurethane foam properties	
Insulation density	48kg/m^3
Thermal conductivity	0.021W/m.K at 10°C mean
Service temperature	-50°C to 100°C
Compressive stress	0.3N/mm^2
Fire propagation	Class "O" rating
Fire rating	2 hours at 1000°C

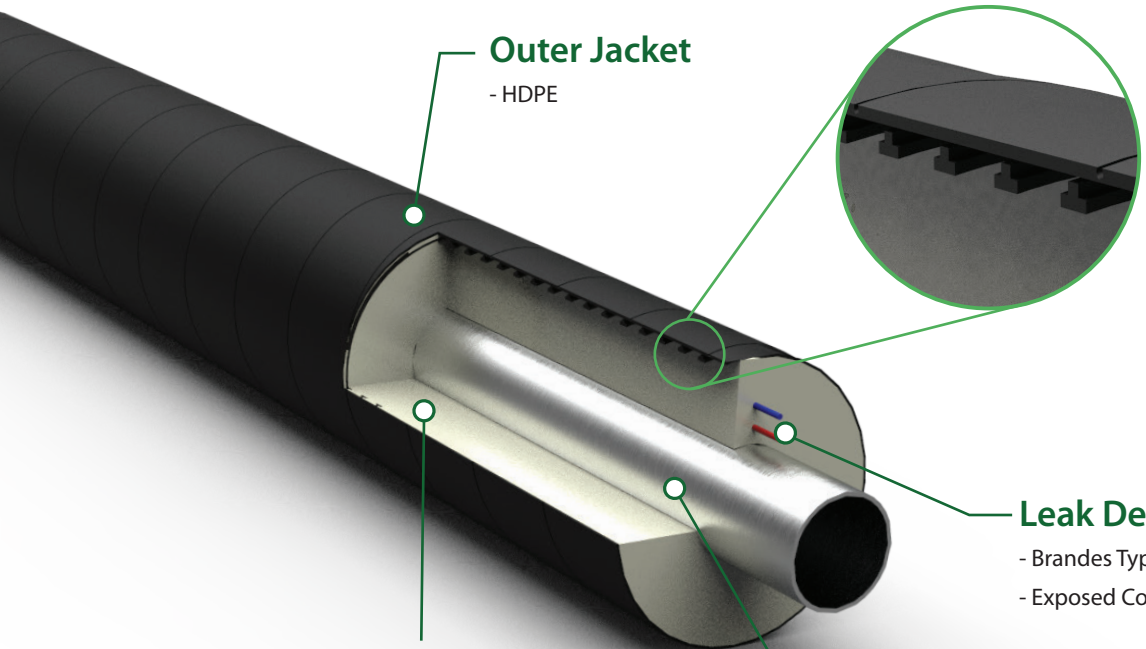
Recommended insulation thickness	
up to Dia. 50mm	Series 40
from Dia. 65mm to 150mm	Series 50
from Dia.200mm & above	Series 65

TASHI-LOC™ New

Tashi, a brand renowned for its forward-thinking approach to performance and sustainability, is thrilled to present its latest product range: Tashi-Loc. Offering an innovative pre-insulated piping solution, Tashi-Loc is crafted using HDPE, one of the most recyclable types of plastic, to deliver superior performance.

Tashi-Loc features a rigid spiral HDPE (High Density) jacket construction with a unique profile design that includes a smooth external wall and T-shaped inner wall. This innovative design provides a superior grip for the injected polyurethane (PU) and reduces the risk of delamination defects, while the spiral construction ensures unparalleled straightness consistency.

Designed for ease of use and maximum efficiency, the Tashi-Loc range is lightweight and simple to fabricate, assemble, and install. It maintains uniform roundness with minimal losses, avoiding the common issue of out-of-tolerance roundness found with traditional HDPE pipe extrusions. Tashi-Loc is the eco-friendly solution that sets the bar high for excellence in the pre-insulated piping industry.



Outer Jacket

- HDPE

Unique profile design with T-shaped inner wall, provides superior grip and reduce delamination risk

Leak Detection Wire

- Brandes Type
- Exposed Copper Type

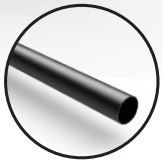
Polyurethane Insulation

Machine injected polyurethane foam that foams in place, fills up the entire space between carrier pipe and outer jacket.

