

Guide Specification - DELTA®-MS Foundation Protection

Section 07 10 00 – Dampproofing and Waterproofing

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Below grade waterproofing and dampproofing

1.2 RELATED SECTIONS

- A. Section 07 11 13 - Bituminous Dampproofing.
- B. Section 07 12 00 - Built-Up Bituminous Waterproofing.
- C. Section 07 13 00 - Sheet Waterproofing.
- D. Section 07 14 00 - Fluid-Applied Waterproofing.
- E. Section 07 16 13 - Polymer Modified Cement Waterproofing.
- F. Section 07 16 16 - Crystalline Waterproofing.
- G. Section 07 16 19 - Metal Oxide Waterproofing.
- H. Section 07 17 13 - Bentonite Panel Waterproofing.
- I. Section 31 223 16 - Excavation.
- J. Section 31 23 23 - Fill: Backfilling.
- K. Section 33 46 00 – Sub drainage: Foundation perimeter drainage.

1.3 ALTERNATIVES

- A. See Section 01230 - Alternatives, for product alternatives affecting this section.

1.4 REFERENCES

- A. AATC 127 - Water Resistance: Hydrostatic Pressure Test; 1998.
- B. ASTM C 1311 - Standard Specification for Solvent Release Sealants; 2002.
- C. ASTM D 1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics; 2004a.
- D. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; 2005.
- E. CCMC Technical Guide for Foundation Wall Drainage Systems – Dimpled Membranes. Master Format Section 02622.1; (Oct. 11, 2006).

- F. CCMC Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing Membrane. Master Format Section 07111; (Oct. 11, 2001).
- G. CGSB 19-GP-14M - Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing; 1984.
- R. ICC-ES – Evaluation Guidelines for Rigid Polyethylene Below Grade, Dampproofing and Wall Waterproofing Material EG 114; (Mar. 1, 2004)

1.5 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Specimen warranty.
- C. Samples: 12 by 12 inch (300 by 300 mm) piece of sheet; minimum 12 inch (300 mm) long piece of strip; each type of fastener.
- D. Test Reports: Evaluation service reports or other independent testing agency reports showing compliance with specified requirements.
- E. Installer Qualifications: Include minimum of 5 project references.
- F. Executed warranty.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of this type and approved by the membrane manufacturer.
- B. Manufacturer's Field Services: Provide the services of a representative accredited by the sheet manufacturer to examine substrates before starting installation, periodically review installation procedures, and review final installed systems.

1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to project site in original packaging with labels intact.
- B. Store products in manner acceptable to membrane manufacturer.
- C. When products must be stored for extended periods, keep out of direct sunlight and at temperatures above minus 22 degrees F (minus 30 degrees C).
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 WARRANTY

- A. Manufacturer's Limited Product Warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. All Products of This Section:
 - 1. Dörken Systems Inc: www.dorcken.com
 - 2. Substitutions: [[See Section 01600 - Product Requirements]][Not permitted]].

2.2 APPLICATIONS

- A. Foundation Wall Waterproofing or dampproofing: Install membrane to all walls below grade, from bottom of wall to grade level, and in locations indicated on the drawings.

