Duradek Ultra



SECTION 09305

TILE UNDERLAYMENT AND WATERPROOFING

(as well as Section 07540 – THERMOPLASTIC MEMBRANE ROOFING)

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

\*\* NOTE TO SPECIFIER \*\* Duradek; Tile Underlayment and Waterproofing.

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 This section is based on products manufactured by Duradek, which is located at:  
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Duradek U.S. Inc.:  
 1722 Iron Street.  
 North Kansas City, MO 64116.  
 Toll Free: 800-338-3568.  
 Fax: 816 421-2924.

Email: [duradek@duradek.com](mailto:).

Web: www.duradek.com.

Duradek Canada Ltd.:  
 8288 129th Street.  
 Surrey, BC V3W 0A6 Canada.  
 Toll Free: 866-591-5594.  
 Fax: 604 591-3100.

Email: duradek@duradek.com.

Web: www.duradek.com.  
 .  
Since 1974, Duradek has been supplying North America's premier sheet vinyl pedestrian traffic membrane. Along with other PVC products, such as siding, windows and industrial roofing, Duradek vinyl has gained wide acceptance in the construction industry as the ultimate in maintenance-free outdoor flooring. Duradek 's factory engineered products and professional, detailed installation techniques have set new standards for waterproofing that works.  
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Duradek has been installed, through professional applicators only, on over 100 Million Square Feet of flat roofs, decks and balconies all over North America. We've solved difficult waterproofing problems in the hottest, coldest, and wettest parts of the continent.  
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As the unquestioned market leader, in an industry that we created, Duradek is using the same proven product and the same proven installation techniques to install waterproofing membranes under exterior tile.

1. GENERAL
   1. SECTION INCLUDES
      1. Waterproof Tile Underlayment.
   2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06160 – Sheathing.
    2. Section 09300 – Tile.
    3. Section 07540 – Thermoplastic Membrane Roofing.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM C 627 – Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester.
    2. CAN/ULC-S107 - Standard Methods of Fire Tests of Roof Coverings; National Standard of Canada.
    3. CCMC - Technical Guide for PVC Sheet Waterproofing (Exposed to Light Pedestrian Traffic); National Research Council, Canada Construction Materials Centre (CCMC).
    4. CGSB 37.54-95 - Roofing and Waterproofing Membrane, Sheet Applied, Flexible, Polyvinyl Chloride; Canadian General Standards Board.
    5. CGSB 37-GP-55M - Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane; Canadian General Standards Board.
    6. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
    7. ICC - Acceptance Criteria for Walking Decks; ICC Evaluation Service, Inc. (ICC-ES).
    8. UBC Std 15-2 - Test Standard for Determining the Fire Retardancy of Roof-covering Materials; International Conference of Building Officials.
    9. ANSI A118.10 – Specification for Load Bearing, Bonded, Waterproof Membranes for Thin-set Ceramic Tile and Dimensional Stone Installation.
  1. SUBMITTALS
     1. Submit under provisions of Section 01300.
     2. Manufacturer's specifications, including data substantiating compliance with physical properties specified.
     3. Shop Drawings: Installation and seaming plan, showing joints, termination details, and interface with other materials.
     4. Samples: Two 8 1/2 inch by 11 inch (210 by 250 mm) pieces; labeled.
     5. Manufacturer's printed installation instructions and recommendations, including precautions required for seaming and adhering membrane.
     6. Installer's Qualifications.
  2. QUALITY ASSURANCE

\*\* NOTE TO SPECIFIER \*\* If any other manufacturers would be acceptable, edit the following paragraph to indicate how much experience they must have. Duradek has been manufacturing waterproofing products for 35 years.