Polyurethane foam properties	
Insulation density	60kg/m^3
Thermal conductivity	0.021W/m.K at 10°C mean
Service temperature	-50°C to 100°C
Fire propagation	Class "O" rating
Fire rating	2 hours at 1000°C

Recommended insulation thickness	
up to Dia. 50mm	Series 40
from Dia. 65mm to 150mm	Series 50
from Dia.200mm & above	Series 65

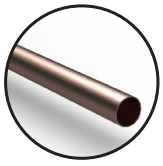
Carrier Pipe Options:



Carbon Steel

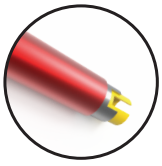
Stainless Steel

Ductile Iron



Copper

HDPE



Epoxy Cast Iron

Technical Description

Steel Pipes

Tashi uses steel pipes made by approved suppliers when producing pre-insulated pipes. The pipes are produced in accordance with strictest demands in standards.

In our standard production, steel pipes according to the following norms and standards are used:

Pipe Size	Standards
DN15 - 150	BS EN 10255 Class B or C ASTM A106 Grade B, Seamless, STD or S40 API5L Grade B, ERW, STD or S40
DN200 - 600	ASTM A106 Grade B, Seamless, STD or S40 API5L Grade B, ERW, STD or S40 JIS G3452
DN650 - 1600	API 5L Grade B LSAW, STD

Other pipes which can be pre-insulated:
Copper pipes
Galvanised pipes
Stainless steel pipes
Plastic pipes, PEH, PP, PB or PVC

Insulation Foam

Polyurethanes as an insulant are a sustainable material which prevents heat loss. In addition, it provides high mechanical strength, flexibility and good flow ability properties, important when filling applications.

The table below presents the properties of Tashi's Polyurethane Foam:

Test	Unit	Typical Value
Density	kg/m^3	48 - 200
Thermal Conductivity	W/m°K	0.02118
Maximum Compressive Strength	kPa	307
Water Vapour Transmission	Perm (m)	0.01

*Information is extracted from Test Report:
S09MEC00742/TKC, 54S043560/ST/ED

Insulation Thickness

Casing

The casing material shall be sufficiently sized to allow desired insulation thickness for optimum performance of system. All metal jackets shall have an internal spiral lock seam. In Tashi's standard production, the following casing material is use.

In our standard production, casing material according to the following standards are used:

Casing Material	Thickness (mm)
Galvanized	0.3 - 1.2

Other casing material which can be used: Stainless Steel, Aluminium, HDPE

Insulation Thickness												
Pipe Sizing			Series 25		Series 40		Series 50		Series 65		Series 75	
OD (mm)	INCH	MM	Casing (mm)	Insulation Thickness (mm)	Casing (mm)	Insulation Thickness (mm)	Casing (mm)	Insulation Thickness (mm)	Casing (mm)	Insulation Thickness (mm)	Casing (mm)	Insulation Thickness (mm)
21.3	1/2"	15	80	29.35	115	46.85	125	51.85	160	69.35	190	84.35
26.7	3/4"	20	80	26.65	115	44.15	140	56.65	160	66.65	190	81.65
33.4	1"	25	90	28.3	115	40.8	140	53.3	170	68.3	190	78.3
42.2	1-1/4"	32	100	28.9	125	41.4	150	53.9	180	68.9	215	86.4
48.3	1-1/2"	40	100	25.85	140	45.85	150	50.85	180	65.85	215	83.35
60.3	2"	50	115	27.35	140	39.85	160	49.85	190	64.85	215	77.35
73	2-1/2"	65	125	26	160	43.5	170	48.5	215	71	225	76
88.9	3"	80	140	25.55	170	40.55	190	50.55	225	68.05	240	75.55
101.6	3-1/2"	90	160	29.2	190	44.2	215	56.7	240	69.2	265	81.7
114.3	4"	100	170	27.85	215	50.35	215	50.35	250	67.85	265	75.35
141.3	5"	125	190	24.35	225	41.85	250	54.35	280	69.35	295	76.85
168.3	6"	150	225	28.35	250	40.85	280	55.85	320	75.85	320	75.85
219.1	8"	200	280	30.45	320	50.45	320	50.45	355	67.95	375	77.95
273.1	10"	250			355	40.95	375	50.95	420	73.45	425	75.95
323.9	12"	300			420	48.05	425	50.55	475	75.55	475	75.55
355.6	14"	350			450	47.2	460	52.2	490	67.2	510	77.2
406.4	16"	400					510	51.8	540	66.8	560	76.8
457.2	18"	450					560	51.4	590	66.4	610	76.4
508	20"	500					610	51	640	66	660	76
558.58	22"	550					660	50.71	690	65.71	710	75.71
609.6	24"	600					710	50.2	740	65.2	760	75.2
660.4	26"	650									825	82.3
711.2	28"	700									875	81.9
762	30"	750									925	81.5
812.8	32"	800									975	81.1
863.6	34"	850									1050	93.2
914.4	36"	900									1100	92.8
965.2	38"	950									1150	92.4
1016	40"	1000									1200	92
1066.8	42"	1050									1250	91.6
1117.8	44"	1100									1275	78.6
1168.4	46"	1150									1325	78.3
1219.2	48"	1200									1375	77.9
1321	52"	1300									1480	79.5
1422	56"	1400									1580	79
1524	60"	1500									1680	78

