

SECTION 07 5400

THERMOPLASTIC MEMBRANE ROOFING

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word 2007: Click the OFFICE button, select WORD OPTIONS, select DISPLAY, then select or deselect the HIDDEN TEXT option.

Microsoft Word (earlier versions): From the pull-down menus select TOOLS, then OPTIONS. Under the tab labeled VIEW, select or deselect the HIDDEN TEXT option.

Corel WordPerfect: From the pull-down menus select VIEW, then select or deselect the HIDDEN TEXT option.

This master specification section has been prepared by Skyline Building Systems, Inc. for use in the preparation of a project specification section covering DecTec CoolStep thermoplastic membrane roofing systems. DecTec may be installed over minimum 16 mm thick plywood, concrete, or minimum 13 mm thick DensDeck Prime Roof Board by Georgia-Pacific. Contact Skyline Building Systems, Inc. for a current list of approved substrates. DecTec is not compatible with treated wood or asphalt-based products.

The following guide specifications are also available for other Skyline Building Systems, Inc. Products:

07 1819 - Thermoplastic Membrane Deck Waterproofing

07 5400-1 - Thermoplastic Membrane Roofing (Select 60 and 80 mil)

The following should be noted in using this specification:

Hypertext links to specific websites are included after names of organizations whose standards are referenced within the text, to assist in product selection and further research.

Hypertext links are contained in parenthesis and shown in blue, e.g.:

(www.astm.org)

Optional text requiring a selection by the user is enclosed within brackets, e.g.: "Section [09 0000.] [____.]"
Items requiring user input are enclosed within brackets, e.g.: "Section [____ - ____]."

Optional paragraphs are separated by an "OR" statement, e.g.:

**** OR ****

"Green" requirements are included for projects requiring LEED certification, and are included as green text. For additional information on LEED, visit the U.S. Green Building Council website at www.usgbc.org.

For assistance on the use of the products in this section, contact Skyline Building Systems, Inc. by calling 866-461-3914. by email at service@dec-tec.com, or visit their website at www.dec-tec.com.

PART 1 GENERAL

1.1 SUMMARY

Edit the following paragraphs to include only those items specified in this section.

- A. Section Includes:
1. Polyvinyl chloride (PVC) membrane roofing.
 2. Integral flashings.

3. Drain fittings.
4. Scuppers.

Coordinate the following paragraphs with other sections in the project manual.

B. Related Sections:

1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section [03 3300 - Cast-in-Place Concrete:] [__ ____ - ____:] Concrete deck surfaces to receive roofing.
3. Section [06 1100 - Framing and Sheathing:] [__ ____ - ____:] Wood deck surfaces to receive roofing.
4. Section [06 1643 - Gypsum Sheathing:] [__ ____ - ____:] Gypsum roof board to receive roofing.

1.2 REFERENCES

In the following paragraphs, retain only those reference standards that are used elsewhere in this section.

- A. ASTM International (ASTM) (www.astm.org):
1. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 2. C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emisometers.
 3. D4434 - Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
- B. Canadian General Standards Board (CGSB) (www.tpsgc-pwgsc.gc.ca/cgsb) CAN/CGSB-37.54 - Polyvinyl Chloride Roofing and Waterproofing Membrane.
- C. Cool Roof Rating Council (CRRC) (www.coolroofs.org) CRRC-1 - Product Rating Program Manual.

1.3 SUBMITTALS

Limiting submittals to only those actually required helps to minimize liability arising from the review of submittals. Minimize submittals on smaller, less complex projects.

Include the following for submission of shop drawings, product data, and samples for the Architect's review. Edit to suit project requirements.

A. Submittals for Review:

1. Shop Drawings: Indicate deck slopes, seam layout, and flashing, termination, and special details.
2. Product Data: Manufacturer's product specifications, installation instructions, and general recommendations.
3. Samples:
 - a. [175 x 250] [__ x __] mm membrane samples [showing available colors.] [in specified color.]
 - b. [75 x 75] [__ x __] mm clad metal samples.
 - c. Typical drain fitting.
4. Warranty: Sample roofing warranty.

Include the following for submission of sustainable design submittals.

B. Sustainable Design Submittals:

1. Recycled Content: Certify percentage of recycled content.
2. Regional Materials: Certify that products have been manufactured within 500 mile radius of Project site.
3. Solar Reflectance Index: Certify solar reflectance and emissivity values.

1.4 QUALITY ASSURANCE

The following paragraph specifies a minimum level of experience required of the parties performing the work of this section. Retain if required, and edit to suit project requirements.

