



MaxTight™ Air Barrier System

Guide Specifications in CSI Format

MaxTight™, Therm-All's patented air barrier system for metal buildings, consists of a vapor retarder, at least one layer of fiberglass, and a continuous air barrier. What makes MaxTight™ unique is that it is placed within the thermal envelope, providing a fully sealed airtight system. Mechanical, electrical and other tradespeople won't poke holes in it as they would a typical exposed vapor retarder.

Therm-All was founded in Cleveland, OH in 1981. Since then, the company has grown to become one of the largest laminators of metal building insulation in the U.S. The first to spearhead important industry standards, such as the need for third party testing of after-laminated R-values, Therm-All continues to be at the forefront of innovative building solutions today.

SECTION 07 27 19

AIR BARRIER SYSTEM FOR METAL BUILDINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Flexible air barrier systems for metal buildings (building wraps) located in the non-accessible part of the assembly for the following applications:
 - 1. Roof application for double-layer high-R liner systems.
 - 2. Wall application for double-layer high-R liner systems.
 - 3. Single layer.
 - 4. Double layer sag and bag.
 - 5. Long tab banded.
- B. Materials to bridge and seal the following air leakage pathways and gaps:
 - 1. Connections of the walls to the roof air barrier.
 - 2. Connections from the foundations to the walls.
- C. Related Work: The following items are not included in this Section and are specified under the designated Sections:
 - 1. Section 014000 - Quality Requirements; coordination with Owner's independent testing and inspection agency.
 - 2. Section 133419 - Metal Building Systems.

1.2 SUBMITTALS

- A. Product Data: Submit for each product indicating materials, dimensions, profiles, textures and colors. Include installation instructions.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Minimum of 5 years' experience producing similar products.



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1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage and Handling: Comply with manufacturer's recommendations for storage and handling. Protect from weather damage. Prevent exposure to direct sunlight.
- C. Protect from exposure to open flame and ignition sources.

1.5 WARRANTY

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

PART 2 - PRODUCTS

2.1 AIR BARRIER SYSTEM

- A. Basis of Design: MaxTight™ as manufactured by Therm-All. 31387 Industrial Parkway, North Olmsted, OH 44070; Toll Free Tel: 800-886-9494; Fax: 440-734-1001; Email: WBeals@therm-all.com; www.therm-all.com.
- B. Air Barrier: A cross-woven non-perforated breathable polyolefin coated fabric functioning as a water-resistive barrier and an air barrier in accordance with the International Building, Residential and Energy Codes.

1. Standards Compliance:

- a. International Energy Conservation Code (IECC) – Chapter 4, Section 402.5.
- b. Air Permeance per ASTM E2178 – Air: Less than 0.004 cubic feet per minute per square foot at a pressure differential of 1.57 pounds per square foot (Less than 0.04 cfm/ft² at 1.57 psf) [Less than 0.02 liters per square meter per second at a pressure differential of 75 Pa (Less than 0.02 L/(s*m²) at 75 Pa)].
- c. Water Vapor Permeance per ASTM E96 (Desiccant Method): 16 U.S. perms (915.42 ng/Pa*s*m²).
- d. Water Vapor Permeance per ASTM E96 (Water Method): 25 U.S. perms (1430.34 ng/Pa*s*m²).
- e. Intertek CCRR-1018 for IBC, IECC and IRC Compliance.
- f. DrJ Engineering TER No. 1407-05 (NFPA 285).
- g. ASTM D 226, Type I (Specification for Building / Roofing Paper).
- h. ASTM E 1677, Type II (Specification for Air Infiltration Barriers).
- i. ASTM E 2178 – Air Permeance (Air Barrier Materials).
- j. ASTM E2357 – Air Barrier Assembly (go to www.airbarrier.org).
- k. ASTM E 2556, Type II (Specification for Water-Resistive Barriers).
- l. HUD/FHA UU-B-790a – Equivalent to Grade D/Type 15 Building Paper.

2. Features and Attributes:

- a. UV resistant: Up to 6 months.
- b. Nominal Thickness per ASTM D 1777: 0.018 in (0.46 mm).
- c. Nominal Width: 9 to 10 ft (2.74 to 3.05 m).
- d. Weight per ASTM D3776: 17.3 lbs per 1000 sq ft (7.85 kg per 92.90 sq m).



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- e. Tensile Strength - Machine Direction per ASTM D 882: 69 lbs per in (1.07 kg per mm).
- f. Tensile Strength – Cross Direction per ASTM D 882: 42 lbs per in (.75 kg per mm).
- g. Trapezoid Tearing Strength – Machine Direction per ASTM D 4533: 42 lbs per in (75 kg per mm).
- h. Trapezoid Tearing Strength – Cross Direction per ASTM D 4533: 62 lbs per in (1.11 kg per mm).
- i. Water Penetration Resistance per AATCC-127: Greater than 8.53 psi (600 cm H₂O).
- j. Water Resistance per ASTM D779: Greater than 120 minutes.
- k. Water Vapor Transmission Rate per ASTM E 96 Desiccant Method: 3.274 oz per sq yd per 24 hr (111 g per m² per 24 hr).
- l. Water Vapor Transmission Rate per ASTM E 96 Water Method: 5.102 oz per sq yd per 24 hr (173 g per m² per 24 hr).
- m. Air Penetration Resistance per TAPPI T 460: Greater than 800 seconds per 6.102 cu in (100 cu cm).
- n. Air Resistance / Wall Assembly per ASTM E2357: Less than 0.00 cfm per ft² at 1.57 psf (0.01 L per s per 0 m² at 75 Pa).
- o. Air Leakage Rate / Air Resistance per ASTM E 283: 0.01 cfm per ft² at 1.57 psf per 25 mph (0.005 L per s per 0 m² at 75 Pa per 40.23 kph).
- p. Structural Integrity per ASTM E 330 (Procedure A): 1 hr at 10.44 lbs per sq ft at 65 mph (1 hr at 500 Pa at 65 mph) minimum.
- q. Water Resistance per ASTM E 331: 15 min at 0.56 lbs per sq ft at 15 mph (15 min at 27 Pa / 15 mph).
- r. Flame Spread per ASTM E 84: 0 – Class A.
- s. Smoke Development per ASTM E 84: 25.

C. Unfaced Fiberglass Batt Insulation: Per ASTM C 665, Type I.

- 1. Flame-Spread Index: 25 per ASTM E 84.
- 2. Smoke-Development Index: 50 per ASTM E 84.
- 3. Combustion Characteristics: Comply with ASTM E 136.

D. Self-Adhering Flashing

- 1. GreenGuard Standard Flashing as manufactured by Kingspan.
 - a. Thickness: 0.020 in (0.51 mm).
 - b. Facer Type: Polyolefin.
 - c. Adhesive Tape: Rubber-Modified Asphalt.
 - d. Split release liner.
 - e. Application Temperature: 25 degrees F (minus 3.9 degrees C).
 - f. Maximum Recommended Use Temperature: 150 degrees F (65.5 degrees C).
 - g. UV Exposure: 30 days.
 - h. Tensile Strength per ASTM D 412: 700 lbs per in (317.5 kg per m).
 - i. Elongation per ASTM D 412: 500 percent.
 - j. Peel Strength per ASTM D 903: 4.5 lbs per in width (0.08 kg per mm width).
 - k. Puncture Resistance per ASTM E 154: 27 lbs (12.2 kg).
 - l. Lap Adhesion per ASTM D 1876 (Modified): 4.5 lbs per in width (0.08 kg per mm width).
 - m. Roll Sizes: [6 in (152 mm)] [9 in (229 mm)] by 100 ft (30.5 m).



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E. Accessories:

1. Vapor Retarder Tape: Pressure-sensitive tape of type recommended by vapor retarder manufacturer for sealing joints and penetrations in vapor retarder.
2. Adhesive for Vapor Retarders: Product recommended by vapor retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing conditions are suitable for installation of air barriers. Proceed with installation only when unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions and approved submittals.

3.3 FIELD QUALITY CONTROL

- A. Owner's Inspection and Testing Agency (as applicable): Cooperate with Owner's testing agency. Allow access to work areas and staging. Notify Owner's testing agency in writing of schedule for Work of this Section to allow sufficient time for testing and inspection. Do not cover Work of this Section until testing and inspection is accepted.

3.4 PROTECTING AND CLEANING

- A. Protect air barrier materials from damage during installation and the remainder of the construction period, per primary material manufacturer's written instructions.
 1. Coordinate with installation of materials which cover the air barrier assemblies, to ensure exposure period does not exceed that recommended by the air barrier material manufacturer.

END OF SECTION