Note:
1. Insulation thickness shown in above table indicates calculated thickness only; actual insulation thickness varies due to dimensional tolerance of carrier pipe OD and manufacturing dimensional tolerance of steel jacket.

*Recommended thickness

Engineering Data

Calculation Formulas for Heat Gain and Casing Temperature

1. Heat Gain

$$Q = \frac{(Ta - Tw)\pi}{\frac{1}{2K} LN \frac{D2}{D1} + \frac{1}{\alpha D2}}$$

Where K = 0.021 W/m.K

Q = Heat gain or heat loss by insulation (W/m)
Tw = Fluid temperature (°C)
Ta = Ambient air temperature (°C)
Tc = Casing temperature (°C)
D2 = Casing outer diameter (m)
D1 = Carrier pipe outer diameter (m)
K = Thermal conductivity of insulation (W/m.K)
α = Surface coefficient (W/m2.K)
= 8 (Dull metallic surface still air)

2. Casing Temperature of Preinsulated Pipe

$$Tc = Ta - \frac{Q}{\pi \alpha D2}$$

The temperature of the casings of preinsulated chilled water pipes must be higher than the dew point to prevent condensation.

Heat Gain Value by Insulation

Preinsulated Pipes

Specifications: Chilled Water Pipes

Carrier pipe: 15mm to 150mm – BS 1387 Heavy or Medium Gauge

200mm to 1000mm – API 5L Grade B; ASTM A53 Grade B

Insulation: Rigid Polyurethane foam, Density 48kg/m^3

Jacket: Galvanized steel inside lockseamed

Ambient temperature: 30°C

Fluid temperature: 6°C

Pipe Size (mm)	Pipe OD (mm)	Casing Size (mm)	Insulation Thickness (mm)	Heat Gain (W/m)
15	21.3	100	39	2.1
20	26.9	100	37	2.4
25	33.7	115	41	2.6
32	42.4	115	36	3.2
40	48.3	125	38	3.3
		140	46	3.0
50	60.3	140	40	3.8
		150	45	3.5
		160	50	3.3
65	76.1	170	47	3.9
		190	57	3.5
80	88.9	190	51	4.2
		215	63	3.6
100	114.3	215	50	5.0
		225	55	4.7
125	139.7	240	50	5.9
		250	55	5.4
150	165.1	265	50	6.7
		295	65	5.5
		320	77	4.8

Pipe Size (mm)	Pipe OD (mm)	Casing Size (mm)	Insulation Thickness (mm)	Heat Gain (W/m)
200	219.1	320	50	8.4
		355	68	6.6
250	273.0	375	51	10.0
		400	64	8.3
300	323.9	425	51	11.7
		450	63	9.6
350	355.6	475	60	10.9
		510	77	8.8
400	406.4	560	77	9.9
		610	102	7.8
450	457.2	590	66	12.4
		610	76	11.0
500	508.0	640	66	13.7
		660	76	12.1
600	609.6	760	75	14.4
650	660.4	825	82	14.2
700	711.2	875	82	15.3
800	812.8	975	81	17.4
900	914.4	1070	78	20.2
1000	1016.0	1170	77	22.4

Engineering Data

Calculation Formulas for Heat Gain and Casing Temperature

1. Heat Gain

$$Q = \frac{(Ta - Tw)\pi}{\frac{1}{2K} LN \frac{D2}{D1} + \frac{1}{\alpha D2}}$$

Where K = 0.021 W/m.K

Q = Heat gain or heat loss by insulation (W/m)
Tw = Fluid temperature (°C)
Ta = Ambient air temperature (°C)
Tc = Casing temperature (°C)
D2 = Casing outer diameter (m)
D1 = Carrier pipe outer diameter (m)
K = Thermal conductivity of insulation (W/m.K)
α = Surface coefficient (W/m2.K)
= 8 (Dull metallic surface still air)

2. Casing Temperature of Preinsulated Pipe

$$Tc = Ta - \frac{Q}{\pi \alpha D2}$$

The temperature of the casings of preinsulated chilled water pipes must be higher than the dew point to prevent condensation.

