

DELTA®-DRY – Ventilated Rainscreen

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section provides information regarding above grade ventilated rainscreen for enclosure walls.
- B. Related Sections include the following:
 - 1. Section 05400 – Cold-formed metal framing: Gypsum-type exterior above-grade wall sheathing.
 - 2. Section 06100 – Rough Carpentry: Wood-type exterior above-grade wall sheathing.
 - 3. Section 07260 – Weather Barriers: Other vapor retarders and air barriers.
 - 4. Section 09260 – Gypsum board assemblies: Gypsum-type exterior above-grade wall sheathing.
 - 5. Section 09111 – Non-structural metal framing: Gypsum-type exterior above-grade wall sheathing.

1.2 REFERENCES

- A. AATCC 127 (1998) - Water Penetration Resistance.
- B. ASTM C 695-02a (2005) - Standard Test Method for Compressive Strength.
- D. ASTM D 1777-96 (2002) - Standard Test Method for Thickness of Textile Materials.
- E. ASTM D 5261 (2003) - Standard Test Method for Measuring Mass per Unit Area of Geotextiles.
- F. ASTM E 84 (2005) - Standard Test Method for Surface Burning Characteristics of Building Materials.
- G. ASTM E 96/96M (2005), Method A - Standard Test Method for Water Vapor Transmission of Materials.
- H. CAN/ULC-S102.2 (2003) - Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
- I. CGSB 19-GP-14M - Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing; Canadian General Standards Board; 1984.

1.3 SUBMITTALS

- A. See Section 01300 – Administrative Requirements, for submittal procedures.
- B. Product Data: Include manufacturer’s written instructions, detail drawings showing ventilation and drainage details, technical data, and tested physical and performance properties.
- C. Shop Drawings: Provide 1-1/2” scale drawings (or larger) showing relationship of rainscreen product to:

1. Framing or blocking members
 2. Girts
 3. Thermal insulation
 4. Sheathing
 5. Weather resistive barrier
 6. All exterior cladding and corner conditions
 7. Door and window frames
 8. Balcony and railing penetrations
 9. Structural tie-back penetrations
 10. Pipe, conduit, duct, or any other wall penetrations
- D. Samples:
1. 5" x 5" (125 mm x 125 mm) sample of rainscreen material
 2. Tape
 3. Sealant/Caulking
 4. Provide materials and fasteners for mock-up
- E. Manufacturer's Instructions: Provide manufacturer's instructions showing the recommended procedures and sequences of installation of the rainscreen product, and storage and handling requirements and recommendations. See www.deltadry.com for downloadable installation instructions.
- F. Installer Qualifications: Include minimum of 5 project references.
- G. Manufacturer's Product Warranty

1.4 QUALITY ASSURANCE

- A. Rainscreen manufacturer shall have an on-going quality control program with inspections by a nationally recognized independent organization.
- B. Source Limitations: Obtain all rainscreen material through one source from a single manufacturer.
- C. Installer Qualifications: Company specializing in performing work of this type, incorporating rainscreen materials.
- D. Manufacturer's Representative Qualifications: Approved or accredited and employed or authorized by rainscreen manufacturer to perform specified field quality control activities.
- E. Pre-installation meeting: Conduct meeting at project site to comply with requirements in Division 1, Section "Project Management and Coordination." Review requirements for rainscreen, including surface preparation specified under other sections, substrate condition and pre-treatment, forecasted weather conditions, special details and flashings, installation procedures, testing and inspection procedures, protection, and repairs.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original packaging with seals unbroken, labelled with manufacturer's name, and product brand name.
- B. Store product rolls under cover, on a clean, level surface, either flat or upright.

- C. Provide cover for products while stored on site before installation, protected from direct sunlight and UV exposure.
- D. When products must be stored for extended periods of time, store at temperatures above minus 24° F (minus 30° C).

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the following products:
 - 1. Dual cavity 3-dimensional rainscreen membrane with drainage and ventilation channels. Rainscreen product shall be furnished in standard rolls of 1 m wide by 15.24 m long (3'3" x 50').
 - a. DELTA[®]-DRY, manufactured by Cosella-Dörken Products, Inc.;
Phone: +1 (888) 433-5824 - www.deltadry.com
 - b. Others as may be approved by Addendum.
Note: The Architect is not aware of any other material that has the compressive strength, vapor permeability and water penetration resistance of the specified product.

