



# THERMAFIBER® Curtain Wall CW 40 and CW 90 Insulations

- Provide 1, 2 and 3-hr. fire protection in a variety of rated curtain wall assemblies.
- Available in unfaced felt or with a tough scrim-reinforced foil facing that serves as a vapor retarder.
- Optional dark-colored insulation for backing glass spandrel panels.
- Two densities\*, CW 40 (4.0 pcf) and CW 90 (8.0 pcf) provide for a variety of fire-protection applications.

## Description

THERMAFIBER® Curtain Wall CW 40 and CW 90 Insulations are mineral-wool-type insulations that resist temperatures up to 2,000 °F (1,093 °C), thus offering superior fire protection in rated curtain wall assemblies. These products are noncombustible per Standard NFPA 220 when tested according to ASTM E 136, and are moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. They permit dry construction for all-year-round work. Also, these products are available plain or FSP with scrim-reinforced foil facing that serves as a vapor retarder, and in standard color or dark color for backing glass spandrel panels.

Two different densities, 4.0 and 8.0 pcf, permit THERMAFIBER® Curtain Wall Insulations to be used in many different fire-containment assemblies of 1, 2 and 3-hr. ratings. Note that an optional 6.0 pcf product (CW 70) is also available.

## Fire Containment

The first priority in building safety is containment of both fire and smoke to the area of origin. For mid- and high-rise buildings, especially, that means that fire and smoke must be prevented from spreading to the next floor. Since the floor assembly is typically a fire-rated system, a possible route for the fire spread is through and up the exterior curtain wall system. THERMAFIBER® Life-Safety Fire Containment Systems are assemblies designed to protect perimeters by combining THERMAFIBER® Safing Insulation, THERMAFIBER® Curtain Wall Insulation and 3M THERMAFIBER® FIRE BARRIER™ Spray, THERMAFIBER® SMOKE SEAL™ Compound or FIRECODE® Compound. All four model building codes (BOCA, SBCCI, ICBE and IBC) require that the gap at the slab edge/curtain wall interface be treated to maintain the same fire integrity as the floor-ceiling. The THERMAFIBER® Life-Safety Fire Containment Systems have been tested (UL Systems CW-S-1001, CW-S-2001 and CW-S-2002) and accepted or recognized (ICBO ER-2331, California State Fire Marshal, OSHPD) as maintaining fire containment from floor to floor.

## Installation (Aluminum-Framed Application)

Mechanically attach CW insulation to vertical aluminum mullions with fasteners approved by the architect. Adhesive attachments are not acceptable. Cover aluminum mullions with 1" or 2" thick, 6" or 8" wide THERMAFIBER® Curtain Wall CW 90 Insulation depending on the assembly specifications. Place backing/reinforcement members horizontally at the safing line and behind the outer surface of the curtain wall insulation to prevent bowing of the curtain wall insulation due to pressure applied from compression-fit safing insulation. Typical reinforcement members include hat channels and "L" and "T" angles.

Install THERMAFIBER® Safing Insulation, of proper width (2" to 8" max. opening), in safe-off area foil side up between THERMAFIBER® Curtain Wall Insulation and floor slabs, on safing clips spaced as required, 24" or 12" o.c. maximum, leaving no voids. Cut safing wider than opening to ensure compression fit. Install THERMAFIBER® SMOKE SEAL™ Compound, or FIRECODE® Compound or FIRE BARRIER™ Spray as indicated in the specific test description or architectural specification.

In steel-stud-framed applications, screw-attach type X gypsum sheathing or cement board, 1/2" or 5/8" thick, to the exterior face of the studs.

## Technical Data

### Surface Burning Characteristics (According to ASTM E84)

Product Designation	Flame Spread	Smoke Developed
CW Regular (Unfaced)	15	0
CW Foil-Faced	25	0

Products have a class A interior finish rating per NFPA 101, life safety code. Values apply to both standard color and dark curtain wall insulation.

### Product Density

Product Designation	Actual Density	Approximate Density Tolerance-pcf <sup>(1)</sup>			Minimum Thickness	Application Method
		Tacoma	Wabash			
CW 40 <sup>(2)</sup>	4.0	±0.5	-0.5 +1.0	2"	see tests for req'd attachment	
CW 70 <sup>(3)</sup>	6.0	±0.75	-0.75 +2.0	1-1/2"	see tests for req'd attachment	
CW 90 <sup>(2)</sup>	8.0	±1.0	-1.0 +2.0	1"	see tests for req'd attachment	

(1) On packaging weight basis. (2) Values apply to both standard color and dark curtain wall insulation. (3) Special-order product.