2.3 MATERIALS

- A. Foundation Wall Waterproofing or dampproofing Membrane: High density polyethylene sheet, dimpled throughout field of sheet, with flat flanges on manufactured edges.
 - 1.
 - a. Product: Dörken Systems Inc. DELTA®-MS
 - b. Color: Brown.
 - c. Working Temperature Range: Minus 22° F (minus 30° C) to 176° F (80° C).
 - d. Dimple Height: 5/16 inch (8mm)
 - e. Compressive Strength: ASTM D 1621: Approximately 5200 psf (250 kN/sq m)
 - f. Flange Width: 2 inch (50 mm)
 - g. UV Stability: 30 days maximum UV exposure, however cover as soon as possible
 - h. Material Quality: Meeting minimum requirements of CCMC Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing Membrane.
 - i. Sheet Width: As required to result in as few seams as possible.
 - j. Recycled Content: 60% post consumer / post-industrial HDPE
 - k. Sustainable Design: Virgin co-extrusion process, utilizing virgin polyethylene on the outside layers and recycled HDPE in the middle to provide long-term in situ performance.
- B. Accessories as recommended by product manufacturer's installation instructions.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrates are sound enough to retain fasteners and suitable for bonding of sealant.
- B. Verify that there are no active leaks within area to be covered.
- C. Verify that perimeter foundation drainage system has been properly installed.
- D. Verify that finish grade elevations are clearly marked.
- E. Do not begin installation until substrates have been properly prepared.
- F. If substrate preparation is the responsibility of another trade, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces "broom clean" prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 1. Remove projections larger than 1/4 inch (6 mm); remove sharp edges.
 - 2. In concrete and masonry, patch cracks and holes so that they provide suitable substrate as recommended by membrane manufacturer.
- C. Mark a chalk line at anticipated grade level on walls prior to starting installation.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's recommended procedure.
- B. Do not install when:
 - 1. Ambient temperature is below minus 22 degrees F (minus 30 degrees C).
 - 2. Concrete has been cured for less than 3 days.
 - 3. Standing water is present.
- C. General Sheet Installation: Start at lowest point and work to top, running length of sheets horizontally and overlapping upper sheets in shingle fashion at least 6 inches (150 mm); lap vertical joints at least 6 inches (150 mm).
 - 1. Install sheets without gaps, wrinkles, creases, or tears.
 - 2. Align and interlock overlapping layers.
 - 3. Secure to substrate at edges and in the field of the sheet using fasteners and methods recommended by sheet manufacturer; stagger fasteners in alternate rows.
 - 4. Flash and seal top edges, around openings and penetrations, and other locations recommended by manufacturer, in manner recommended by manufacturer.
- D. Foundation wall waterproofing or dampproofing: In addition to general sheet installation specified above:
 - 1. Install with protruding dimples on side facing substrate.
 - 2. Unless otherwise indicated, fasten dimpled sheets using specified fasteners with dimpled washers interlocked with sheet at not more than 24 inches (600 mm) on center in a "W" pattern.
 - 3. At top, install with flat edge secured with DELTA®-MOLD STRIP. Fasten at not more than 8 inches (200 mm) on center.
 - 4. At all joints, apply continuous bead of sealant between layers and fasten through both layers with specified fasteners with dimpled washers.
 - 5. At vertical joints, overlap sheets at least 6 inches (150 mm) and interlock dimples, making full contact with sealant.
 - 6. At horizontal joints, apply continuous sealant bead between wall and top flange of lower sheet and fasten lower sheet along top edge; overlap upper sheet over flat flange of lower sheet and fasten through both sheets at lower edge of upper sheet at 36" (910 mm) on center.
 - 7. At interruptions and penetrations, apply continuous bead of sealant between sheet and substrate, fasten sheet around entire opening at not more than 8 inches (100 mm) on center, and cover cut edge with flashing strip sealed to wall and fastened at not more than 8 inches (100 mm) on center.

8. At inside and outside corners, install sheet as close to substrate as possible without breaking and fasten along both sides entire length of corner, not closer than 5 inches (125 mm) to corner.
 9. At bottom of walls, extend a single sheet from wall over footing to drainage pipe.
- E. Repairs to Dimpled Sheet: Apply patch made of same material interlocked, with continuous sealant bead around tear or penetration.

3.4 FIELD QUALITY CONTROL

- A. Provide the services of a manufacturer's representative to inspect substrates for suitability for installation, to review procedures during construction, and to review the finished work.

3.5 PROTECTION

- A. Do not leave installed membrane exposed to sunlight for more than 30 days after installation; to cover, complete backfill operation or cover with protection board.
- B. Prior to backfilling, inspect DELTA®-MS for tears and other damage and repair.
- C. Take care when backfilling to avoid damage to membrane; replace membrane damaged during backfilling.
- D. Protect installed products until completion of project.
- E. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION