



SPECIFIER'S RESPONSIBILITY FOR EDITING GUIDE SPECIFICATIONS: This is a general specification guide, intended to be used by experienced construction professionals, in conjunction with good construction practice and professional judgment. This guide is to aid in the creation of a building specification that is to be fully reviewed and edited by the architect or engineer. Sections of this guide should be included, edited, or omitted based on the requirements of a specific project. It is the responsibility of both the specifier and the purchaser to determine if a product or system is suitable for its intended use. Neither Owens Corning, Thermafiber, nor any of its subsidiary or affiliated companies, assume any responsibility for the content of this specification guide relative to actual projects and specifically disclaim any and all liability for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or other construction related details, whether based upon the information provided by Owens Corning, Thermafiber or otherwise.

SECTION 07 21 10

MINERAL WOOL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Mineral wool insulation for the following applications:
 - 1. Thermal and acoustical insulation.
 - 2. Perimeter fire containment systems.
 - 3. Fire resistive joint systems in rated assemblies.
 - 4. Firestopping of through penetrations in rated assemblies.
- B. Related Sections:
 - 1. Section 07 10 00 - Dampproofing and Waterproofing Systems:
 - 2. Section 07 24 00 - Exterior Insulation and Finish Systems: Insulation for EIFS systems.
 - 3. Section 07 50 00 - Membrane Roofing: Insulation in low-slope roofing applications.
 - 4. Section 23 07 00 - HVAC Insulation: Insulation for HVAC ductwork.

1.2 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including preparation instructions and recommendations, storage and handling requirements, and installation methods.
- B. Shop Drawings: Submit manufacturer's shop drawings describing the type and location of each product specified.
- C. Recycled Content: For projects seeking USGBC LEED certification or other sustainable design program, submit letter from material supplier indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating cost for each product having recycled content.
- D. Regionally Manufactured Materials: For projects seeking USGBC LEED certification, submit documentation indicating location of manufacturer and percent of raw materials. Include statement indicating cost and distance from the manufacturer to project for each regionally manufactured material. Include statement indicating percent of raw materials used to make product within 500 miles of project site.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches square, representing actual product.



1.3 QUALITY ASSURANCE

- A. Installer Qualifications: The installation work of this Section shall be performed by an experienced contractor with a minimum of 2 years experience installing similar assemblies.
- B. Mock-Up: If requested, provide a mock-up of materials proposed for use for review of workmanship. Accepted mock-ups may remain in place.
- C. Preconstruction Meeting: Convene a minimum of two weeks prior to commencing Work of this Section. Agenda shall include, at a minimum, materials proposed for use, sequence of construction, coordination with substrate preparation, compatibility of materials, coordination with installation of adjacent and covering materials. Attendance is required by representatives of related trades including covering materials, substrate materials and adjacent materials.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to the job site in original packages, containers, or bundles bearing the brand name and manufacturer's identification.
- B. Storage: Store materials in dry locations with adequate ventilation, free from water, and in such a manner to permit easy access for inspection and handling.
- C. Handling: Handle using procedures recommended by the manufacturer for materials and personnel.

1.5 WARRANTY

- A. Warranty: Provide manufacturer's standard limited warranty against manufacturing defects.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Manufacturer: Thermafiber, Inc. (an Owens Corning company), One Owens Corning Parkway, Toledo, OH 43659. Toll free 888-834-2371, Fax 260-563-8979, www.thermafiber.com.

2.2 THERMAL AND ACOUSTICAL INSULATION

- A. Thermal / Acoustical Insulation:
 - 1. Product: Thermafiber FireSpan 90 Insulation.
 - a. R-Value: 4.3 per inch.
 - b. Facing: Unfaced.
 - c. Facing: Foil Faced.
 - d. Density: 8.0 pcf (nominal).
 - e. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 - 2. Product: Thermafiber FireSpan 40 Insulation.
 - a. R-Value: 4.3 per inch.
 - b. Facing: Unfaced.
 - c. Facing: Foil Faced.
 - d. Density: 4.0 pcf (nominal).
 - e. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.