* + 1. Manufacturer Qualifications: Company specializing in providing products of the type specified in this section, with minimum of 15 years of waterproofing experience.
    2. Installer Qualifications: Trained and currently authorized by manufacturer.
    3. Pre-installation Meeting: Discuss waterproofing practices and precautions applicable to this project.
       1. Convene minimum of 7 days prior to start of installation.
       2. Require the attendance of:
          1. Manufacturer's representative.
          2. Contractor's field superintendent.
          3. Installation foreman.
          4. Other trades affected by this work.
          5. Owner's representative.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact.
        1. Label uncured materials, both sheets and canned goods, with date of manufacturer and shelf life.
        2. Do not use creased or damaged sheets.
        3. Do not use products after end of shelf life.
     2. Store and handle materials to prevent damage.
        1. Place materials on pallets.
        2. Prevent creasing of rolled materials.
        3. Keep containers closed, except when removing materials from them.
     3. Keep materials at temperature between 40 degrees F (4.4 degrees C) and 80 degrees F (26.6 degrees C); if adhesives are exposed to lower temperature, verify useability with manufacturer before using.
  2. WARRANTY
     1. Provide manufacturer's 10 year warranty for membrane leaks due to a manufacturing defect, covering materials and/or repair and replacement labor.

1. PRODUCTS
   1. MANUFACTURERS

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs. The first is the US company, the second is the Canadian.

* + 1. Manufacturer: Provide products of Duradek/Durarail U.S. Inc., 1722 Iron Street, North Kansas City, MO 64116 USA Tel: (816) 421-5830. Fax: (816) 421-2924.
    2. Manufacturer: Provide products of Duradek/Durarail Canada Ltd., 8288 129th Street, Surrey, BC V3W 0A6 Canada. Tel: (604) 591-5594. Fax: (604) 591-3100.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs; coordinate with Division 1 requirements.

* + 1. Requests for substitution will be considered in accordance with provisions of Section 01 60 00.
    2. Substitutions: Not permitted.
  1. MEMBRANE
     1. Duradek Ultra Tiledek Membrane: Calendared polyvinyl chloride (PVC) film laminated to a woven, heat-set polyester fabric on the back surface. A non-woven polyester fabric is laminated to the top surface to accept overlay.
        1. Sheet Width: 72 inches (1829mm).
        2. Sheet Thickness: 0.060 inch / 60 mil (1.5mm)
        3. PVC Film Thickness: 0.050 inch (1.3 mm).
        4. Weight: 55 ounces per square yard (1864 g/sm) nominal.
        5. Selvage edge: 1 1/2 inch (38 mm) edge applied to one roll side lap.

\*\* NOTE TO SPECIFIER \*\* Retain only products required from the included paragraphs or delete the entire article if not required.

* 1. SUBSTRATE
     1. Plywood: Minimum ¾” exterior grade with tongue in grove edges.
     2. Concrete: concrete substrates are to comply with the requirements of the applicable code.
  2. UNDERLAYMENTS
     1. CBU (Cement Backer Unit): 1/2 inch (13mm) Durock cement board, as manufactured by USG. CBU to be applied to the plywood using a latex hydraulic mortar and fasteners in accordance with the manufacturer’s specifications.
  3. ADHESIVES

\*\* NOTE TO SPECIFIER \*\* Select Adhesive Type. Delete one of the next two paragraphs.

* + 1. Duradek D-763-1: Water-based Liquid Adhesive – trowel grade, 11.5 Litre pail
    2. Duradek D-763-R: Water-based Liquid Adhesive - roller grade, 18.1 Litre pail
    3. Duradek D-811: Liquid Contact Adhesive – 14.5 KG pail
  1. OVERLAYS

\*\* NOTE TO SPECIFIER \*\* Retain the next paragraph only if Porcelain Tile is specified.

* + 1. Porcelain Tile: As specified in 09 30 13 meeting TTMAC or TCNA requirements. Freeze thaw rated where required.

\*\* NOTE TO SPECIFIER \*\* Retain the next paragraph only if Stone Tile is specified.

* + 1. Stone Tile: As specified in 09 30 33 meeting TTMAC or TCNA requirements. Freeze thaw rated where required.

\*\* NOTE TO SPECIFIER \*\* Select bond coat. Delete one of the next two paragraphs.

* + 1. Bond Coat: For drainage mat application over Ultra Tiledek; use a mortar in accordance with the specifications of both of the mortar manufacturer and the drainage mat manufacturer.
    2. Bond Coat: For tile application directly to drainage matt; use a latex hydraulic mortar in accordance with the manufacturer’s specifications.
    3. Bond Coat: For tile application directly to the Ultra Tiledek membrane; use a latex hydraulic mortar in accordance with the manufacturer’s specifications considering the installation conditions and type of tile.
    4. Tile Grout: Use exterior grade, odor and stain resistant, sanded grout.