Heat Gain Value by Insulation

Preinsulated Pipes

Specifications: Chilled Water Pipes

Carrier pipe: 15mm to 150mm – BS 1387 Heavy or Medium Gauge

200mm to 1000mm – API 5L Grade B; ASTM A53 Grade B

Insulation: Rigid Polyurethane foam, Density 120kg/m^3

Jacket: Galvanized steel inside lockseamed

Ambient temperature: 30°C

Fluid temperature: 5°C

Pipe Size (mm)	Pipe OD (mm)	Casing Size (mm)	Insulation Thickness (mm)	Heat Gain (W/m)
15	21.3	100	39	2.1
20	26.9	100	37	2.5
25	33.7	115	41	2.7
32	42.4	115	36	3.3
40	48.3	125	38	3.5
		140	46	3.1
50	60.3	140	40	3.9
		150	45	3.6
		160	50	3.4
65	76.1	170	47	4.1
		190	57	3.6
80	88.9	190	51	4.3
		215	63	3.7
100	114.3	215	50	5.2
		225	55	4.9
125	139.7	240	50	6.1
		250	55	5.7
150	165.1	265	50	7.0
		295	65	5.7
		320	77	5.0

Pipe Size (mm)	Pipe OD (mm)	Casing Size (mm)	Insulation Thickness (mm)	Heat Gain (W/m)
200	219.1	320	50	8.7
		355	68	6.8
250	273.0	375	51	10.4
		400	64	8.6
300	323.9	425	51	12.1
		450	63	10.0
350	355.6	475	60	11.4
		510	77	9.2
400	406.4	560	77	10.3
		610	102	8.1
450	457.2	590	66	12.9
		610	76	11.4
500	508.0	640	66	14.3
		660	76	12.6
600	609.6	760	75	15.0
650	660.4	825	82	14.8
700	711.2	875	82	15.9
800	812.8	975	81	18.1
900	914.4	1070	78	21.0
1000	1016.0	1170	77	23.4

*Recommended insulation thickness

Engineering Data

Typical Insulation Thickness to Prevent Condensation

$$\textit{Insulation Thickness: } L = \frac{K(Td-Tw)}{\alpha(Ta-Td)}$$

K = Thermal conductivity of insulation

Td = Dew temperature (take reading from dew point table, it depends on ambient temperature and relative humidity

Tw = Operating temperature of cool store (piping insulation system)

Ta = Ambient air temperature

α= Surface coefficient

bright metal = 5.7 W/m² K; dull metal = 8 W/m²K

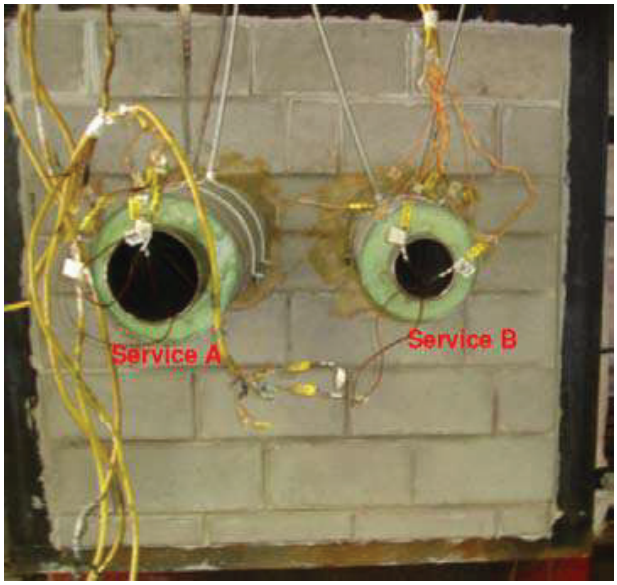
Dew Point

The following graph shows the dew point temperature at which condensations forms on the pipe.

Air Temp °C	% Relative Humidity																		
	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
40	40	39	38	37	36	35	33	32	31	39	28	26	24	22	19	16	13	8	3
38	38	37	36	35	34	33	32	30	29	27	26	24	22	20	17	15	11	7	1
36	36	35	34	33	32	31	30	28	27	26	24	22	20	18	16	13	10	7	0
34	34	33	32	31	30	29	28	26	25	24	22	20	19	16	14	11	8	4	0
32	32	31	30	29	28	27	26	25	23	22	20	19	17	15	12	10	6	2	0
30	30	29	28	27	26	25	24	23	21	20	18	17	15	13	11	8	4	1	0
28	28	27	26	25	24	23	22	21	20	18	17	15	13	11	9	6	3	0	
26	26	25	24	23	22	21	20	19	18	16	15	13	11	9	7	4	1	0	
24	24	23	22	21	20	19	18	17	16	14	13	11	10	8	5	3	0		
22	22	21	20	19	18	17	16	15	14	13	11	10	8	6	4	1			
20	20	19	18	17	16	15	14	13	12	11	9	8	6	4	2	0			
18	18	17	16	15	15	14	12	11	10	9	7	6	4	2	0	0			
16	16	15	14	13	13	12	11	9	8	7	6	4	2	1	0				
14	14	13	12	12	11	10	9	8	6	5	3	2	1	0					
12	12	11	10	10	9	8	7	6	4	3	2	0							
10	10	9	8	8	7	6	5	4	3	1	1	0							
8	8	7	6	6	5	4	3	2	1	0									
6	6	5	4	4	3	2	1	0											
4	4	3	3	2	1	0													
2	2	1	1	0															
0	0																		

4 Hour Fire Rated System

Tashi's preinsulated pipe achieved 4 hour fire resistance rating in accordance to BS 476: Part 20: 1987. Warrington Fire Research Consultancy's test report and Singapore Productivity and Standards Board (PSB)'s certification is available upon request.