3. Product: Thermafiber UltraBatt; unfaced.
 - a. R-Value: R-10, R-15, R-23, R-24, R30 as applicable.
 4. Product: Thermafiber UltraBatt; unfaced
 - a. Formaldehyde Free (FF)
 - b. R-Value: R-10, R-15, R-23, R-24, R30 as applicable
 - c. Surface Burning Characteristics: Tested in accordance with ASTM E84
 - 1) Unfaced: Flame Spread 5 and Smoke Developed 5
 5. Product: Thermafiber UltraBatt; foil faced.
 - a. R-Value: R-10, R-15, R-23, R-24, R30 as applicable.
 6. Product: Thermafiber Sound Attenuation Fire Blanket (SAFB); unfaced.
 - a. Density - 1 Inch Thick: 4 pcf, nominal.
 - b. Density - Greater Than 1 Inch Thick: 2.5 pcf, nominal.
 - c. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 7. Product: Thermafiber Sound Attenuation Fire Blanket (SAFB); unfaced
 - a. Formaldehyde Free (FF)
 - b. Density – 1 Inch Thick: 4 pcf nominal.
 - c. Density – Greater Than 1 Inch Thick: 2.5 pcf, nominal.
 - d. GREENGUARD GOLD Certified
 - e. ULE Validated Formaldehyde Free
 - f. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 8. Surface Burning Characteristics (excluding UltraBatt FF): Tested in accordance with ASTM E84.
 - a. Unfaced: Flame Spread 0 and Smoke Developed 0,
 - b. Foil Faced: Flame Spread 25 and Smoke Developed 0.
 9. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 10. Fiber Type: EPA Choice fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 11. Fiber Type: Standard fiber; 70 percent pre-consumer recycled content.
 12. Post-Consumer Recycled Content: 0 percent.
 13. UL Certified Environmental Product Declaration in accordance with ISO 14025. Applies to all products except SAFB FF and UltraBatt FF.
- B. Rain Screen / Cavity Wall Continuous Insulation:
1. Product: Thermafiber RainBarrier 45, non-combustible, semi-rigid mineral wool insulation board that is water repellent and resists temperatures above 2,000 degrees F, meets ASTM C612, IVA.
 - a. R-value: 4.3 per inch.
 - b. Facing: Unfaced.
 - c. Density: 4.5 pcf.
 2. Product: Thermafiber RainBarrier HD
 - a. R-value: 4.3 per inch
 - b. Facing: Unfaced.
 - c. Density: 6.0 pcf.
 3. Surface Burning Characteristics: Tested in accordance with ASTM E84, Unfaced Flame Spread 0 and Smoke Developed 0.
 4. Surface Burning Characteristics: Tested in accordance with CAN/ULC S102, Unfaced Flame Spread 0 and Smoke Developed 5.
 5. Moisture Resistance: Absorption of less than 0.03 percent by volume, when tested in accordance with ASTM C1104.
 6. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 7. Fiber Type: EPA Choice fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 8. Fiber Type: Standard fiber; 70 percent pre-consumer recycled content.
 9. Post-Consumer Recycled Content: 0 percent.
 10. UL Certified Environmental Product Declaration in accordance with ISO 14025.