1. EXECUTION
   1. EXAMINATION
      1. Verify that surfaces and site conditions are ready to receive work and conform to membrane manufacturer's requirements.
      2. Verify that deck is:
         1. Secure, well supported, solid, and in accordance with local code structural requirements.
         2. Minimum 3/4 inch (19mm) C-C grade exterior sheathing with tongue-and-groove edges.

\*\* NOTE TO SPECIFIER \*\* The minimum slope is 1 in 100, or 1/8 inch per foot, with an optimum of 1 in 50. 1 in 50 slope, or 1/4 inch in 12 inches, is recommended for all new construction. Verify that other sections of the specification, or the drawings, include this requirement. For existing construction, verify existing slopes and coordinate details with manufacturer.

* + - 1. Clean and smooth, free of depressions, waves, and projections, properly sloped to drains, valleys, or eaves.
      2. Dry and free of ice and snow.
    1. Notify the Architect of any conditions that would prevent satisfactory completion of the work. Do not proceed until unsatisfactory conditions are corrected.
  1. PREPARATION
     1. Do not proceed with installation until substrate preparation is complete.
     2. Coordinate timing of installation to avoid construction traffic over completed traffic membrane surfaces.
     3. Wood Substrate: Verify plywood is fastened according to local building code requirements.
     4. Coordinate installation with installation of drains and similar accessories.

\*\* NOTE TO SPECIFIER \*\* The following article is for applications were porcelain or stone tile are to be installed on a plywood substrate without the use of a Schluter “Ditra drainage mat”. Delete if not required.

* 1. UNDERLAYMENT INSTALLATION
     1. Laminate underlayment panel to plywood subfloor using thinset mortar. Cover mortar with panel immediately. Stagger joints by 1/2 panel in both directions from plywood subfloor joints. Fit ends and edges closely, leaving a maximum 1/8 inch (3mm) gap at panel edges and ends.
     2. Fasten panels to subfloor while mortar is wet with 1 1/4 inch (32mm) Durock wood screws spaced 6 inches on center in both directions and 1/2 inch (12.5mm) from ends and edges. Do not overdrive fasteners.
  2. MEMBRANE INSTALLATION

\*\* NOTE TO SPECIFIER \*\* In the U.S., delete the requirement for compliance with CGSB-37-GP-55M in the paragraph below.

* + 1. Fully adhere membrane to substrate in accordance with manufacturer's instructions, applicable codes, and CGSB-37-GP-55M.
    2. Do not install when temperature is below 45 degrees F (7.0 degrees C) or above 98 degrees F (36.6 degrees C). Do not install when winds are gusting over 30 mph (48.3 kph).
    3. Do not dilute primers, adhesives, coatings, or sealants.
    4. Install membrane with seams placed in direction of slope. Overlap field seams 1.5 inch (38 mm), heat-weld all seams in accordance with manufacturer’s instructions.
    5. Mechanically fasten all perimeter edges and penetrations.
    6. Install flashings and accessories. Seal around all penetrations, drains, and edges.

3.5 FLOOD TEST

A. Perform a flood test with a minimum of 2 inches of water for 24 hours to verify a leak free installation. Plug drains and position barriers to contain water. Repair any leaks and retest before covering the membrane.

* 1. DRAINAGE MAT INSTALLATION (OPTIONAL)
     1. Drainage mat is applied using a bond coat specified by the drainage mat manufacturer.

B. Perimeter flashings are to be installed to allow any moisture draining through the drainage mat to escape.

* 1. TILE INSTALLATION
     1. Mix latex-Portland cement mortars in accordance with latex manufacturer’s instructions or as directed by TTMAC or TCNA.
     2. Set tiles in accordance with TTMAC or TCNA standards.
     3. Install expansion or movement control joints where required by TTMAC or TCNA standards.
  2. ADJUSTING AND CLEANING
     1. Clean soiled areas in accordance with manufacturer's recommendations.
     2. Repair damaged areas to match original materials.
  3. PROTECTION
     1. Protect finished work from traffic using durable temporary materials.

END OF SECTION