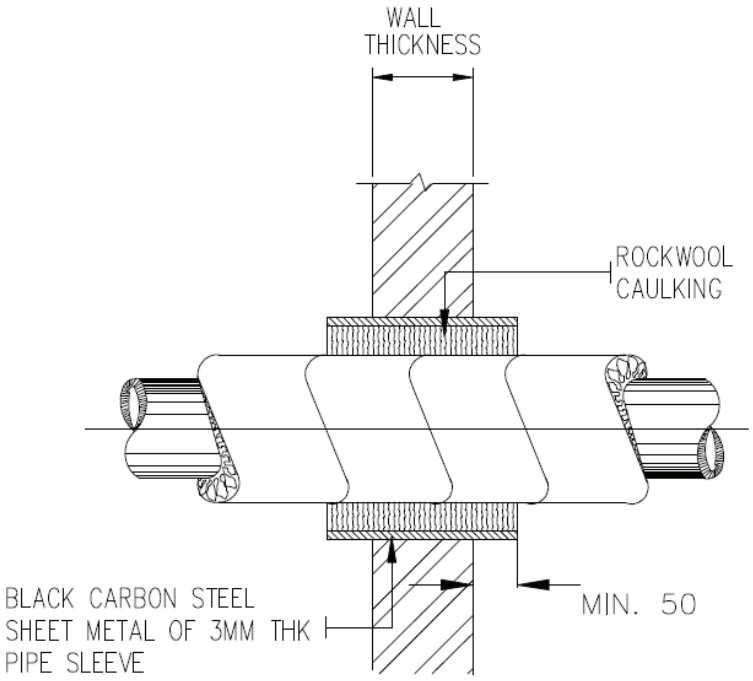


Unexposed face of test specimen prior to commencement of test

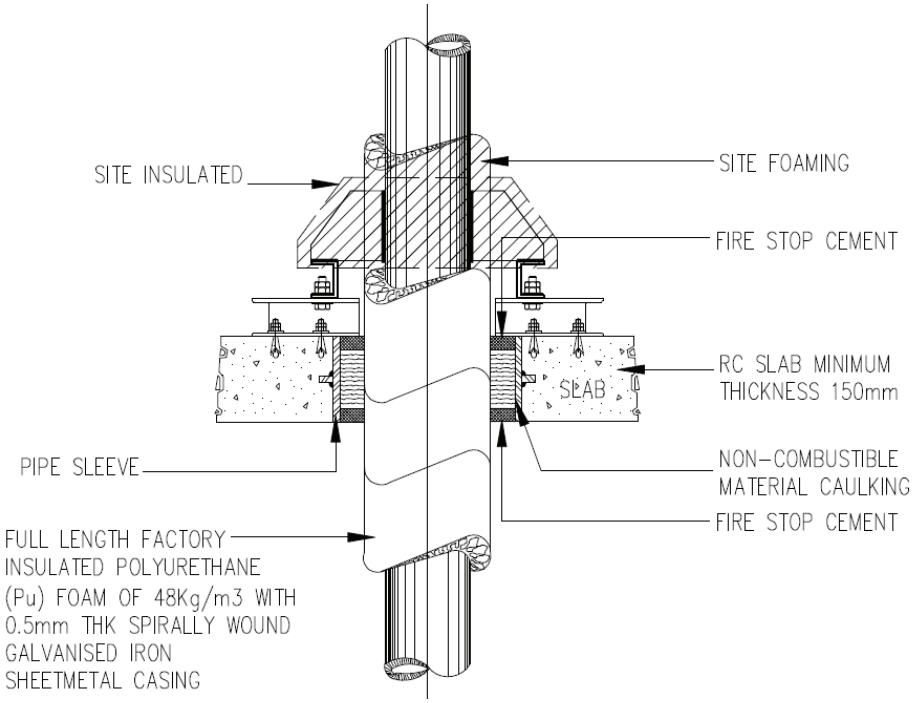
Unexposed face of test specimen after approximately 120 Minutes test duration

Unexposed face of test specimen after completion of test duration 240 Minutes

Wall and Slab Penetration



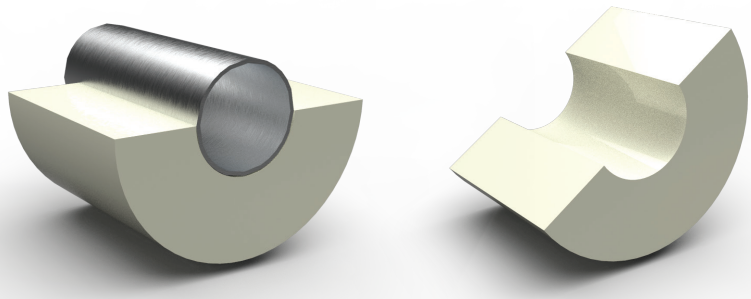
Typical Detail for Fire Rated Pipe Protection Pre-Insulated Pipe Penetrating Through Wall



Typical Detail for Fire Rated Pipe Protection Pre-Insulated Pipe Penetrating Through Slab

Curvex Pipe Support

Curvex, Tashi's range of cold service pipe supports' service temperature ranging from -200°C TO 110°C with High Density Polyurethane as insulating material. The table below details the factory standard:



Curvex Pipe Support 80, 120, 220 kg/m³		
Pipe Size (mm)	Thickness (mm)	Length (mm)
20	40	150
25		
32		
40		
50		
65		
80	50	
100		
125		
150		
200	65	250
250		
300		
350	75	350
400		
450		
500		
600		
700		400
800		
900		
1000		

Properties	Test Method	Unit	Typical Value	
Density	ASTM D 1622	kg/m³	80	120
Thermal Conductivity	ASTM C 518	W/mK	0.025	0.025
Compressive Strength	DIN 53421	kg/cm²	6	9
Flexural Strength	DIN 53430	kg/cm²	10	15
Water Absorption	DIN 53428	% Vol.	1.5	1.5
Closed Cell Content	DIN EN ISO4590	%	90	90
Dimensional Stability	DIN 53431	%	+1	+1

Properties	Test Method	Unit	Typical Value	
Density	ASTM D 1622	kg/m³	160	220
Thermal Conductivity	ASTM C 518	W/mK	0.027	0.029
Compressive Strength	DIN 53421	kg/cm²	21.5	28
Flexural Strength	DIN 53430	kg/cm²	23	40
Water Absorption	DIN 53428	% Vol.	1.2	1
Closed Cell Content	DIN EN ISO4590	%	92	95
Dimensional Stability	DIN 53431	%	+1	+0.8

Properties	Test Method	Unit	Typical Value	
Density	ASTM D 1622	kg/m³	320	500
Thermal Conductivity	ASTM C 518	W/mK	0.042	0.066
Compressive Strength	DIN 53421	kg/cm²	61.1	107.3
Flexural Strength	DIN 53430	kg/cm²	75.4	222.6
Water Absorption	DIN 53428	% Vol.	0.4	0.3
Closed Cell Content	DIN EN ISO4590	%	95	95
Dimensional Stability	DIN 53431	%	+0.3	+0.2

Phenolic

Phenolic foam has very low embodied energy per unit thermal performance and significant CO2 savings can be achieved compared to other insulation materials. Both CFC and HCFC Phenolic forms are available at Tashi.

