



Pre-Insulated Pipe System

Introduction

Fortune Links has been a leading supplier of thermal insulation materials to construction industry since 1980s which brought Armacell closed-cell insulation, Owens Corning Fiberglas, Rockwool and a lot more into Hong Kong and Macau. In view of the demand for excellence in workmanship of insulation material deployment, shortening of time spent at construction sites, minimizing material wastage, focus on wellbeing of workers and environment, **ALinks-PIP Pre-insulated Pipe System** is brought to the market to fulfill such demands.

ALinks-PIP Pre-insulated Pipe System is suitable for deployment in air-conditioning and refrigeration systems. It is comprised of a protective jacket, thermal insulation and service pipe which are all pre-assembled in our factory per design request.

Polyurethane foam is the thermal insulation layer of **ALinks-PIP Pre-insulated Pipe System** which is robust, durable and possesses excellent insulation coefficient. Moreover, a wide selection of protective jacket materials is available to suit your applications while compliant to various fire ratings.

ALinks-PIP Pre-insulated Pipe System is manufactured to fit for your specific deployment in a facility full of experienced industrial engineers and skilled workers to ensure professional workmanship through closely monitored, refined and standardized procedures.

“ALinks-PIP has significantly reduced my workers’ time at site, as well as material wastage, therefore, saves us money! At the same, the building owner is happier because we can complete the project ahead of schedule...”



- Environmental Friendly
- Professional workmanship
- Save Implementation Time & Cost
- Facilitate Prefabrication
- Simplify Site Management

Product Features

- Durable
- Ease of installation
- Dimensionally stable
- Fire, Water and Moisture resistant
- Health and safety at site construction
- Superior insulating efficiency leading to energy savings

Pre-Insulated Pipe Fitting

● Standard Fitting Pre-Insulation

The insulation is made of CFC / HCFC free polyurethane foam. The required amount of foaming mixture is injected into the cavity between the steel core fitting and the fabricated casing pipe via the injection hole in the metal end caps of the fitting assembly.



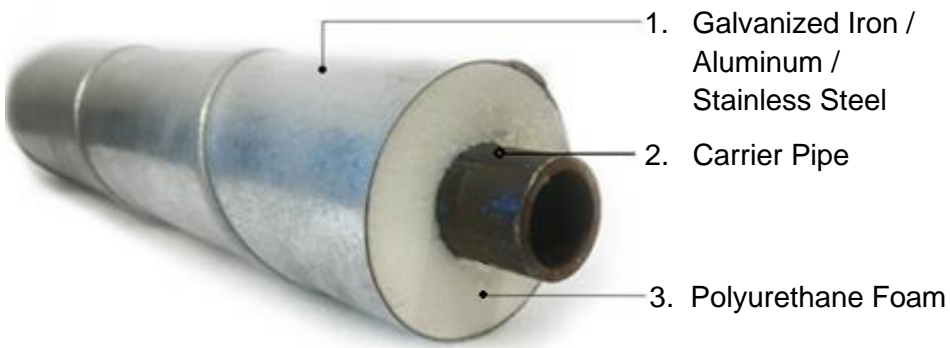
● Customized Fitting Fabrication & Pre-Insulation

By incorporating highly efficient and precise automatic welding machine with manual welding performed by our qualified workers, we can fabricate any kind of custom-made fittings with pre-insulation, in accordance with your specifications.

To enable DfMA, prefabricated modules can be secured in reinforcement frames for ease of transportation and installation at site.

As a peace of mind, we can also offer welding quality certification by authorized independent 3rd party inspectors.

Product Description



Rigid polyurethane foam is injected into the cavity between the steel tube and the outer layer by high-pressure foaming machine. Polyurethane foam has good mechanical and adiabatic properties and can withstand high temperature up to 120°C. It can withstand up to 180°C through modification or combination with other heat insulation materials. The material can be Polyurethane foam for keeping cold (-200°C ~ 120°C) or Polyurethane foam plus Silica (mineral wool) for keeping warm (120°C ~ 300°C)

