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ENGINEERING & CONSULTING, INC.
STRUCTURAL, PLUMBING, MECHANICAL, & ELECTRICAL DESIGN



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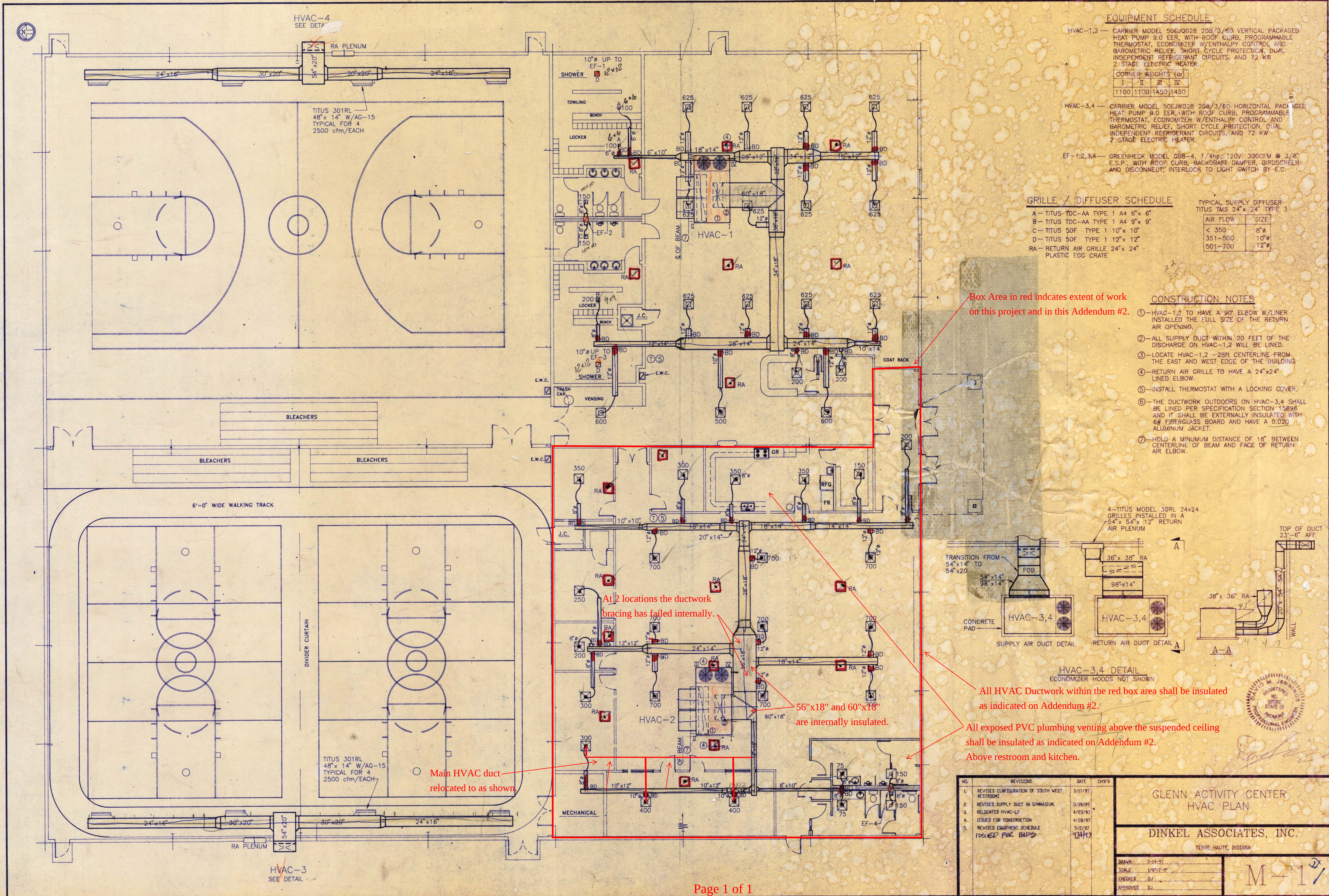
**BIRD GIBSON SPORTS CENTER
2026 BUILDING REMODEL PHASE 1
599 SOUTH TABORTOWN ROAD
TERRE HAUTE, INDIANA 47803**

ADDENDUM #2

This ADDENDUM, giving information supplemental to the drawings and specifications, becomes part of the contract documents. Wherever this addendum might be in conflict with the drawings and/or specifications, this addendum shall take preference.