Phenolic Insulation 37-60Kg/m^3				
Properties	**Test Method**	**Unit**	**Typical Value**	
Density	ASTM D 1622	Kg/m^3	37	60
Thermal Conductivity	ASTM C 518	W/m°K	0.021	0.029
Close Cell Content	ASTM D 2865	%	≥95	≥95
Operating Temperature Limits	Upper Limit	°C	+120	+120
	Lower Limit	°C	-180	-180
Min. Compressive Strength @+23°C	ASTM D 1621			
	Parallel	kPa	150	320
	Perpendicular	kPa	100	170
Min Tensile Strength @+23°C	ASTM D 1623			
	Parallel	kPa	150	300
	Perpendicular	kPa	110	210
Fire Propagation	BS 476-6:1989 BS 476-7:1997	Class	1, "O", P	
Oxygen Index	EN ISO 4589–2: 1996	%	≥ 50	≥ 50
Temperature Index	EN ISO 4589–3: 1996	°C	> 390	> 390

Phenolic

Tashi's phenolic insulation are available in the following forms as standard:

Standard pipe sizes

Pipe sections

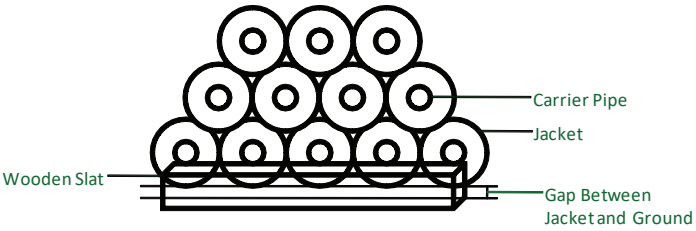
Pipe supports

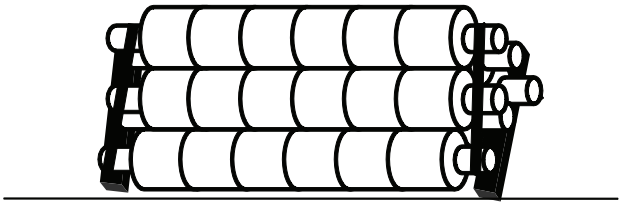
Standard Slabs: 1220mm x 1000mm / 2440mmL x 1000mm

Phenolic Insulation 80-120Kg/m³				
Properties	**Test Method**	**Unit**	**Typical Value**	
Density	ASTM D 1622	Kg/m³	80	120
Thermal Conductivity	ASTM C 518	W/m°K	0.030	0.032
Operating Temperature Limits	Upper Limit	°C	+120	+120
	Lower Limit	°C	-180	-180
Min. Compressive Strength @+23°C	ASTM D 1621			
	Parallel	kPa	590	1000
	Perpendicular	kPa	440	800
Min Tensile Strength @+23°C	ASTM D 1623			
	Parallel	kPa	520	800
	Perpendicular	kPa	350	600
Fire Propagation	BS 476-6:1989 BS 476-7:1997	Class	1, "O", P	
Oxygen Index	EN ISO 4589–2: 1996	%	≥ 50	≥ 50
Temperature Index	EN ISO 4589–3: 1996	°C	> 390	> 390

Storage & Transport

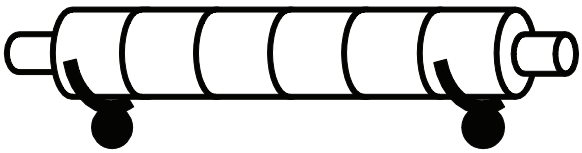
Storage

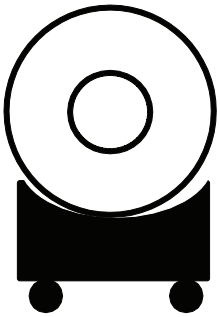




Delivery on-site will be effected within three days of this time and will be advised. At the time of delivery, there must be sufficient personnel and gear available for unloading. The consignment must be checked for completeness and damage. Receipt of the goods must be signed for on the delivery order.