Protective Jacket	<ul style="list-style-type: none"> Galvanized steel Aluminum Stainless Steel Grade <p>*Other jacket material upon request</p>
Density	48 kg/m ³ to 60 kg/m ³ (Based on customer requirement)
Thermal Conductivity	Below 0.025W/m°C at 10°C mean temperature
Service Temperature	-50°C to +140°C
Compressive Strength	300kPa (insulation only)
Water Permeability	1.4 perm. In or equivalent to 0.002g.m/s.MN (insulation only)
Fire Rating	<ul style="list-style-type: none"> BS476 Part 6 - Fire propagation, I<12; i<6 (PSB: 7191243377-MEC20/B2-YWA) BS476 Part 7 - Surface spread of flame Class 1 (PSB: 7191243377-MEC20/C1-YWA) BS476 Part 20 - 120 minutes integrity (PUGRO: G20875 FU206144)
Closed Cell Content	> 95%
Ozone Friendly	CFC & HCFC free
Insulation Thickness for Water Pipes	Range 40mm to 100mm (Special Thickness upon request)
Service Pipe	<ul style="list-style-type: none"> Black steel pipe to BS EN10217-1 and BS EN10255 will normally be used as the inner carrier pipe. The black steel pipes shall be supplied with plain / beveled end for butt welding on-site and grooved end for mechanical couplers. The pipes will be delivered in standard length of 6 meters.



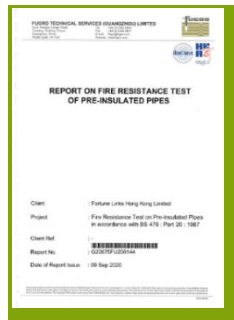
Advantages of using ALinks-PIP

1. Fully comply with HKSAR standard

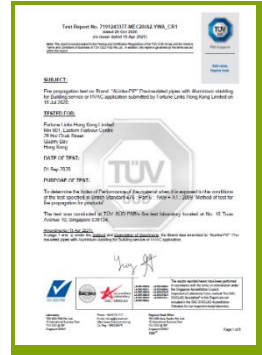
- BS476 Standard Part 6,7 & 20, and also HKFSD approval
- CFC and HCFC free



CFC & HCFC Free Test Report



BS 476:Part 20 Test Report



BS 476:Part 6 Test Report



BS 476:Part 7 Test Report

2. QR Code for Quality Assurance

- Every single pre-insulated pipe/fittings is inspected before leaving factory to ensure compliance with customer's specifications and our quality standard.
- The inspection results are documented in "Quality Control Report" that comes with each finished good.
- By scanning the unique QR code printed on each finished good with a smartphone, an electronic copy of the good's Quality Control Report can be conveniently retrieved.



QR Code Sample



Advantages of using ALinks-PIP

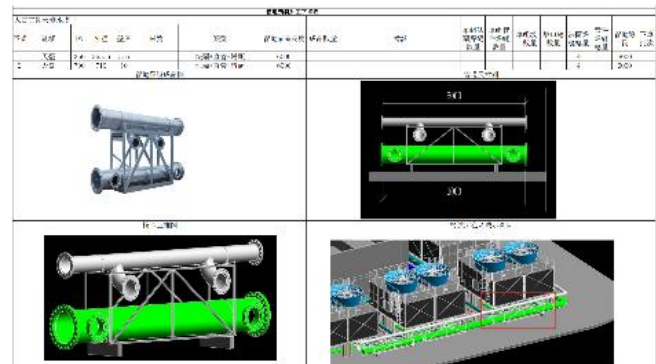
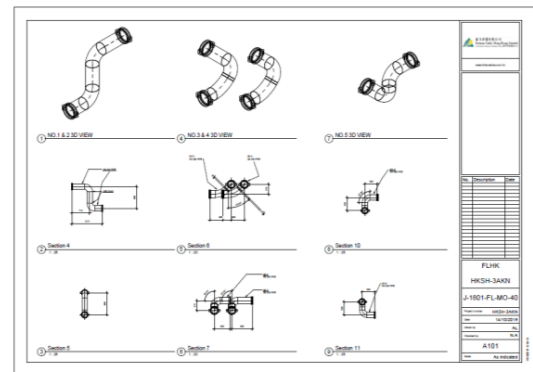
3. On Site Pre-Insulated Pipe Joint Service

- Provide technical training to site worker to handle ALinks-PIP pipe joint
- ALinks-PIP can provide a fee-based technical team to perform on-site pipe joint service
- ❖ *For **On Site Pre-Insulated Service**, please contact our sales team for more information*



4. Value added service to enable DfMA /BIM/ MIC assistant with Mechanical Design

- Our team of experts supports your BIM drafting and coordination. We deliver 3D modelling in your preferred project format for clash detection
- We can prefabricate pipework module, assemble and then deliver the modules to your jobsite.



