

# EAGLE PANELS-INSULATION SPECIFICATIONS

## Thermafiber® Industrial Felt



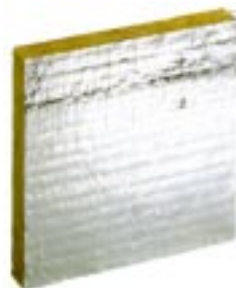
Industrial Felt, ASJ



Industrial Felt



Industrial Felt  
Black or White mat



Industrial Felt, Foil



Resin-bonded, rigid, felt is ideal for customer fabrication.

### Description

Thermafiber Industrial Felt is a high-melt point, preformed insulation. The high-density products are suited for use at service temperatures up to 1,350 °F. At elevated temperatures the high density materials (10- and 12-pcf densities) are more effective than glass fiber, more energy-efficient than conventional mineral-fiber insulations and less costly than high-temperature block.

Low cost and high insulating efficiency make these products ideal for a wide range of thermal, fire-protection and sound-control applications. With its semi-rigid composition, Thermafiber Felt is easily handled and applied. It is nonadsorbent and corrosion-resistant; it adsorbs less than 1% moisture and will not corrode steel or aluminum as tested per HH-1-558B. All felts meet applicable analysis for chloride content on the basis of plot points for austenitic stainless steel per MIL-1-24244A. Contains no asbestos.

On initial startup only, heat rise should not exceed 15°F per minute to allow binder to dissipate without excessive temperature rise. Thermal conductivity is not affected. When insulation is to be used in applications exposed to high-air velocities, adequate protection must be provided to prevent erosion of insulation. Severe vibration may cause degradation of insulation under some conditions.

### Uses

High melt resistance and eleven densities make Thermafiber Felt exceptionally versatile for commercial and industrial applications in a wide range of low-to hot-surface temperatures. Included are thermal applications—commercial and industrial ovens, package boilers, dryers, walk-in freezers and coolers; fire-protective applications—metal fire doors, light fixture protection and ship bulkheads; sound control applications—metal partitions, sound booths and acoustical decks; and fabrication.

### Fire Performance Characteristics

Products withstand ASTM E119 time-temperature exposure for over five hours when mechanically supported. Melting point exceeds 2,000 °F. Not for service operation at this temperature; refer to table for recommended maximum hot-surface temperatures.

### Surface Burning Characteristics

Flame spread 15, smoke developed 0 per ASTM E84 unfaced and flame spread 25, smoke developed 0 per ASTM E84 foil faced.

### Desired Cold-Surface Temperatures and Heat Loss

Data for Thermafiber Felt used on ovens, furnace walls, etc., is available upon request.

### Chemical State

High melt-point mineral fiber formulation.

### Average Compressive Strength

Per ASTM C165: 12 pcf-590 psf @ 10% compression, 10 pcf-460 psf @ 10% compression.

### Maximum Hot-Surface Temperature One Side (Enclosed Panel) per ASTM C411

Non. Density--pcf	Max. °F	Non. Density--pcf	Max. °F
2.5	400	7.0	1,000
3.0	500	—	—
3.5	600	8.0	1,200
4.0	850	9.0	1,200
4.5	850	10.0	1,200
6.0	1,000	12.0	1,350

Note: Temperatures above 450 °F require mechanical support.

### Specification Compliance(1)

Meets Federal Specification HH-I-558B (ASTM 553), ASTM C612(2)

Non. Density--pcf	Type IA	Type IB	Type II	Type III	Type IV
3.0	X				
4.0	X	X	X		
4.5	X	X	X		
6.0	X	X	X	X	
7.0	X	X	X	X	
8.0	X	X	X	X	X
9.0	X	X	X	X	X
10.0		X	X	X	X
12.0		X <sup>(3)</sup>	X <sup>(3)</sup>	X <sup>(3)</sup>	

(1) All felts meet applicable analysis for chloride content on the basis of plot points for austenitic stainless steel per MIL-1-24244A.

(2) Certification of density based on full compliance with Sec. 11.2 of ASTM C612-93.

