

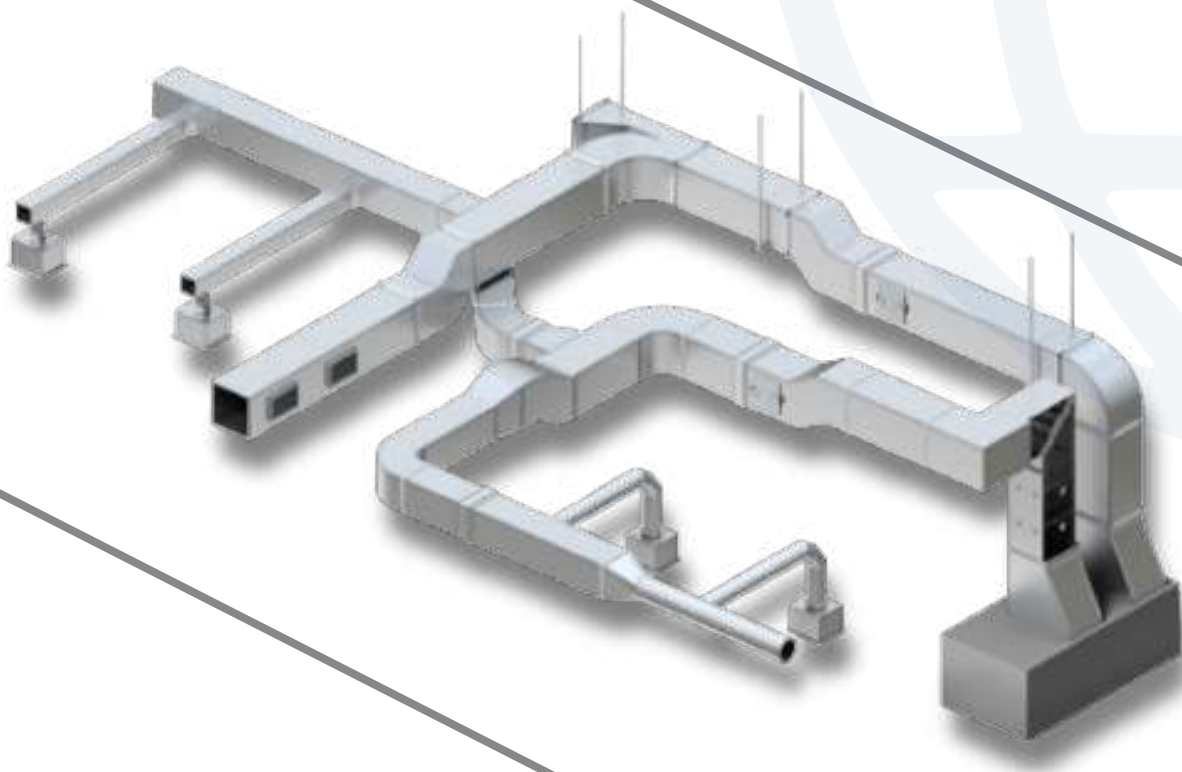


Insulation

WORLD
THERMAL
INSULATION

Product Catalogue

Phenolic Duct System



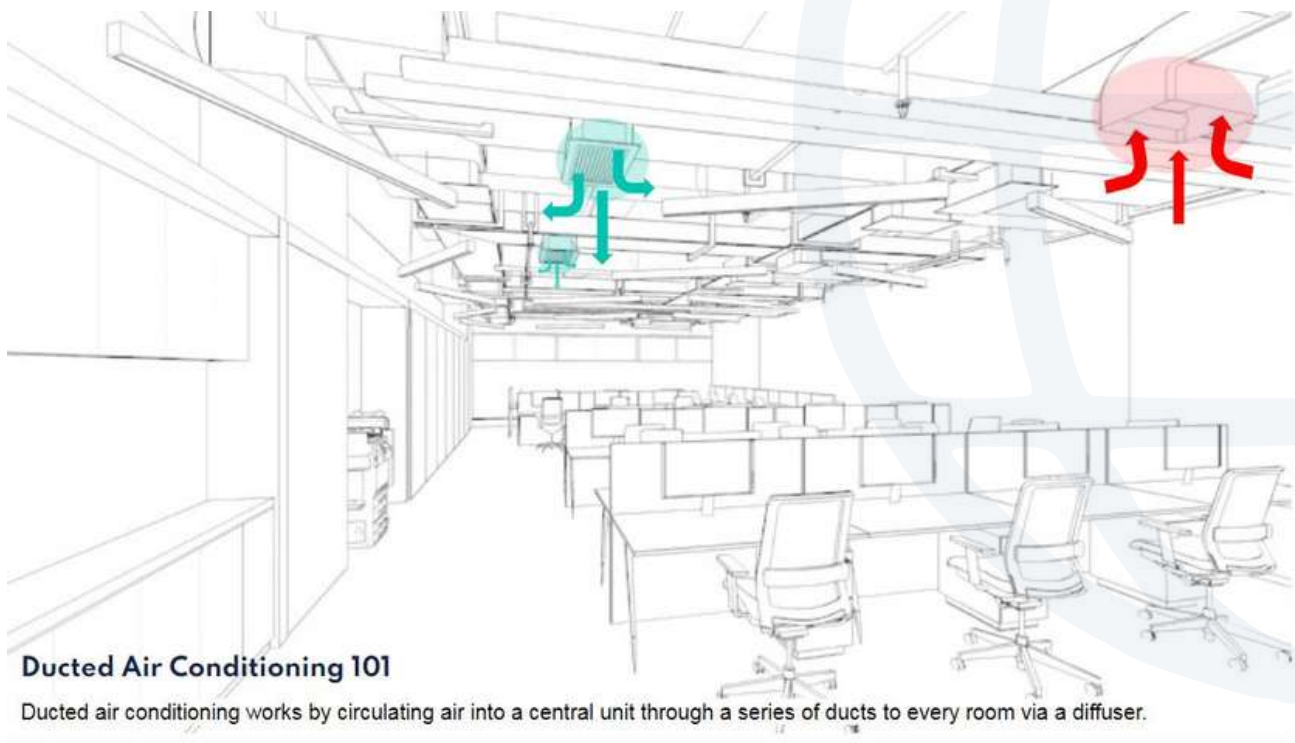
Introduction

Overview

World Thermal Phenolic Panels comprises of a fiber-free, high-performance, rigid thermoset phenolic insulation core faced on both sides with a composite foil facing.

World Thermal Phenolic Panels are available in a standard **thickness of 20mm and 30mm.**

World Thermal Insulation offers a complete product line, providing all materials, tools and accessories necessary for the effective fabrication of ductwork from the World Thermal Phenolic System. The ductwork from World Thermal Phenolic System is only fabricated by specially trained fabricators who have completed the World Thermal Phenolic System training course and who are registered with World Thermal Insulation.

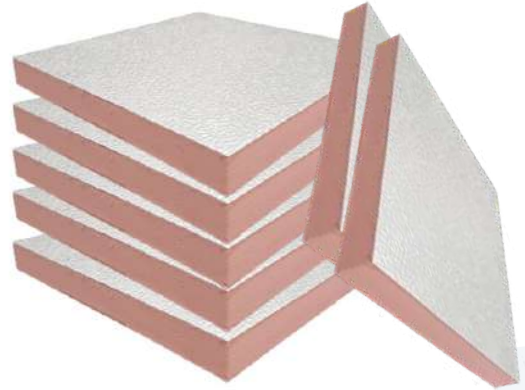


World Thermal Insulation has commissioned state of the art manufacturing plant in the UAE and provided specialized and comprehensive training courses conducted by service-oriented and experienced trainers well-equipped with the latest technologies, all to ensure high quality HVAC ductwork fabrications and installations.



What is World Thermal Phenolic Duct System?