- A. Installer Qualifications:
 - 1. Minimum [2] [] years [documented] experience in work of this Section.
 - 2. Registered with roofing system manufacturer.

Include the following for a pre-installation conference attended by the parties performing the work of this section. Edit to suit project requirements.

- B. Pre-Installation Conference:
 - 1. Convene at site [2] [] weeks prior to beginning work of this Section.
 - 2. Attendance: [Architect,] [Contractor,] [Construction Manager,] roofing installer, and related trades.
 - 3. Review and discuss: Contract Documents, roofing system manufacturer's literature, project conditions, scheduling, and other matters affecting installation.
 - 4. Tour representative areas of roofing substrates; discuss substrate construction, related work, work conditions, and materials compatibility.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store products off ground in weathertight storage area.
- B. Do not remove materials from original packaging until required for same-day use.
- C. Protect adhesives from freezing.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements:
 - 1. Do not apply waterproofing when deck surfaces are damp, snowy, icy, or frozen.
 - 2. Do not apply waterproofing during inclement weather.
 - 3. Apply waterproofing when ambient temperature and wind chill are within manufacturer's specified temperature parameters, based on adhesive used, for 24 hours before, during, and for 24 hours after application.
 - 4. Do not use frozen materials.

1.7 WARRANTIES

- A. Furnish manufacturer's 20 year membrane warranty covering defects in materials.
- B. Provide applicator's 2 year warranty covering defects in installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on DecTec products by Skyline Building Systems, Inc.

Edit the following to indicate whether or not substitutions will be permitted for the products in this section.

- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

- A. Roofing Membrane:
 - 1. Description: ASTM D4434, plasticized polyvinyl chloride (PVC), solid backed sheet with embedded polyester reinforcing scrim, ultraviolet stabilized, antimicrobial treated.
 - 2. Size: 2.0 mm thick x maximum sheet size permitted by application and job conditions.
 - 3. Fire rating: Class A on noncombustible deck.

4. Tested to CRRC-1; listed in CRRC Directory of Rated Products.
5. Solar reflectance: 0.71, tested to CRRC-1.
6. Emissivity: 0.87, tested to ASTM C1371.

Verify current recycled content with Skyline Building Systems, Inc.

7. Recycled content: Minimum [] percent, classified as post-industrial.
8. Product: DecTec CoolStep.
9. Color: Cool White.

2.3 ACCESSORIES

- A. Membrane Flashings: DecTec Pre-Formed DecFlash.
- B. Metal Flashings: Galvanized steel, ASTM A653/A653M, G90 coating class, minimum 0.7 mm thick, laminated with PVC membrane in color to match roofing membrane.
- C. Scuppers: Fabricated from PVC-clad flashing material; incorporate positive slope to ensure drainage.

Include the following paragraph for PVC-clad drain fittings; contact Skyline Building Systems, Inc. for other acceptable drain types.

- D. Drain Fittings: Spun aluminum clad with minimum 0.4 mm thick PVC, with drain grate and membrane clamping ring.
- E. Filler Material: Cementitious type as recommended by roofing membrane manufacturer
- F. Adhesives and Sealants: As recommended by roofing membrane manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Fill voids in substrate using filler material; finish smooth and flush.
- B. Remove projections that could puncture membrane from substrate.
- C. Clean substrate of loose and foreign material, oil, and grease.
- D. Complete penetrations and preparation for drains, flashings, and other penetrations prior to beginning roofing.

Edit the following paragraph to suit project requirements.

- E. Recess surfaces to receive [edge flashings] [drains] [scuppers] to provide smooth, free draining surface.

3.2 INSTALLATION

- A. Install roofing system in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Position roofing sheets without stretching and wrinkles. Allow membrane to relax before proceeding.
- C. Provide minimum 50 mm lap at joints between adjacent sheets.
- D. Join seams and laps by heat welding.
- E. Bond membrane to substrate with full adhesive bed.
- F. Secure membrane at perimeter according to manufacturer's recommendations.

- G. Juncture of Horizontal and Vertical Surfaces:
 - 1. Install membrane or metal flashings as indicated on Drawings.
 - 2. Use longest practical length flashing to minimize joints.
 - 3. Adhere membrane flashings to substrate with full bed of adhesive.
 - 4. Install metal flashings with provisions for thermal movement.
 - 5. Make watertight connections to metal flashings.
 - 6. Terminate top edge as directed by manufacturer.

- H. Penetrations through Membrane:
 - 1. Use premolded flashings wherever possible.
 - 2. Where premolded flashings cannot be installed, use flashing field fabricated from PVC membrane material.
 - 3. Seal between membrane and drain fitting base.

END OF SECTION