11. Hardware: RainBarrier Insulation Retaining Clip for securing RainBarrier continuous insulation to exterior substrate; recommended by manufacturer as compatible with multiple types of masonry and façade tie systems.
- C. Multi-Purpose Thermal and Acoustical Insulation Product Used Where Fire Rated Assembly is Not REQUIRED:
1. Product: Thermafiber VersaBoard, non-combustible, semi-rigid mineral wool insulation board, water repellent. Fire resistant to temperatures above 2,000 degrees F.
 - a. Facing: Unfaced.
 - b. Facing: ASJ Facing.
 - c. Facing: Black mat.
 - d. Facing: White mat.
 - e. Surface Burning Characteristics: Tested in accordance with ASTM E84. Unfaced, Flame Spread 0 and Smoke Developed 0. Foil Faced, Flame Spread 25 and Smoke Developed 0.
 2. Product: Thermafiber VersaBoard 35, complies with ASTM C612 Type IA.
 - a. R-Value: 4.2 per inch.
 - b. Density: 3.5 pcf (actual).
 3. Product: Thermafiber VersaBoard 40, complies with ASTM C612 Type IA, IB, II, III, and IVA.
 - a. R-Value: 4.3 per inch.
 - b. Density: 4.0 pcf (actual).
 4. Product: Thermafiber VersaBoard 60, complies with ASTM C612 Type IA, IB, II, III, and IVA.
 - a. R-Value: 4.3 per inch.
 - b. Density: 6.0 pcf (actual).
 5. Product: Thermafiber VersaBoard 80, complies with ASTM C612 Type IA, IB, II, III, and IVA.
 - a. R-Value: 4.3 per inch.
 - b. Density: 8.0 pcf (actual).
 6. Moisture Resistance: Absorption of less than 0.03 percent by volume, when tested in accordance with ASTM C1104.
 7. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 8. Fiber Type: EPA Choice fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 9. Fiber Type: Standard fiber; 70 percent pre-consumer recycled content.
 10. Post-Consumer Recycled Content: 0 percent.
 11. UL Certified Environmental Product Declaration in accordance with ISO 14025.
- D. Acoustical Insulation for Fire Rated Interior Partition Walls and Ceilings: Unfaced.
1. Product: Thermafiber Sound Attenuation Fire Blanket (SAFB).
 - a. Density - 1 inch Thick: 4.0 pcf, nominal.
 - b. Density - Thicker Than 1 Inch: 2.5 pcf, nominal.
 - c. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 2. Product: Thermafiber Sound Attenuation Fire Blanket (SAFB)
 - a. Formaldehyde Free (FF)
 - b. Density - 1 inch Thick: 4.0 pcf, nominal.
 - c. Density - Thicker Than 1 Inch: 2.5 pcf, nominal
 - d. GREENGUARD GOLD Certified
 - e. ULE Validated Formaldehyde Free
 - f. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 3. Product: Thermafiber Creased Sound Attenuation Fire Blanket (SAFB).
 - a. Density - 2.5 pcf, nominal.
 - b. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
 4. Product: Thermafiber Creased Sound Attenuation Fire Blanket (SAFB)
 - a. Formaldehyde Free (FF)



- b. Density - 2.5 pcf, nominal
 - c. GREENGUARD GOLD Certified
 - d. ULE Validated Formaldehyde Free
 - e. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
5. Surface Burning Characteristics: Flame Spread 0 and Smoke Developed 0; tested in accordance with ASTM E84.
 6. Recycled Content: 70 percent, minimum, pre-consumer.
 7. UL Certified Environmental Product Declaration in accordance with ISO 14025. Applies to all products except SAFB FF.
 8. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.