Most air conditioning and heating systems require some form of duct work to channel or direct the air to places where the conditioned air is needed. There are many types of ductwork available and often times the ductwork can make a big difference in your utility bills. For that reason, it is important that the ductwork is designed and installed correctly. A poor installation job will result in poor performance, bad air flow, leaky duct systems, and higher than usual utility bills. Another important factor in the installation process is to make sure the duct work is sized properly.



Advantages of World Thermal Insulation Technology

- Lightweight, easy to fabricate and install.
- Low thermal properties.
- It is possible to fabricate ducts in any size.
- Very high compressive strength.
- Possible to fabricate at the site that has issues with space.
- High rigidity/integrity.
- Resistant to mold growth.
- Environmentally friendly: CFCs and HCFCs –free (zero ODP and GWP <5.)
- Clean air: fiber-free insulation core.
- Easy to clean and hygienic.
- Core material is impermeable to moisture.
- High productivity in installation.



Certifications

World Thermal Insulation is ISO certified and complies with management system standards. The product is tested and certified by the highest standard certification bodies.

- ISO 9001: 2015 (Quality management systems)
- ISO 14001: 2015 (Environmental Management Systems)
- ISO 15001: 2018 (Occupational health and safety management systems)
- UL 181
- DCL , DCD , SCD , ADCD



WTI PHENOLIC PANELS 20 & 30 MM

Phenolic Pre Insulated Duct Panel

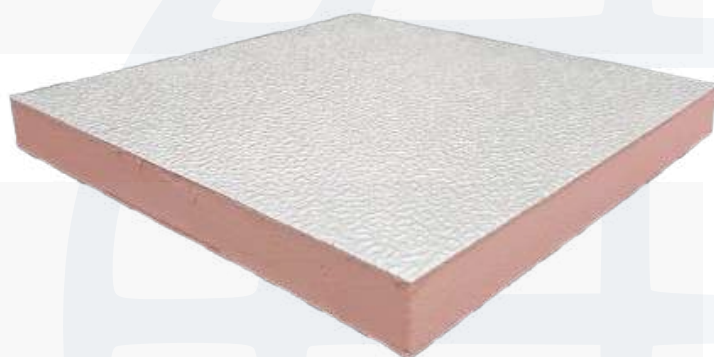
PHENOLIC PANELS FOR INTERNAL USE

WTI PHENOLIC PANELS 20 MM

Thickness	: 20mm
Panel Density	: $65 \pm 5 \text{ kg/m}^3$
Dimension	: 4000 mm X 1200 mm and 3000 mm X 1200 mm
Facer Finish	: Embossed / Embossed
Facer Type	: Reinforced Aluminium

WTI PHENOLIC PANELS 30 MM

Thickness	: 30mm
Panel Density	: $65 \pm 5 \text{ kg/m}^3$
Dimension	: 4000 mm X 1200 mm and 3000 mm X 1200 mm
Facer Finish	: Embossed / Embossed
Facer Type	: Reinforced Aluminium



WTI Phenolic Panels are available with a thickness of 20mm & 30mm, offering a panel density of $65 \pm 5 \text{ kg/m}^3$ for optimal insulation and structural performance. The panels come in standard dimensions of 4000 mm × 1200 mm and 3000 mm × 1200 mm, making them versatile for a wide range of applications. They feature a high-quality aluminium foil finish, available in embossed patterns, moisture resistance, and long-lasting aesthetic appeal.



Technical Specifications

ITEM	DESCRIPTIONS	VALUE	STANDARDS
1	Panel Density	65±5 kg/m ³	ASTM D1622 D1622M-14 ASTM D1622-20
2	Thermal Conductivity	0.021 w/mk - 0.033w/mk	ASTM C518-2010
3	Toxic Chemical Analysis formaldehyde	<0.01 mg/m ³	ASTM D5582
4	Closed Cell Content	>90%	ASTM D6226-21
5	Compressive Strength	>200kpa	ASTM D1621-16
6	Flame Spread Index	<25	ASTM E84
7	Smoked Developed Index	<50	ASTM E84
8	Phenolic " Air Ducts "	Class 1	UL 181 LISTED
9	Phenolic Foam Chemical Property	CFC Free / HCFC Free	
10	Environment effect	ODP= 0 (GWP<5)	
11	Air Leakage Class	Class C	BS EN 13403:2003

The purpose of a duct system is to transmit air from the central air source to the air diffusers located in the building control zones. A central heating furnace connected to supply and return air ductwork. The furnace is connected to the air plenum at the starting point. Furnace fan/s draw air in through grilles called returns and force air through the plenum and into the conditioned space through supply registers.

