

Commercial Building Insulation

Submittal Date _____



Submitted to: _____

Job Name: _____

Job Reference: _____

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Commercial Building Insulation

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Knauf Batt Insulation					
Product and Description	R-Value/RSI		Thickness		Location
■ Unfaced Thermal and Acoustical					
<p>Fiber glass insulation designed to be friction fit between metal framing members. Specifier permitted choice of warm side vapor retarders, including foil backed gypsum board or polyethylene film.</p> <p>Unfaced fiber glass insulation is also an excellent sound control insulation, designed for installation in partition walls and as a lay-in over acoustical ceiling panels.</p> <p>When tested in accordance with ASTM E 84, material has Fire Hazard Classification of 25/50 or less.</p> <p>Specification Compliance</p> <ul style="list-style-type: none"> • ASTM C 665; Type I, Class A • HH-I-521F; Type I, Class A • ASTM E 136 	<input type="checkbox"/> R-8	RSI-1.4	2½"	64 mm	
	<input type="checkbox"/> R-11	RSI-1.9	3½"	89 mm	
	<input type="checkbox"/> R-13	RSI-2.3	3½"	89 mm	
	<input type="checkbox"/> R-19	RSI-3.3	6¼"	159 mm	
	<input type="checkbox"/> R-25	RSI-4.4	8¾"	210 mm	
	<input type="checkbox"/> R-26	RSI-4.6	9"	229 mm	
	<input type="checkbox"/> R-30	RSI-5.3	10"	254 mm	
	<input type="checkbox"/> R-38	RSI-6.7	12"	311 mm	

■ Kraft Faced Thermal and Acoustical					
<p>Fiber glass insulation with kraft paper with flanges. Kraft vapor retarder has vapor transmission (permeance) rating of 1.0 or less.</p> <p>Kraft faced fiber glass insulation is also an excellent sound control insulation, designed for installation in partition walls and as a lay-in over acoustical ceiling panels.</p> <p>Kraft facing will burn and should not be left exposed. Install kraft facing in contact with approved finish material.</p> <p>Specification Compliance</p> <ul style="list-style-type: none"> • ASTM C 665; Type II, Class C • HH-I-521F; Type II, Class C 	<input type="checkbox"/> R-11	RSI-1.9	3½"	89 mm	
	<input type="checkbox"/> R-13	RSI-2.3	3½"	89 mm	
	<input type="checkbox"/> R-19	RSI-3.3	6¼"	159 mm	
	<input type="checkbox"/> R-26	RSI-4.6	9"	229 mm	
	<input type="checkbox"/> R-30	RSI-5.3	10"	254 mm	
	<input type="checkbox"/> R-38	RSI-6.7	12"	311 mm	

■ FSK-25 Foil Faced					
<p>Fiber glass insulation with a flanged reinforced foil/ scrim/kraft facing with an average vapor transmission (permeance) rating of .04.</p> <p>When tested in accordance with ASTM E 84, material has Fire Hazard Classification of 25/50 or less.</p> <p>Specification Compliance</p> <ul style="list-style-type: none"> • ASTM C 665; Type III, Class A • HH-I-521F; Type III, Class A 	<input type="checkbox"/> R-11	RSI-1.9	3½"	89 mm	
	<input type="checkbox"/> R-13	RSI-2.3	3½"	89 mm	
	<input type="checkbox"/> R-19	RSI-3.3	6¼"	159 mm	
	<input type="checkbox"/> R-30	RSI-5.3	10"	254 mm	
	<input type="checkbox"/> R-38	RSI-6.7	12"	311 mm	

■ Foil Faced					
<p>Fiber glass foil insulation with asphalt-coated kraft/foil facing with flanges. Foil vapor retarder has vapor transmission (permeance) rating of .05 or less.</p> <p>Insulation should not be left exposed. Install foil facing in contact with approved finish material.</p> <p>Specification Compliance</p> <ul style="list-style-type: none"> • ASTM C 665; Type III, Class B • HH-I-521F; Type III, Class B 	<input type="checkbox"/> R-11	RSI-1.9	3½"	89 mm	
	<input type="checkbox"/> R-13	RSI-2.3	3½"	89 mm	
	<input type="checkbox"/> R-19	RSI-3.3	6¼"	159 mm	
	<input type="checkbox"/> R-30	RSI-5.3	10"	254 mm	
	<input type="checkbox"/> R-38	RSI-6.7	12"	311 mm	