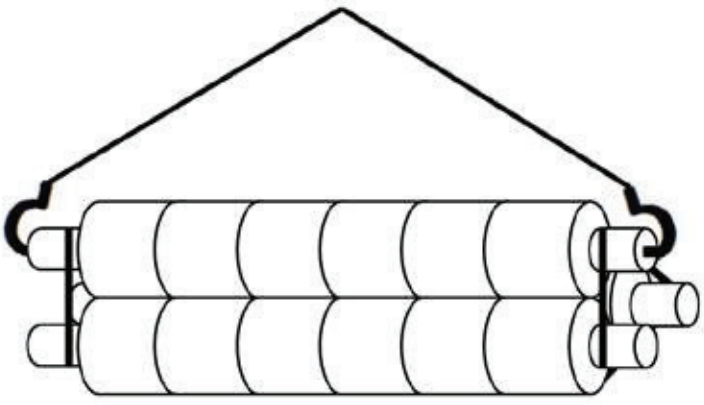
Transport





During transport of pipes, care must be taken so that they do not come into contact with sharp edges or objects. Pipes must not overhang the end of a trailer or truck bed by more than 2 m. They must be placed flat or upon minimum 100mm wide wooden slats.

Delivery



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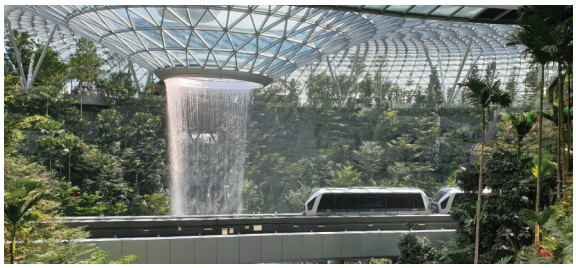
Project References



Project: JEWEL CHANGI AIRPORT

Jewel Changi Airport is a nature-themed entertainment and retail complex surrounded by and linked to one of the passenger terminals of Changi Airport, Singapore.

Project: MARINA BAY SANDS

An integrated resort notable for transforming Singapore's city skyline, it comprises three 55-storey towers of extravagant hotel rooms and luxury suites.

Project: ION ORCHARD

ION Orchard is spread over eight levels, visitors are treated to a unique shopping experience at over 300 retail, F&B and entertainment stores, and six luxury brands duplex units.

Project: MRT CIRCLE LINE

By intersecting existing train lines across key interchanges, and bypassing the busy City Hall and Raffles Place MRT stations, the CCL shortens trips between the north, east and west of Singapore.

Project: RESORTS WORLD SENTOSA

Resorts World Sentosa (RWS) is an integrated resort on the island of Sentosa, which is located off the southern coast of Singapore. It was the third most expensive building ever constructed when it was completed 2010.

Project References

YEAR	PROJECT/SITE
2024	SINGTEL PAYA LEBAR TELEPHONE EXCHANGE
2024	SINGTEL TUAS DATA CENTRE
2024	IOI CENTRAL BOULEVARD TOWER
2024	PASIR RIS 8 CONDOMINIUM
2024	ALEXANDRA HOSPITAL REDEVELOPMENT
2023	UMC
2023	DAIKIN INDUSTRIAL DISTRICT COOLING PLANT
2023	CROSS ISLAND LINE - CRL PHRASE 1
2023	THOMSON EAST COAST LINE 5
2022	THOMSON EAST COAST LINE 3 & 4
2021	AMARA HOTEL & SENTOSA
2021	PUNGGOL FIRESTATION
2020	ABBOT MANUFACTURING PLANT
2019	GLAXOSMITHKLINE PLANT
2019	NESTE OIL PLANT
2019	CITY GATE
2018	CAPITOL BUILDING
2018	LONZA MANUFACTURING FACILITY
2018	SCDF TRAINING CENTRE
2016	GUOCO TOWER
2016	CHANGI AIRPORT T4
2015	PARAGON SHOPPING CENTRE
2015	SOUTH BEACH NIGHTVIEW
2015	SOUTH BEACH TOWER
2014	MANDAI DEPOT SMRT
2011	ASIA SQUARE TOWER
2010	FUSIONPOLIS
2010	HALLIBURTON
2010	ION ORCHARD
2010	MBS SOUTH PODIUM
2010	DBS ASIA HUB
2010	KTPH
2008	SINGAPORE FLYER
2006	HORIZON TERMINAL @ JURONG ISLAND
2006	ONE RAFFLES QUAY
2003	BIOPOLIS
1997	SUNTEC CITY TOWER
1984	PARKWAY PARADE
1976	HONG LEONG FINANCE BUILDING

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