Cladding Materials

Stainless Steel Jacket:

SS-GUARD



SS-Guard represents a series of ALinks-PIP with Stainless Steel as cladding materials. SS-Guard is an efficient, durable and reliable method typically deployed in above ground applications in a temperature range of -50°C to 140°C with the highest corrosion resistance among commonly used cladding materials. In addition, Stainless Steel cladding is widely deployed in governmental projects.

Aluminum Jacket:

Alum-GUARD



Alum-Guard represents a series of ALinks-PIP with Embossed Aluminum as cladding materials which is commonly used for above ground application in Hong Kong projects. With comparable hardness, durability, corrosion resistance and medium insulation property, Alum-Guard provides an economical alternative to SS-Guard.

Galvanized Iron Jacket:

GI-GUARD

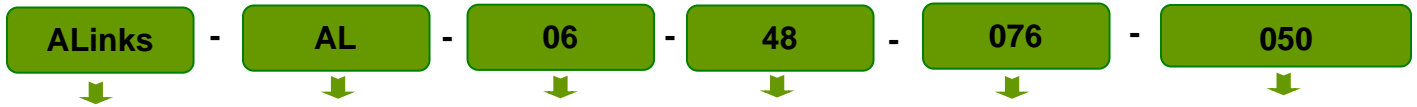


GI-Guard represents a series of ALinks-PIP with Galvanized Iron as cladding materials which is commonly used for outdoor above ground application in commercial projects in Hong Kong. With comparable hardness, durability, corrosion resistance but lowest insulation property, GI-Guard is the most inexpensive choice of cladding.



ALinks-PIP Models

Model Index



Brand Name	Cladding Material	Cladding Thickness	Density	Service Pipe O.D.	Insulation Thickness
ALinks	AL=Aluminum	06 = 0.6mm 08 = 0.8mm	48 = 48 kg/m ³ 60 = 60 kg/m ³	BS 10255 BS 10217-1	Per specified
	GI = Galvanized Iron				
	SS = Stainless Steel				

ALinks-PIP Product Code Samples

Nom. I.D. mm(inch)	Actual O.D. mm	Aluminum Density: 48kg/m ³ Insulation Thickness: 40mm (15/8")						Stainless Steel Density: 48kg/m ³ Insulation Thickness: 50mm (2")					Galvanized Iron Density: 48kg/m ³ Insulation Thickness: 65mm (2½")						
		Guard	Clad Thk.	Dens.	O.D.	Thk.	Guard	Clad Thk.	Dens.	O.D.	Thk.	Guard	Clad Thk.	Dens.	O.D.	Thk.			
40 (1½")	48.3	ALinks	-AL	-06	-48	-048	-40	ALinks	-SS	-08	-48	-048	-50	ALinks	-GI	-06	-48	-048	-50
50 (2")	60.3	ALinks	-AL	-06	-48	-060	-40	ALinks	-SS	-08	-48	-060	-50	ALinks	-GI	-06	-48	-060	-50
65 (2½")	76.1	ALinks	-AL	-06	-48	-076	-40	ALinks	-SS	-08	-48	-076	-50	ALinks	-GI	-06	-48	-076	-50
80 (3")	88.9	ALinks	-AL	-06	-48	-089	-40	ALinks	-SS	-08	-48	-089	-50	ALinks	-GI	-06	-48	-089	-50
100 (4")	114.3	ALinks	-AL	-06	-48	-114	-40	ALinks	-SS	-08	-48	-114	-50	ALinks	-GI	-06	-48	-114	-50
125 (5")	141.3	ALinks	-AL	-06	-48	-141	-40	ALinks	-SS	-08	-48	-141	-50	ALinks	-GI	-06	-48	-141	-50
150 (6")	165.1	ALinks	-AL	-06	-48	-165	-40	ALinks	-SS	-08	-48	-165	-50	ALinks	-GI	-06	-48	-165	-50
200 (8")	219.1	ALinks	-AL	-06	-48	-219	-40	ALinks	-SS	-08	-48	-219	-50	ALinks	-GI	-06	-48	-219	-50
250 (10")	273.0	ALinks	-AL	-06	-48	-273	-40	ALinks	-SS	-08	-48	-273	-50	ALinks	-GI	-06	-48	-273	-50
300 (12")	326.0	ALinks	-AL	-06	-48	-326	-40	ALinks	-SS	-08	-48	-326	-50	ALinks	-GI	-06	-48	-326	-50
350 (14")	355.6	ALinks	-AL	-06	-48	-355	-40	ALinks	-SS	-08	-48	-355	-50	ALinks	-GI	-06	-48	-355	-50
400 (16")	406.4	ALinks	-AL	-06	-48	-406	-40	ALinks	-SS	-08	-48	-406	-50	ALinks	-GI	-06	-48	-406	-50
500 (20")	506.0	ALinks	-AL	-06	-48	-506	-40	ALinks	-SS	-08	-48	-506	-50	ALinks	-GI	-06	-48	-506	-50