2.3 PERIMETER FIRE CONTAINMENT SYSTEMS

- A. General: Provide where indicated for gaps between the perimeter edge of fire-resistance-rated floor assemblies and non-fire-resistance-rated exterior curtain walls.
 1. Provide a perimeter fire-containment system with the fire test response characteristics indicated, as determined by testing identical systems per the Underwriters Laboratories or Intertek (OPL) Laboratories, or another testing and inspecting agency accountable to authorities having jurisdiction.
 2. If no tested system exists, an engineering judgment provided by the manufacturer, 3rd party testing lab, or fire protection engineering firm that follows guidelines established by the International Firestop Council must accompany the design.
 3. For non-fire resistance rated floor assemblies add an approved material or assembly for retarding the passage of flame and hot gasses.
- B. Curtain Wall Insulation:
 1. Product: Thermafiber FireSpan 90 Insulation; density of 8 pcf, nominal.
 2. Product: Thermafiber FireSpan 40 Insulation; density of 4.0 pcf, nominal.
 3. Minimum Thickness and Density as noted in tested and listed design.
 4. R-Value: 4.3 per inch.
 5. Facing: Unfaced.
 6. Facing: Foil Faced.
 7. Surface-Burning Characteristics: Tested in accordance with ASTM E84. Unfaced, maximum flame spread 0 and smoke-developed of 0; foil faced, maximum flame spread 25 and smoke-developed of 0.
 8. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 9. Fiber Type: EPA Choice Fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 10. Fiber Type: Standard fiber; 70 percent pre-consumer recycled content
 11. Post-Consumer Recycled Content: 0 percent.
 12. UL Certified Environmental Product Declaration in accordance with ISO 14025.
 13. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
- C. Safing Insulation:
 1. Product: Thermafiber Safing Insulation. Designated Type SAF in UL Fire Resistance Directory.
 2. R-Value: 4.3 per inch.
 3. Facing: Unfaced.
 4. Facing: Foil Faced.
 5. Density: 4.0 pcf (actual).
 6. Density: 6.0 pcf (actual).
 7. Minimum Thickness and Density as noted in tested and listed design.



8. Surface-Burning Characteristics: Tested in accordance with ASTM E84. Unfaced, maximum flame spread 0 and smoke-developed of 0; foil faced, maximum flame spread 25 and smoke-developed of 0.
 9. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 10. Fiber Type: EPA Choice Fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 11. Fiber Type: Standard fiber; 70 percent pre-consumer recycled content
 12. Post-Consumer Recycled Content: 0 percent.
 13. UL Certified Environmental Product Declaration in accordance with ISO 14025.
 14. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
- D. Safing Clips: Z-Shaped galvanized steel clips formed from 1 inch wide strips of 20 gauge galvanized steel; 3 inches high with 2 inch and 3 inch upper and lower horizontal legs. Use where required by specific UL or OPL/Intertek design.
- E. Hardware: Thermafiber Impasse hardware for attaching curtain wall insulation or other mechanical fasteners as approved by the Architect and Manufacturer.
- F. Mullion Covers: Thermafiber FireSpan 90 Insulation for protection of mullions. Refer to specific UL/Intertek designs for size of mullion covers.
- G. Backer / Reinforcement Member: Thermafiber Impasse T-Bar or galvanizes steel channel or angle (see specific listing for appropriate gauge of steel) approved by the primary manufacturer. Place horizontally at the safe-off line to support the curtain wall insulation to prevent bowing of curtain wall insulation caused by compression fitting of the Safing insulation. See specific listed design for system requirements.
- H. Smoke Barrier: Smoke sealant as listed in the appropriate fire tested assembly.
- I. Vapor Retarder Tape: Compatible with specified facer and comparable perm rating. For taping insulation joints and repairing tears.

2.4 FIRE RESISTIVE JOINT SYSTEMS IN RATED ASSEMBLIES

- A. Insulation for Joint Packing:
1. Product for Construction Joints: Thermafiber Safing Insulation - Type SAF.
 2. Product for Head of Wall Applications: Thermafiber Top-Stop Insulation.
 3. Facing: Unfaced.
 4. Surface Burning Characteristics: Flame Spread 0 and Smoke Developed 0; tested in accordance with ASTM E84.
 5. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
 6. Fiber Type: Standard fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
 7. Post-Consumer Recycled Content: 0 percent.
 8. UL Certified Environmental Product Declaration in accordance with ISO 14025.
 9. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.
- B. Smoke Barrier Sealant: Smoke sealant as listed in the appropriate fire tested assembly.