1. ALL BIDDERS: All bidders shall acknowledge receipt of this addendum on their bid forms.
2. MECHANICAL: All exposed galvanized HVAC ductwork in the area indicated on attached Exhibit #1, shall be covered in Owens Corning Soft Duct Wrap FRK. Thickness shall be 1 1/2" Type 75 with an installed R-Value of 4.2. Note: Due to the space being an open return air plenum, the Flame Spread Rating cannot be greater than 25 and the Smoke Developed Index cannot be more than 50. Attached Exhibit #2 is the Data Sheet of the Owens Corning insulation. The 60"x18" and 56"x18" ductwork indicated on Exhibit #1 are internally insulated and do not require the above insulation wrap.
3. MECHANICAL: All exposed PVC venting piping above the suspended ceiling in the indicated areas shall be covered with LoSmoke PVC Jacketing and Fittings. Note: Due to the space being an open return air plenum, the Flame Spread Rating cannot be greater than 25 and the Smoke Developed Index cannot be more than 50. Attached Exhibit #3 is the Data Sheet of the Proto Corp. LoSmoke PVC Jacketing and Fittings.
4. MECHANICAL: The existing 56"x18" ductwork has failed internal bracing at two locations indicated on attached Exhibit #1. Mechanical Contractor shall provide and install external bracing consisting of Unistrut across the bottom of the failed location and threaded rod support from roof structure as required.
5. MECHANICAL: Mechanical Contractor shall install Owens Corning Thermafiber SAFB Mineral Wood Insulation batt insulation on top of all Supply Air Grilles in the project area. This is to reduce possible condensation. Note: Due to the space being an open return air plenum, the Flame Spread Rating cannot be greater than 25 and the Smoke Developed Index cannot be more than 50. Attached Exhibit #4 is the Data Sheet of the Owens Corning Thermafiber SAFB Mineral Wood Insulation.

6. GENERAL: The existing vinyl flooring is glued down. Remove and prepare existing concrete slab as required for new flooring.
7. GENERAL: The toilet partitions specified will need to be ordered ASAP after award of project to meet project schedule.
8. GENERAL: The Owner will remove all items currently in the space to be remodeled prior to start of construction activities.
9. GENERAL: Existing Hollow Metal Steel Frames are rough in texture due to prior painting. Sand and prepare frames as required for smooth final finish.
10. GENERAL: The Owner does not wish to retain the exiting counter and service rolling door indicated to be removed on the project. Disposal by General Contractor.





SOFT[®] DUCT WRAP FRK

FIBERGLASS INSULATION

Exhibit #2

SOFT[®] Duct Wrap is a blanket of glass fiber insulation factory-laminated to FRK vapor retarder facing. A 2" (50mm) stapling and taping flange is provided on one edge. This product is designed to meet existing performance standards such as NFPA 90A and 90B and other mechanical and energy codes. SOFT[®] Duct Wrap FRK flexible design makes it easy and fast to install, helps prevent duct condensation, and increases building occupants thermal comfort.



Features

- Condensation control
- Enhanced comfort control
- Easy to clean surface
- Flexible and easy to install

Applications

- SOFT[®] Duct Wrap FRK is used for external insulation of commercial and residential heating, air conditioning and dual-temperature ducts operating at temperatures from 40°F (4°C) to 250°F (121°C). This insulation, when applied in accordance with installation instructions (Pub. 10021577), will provide the "installed R-value" as published for the product and printed on the facing, assuring specified in-place thermal performance and condensation control.

Limitations

- SOFT[®] Duct Wrap FRK is not recommended for use on duct systems subject to continuous service at temperatures in excess of 250°F (121°C). It should not be used in conditions where condensation might occur on the facing nor exposed to weathering or mechanical abuse without proper protection. It should not be used on the inside of ducts.

Physical Properties

PROPERTY	TEST METHOD	VALUE		
Operating Temperature	ASTM C411	Up to 250°F (121°C)		
Insulation Jacket Temperature Limit	ASTM C1136	Up to 150°F (66°C)		
Jacket Puncture Resistance	ASTM C1136	25 units (0.7 joules)		
Water Vapor Permeance	ASTM E96	0.02 perms		
Water Vapor Sorption	ASTM C1104	<3% by weight at 120°F (49°C), 95% R.H.		
Fungi Resistance	ASTM C1338	Meets requirements		
Thermal Conductivity <u>Out-of-Package k-Value</u> k Btu • in/hr • ft ² • °F (λ at 24°C Mean, W/m • °C)	ASTM C518	Type 75 0.30 (0.043)	Type 100 0.27 (0.039)	Type 150 0.25 (0.036)
<u>Installed (Compressed) k-Value</u> k Btu • in/hr • ft ² • °F (λ at 24°C Mean, W/m • °C)		Type 75 0.27 (0.039)	Type 100 0.25 (0.036)	Type 150 0.23 (0.033)
Surface Burning Characteristics ¹	ASTM E84	Flame Spread 25 Smoke Developed 50		

1. The surface burning characteristics of these products have been determined in accordance with ASTM E84. Values are reported to the nearest 5 rating.

Availability

Standard roll width: 48" (1.2m)

Installed R (RSI) values: When installed in accordance with installation procedures, SOFTR® Duct Wrap FRK will provide installed R (RSI) values as follows:

NOMINAL THICKNESS		OUT-OF-PACKAGE R (RSI) VALUE ²		INSTALLED THICKNESS ³		INSTALLED R (RSI) VALUE ^{2,3}	
IN	MM			IN	MM		
Type 75 – 0.75 pcf (12 kg/m³)							
1½	(38)	5.1	(0.90)	1⅛	(29)	4.2	(0.74)
2.0	(50)	6.8	(1.17)	1½	(38)	5.6	(0.98)
2.2	(56)	7.4	(1.30)	1⅝	(42)	6.0	(1.06)
3	(76)	10.0	(1.76)	2¼	(57)	8.3	(1.46)
Type 100 – 1.00 pcf (16 kg/m³)							
1½	(38)	5.6	(0.99)	1⅛	(29)	4.5	(0.79)
2	(51)	7.4	(1.30)	1½	(38)	6.0	(1.06)
Type 150 – 1.50 pcf (24 kg/m³)							
1½	(38)	6.0	(1.06)	1⅛	(29)	4.8	(0.85)
2	(51)	8.0	(1.41)	1½	(38)	6.4	(1.13)

2. hr • ft² • °F/Btu (m² • °C/W) at 75°F (24°C) mean temperature.

3. Assumes 25% compression of insulation.

Material Requirements to Achieve Installed R-Value

STRETCH-OUT DIMENSIONS			
OUT-OF PACKAGE THICKNESS	INSTALLED THICKNESS	ROUND AND OVAL DUCTS	SQUARE AND RECTANGULAR DUCTS
IN	IN	P + IN	P + IN
1 1/2	1 1/8	P + 9 1/2	P + 8
2	1 1/2	P + 12	P + 10
2 3/16	1 5/8	P + 13	P + 11
3	2 1/4	P + 17	P + 14 1/2

P = measured duct perimeter

Specification Compliance

- ASTM C 1290, Flexible Fibrous Glass Blanket Insulation Used to Externally Insulate HVAC Ducts, Type III
- ASTM C 1136, Flexible Low Permeance Vapor Retarders for Thermal Insulation, Type II (facing only)
- ASTM C 553 Mineral Fiber Thermal Insulation:
Type I – Fiberglas™ Duct Wrap Type 75; Type II – SOFTR® Duct Wrap FRK Types 100 and 150. (Operating temperatures to 250°F (121°C) and thermal values to 150°F (66°C) mean.)

4. Preferred specification is ASTM C1290.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services.

Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at www.owenscorning.com.