1. Pipework size according to black mild steel tube standard BS EN 10255 for DN 25 -150, BS EN 10217-1 from 200mm to 500mm
2. Cladding thickness can be 0.6mm or 0.8mm
3. Pipe size above 500mm can be supplied according to the project specification or upon special request
4. Service Pipe shall be as specified for desired service, e.g., black steel pipe, galvanized iron steel pipe, copper pipe and PVC pipe but not applicable to ABS plastic pipes

Engineering Data for Common Size PIP

Pipe Size (mm)	Insulation Thickness (mm)	Total Diameter (Pipe OD, Insulation Thk & Cladding) (mm)	Pipe length (m/pcs)	Weight /pcs		
				Aluminum Cladding (kg/pcs)	GI Cladding (kg/pcs)	S.S Cladding (kg/pcs)
32	40	123.6	6	30.93	42.00	45.46
	50	143.6		33.02	45.89	49.92
	65	173.6		36.50	52.09	56.96
40	40	129.5	6	34.88	46.49	50.11
	50	149.5		37.02	50.43	54.62
	65	179.5		40.58	56.71	61.75
50	40	141.5	6	42.91	55.60	59.57
	50	161.5		45.17	59.66	64.19
	65	191.5		48.90	66.11	71.49
65	40	157.3	6	58.57	72.68	77.10
	50	177.3		60.97	76.90	81.87
	65	207.3		64.93	83.57	89.39
80	40	170.1	6	68.10	83.38	88.15
	50	190.1		10.63	87.71	93.05
	65	220.1		74.77	94.56	100.75
100	40	195.5	6	100.90	118.47	123.95
	50	215.5		103.66	123.04	129.10
	65	245.5		108.16	130.26	137.16
125	40	220.9	6	123.34	143.23	149.45
	50	240.9		126.34	148.05	154.83
	65	270.9		131.21	155.63	163.26
150	40	246.3	6	148.38	170.84	177.85
	50	266.3		151.66	175.92	183.50
	65	296.3		156.93	183.90	192.33
200	40	300.3	6	220.81	247.86	256.31
	50	320.3		224.57	253.43	262.44
	65	350.3		230.56	262.13	271.99
250	40	354.2	6	274.89	306.81	316.79
	50	374.2		279.15	312.86	323.43
	65	404.2		285.91	322.35	333.74
300	40	405.1	6	326.33	362.87	374.29
	50	425.1		331.08	369.43	381.41
	65	455.1		338.56	379.62	392.45
350	40	436.8	6	444.68	484.10	496.42
	50	456.8		449.72	490.96	503.85
	65	486.8		457.66	501.61	515.34
400	40	487.6	6	508.67	552.66	566.40
	50	507.6		514.20	560.00	574.31
	65	537.6		522.85	571.36	586.52
500	40	589.2	6	693.13	746.30	762.92
	50	609.2		699.62	754.61	771.79
	65	639.2		709.72	767.41	785.44



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