

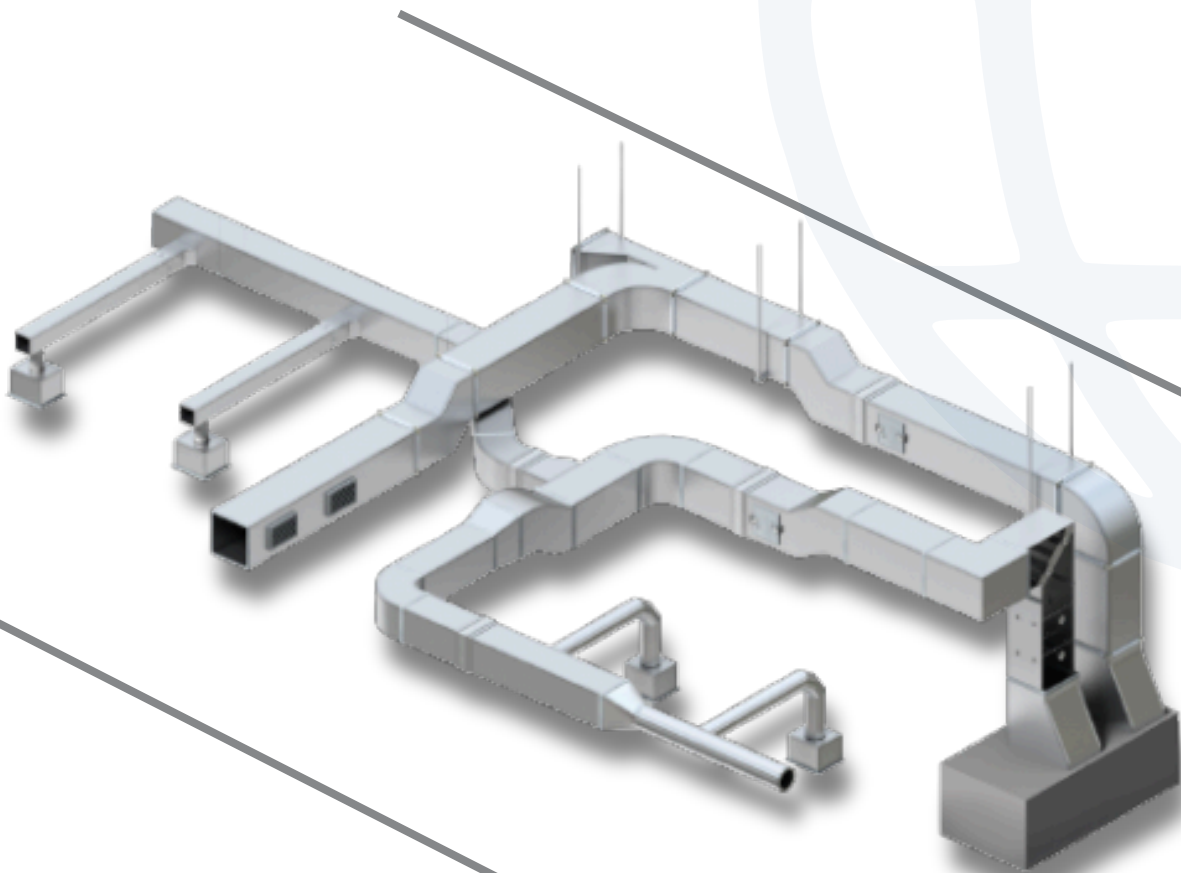


Insulation

**WORLD**  
THERMAL  
INSULATION

Product Catalogue

# Phenolic Duct System



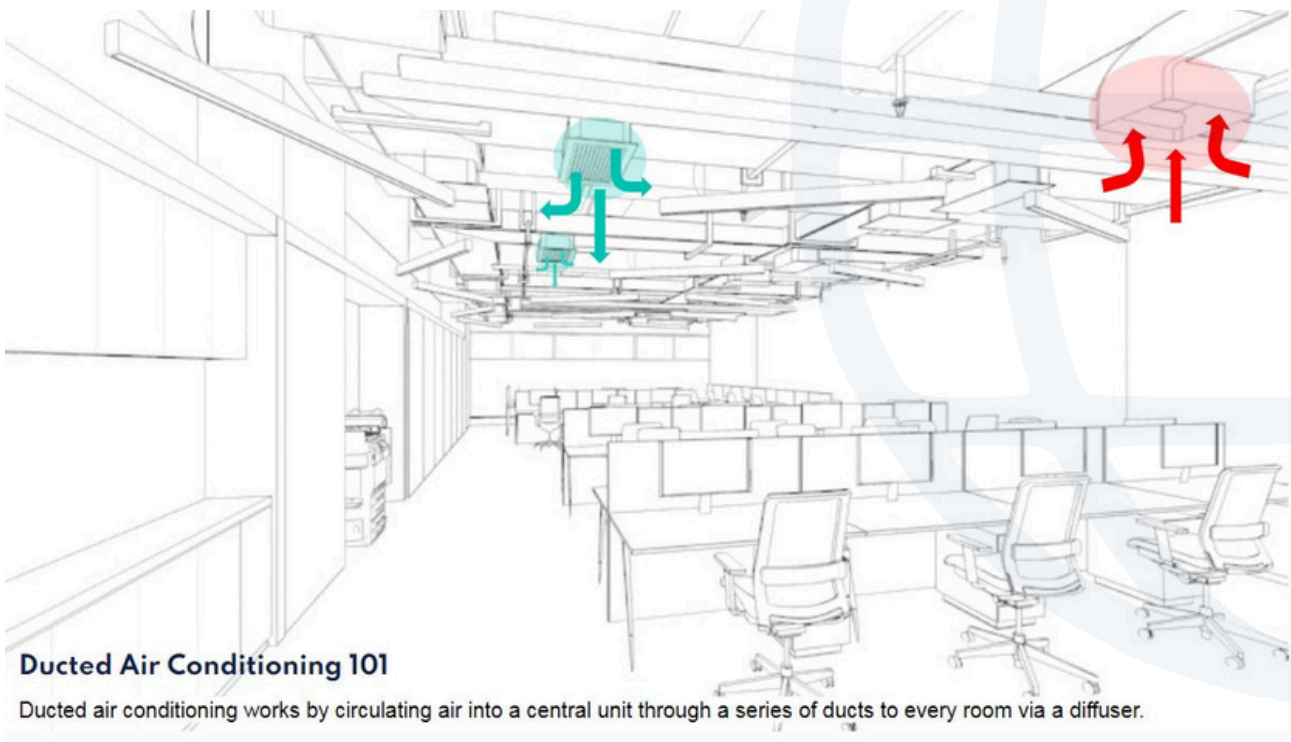
# Introduction

## Overview

World Thermal Phenolic Panels comprise 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.

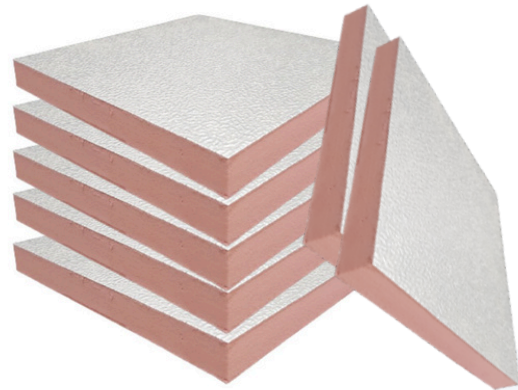


World Thermal Insulation has commissioned state of the art manufacturing plant in UAE, and provided specialized and comprehensive training courses conducted by service oriented and experienced trainers well-equipped with the latest technologies, all to ensure quality HVAC ductwork fabrications and installations.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



# 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

- Light weight, Easy to fabricate and Install.
- Less Thermal conducting.
- Possible to fabricate ducts in any sizes.
- Very High-compressive strength.
- Possible to fabricate at site no space constrained.
- High rigidity/integrity.
- Resistant to mold growth.
- Environmentally friendly: CFCs and HCFCs –free (zero ODP and GWP <5.)
- Clean air: fibre-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:

- 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

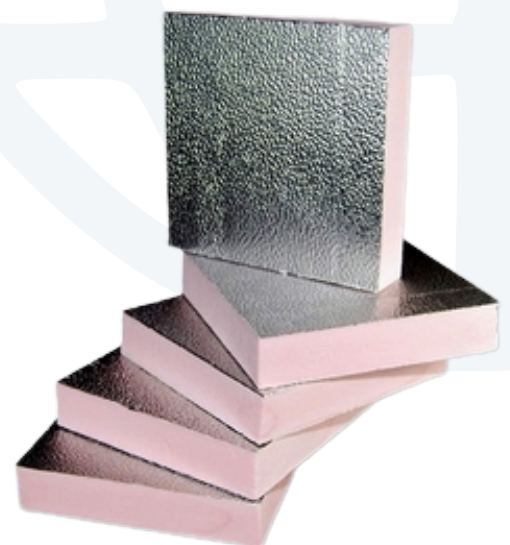


# Technical Specifications

ITEM	DESCRIPTIONS	VALUE	STANDARDS
1	Panel Density	60±5 kg/m <sup>3</sup>	ASTM D1622 D1622M-14 ASTM D1622-20
2	Thermal Conductivity	0.021 w/mk - 0.036w/mk	ASTM C518-2010
3	Toxic Chemical Analysis formaldehyde	<0.01 mg/m <sup>3</sup>	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 Developd 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)	

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.

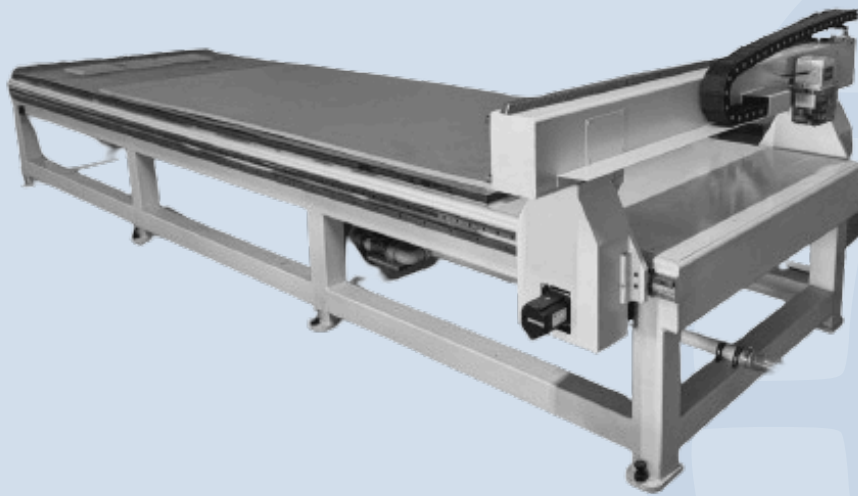
Over sizing systems cost more and does not maintain the desired air flow and undersized duct work causes the system to strain mechanically and can be noisy Several issues must be considered in an effective design. A primary issue is the tradeoff between the initial cost of the duct system and the energy 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.



# 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	300m <sup>3</sup> /h
Total weight of the machine	1200kg
Power supply	10hz
Vacuum pumps Power supply	380v/50hz



# Duct Fabrication Guide

## 20 mm Panel (Internal Use)

To produce 1,000 m 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	0
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 400 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-4461	Gasket	pc	400
WTI-4042	Aluminium U Profile	m	80
WTI-4043	Aluminium Chair Profile	m	80
WTI-4044	Aluminium F Profile	m	80
WTI-4210	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



# 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](mailto: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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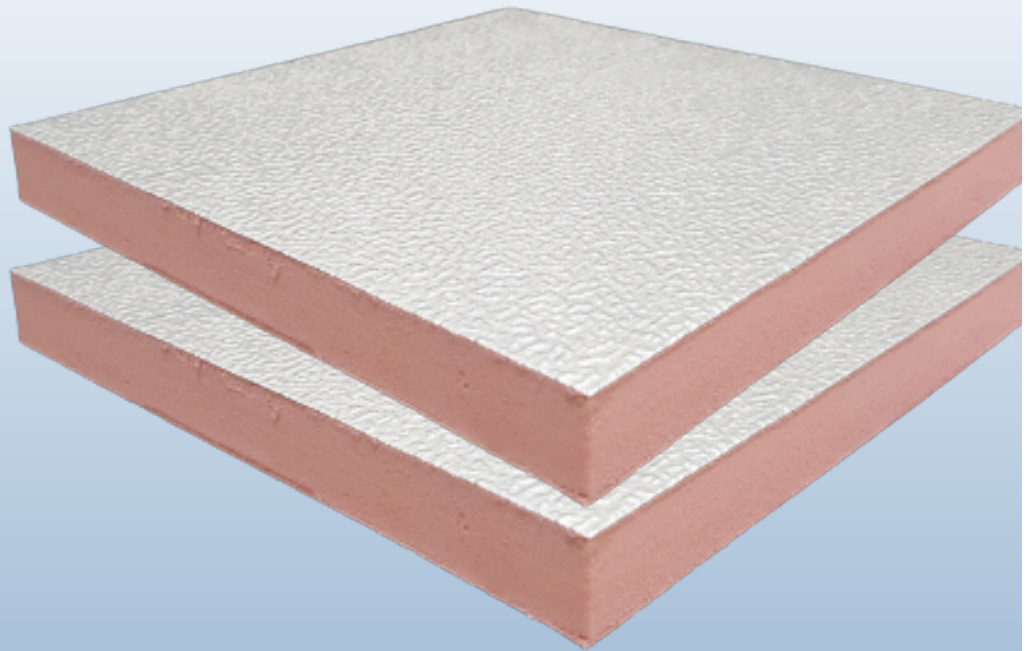




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## Contact Details



Emirates Industrial Area  
Alsajaa Sharjah  
UAE

T: +971 (0) 656 70 241  
E: [sales@wti.ae](mailto:sales@wti.ae)  
[www.wti.ae](http://www.wti.ae)