Certificates and Sustainable Features

- Environmental Product Declaration (EPD) has been certified by UL Environment*
- Health Product Declaration® (HPD)



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Technical information contained herein is furnished without charge or obligation and is given and accepted at recipient's sole risk. Because conditions of use may vary and are beyond our control, Owens Corning makes no representation about, and is not responsible or liable for the accuracy or reliability of data associated with particular uses of any product described herein. SCS Global Services provides independent verification of recycled content in building materials and verifies recycled content claims made by manufacturers. For more information, visit www.SCSglobalservices.com. LEED® is a registered trademark of the U.S. Green Building Council.

DESCRIPTION

The Proto Fitting Cover System consists of one or two piece pre-molded high impact, UV resistant, LoSmoke® PVC fitting covers with or without formaldehyde free fiberglass inserts and accessories. This product line is designed to cover all standard and specialty fittings; which include elbows, tee/valves, end caps, mechanical line couplings, and many more. When combined with our PVC jacketing and solvent welding adhesive or tape, our PVC fitting covers form a completely sealed system that may be used for below ambient applications. Colored PVC is manufactured from a LoSmoke® formula that is suitable for indoor use only.

AVAILABLE FORMS

Thickness: Standard and Heavy Duty

Fitting Covers: 45° and 90° small and long radius, tees, valves, flanges, reducers, end caps, traps, mechanical groove - fittings and many more

Jacketing: PVC rolls and cut and curl are available in thickness ranging from 10 to 40 mil at a 35 1/2" and 48" width

OPERATING TEMPERATURE

PVC: -20° F (-29° C) to 150° F (66° C)

(exposed surface)

Inserts: - 20° F (-29° C) to 1000° F (538° C)

PHYSICAL PROPERTIES

Specific Gravity (ASTMD-792)	1.41	
Tensile Modulus, PSI (ASTMD-638)	361,000 (25,380kg/cm2)	
Tensile Strength, PSI (ASTMD-638)	6,011	
Flexural Strength, PSI (ASTMD-790)	9,396	
IZOD Impact (1/4") ft. lb./in(ASTMD-256)	3.7	
Heat Deflection Temp. (ASTMD-648) @ 264 PSI (8.95 kg/cm2)	157° F (70° C)	
VICAT Softening Temp. (ASTMD-1525)	198° F (92° C)	
Permeance (WVTR)	0.015" thick	≤0.058
ASTM E E96	0.020" thick	≤0.047
Procedure A Perm, (grains/hr-ft2in Hg)	0.030" thick	≤0.027
Tested over code compliant		
Vapor barrier*	0.02" thick	≤0.02
*ASTM C1136@ ≤ 0.02 perm		
ASTM E 84 and CAN/ULC S102	Flame	≤25
Surface Burning Characteristics	Smoke	≤50
Puncture Resistance (ASTMD781)	0.006" thick	178 Beach Units
	0.015" thick	221 Beach Units
Electrical resistance	Non-conductor	

SPECIFICATION COMPLIANCE

ASTM E84	Surface burning characteristics
ASTM E136	Non-combustibility (insert only)
ASTM C585	Standard dimensions for pipe
ASTM D1784	Specification for rigid PVC
ASTM C1338	Fungi test
ASTM G21 & G22	Fungi and bacteria test
Federal Specification	
LP-1035A	Federal standard PVC - Type II Grade GU
LP-535E	US Army standard PVC - Type II Grade GU
USDA	United States Department of Agriculture
New York City MEA	Toxicity
Canada	
CAN/CGSB – 51.53.95	PVC Jacketing
CAN/ULC S102	Surface burning characteristics
Agriculture Canada	
ICC	International code council
IBC	International building code
IMC	International mechanical code

GREEN BUILDING ATTRIBUTES

Manufacturing Location	Clearwater, FL
Recycled Content	Pre 55+%
CA 1350 - VOC	Pass office and School
Berkeley Analytical	Cert NO 160504 – 10
LEED Credits per V4	Contributes EA, MR, EQ (See Proto LEED credit guide)
RoHS	Heavy metal compliant
DecaBDE ≤0.01%	Pass State of Oregon
Rigid PVC	No plasticizers or phthalates

Formaldehyde free preformed fiber glass inserts which are cut to a specific size and shape save time and labor and are an integral part of our LoSmoke PVC fitting system. This 1000° F rated, 1 pcf dense, insulation classified as noncombustible, meets all fungi and corrosion resistance criteria and design requirements of ASHRAE 90.1-10. The product is designed to be installed using one insert per each inch of installed pipe insulation thickness.