Knauf Black Acoustical Insulation

Product and Description	Density	Thickness	Location
Wall and Ceiling Liner M			
Black insulation blanket with a black mat facing adhered to one surface. The product is designed for use as an acoustical and visual barrier for walls and ceilings. When tested in accordance with ASTM E 84, material has Fire Hazard Classification of 25/50 or less. Specification Compliance <ul style="list-style-type: none"> • ASTM C 553; Types I, II, III • ASTM C 1071; Type I 	<input type="checkbox"/> 1.0 pcf	16 kg/m ³	1" 25 mm
	<input type="checkbox"/> 1.0 pcf	16 kg/m ³	1½" 38 mm
	<input type="checkbox"/> 1.0 pcf	16 kg/m ³	2" 51 mm
	<input type="checkbox"/> 1.5 pcf	24 kg/m ³	½" 13 mm
	<input type="checkbox"/> 1.5 pcf	24 kg/m ³	1" 25 mm
	<input type="checkbox"/> 1.5 pcf	24 kg/m ³	1½" 38 mm
	<input type="checkbox"/> 1.5 pcf	24 kg/m ³	2" 51 mm
	<input type="checkbox"/> 2.0 pcf	32 kg/m ³	½" 13 mm
	<input type="checkbox"/> 2.0 pcf	32 kg/m ³	1" 25 mm

Black Acoustical Board			
Fiber glass amber board with black polymer top layer and black overspray. The product is designed for use on walls and ceilings where a rigid product is required. When tested in accordance with ASTM E 84, material has Fire Hazard Classification of 25/50 or less. Specification Compliance <ul style="list-style-type: none"> • ASTM C 612; Class I 	<input type="checkbox"/> 2.25 pcf	36 kg/m ³	2" 51 mm
	<input type="checkbox"/> 3.0 pcf	48 kg/m ³	1" 25 mm
	<input type="checkbox"/> 3.0 pcf	48 kg/m ³	1½" 38 mm
	<input type="checkbox"/> 3.0 pcf	48 kg/m ³	2" 51 mm

Knauf Insulation Board

Product and Description	Density	Thickness	R-Value/RSI	Location	
Insulation Board					
Fiber glass insulation designed to be used on metal and masonry walls, walls and roof panel systems, curtain wall assemblies, cavity walls and for all applications where insulating and acoustical efficiency is required. It is available plain, with a factory applied foil/scrim/kraft facing or with a factory applied all service jacket. When tested in accordance with ASTM E 84, material has Fire Hazard Classification of 25/50 or less. Specification Compliance <ul style="list-style-type: none"> • HH-I-558B <ul style="list-style-type: none"> – Form A, Class 1 (1.6pcf, 2.25pcf, 3.0 pcf, 4.25pcf, 6.0pcf) – Form A, Class 2 (3.0pcf, 4.25pcf, 6.0pcf) • HH-B-100B <ul style="list-style-type: none"> – Type I (ASJ) – Type II (FSK) • ASTM C 1136 <ul style="list-style-type: none"> – Type I, II, III, IV (ASJ) – Type II, IV (FSK) • ASTM C 612 <ul style="list-style-type: none"> – Type IA (1.6pcf, 2.25pcf, 3.0pcf, 4.25pcf, 6.0pcf) – Type IB (3.0pcf, 4.25pcf, 6.0pcf) 	1.6 pcf 26 kg/m ³	<input type="checkbox"/> 1½"	38 mm	R-6.3 RSI-1.1	
		<input type="checkbox"/> 2"	51 mm	R-8.3 RSI-1.5	
		<input type="checkbox"/> 2½"	64 mm	R-10.4 RSI-1.8	
		<input type="checkbox"/> 3"	76 mm	R-12.5 RSI-2.2	
		<input type="checkbox"/> 3½"	89 mm	R-14.6 RSI-2.6	
		<input type="checkbox"/> 4"	102 mm	R-16.7 RSI-2.9	
	2.25 pcf 36 kg/m ³	<input type="checkbox"/> 1"	25 mm	R-4.3 RSI-0.8	
		<input type="checkbox"/> 1½"	38 mm	R-6.5 RSI-1.1	
		<input type="checkbox"/> 2"	51 mm	R-8.7 RSI-1.5	
		<input type="checkbox"/> 2½"	64 mm	R-10.9 RSI-1.9	
		<input type="checkbox"/> 3"	76 mm	R-13.0 RSI-2.3	
		<input type="checkbox"/> 3½"	89 mm	R-15.2 RSI-2.7	
	3.0 pcf 48 kg/m ³	<input type="checkbox"/> 4"	102 mm	R-17.4 RSI-3.1	
		<input type="checkbox"/> 1"	25 mm	R-4.3 RSI-0.8	
		<input type="checkbox"/> 1½"	38 mm	R-6.5 RSI-1.1	
		<input type="checkbox"/> 2"	51 mm	R-8.7 RSI-1.5	
		<input type="checkbox"/> 2½"	64 mm	R-10.9 RSI-1.9	
		<input type="checkbox"/> 3"	76 mm	R-13.0 RSI-2.3	
	4.25 pcf 68 kg/m ³	<input type="checkbox"/> 3½"	89 mm	R-15.2 RSI-2.7	
		<input type="checkbox"/> 4"	102 mm	R-17.4 RSI-3.1	
		<input type="checkbox"/> 1"	25 mm	R-4.3 RSI-0.8	
		<input type="checkbox"/> 1½"	38 mm	R-6.5 RSI-1.1	
	6.0 pcf 96 kg/m ³	<input type="checkbox"/> 2"	51 mm	R-8.7 RSI-1.5	
		<input type="checkbox"/> 2½"	64 mm	R-10.9 RSI-1.9	
		<input type="checkbox"/> 1"	25 mm	R-4.4 RSI-0.8	
		<input type="checkbox"/> 1½"	38 mm	R-6.7 RSI-1.2	
			<input type="checkbox"/> 2"	51 mm	R-8.9 RSI-1.6

