

Techna-Duc[®]

Pre-Manufactured, Interlocking, Insulated Panel System

Protection from the elements that far surpasses
any other method of outdoor insulation.



Techna-Duc® Advantages

- Techna-Duc is shop fabricated and installed with **minimal field alterations**.
- Panels are constructed with polyisocyanurate insulation products that **do not promote the growth of mold and mildew**.
- The interlocking panels prevent air penetration, intrusion of water and water vapors, **virtually eliminating air quality problems**.
- Techna-Duc **lowers energy costs**.

Features and Benefits

- No maintenance required
- Extremely durable
- Interlocking joint systems
- Water-tight triple sealed joints
- Temperature range -100°F to +250°F
- Thermal properties up to an R-16 @ 2"/K - .16 @ 75°F = lower energy costs
- Does not promote mold or mildew growth
- Shop fabricated for less field install time
- Year round installation
- No over-sizing of T.D.C. joints (this is built into the system)
- .032 white aluminum standard finish (others available)
- Lightweight at less than 1 lb per square foot
- Best of all – a 20 year warranty



Interlocking panels help make the Techna-Duc System virtually impervious to moisture and other contaminants.

LEED Eligible Product

Use of this product may help building projects meet green building standards as set by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.



Description

Techna-Duc® is a pre-manufactured panel system that can be shop-fabricated from “as built” drawings and installed with minimum field alterations. It is manufactured as a four-piece interlocking panel. The interlocking panels are constructed with polyisocyanurate insulation, which does not promote the growth of mold or mildew. Laminated in two layers for ease of installation over T.D.C. joint ductwork, the polyisocyanurate insulation has thermal properties up to an R-16 @ 2” thickness, is jacketed with .032” white aluminum and sealed with vapor barrier compound. All joints interlock to insure a thermal seal, preventing air penetration, intrusion of water and water vapors – virtually eliminating air quality problems. Panels are secured with #10 self-tapping stainless steel screws with weather seal washers. Techna-Duc panels are numbered per shop drawings for ease of installation. The panels are rigid enough to avoid any sagging and can withstand substantial weathering. Techna-Duc’s unique combination of design features enable us to back it with a 20 year limited warranty.

Recommended Uses

Techna-Duc is to be used on outside HVAC rectangular ductwork. The system is ideal on new construction and is an excellent choice to retro-fit existing outdoor systems that have failed.



Before



- 2" thick fiberglass and mastic
- 3 year lifespan
- Full replacement required



- Total insulation replacement needed
- Rusted out duct work
- Higher than needed energy cost



- 2" thick fiberglass R-6, Wet R-0.5
- Heavily water saturated, with mold and mildew growth
- Risk of indoor air quality issues

After



- 2" thick Techna-Duc®
- 20 year warranty
- No maintenance required



- Durable reflective finish
- Triple weather tight seal
- 30% reduction in unit run time



- 2" thick Techna-Duc R-16
- No mold or mildew problem
- No indoor air quality issues

Physical Properties

PROPERTY OF FOIL FACED BOARD	ASTM	RESULT
Density, pcf (kg/m ³)	D 1622	Normal 2 pcf (32)
Water Vapor Transmission as permeance, in terms	E 96	Less than .03
Water Absorption	C 209 (24 hours)	Less than 0.3%
Flexural Strength in psi (kPa)	C 203	More than 40 psi (276)
Operating Temp Range °F (C)		-100° F to +250° F (-73° C to +121° C)
2" Thick System R*	C-236 / C-518	R-16
1/2" Thick System R*	C-236 / C-518	R-6.1

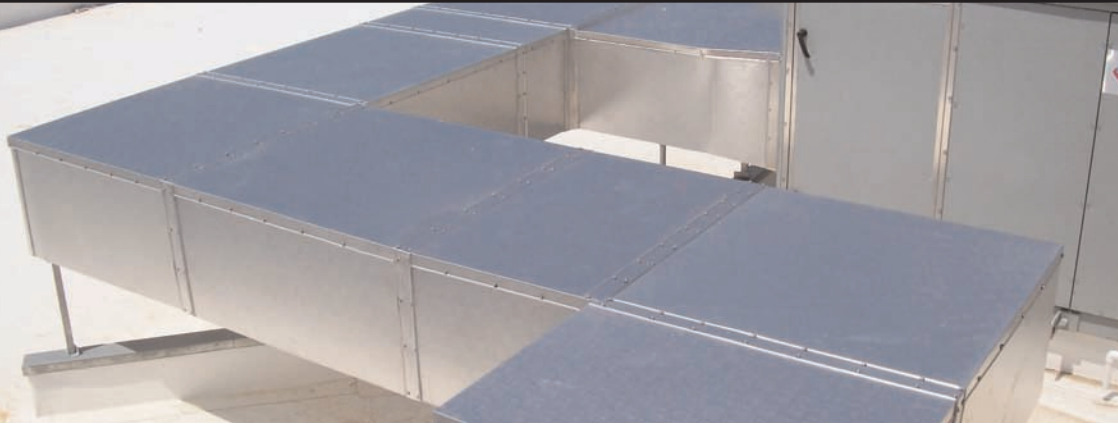
* The system R value is the sum of the stabilized R-value plus additional R-value calculated when the aluminum foil surface is installed next to a non-ventilated 3/4 inch air space (R-value = 2.8). All values from the ASHRAE Fundamentals Handbook.

Energy Analysis

	MEASUREMENT UNITS	TECHNA-DUC®	BARE SHEET METAL	WET FIBERGLASS WITH MASTIC FINISH
Installed Thickness	Inches	2	0	2
Installed R Value	FT2oFHR/BTU	16	0	6
Installed R Value / Wet	FT2oFHR/BTU	16	0	0.5
Energy Loss / HR SF	BTU	1.87	69.81	32.69
Annual Energy Loss (1)	MM BTU	149.6	5584.8	2615.2
Annual Lost Revenue	\$8.00/MM BTU	\$1,197	\$44,678	\$20,922
% Loss vs. Techna-Duc®	% Greater	0%	3732%	1747%

NOTE 1:

Design Conditions: Delta T 30°F, Outdoor, Avg. Wind Speed 9 mph, 8000 hours annual run time
 Total duct surface area: 10,000 SF
 Duct work static pressure: 2" w.g.
 Calculations performed using NAIMA 3E Plus Version 4.0



PTM Manufacturing

PTM Manufacturing, LLC, is an industry leader in advanced HVAC system air distribution and insulation technologies designed to improve building energy efficiency, reduce total energy consumption and lower cost. We provide custom-engineered, LEED approved exterior and interior air handling systems that support sustainable building practices for industrial, commercial and residential applications.

PTM manufactures and distributes its patented Techna-Duc® insulation systems for exterior HVAC ducting applications. Techna-Duc forms a water-tight shield against the environment and has been documented to reduce system energy output by up to 25%.

PTM also distributes and fabricates the KoolDuct® product line – used worldwide as a premier air conveyance system. Designed to combine insulation and ducting for more thermally efficient HVAC performance, KoolDuct practically eliminates system air leakage, improves indoor air quality, boosts overall energy efficiency and can reduce unit fan operation by as much as 30%.

**New construction or retrofit, PTM can
maximize your building's HVAC efficiency
...contact us to find out how.**

800-455-1402 OR 302-455-9733