Specification compliance:

ASTM C553, ASTM C547, C665, C1338, C1617, C795, ASTM E84, ASTM E136
ASHRAE 90.1
ASTM E84 & CAN ULC S102
GREENGUARD: Gold
Recycled content: 53% pre and post consumer content
Decabrom free

INSERT COMPRESSED THERMAL CONDUCTIVITY

Mean Temperature		K value	
F°	C°	BTU in/sq ft hr F	W/M C
75	24	0.23	0.033
150	66	0.27	0.039
300	40	0.4	0.058

APPLICATION FOR USE

Storage:

Protect cartons from water damage or other abuse. Proto cartons are not designed for outside storage.

Preparation:

Proto fitting covers and inserts should be applied on a clean, dry surface.

Above ambient – General installation:

A Proto fiberglass insert shall be wrapped completely around the metal fitting leaving no voids or open spaces. A loose wrapping of twine or tape may be helpful to hold insulation in place. The Proto Fitting Cover shall then be applied over the insert, and secured by using serrated stainless steel tacks or by taping.

Cold pipe:

Fitting systems below ambient temperature must have a continuous vapor retarder or vapor retardant mastic as specified by the engineer. When using Proto PVC Tape, a 2" (51mm) minimum downward overlap is recommended for optimum performance. Care should be taken not to stretch the last 2" (51mm) of Proto PVC Tape, to avoid stretching or creeping.

Hot system:

Use proper insulation thickness to ensure PVC covers are kept below 150°F (66°C). PVC jackets and fitting covers should be kept away from direct contact or exposure to radiated heat. For conditions where operating temperatures exceed 250°F (121°C) or where pipe insulation thickness is greater than 1" (25.4mm), two or more layers of insulation inserts are required beneath the fitting cover.

Refrigerant Systems and/or Cold Systems In Severe Ambient Conditions:

An intermediate layer of low perm facing or vapor-compatible mastic with PVC is required to completely seal the insulation prior to installing the PVC fitting cover. Vapor barrier mastic should be applied between the pipe insulation and the insert, fitting cover, throat of the fitting cover, and overlap seam.

Totally Sealed Systems (USDA):

20 mil (0.5 mm) minimum LoSmoke PVC jacketing should be applied to pipe insulation in conjunction with LoSmoke PVC fitting covers. Circumferential and longitudinal jacketing and fitting cover seams should be sealed with solvent welding adhesive. Circumferential seams should be a minimum of 1 ½" - 2" (38mm to 51mm) overlap and longitudinal seams should be 1½" - 2" (38mm to 51mm) overlap (with 6-8 inches for expansion joints). All seams should visually be checked for seal and, if necessary, repaired. Slip joints will be required between fixed supports and on continuous long runs of straight piping.

Outdoors (for white only):

Proto PVC Jacketing thickness for outdoor applications should be a minimum of 0.030" (0.8 mm) and 0.040"(1.0 mm) for any O.D. over 15". The PVC Jacketing shall be overlapped a minimum of 2" (51 mm) on the down side so as to shed water. All longitudinal and circumferential joints shall be completely weather sealed with caulk adhesive. Additionally, a slip type expansion joint of 8" (202 mm) minimum width shall be applied at least every 25 lineal feet (6.1 lineal meters) and between fittings.

The physical and chemical properties of Proto Corp. PVC represent typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread rating is not intended to reflect hazards presented by this or any other materials under actual fire conditions. Check with Proto Corp. office to assure current information. Purchaser will be responsible to determine suitability of this product for purchaser's use. Proto Corp. liability will be limited to the purchase price of the material. No person is authorized to alter this without a Proto Corp. officer's written approval.



