

**SECTION 07113**  
**SELF ADHERING SHEET WATERPROOFING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Comply with Division 1, General Requirements.
- B. The term waterproofing means a treatment to prevent the passage of water under pressure, and capable of spanning cracks up to 1.5 mm without failure.

1.02 REFERENCES

- A. ASTM A525-M Specification for General Requirements for Steel Sheet Zinc-Coated (Galvanized) by the Hot-Dip Process.
- B. ASTM A526-M Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.

1.03 QUALITY ASSURANCE

- A. Qualification: Membership in good standing of the Sealant and Waterproofing Association of Ontario and approved by membrane manufacturer.
- B. Perform work of this Section by an applicator of recognized standing having not less than five years proven experience on work of similar size and scope.
- C. Arrange for membrane waterproofing manufacturer's review of preparation for and application of waterproofing system.

1.04 PROTECTION

- A. Protect surfaces which are not to be waterproofed from soiling or other cause in connection with the work of this Section.
- B. Protect waterproofed areas until permanent membrane protection is placed.

1.05 SITE CONDITIONS

- A. Verify that surface and ambient temperatures are at least 5 degrees C for a minimum period of 48 hours, during and after the work of this Section unless otherwise accepted by the Contract Administrator in writing.

## 1.06 WARRANTY

- A. Submit a 5-year warranty for the work of this Section against defects in materials and workmanship, except as the result of structural failure of the concrete substrate.
- B. Cracks arising from normal shrinkage or expansion of concrete are not considered structural failure. Hairline cracks which result from these causes are considered normal and consequently the warranty is not voided as a result of these minor defects.
- C. Warranty period: Commencing with start of Guaranteed Maintenance Period.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Membrane: 0.1 mm thick polyethylene sheet with a factory-applied 1.4 mm thick rubberized asphalt coating; Bituthene by W.R. Grace & Co. of Canada Ltd.
  - 1. For air and surface temperatures are above 4 degrees C use Bituthene 3000.
  - 2. For air and surface temperatures are between -4 degrees C and 4 degrees C use Bituthene 3100.
  - 3. For temperatures between -10 degrees C and 4 degrees C use Bituthene Low Temperature.
- B. Primer for membrane: Water based primer compatible with membrane and substrates, as manufactured and recommended by the membrane material manufacturer.
- C. Mastic: Bituthene Elastomeric Mastic by W.R. Grace & Co. of Canada Ltd.
- D. Protection board: Semi-flexible board consisting of a core of blended asphalts and mineral fillers laminated between faces of asphalt saturated felt glass fibre faced, Vibraflex by W.R. Meadows of Canada Ltd., Globeglas Protection Board by Bakor Inc., 3 mm thick.
- E. Bituthene liquid membrane: Two part urethane for fillet at protrusions.
- F. Insulation (indicated on Drawings as Insulation Type 1): CAN/CGSB-51.20-M Type 4; shiplapped, extruded, expanded polystyrene board, RSI = 0.87 per 25 mm thickness; compressive yield strength: 240 kPa at a 10% deformation.
- G. Drainage course material: Selected or processed from deposits of pit run gravel, talus rock, disintegrated granite, slag or other accepted material having a physical structure impervious to the elements. Particle sizes shall be

uniformly graded and limited to 6 mm to 20 mm. Material washed free of organic and other deleterious matter.

- H. Filter mat: Terrafix 270R by Terrafix Erosion Control Products, Inc., Hydroduct by W.R. Grace Ltd.
- I. Joint backing: White non-absorbent closed cell foam polyethylene or chemically compatible rod stock of butyl or neoprene. Filler diameter 25 percent greater than joint width before installation.
- J. Sealant: Type compatible with membrane, as recommended by the membrane manufacturer, non-sag for vertical applications.
- K. Primer for sealant: As recommended by the sealant manufacturer. Primers shall suit the various job conditions.
- L. Metal reglet: Continuous, non-corrosive metal reglets of size and profile as recommended by the membrane material manufacturer and having the opening sealed with a temporary waterproof tape.
- M. Securement bar: 25 mm wide x 3 mm aluminum bar with rounded edges and corners, predrilled for fasteners at 600 mm o.c.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine surfaces to receive membrane waterproofing. Report defects which would impair performance of waterproofing. Ensure proper slopes to drain where indicated. Commencing work will imply acceptance of substrate conditions.