Acoustical Performance

Knauf Insulation's commercial insulation provides excellent acoustical properties and will reduce sound transmission when properly installed in partition walls and acoustical ceiling and floor systems. Our QuietTherm® acoustical/thermal insulation can improve STC ratings in wood stud construction by 3 to 5 points and metal stud

construction by 8 to 10 points depending upon the complexity of the wall configurations, R-values and layers of insulation.

The following table illustrates the improved STC Ratings using Knauf QuietTherm acoustical/thermal insulation compared to no insulation.

STC Ratings*				
	QuietTherm	No insulation	QuietTherm	No insulation
Wood Frame (3½" - 4" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
Single studs/Single layer gypsum	38	35	38	34
Single studs/Resilient channel	47	39	52	40
Staggered studs/Single layer gypsum	49	39	51**	43
Double stud walls/Single layer gypsum	57	46	56	45
Steel Frame (2½" Studs) (2½" - 2¼" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
Single layer gypsum	45	36	47	39
Double layer gypsum one side/ Single layer gypsum other side	50	39	52	44
Double layer both sides	54	45	57	48
Steel Frame (3¾" Studs) (3½" - 4" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
Single layer gypsum	47	39	50	39
Double layer gypsum one side/ Single layer gypsum other side	52	42	55	47
Double layer both sides	56	50	58	52

* See NAIMA publication BI405 for additional information.

** Uses 2" - 2½" Batts

Thermal Resistance

Thermal resistance (R-value) of the blanket insulation only is certified to be as represented above when measured at a mean temperature of 75°F (24°C) and subject to manufacturing and testing tolerances.

Surface Burning Characteristics

Knauf Unfaced Batts and Blankets, FSK-25 Batts, Insulation Board, Wall and Ceiling Liner M and Black Acoustical Board do not exceed 25 Flame Spread and 50 Smoke Developed when tested in accordance with ASTM E-84.

Fire Safety

Knauf Unfaced Batts are considered noncombustible according to ASTM E-136. Facings and coated products do affect fire safety and burning characteristics. Please consult your Knauf Insulation sales representative or technical support for additional information and appropriate applications.

Additional Information

MSDS sheets are available on our Web site or by contacting technical support.

All Knauf Insulation products have a one-year limited warranty.

Ask your Knauf Insulation sales representative for the following:

- Limited One-Year Warranty Card K-W-3
- QuietTherm Insulation Data Sheet BI-DS-3
- Insulation Board Data Sheet PE-DS-2
- Theater Insulation* Products Data Sheet BI-DS-4

*Wall and Ceiling Liner M, Black Acoustical Board, Insulation Board

Fiber Glass and Mold

Fiber glass insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated with organic material.

Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold it must be discarded. If the material is wet but shows no evidence of mold, it should be dried rapidly and thoroughly.

Notes

Knauf Insulation is registered to ISO 9001:2000 in the prevention, detection and correction of problems in production and service areas. The chemical and physical properties of Knauf Unfaced Batts and Blankets, FSK-25 Batts, Insulation Board, Wall and Ceiling Liner M and Black Acoustical Board represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing variations. The data is supplied as a technical service and is subject to change without notice. References to numerical flame spread ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Check with your Knauf Insulation sales representative to assure information is current.