2.5 FIRESTOPPING OF THROUGH PENETRATIONS IN RATED ASSEMBLIES

- A. Safing Insulation – Type SAF:



1. Product: Thermafiber Safing Insulation; unfaced.
2. Density: 4.0 pcf (actual).
3. Density: 6.0 pcf (actual).
4. Minimum Thickness and Density as noted in tested and listed design.
5. Surface Burning Characteristics: Flame Spread 0 and Smoke Developed 0; tested in accordance with ASTM E84.
6. Corrosivity: Non-corrosive, when tested in accordance with ASTM C665.
7. Fiber Type: Standard fiber; minimum 75 percent pre-consumer recycled content; complies with EPA Preference Program.
8. Post-Consumer Recycled Content: 0 percent.
9. UL Certified Environmental Product Declaration in accordance with ISO 14025.
10. This product qualifies under the Department of Homeland Security SAFETY Act designation which provides commercial building professions and building owners liability protection in the event of a foreign/domestic act of terrorism.

- B. Smoke Barrier Sealant: Smoke sealant as listed in the appropriate fire tested assembly.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the areas and conditions under which work of this section will be installed. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with tested and listed systems. Install products in proper relationship with each other and adjacent construction and as follows:
1. Backer Reinforcement Members for Perimeter Fire Containment System:
 - a. Install backer reinforcement member in accordance with the listed tested system.
 - b. Install Thermafiber Impasse T-Bar or an approved light steel angle or channels (see specific listing for appropriate gauge of steel), placed horizontally at the safing line, attached to the vertical mullions either within the insulation at a horizontal splice, or behind the insulation and mechanically attached to vertical mullions.
 - c. Install to prevent the bowing of the curtain wall insulation due to the compression fit of the safing insulation.
 2. Curtain Wall Insulation:
 - a. Install curtain wall insulation in accordance with Underwriters Laboratories / Intertek (OPL) Laboratories listed system and manufacturer's instructions.
 - b. Install backer bar assembly in accordance with the listed and tested design. Not applicable when the Thermafiber No Backer Bar system is specified.
 - c. Fasten insulation in place with mechanical fasteners within the mullions and transoms (spandrel area), spaced at intervals recommended by listed and tested assembly to hold insulation securely in place without touching the exterior wall. One inch air space must be maintained.
 - d. Provide Thermafiber Impasse hardware or mechanical fasteners as approved by Architect and manufacturer.
 - e. Comply with specific listed and tested assemblies for mechanical fastener requirements.
 - f. Maintain cavity width of dimension indicated between insulation and exterior wall.
 3. Safing Insulation – Type SAF:
 - a. Install safing insulation of proper size in safe off area between curtain wall insulation and floor slab as prescribed by the listed and tested assembly. Safing insulation direction and compression as well as the absence of safing Z-clips are prescribed by the listed and tested assembly.



- b. Install safing insulation of proper density and size into perimeter joint, construction joints (head-of-wall, floor-to-floor, floor-to-wall, etc.) as prescribed by the listed and tested assembly.
- c. Install safing insulation of proper density and size into poke-throughs and penetrations as prescribed by the listed and tested assembly.
- 4. Smoke Barrier System:
 - a. Utilize foil faced FireSpan curtain wall Insulation with Thermafiber Safing Insulation.
 - b. Apply approved smoke sealant in accordance with the tested assembly.
 - c. Install safing insulation of proper density and size as prescribed by the listed and tested assembly.
 - d. Install safing insulation of proper density and size into poke-throughs and penetrations as prescribed by the tested assembly.
 - e. Apply approved smoke sealant in accordance with the tested assembly.
- 5. Vapor Retarders:
 - a. Seal all joints in curtain wall insulation or exterior wall insulation with vapor retarder tape.
 - b. Application of vapor retarder must be directed by Architect of Record or Mechanical Engineer of project.
 - c. For continuous vapor barrier repair all tears in insulation foil facing with vapor retarder tape.

3.3 PROTECTION

- A. Protect installed products from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

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