2.2 RAINSCREEN PHYSICAL PROPERTIES

- A. Ventilated Rainscreen for building enclosure: High density polyethylene sheet, dimpled and grooved to provide drainage and ventilation on both sides of sheet, stabilized against oxidation and UV degradation.
 - 1. Product: DELTA-DRY (Cosella-Dörken)
 - 2. Weight: 1.56 oz/ft² (475 g/m²) – ASTM D5261-92 (2003)
 - 3. Water penetration resistance: 813 kPa (118 psi) – AATCC 127-1995
 - 4. Overall thickness: 7.5 mm (0.3") at 2 kPa – ASTM D1777-96 (2002)
 - 5. Material thickness: 0.55 mm (0.022") – ASTM D1777-96 (2002)
 - 6. Compressive strength: 19.77 kPa (413 psf) @ 20% strain - ASTM C695-02a
 - 7. Water vapor transmission: 22 ng/(Pa s m²), (0.385 perms) – ASTM E96, Method A
 - 8. Surface burning characteristics:
 - i. Flame spread: 210 – CAN/ULC-S102.2
 - ii. Smoke development: 105 – 190 – CAN/ULC-S102.2
 - 9. Contact surface of rainscreen to WRB: 9% (91% open)
 - 10. Contact surface of rainscreen to cladding: 20% (80% open)
 - 11. Color: silver-gray

2.3 AUXILIARY MATERIALS

- A. Single-Sided Tape:
 - 1. DELTA[®]-FLEXX-BAND, to seal DELTA[®]-DRY at connections to details or penetrations, and to repair tear damage; distributed by Cosella-Dörken Products, Inc.
- B. Sealant/Caulking (permanently elastic):
 - 1. DELTA[®]-THAN, to seal DELTA[®]-DRY at connections to details or penetrations; distributed by Cosella-Dörken Products, Inc.
 - 2. Other sealant complying with ASTM C1311 or CGSB 19-GP-14M, compatible with rainscreen product and approved by rainscreen manufacturer.

- C. Fasteners:
 - 1. Large head roofing nails, minimum 1" long.
- D. Insect Barrier (for open edges at ventilation gaps):
 - 1. Aluminum insect screen, maximum 1/8 inch mesh, continuous across openings
 - 2. Fiberglass insect screen, maximum 1/8 inch mesh, continuous across openings

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements and other conditions affecting performance.
- B. Verify that substrates are sound enough to retain fasteners.
- C. Do not begin installation until substrates have been properly prepared.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 SURFACE PREPARATION

- A. Clean surfaces "broom clean" prior to installation.
- B. Prepare substrate according to manufacturer's written recommendations for achieving the best result for the substrate under the project conditions.

3.3 RAINSCREEN INSTALLATION

- A. Install DELTA[®]-DRY in accordance with manufacturer's instructions.
- B. Start at lowest point and work to top, running length of sheets horizontally, and overlapping upper sheets in single fashion. The application is to incorporate ventilation at top and bottom of wall, or at least every two stories.
 - 1. Install with stud (5 mm) side facing the sheathing (WRB).
 - 2. Lap sheets at least 3" (75 mm) horizontal, and 6" (150 mm) vertical, unless otherwise indicated.
 - 3. Install sheets without gaps, large wrinkles, creases, or tears.
 - 4. Align and nest dimples in overlapping layers in a shiplap shingle method, lower course under subsequent courses up the wall.
 - 5. Overlay and nest seams as required by manufacturer.
 - 6. Secure to substrate at edges and in the field of the sheet using fasteners and methods recommended by manufacturer; fasteners must penetrate into solid backing or sheathing and located 12" o/c horizontally and vertically.
- C. Do not seal or block rainscreen at top or bottom of installation; leave a minimum 3/8" air gap open for ventilation and proper performance of the wall system.
- D. Provide drop leg shielding of ventilation area to prevent rainwater intrusion due to wind events. The length of drop leg shielding is to be determined according to wind/storm events for building location.

3.4 FIELD QUALITY CONTROL

- A. Engage an independent inspector to observe substrate and installation.
- B. Contact Cosella-Dörken Products for field review with contractor to achieve a satisfactory installation by periodic review of the procedures during construction, and evaluating the finished work.

3.5 PROTECTION, REPAIR AND CLEANING

- A. Protect installed rainscreen from damage due to ultraviolet light, harmful weather exposures, physical abuse, and other causes until completion of project. Do not leave installed rainscreen exposed to sunlight (UV) for more than 30 days after installation.
- B. Prior to installing subsequent construction, inspect DELTA-DRY rainscreen for tears and other damage, and repair.
- C. Repair torn rainscreen as follows: Any rips, tears or holes in the rainscreen membrane smaller than 2" in diameter should be patched with DELTA-FEXX BAND centered over the tear. Any rips, tears, or holes larger than 2" in diameter should be patched with DELTA-DRY, cut at least 6" larger in diameter than the tear. Center the patch over the tear and fasten with a continuous bead of DELTA-THAN or other compatible sealant/caulking around the tear, or tape edges of patch with DELTA-FLEXX BAND.
- D. Remove mud and similar marks with a water scrub. If chemicals have been spilled on rainscreen, treat as a tear and repair as stated above.

END OF SECTION