### Thermal Conductivity and Thermal Resistance (According to ASTM C 518)

Product Designation	"k" @ 75 °F (24 °C) BTU · in./hr. · sq. ft. · °F	For insulation only							
		1" thick		1-1/2" thick		2" thick		2-1/2" thick	
		R <sup>(1)</sup>	U <sup>(2)</sup>	R <sup>(1)</sup>	U <sup>(2)</sup>	R <sup>(1)</sup>	U <sup>(2)</sup>	R <sup>(1)</sup>	U <sup>(2)</sup>
CW 40	0.25 <sup>(3)</sup>	—	—	—	—	8.0	0.13	10.0	0.100
CW 70 <sup>(4)</sup>	0.24 <sup>(3)</sup>	—	—	6.2	0.16	8.3	0.12	10.4	0.095
CW 90	0.23 <sup>(3)</sup>	4.3	0.23	6.5	0.15	8.7	0.11	10.9	0.092

\*Note that a third density CW 70 (6.0 pcf) is also available as a special-order product.

Product Designation	"k" @ 75 jF (24 jC) BTU á in./hr. á sq. ft. á jF	For insulation only							
		3" thick		3-1/2" thick		4" thick		6" thick	
		<sup>(1)</sup> R	<sup>(2)</sup> U	<sup>(1)</sup> R	<sup>(2)</sup> U	<sup>(1)</sup> R	<sup>(2)</sup> U	<sup>(1)</sup> R	<sup>(2)</sup> U
CW 40	0.25	12.0	.083	14.0	.071	16.0	.062	24.0	.042
CW 70	0.24 <sup>(3)</sup>	12.5	.080	14.6	.068	16.6	.060	25.0	.040
CW 90	0.23	13.0	.076	15.2	.066	17.4	.057	24.0	.042

(1) R = thickness divided by "k." (2) U value shown is for insulation only; however, in practice U values represent the overall U value of an assembly (U = 1 divided by total R). (3) Values apply to both standard color and dark curtain wall insulation product.

**Product Data**

**Standards Compliance**

THERMAFIBER Curtain Wall CW 40 and CW 90 Insulations meet the following:

ASTM C 665 Federal Specification HH-I-521FD Curtain wall insulation as Types I and III, Class A, Category 1 (0.02 perm, tested in accordance with ASTM E 96 procedure).

ASTM C 612-00 Federal Specification HH-I-558BD Curtain wall insulation (all) as Types 1 and 2 (0.02 perm, tested in accordance with ASTM E 96 procedure); curtain wall insulation (CW 70, CW 90) as Types 3 and 4 (0.02 perm, tested in accordance with ASTM E 96 procedure).

ASTM E 136 Rated noncombustible as defined by NFPA Standard 220 when tested according to ASTM E 136.

ASTM C 553 THERMAFIBER Insulations absorb less than 1% moisture by weight and volume.

Curtain wall products are approved New York City Board of Standards & Appeals-0.02 perm, foil-faced, tested in accordance with ASTM E 96 procedure (under BSA 214-73-SM & accepted by MEA-209-82).

**Fire-Containment Tests**

For more complete test information, see SA 707 THERMAFIBER Life-Safety Fire Containment Systems technical catalog.

Aluminum Spandrel Curtain Wall Fire Containment  
2 hr. DUSG 10-18-71 and WJE 72455; 1 hr. DUSG 6-3-71.

Granite Curtain Wall Fire Containment  
3 hr. DCEG 4-23-90; 2 hr. DCEG 10-6-81 and CEG 1-15-90; 1 hr. DCEG 2-27-81.

Glass Spandrel Curtain Wall Fire Containment  
3 hr. DCEG 4-2-81; 2 hr. DWJE 72481, CEG 12-20-89 and CEG 1-16-90; 1 hr. CEG 8-6-81 and CEG 7-1-81.

**Composition and Materials**

THERMAFIBER Blankets are a mineral fiber material manufactured from slag, a by-product of iron ore reduction, and naturally occurring rock.

**Warranty**

System performance following substitution of materials or compromise in assembly designing cannot be certified and may result in failure of fire performance under certain conditions. Products and systems provided by Thermafiber LLC are warranted to be free from defects in material workmanship. Contact Thermafiber LLC for complete warranty details.

**Storage**

Store in a cool, dry place.

**Submittal Approvals:**

Job Name		
Contractor		Date

Trademarks	Note	Notice	Safety First!	Health Aspects
THERMAFIBER and THE NAME IN MINERAL WOOL are trademarks of available in all geographic markets. Consult your local sales office or representative for information.	Products described here may not be available in all geographic markets. Consult your local sales office or representative for information.	We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current the appropriate personal protective safety data sheets and related literature on products before specification defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.	Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective safety data sheets and related literature on products before specification and/or installation.	Information about health aspects of THERMAFIBER Curtain Wall Insulation products are thoroughly explained in INT279, "Summary of Health & Safety Assessment & Recommended Work Practices" Booklet and INT117, "Health & Safety Assessment & Recommended Work Practices, Second Edition" (complete report).



3711 West Mill Street  
Wabash, IN 46992-8687  
1-888-TFIBER1 (834-2371)  
<http://www.thermafiber.com>