THERMAFIBER® SAFB™ MINERAL WOOL INSULATION

Thermafiber® SAFB™ (Sound Attenuation Fire Blankets) are mineral wool batts designed to provide acoustical control and fire protection in many UL® fire-rated wall and floor-ceiling assemblies. These products are non-combustible, moisture-resistant, non-corrosive, non-deteriorating, mildew-resistant, and vermin-resistant. SAFB™ can add points to STC for walls and floor-ceiling assemblies. SAFB™ can be installed in both steel stud and wood-framed construction.

Features

- Exceptional sound and noise absorption
- Adds STC value to wall and floor-ceiling assemblies
- Provides fire containment in rated assemblies
- Mineral wool is non-combustible as tested to ASTM E136
- Minimum 70% recycled content¹
- Mold-resistant²
- Contributes to credits in several green building programs, such as LEED® and Green Globes®

2 Tested per ASTM C1338, Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings, ASTM International.

Standards, Codes Compliance

- NFPA 101, Class A-rated interior finish
- ASTM C665, Mineral Fiber Blanket Thermal Insulation, Type 1

Physical Properties

PROPERTY	TEST METHOD	VALUE
Corrosion of Steel, Aluminum, and Copper	ASTM C665	Pass
Non-Combustibility	ASTM E136	Non-combustible
Non-Combustibility	CAN/ULC S114	Complies
Water Vapor Sorption	ASTM C1104	Sorption less than 1% by volume
Surface Burning Characteristics	ASTM E84	Flame Spread 0, Smoke Developed 0
Surface Burning Characteristics	CAN/ULC S102	Flame Spread 0, Smoke Developed 0

Acoustical Performance

Noise Reduction Coefficients at Frequencies per ASTM C423

	THICKNESS	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	NRC
2.5 pcf Nominal Density	2"	0.34	0.61	1.07	1.09	1.07	1.10	0.95
	3"	0.51	0.99	1.18	1.03	0.99	0.96	1.05
	4"	0.83	1.19	1.27	1.12	1.12	1.13	1.20
	6"	1.37	1.32	1.23	1.16	1.12	1.12	1.20

Availability

PRODUCT	AVAILABLE THICKNESS IN ½" INCREMENTS	STANDARD DIMENSIONS ^{3,4}	
SAFB™ 2.5 pcf	1.5"–8"	16" x 48", 24" x 48"	2.5 pcf (nominal)
SAFB™ 4.0 pcf	1"	16" x 48", 24" x 48"	4.0 pcf (nominal)
Tolerances	+¼", -⅛"	Width: 0, +¼", Length: ±½"	

3 See our product guide for more details.

4 Custom sizes are available upon request.

Installation

- Interior Stud Cavity – Friction-fit SAFB™ securely between studs. Butt ends of blankets closely together and fill all voids.
- Floor-Ceiling – Friction-fit SAFB™ securely between floor joints.
- Ceiling Overlayment – Lay SAFB™ over ceiling panels, extending 48 inches beyond all partitions. Tightly fit around all hangers, obstructions, and penetrations.

Product Options

- Recycled Content Options^{1,5}:
 - EPA Choice Fiber (U.S. Government Buildings)Minimum 75%
 - Standard Fiber70%

Formaldehyde-free product available. See Owens Corning publication "Thermafiber® SAFB™ Formaldehyde-Free Mineral Wool Insulation Data Sheet" (Pub. No. 10022322) for more information.

5 Recycled content options other than standard must be specified at time of order.

Exhibit #4

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation, and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets, and enhancing lives. More information can be found at www.owenscorning.com.

Certifications and Sustainable Features

- ¹Verified by ICC-ES to contain a minimum of 70% recycled content. See ICC-ES Evaluation Report VAR-1025 at icc-es.org.
- Environmental Product Declaration (EPD) has been certified by UL Environment. For more information, visit ul.com/epd.
- SAFB™ products have a published Health Product Declaration (HPD).
- This product receives SAFETY Act designation by the U.S. department of Homeland Security. For more information, visit safetyact.gov.



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Notes

For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via <http://sds.owenscorning.com>.

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