(3) Except linear shrinkage over 1,300 °F

### Physical Data

Non. Density--pcf	Approx. Density Tolerance--pcf(1)	
	Tacoma	Wabash
2.5	± 0.5	-0.5+1.0
3.0	± 0.5	-0.5+1.0
3.5	± 0.5	-0.5 +1.0
4.0	± 0.5	-0.5 +1.0
4.5	± 0.5	-0.5 +1.0
6.0	± 0.75	-0.75 +2.0
7.0	± 1.0	-1.0 +2.0
8.0	± 1.0	-1.0 +2.0
9.0	—	-1.5 +2.5
10.0	—	-1.5 +2.5
12.0	—	-1.5 +2.5

(1) On package weight basis.

### Sizes and Availability From Manufacturing Plants(1)

Density -pcf	Wabash, IN <sup>(2)</sup>			Tacoma, WA		
	Min. Thick.	Max. Thick.	Max. Width	Min. Thick.	Max. Thick.	Max. Width
2.5	1 ½"	6"	72"	1 ½"	6"	90"
3 & 3.5	1 ½"	6"	72"	1 ½"	4 ½"	90"
4 & 4.5	1"	6"	72"	1"	4"	90"
6	1"	6"	72"	1"	3"	90"
7 & 8	1"	5"	72"	1"	2 ½"	90"
9	1"	4 ½"	72"	-	-	-
10	1"	4"	72"	-	-	-
12	1"	3 ¼"	72"	-	-	-

Note: Dimension tolerances-width ± 1/6 length ± 1/8" thickness -1/8

(1) Aluminum foil-faced industrial felts are available from Tacoma, WA and Wabash, IN.

(2) Consult your sales representative for sizes up to 75" wide

### Thermal Conductivity<sup>(1)</sup> per ASTM C177 or C518

Density—pcf	K-factor—Btu • in./hr. • ft. <sup>2</sup> • °F				
	75°	200°	300°	400°	500°
2.5	.27	.40	.51	—	—
3.0	.26	.35	.45	—	—
3.5	.26	.35	.44	—	—
4.0	.25	.34	.42	.51	.60
4.5	.25	.33	.41	.49	.58
6.0	.24	.30	.38	.46	.56
7.0	.24	.30	.37	.45	.55
8.0	.23	.29	.35	.43	.53
9.0	.23	.28	.34	.42	.51

Density-pcf	K-factor—Btu • in./hr. • ft. <sup>2</sup> • °F				
	75°	150°	300°	500°	700°
10	.23	.27	.34	.48	.67
12	.25	.28	.34	.47	.61

(1) Degrees represent mean temperature.

### NRC Data<sup>(1)</sup>

Specimen Tested-pcf	1/3 Octave Band Center Frequency—Hz						
	125	250	500	1000	2000	4000	NRC
1" thickness							
4	.06	.24	.58	.81	.85	.90	.60
6	.07	.24	.62	.87	.91	.91	.65
8	.10	.37	.82	.97	.91	.89	.75
12	.09	.31	.77	.96	.99	.94	.75
2" thickness							
4	.24	.68	1.08	1.08	.99	.92	.95
6	.32	.81	1.11	1.09	1.02	.94	1.00
8	.35	.84	1.08	1.04	.96	.93	1.00
12	.40	.79	.78	.94	.94	.87	.85
3" thickness							
2.5	.63	1.15	1.15	1.05	1.05	.94	1.00
4	.77	1.14	1.15	1.04	1.04	.94	1.00
6	.84	1.11	1.11	1.05	1.05	.93	1.00

(1) Riverbank Acoustical Laboratories.

### STC Data<sup>(1)</sup>

Non. Density-pcf	Thickness		
	1"	2"	3"
4	—	8	14
6	6	12	16
8	10	15	18
10	12	18	23
12	11	20	26

(1) USG Acoustical Research Facility.

### Specific Airflow Resistance (per ASTM C522 - Standard Method of Test for Airflow Resistance of Acoustical Materials)