#### **3.02 PREPARATION**

- A. Supply metal reglet inserts to other Sections for building in where required to receive membrane edges and instruct as to proper location and position, or provide sawcut reglet, unless steel retaining bar will be used.
- B. Ensure that substrates have cured for 14 days minimum before beginning membrane application.
- C. Remove moisture, form scale, form release agents, laitance, curing agents and other foreign matter from substrate surfaces to which membrane is to be bonded. Employ steam cleaning if necessary. Rinse clean with water and let dry.
- D. Grind outside concrete substrate corners to a 13 mm radius. Remove sharp projections.

- E. Fill cracks in substrate which are greater than 1.6 mm wide with sealant. Pack joint backing into spaces around pipes and other through-substrate appurtenances. Where construction joints occur in vertical substrate surfaces, pack joints with filler before applying membrane. Pack filler to 6 mm below plane of substrate.
- F. Before and during application, remove dust and dirt from substrate surfaces using an industrial type vacuum cleaner or compressed air blower.
- G. Do not apply materials during wet weather, nor to frozen or frost covered surfaces.
- H. Apply one coat of primer to substrate surfaces at rate recommended by manufacturer.

### 3.03 INSTALLATION - MEMBRANE

- A. Install waterproofing membrane in accordance with manufacturer's instructions and in a manner to make the treated surfaces waterproof.
- B. At control and construction joints in substrate and at junctions of horizontal and vertical substrate surfaces, apply a 300 mm wide strip of membrane material centred over joint or junction and press strip firmly to substrate.
- C. Expansion joints: Apply 150 mm wide strip of membrane followed by 460 mm wide strip of membrane, and full width of membrane centred over joint.
- D. Lay membrane in as large sheets as possible cutting and fitting as required at peripheries and through-substrate appurtenances. Roll membrane for full contact.
- E. Avoid stretching membrane during application.
- F. Apply membrane free from air pockets, wrinkles, fishmouths, prominent lap joints or tears. Lap membrane joints 65 mm.
- G. On walls apply membrane in vertical sheets 2400 mm long. Lap upper sheets over lower sheets 150 mm and roll membrane for full contact.
- H. Turn upstanding and horizontal membrane edges into reglets, secure and fill reglet with mastic. Where membrane edge is turned down over slab edge, bed lowest 150 mm of membrane in mastic.
- I. As an alternative to reglets, secure membrane with securement bar mechanically fastened through membrane to substrate and butter edge of membrane with mastic.

- J. Coat pipes, sleeves and other projections through the substrate with mastic and embed a 250 mm collar of membrane material. Apply a second coating of mastic and embed main membrane carrying it up the projection 300 mm.
- K. Seal drain penetrations using 600 mm flanges of membrane material clamped into setting rings at drains. Set main membrane to flange in a continuous bedding of mastic. Butter mastic around drain. Ensure that drainage occurs through weep holes in drain fittings at the proper level.

#### 3.04 INSTALLATION – PROTECTION BOARD

- A. Where no insulation is scheduled install membrane protection promptly after membrane installation.
  - 1. Check membrane for tears and punctures as protection is installed and patch as required using additional membrane patch buttered at perimeter with mastic.
- B. Lap adjoining pieces of protection board 50 mm.
- C. Apply vertical protection board by adhering to membrane in accordance with

#### 3.05 CLEANING

- A. Clean and make good to the Contract Administrator's acceptance surfaces soiled or otherwise damaged in connection with the work of this Section.
- B. Pay the cost of replacing finishes or components that cannot be cleaned.
- C. On completion of the work check area drains in waterproofed areas and verify their cleanliness and proper function.
- D. Remove debris, equipment and excess material from the site.

**END OF SECTION**