Over sizing systems cost more and does not maintain the desired air flow and undersized duct work causes the system to strain mechanically and can be noisy Several issues must be considered in an effective design. A primary issue is the tradeoff between the initial cost of the duct system and the energy cost of the air distribution system; larger ducts require a larger initial investment, but result in lower fan energy costs over the life of the system. Other issues include space available, noise level, capacity for expansion, appearance etc. It is important that the air conditioning ductwork system be designed for the air conditioning load. Each room or space of the facility should be evaluated and a determination of how much air flow will be required to ensure that each room remains at a desirable and comfortable temperature. This course provides a basic overview of HVAC ducting system.



Aluminium F Profile



Thickness	20 mm
Code	WTI-4017
Nominal Length	4 m



Thickness	30 mm
Code	WTI-4044
Nominal Length	4 m

Aluminium U Profile



Thickness	20 mm
Code	WTI-4013
Nominal Length	4 m



Thickness	30 mm
Code	WTI-4042
Nominal Length	4 m

Aluminium Chair Profile



Thickness	20 mm
Code	WTI-4015
Nominal Length	4 m



Thickness	30 mm
Code	WTI-4043
Nominal Length	4 m

Corner Cover in Polymer



Thickness	20 mm
Code	WTI-4350

Polymer / Aluminium Invisible Profile / Aluminium Joint Profile



Thickness	20mm
Code	WTI- 4010 (Aluminium Invisible)
Nominal Length	4 m



Thickness	30 mm
Code	WTI-4041 (Aluminium Joint)
Nominal Length	4 m

Corner Plate for Invisible Profile



Thickness	20 mm
Code	WTI-4360



Thickness	30 mm
Code	WTI-4400

H Bayonet in Polymer



Thickness	20 mm
Code Nominal	WTI-4105
Length	4 m

Adhesive



Capacity	15 kg / tin
Code	WTI-4044

Aluminium Channel



Thickness	30 mm
Code	WTI-4080
Nominal Length	4 m

Aluminium Tape



Width (in)	50 mm for 20 mm Panel
Code	WTI-4340



Width (in)	75 mm for 30 mm Panel
Code	WTI-4346

Steel Corner



Code	WTI-4380
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Sealant



Code	WTI-4210
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Reinforcement Bar in Aluminium



Thickness	14 mm
Code	WTI-4450
Nominal Length	4 m

Reinforcement Disc in Aluminium



Code	WTI-4450
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Reinforcement Disc



Code	WTI-4454
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Duct Fabrication Guide

20 mm Panel (Internal Use)

To produce 1,000 sqm of World Thermal Phenolic System, the following is a list of material and accessories for a standard construction requirement:

Code	Description	UOM	Approx. Qty
WTI-4001	Panel 4000X1200 mm	m2	1,000
WTI-5001	Panel 4000X1200 mm	m2	1,000
WTI-4010	Aluminium Invisible Profile	m	760
WTI-4105	H Bayonet in Polymer	m	400
WTI-4350	Corner Cover in Polymer	pc	900
WTI-4360	Corner Plate for Invisible Profile	pc	1200
WTI-4013	Aluminium U Profile	m	80
WTI-4015	Aluminium Chair Profile	m	80
WTI-4017	Aluminium F Profile	m	80
WTI-4210	Duct Contact Adhesive	kg	91
WTI-4340/WTI-4346	Aluminium UL List Tape	roll	75/150
WTI-4250	Duct Sealant	tube	90

30 mm Panel (External Use)

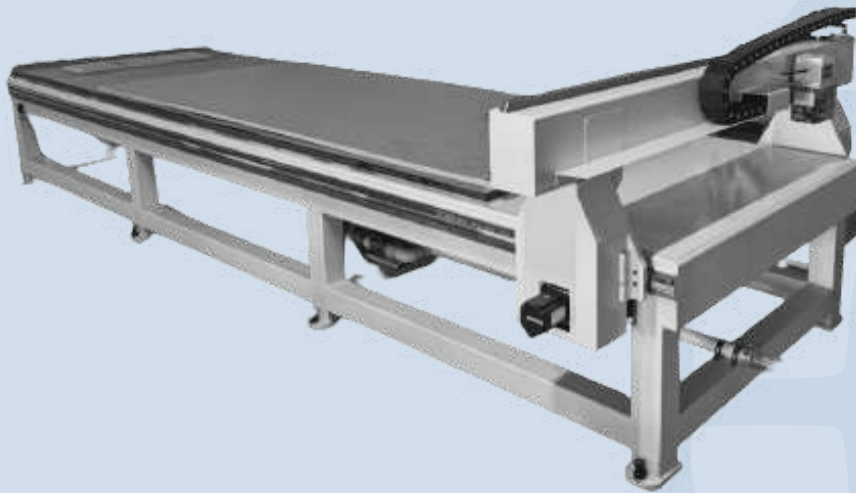
Code	Description	UOM	Approx. Qty
WTI-4005	Panel 4000 X 1200 mm	m2	1,000
WTI-4041	Aluminium Invisible Profile	m	760
WTI-4080	Aluminium Channel	m	400
WTI-4380	Steel Corner	pc	1,500
WTI-4400	Corner Plate for Invisible Profile	pc	1,500
WTI-4042	Aluminium U Profile	m	80
WTI-4043	Aluminium Chair Profile	m	80
WTI-4044	Aluminium F Profile	m	80
WTI-4044	Duct contract Adhesive	kg	90
WTI-4340/WTI-4346	Aluminium UL List Tape	roll	75/150
WTI-4250	Duct Sealant	tube	90
WTI-4450	Reinforcement Bar in Aluminium	m	120
WTI-4454	Reinforcement Dics	pc	200



Automated Fabrication Equipment

World Thermal Insulation Ducting CNC Machine

CNC CUTTING MACHINE FOR PRE- INSULATED PANELS



Features

Description	Dimensions
Work stroke	x axis 1200mm Y axis 4000mm
Rapid feed speed	x axis 40m/min Y axis 40m/min
Working speed	30m/min
Minimum Panel Thickness	10mm
Maximum Panel Thickness	30mm
Maximum Panel width	1200mm
Minimum Panel width	800mm

Description	Dimensions
Maximum Panel length	4000mm
Machine dimensions	5000mm x 2250mm x 180mm
Installed Power	10kw
Vacuum pumps	300m³/h
Total weight of the machine	1200kg
Power supply	10hz
Vacuum pumps Power supply	380v/50hz

Technical Service

World thermal Insulation has one of the most technically advanced support services in the industry offering a full spectrum of advice, free of charge for all types of design projects. World Thermal Insulation technical team are continually updating their knowledge on building regulations, best practise, construction methods and the development of building materials to ensure the advice and services provided are always one step ahead.

Services available:

- U-value calculations.
- Condensation/dew point risk calculations.
- Advice on product selection and product data for the full range of World Thermal Insulation products.
- Installation and fixing advice on all applications and products.
- Specification and construction advice and Tapered Roofing Design service.
- Email: info@wti.ae

World Thermal Insulation LLC reserves the right to amend product specifications without prior notice. Product thicknesses shown in this document should not be taken as being available ex-stock and advice should be sought directly from World Thermal Insulation LLC. The information, technical details and fixing instructions etc. included in this literature are given in good faith and apply to uses described herein. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable codes, laws and regulations. For other applications or conditions of use, World Thermal Insulation offers a Technical Advisory Service, the advice of which should be sought for uses of World Thermal Insulation products that are not specifically described herein or specifically required for your region.

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