Section 07135

Sheet Membrane Waterproofing

GTR-900 Preformed Gel Sheet Waterproofing Membrane

Specifications

PART 1 — GENERAL

1.01 RELATED DOCUMENTS

A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section.

1.02 SUMMARY

A. The work of this section includes, but is not limited to, the following:

1. Preformed polymer rubber gel sheet membrane waterproofing

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02710 – Drainage Composites

1. Section 02712 – Subsurface Drainage Pipe
2. Section 03150 – Concrete Accessories
3. Section 03300 – Cast-In-Place Concrete
4. Section 04200 – Unit Masonry
5. Section 05810 – Expansion Joint Cover Assemblies
6. Section 07150 – Dampproofing
7. Section 07600 – Flashing and Sheet Metal
8. Section 07900 – Joint Sealers
9. Section 15400 – Drains

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. Korean Standard (KS)

KS F 4917 Standard Test Methods for Tensile Properties of Thin Plastic Sheeting

KS F 4917 Standard Test Methods for Rubber Properties in Tension

KS F 4934 Standard Test Method for Water Absorption of Plastics

KS F 4917 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

KS F 4917 Standard Test Method for Peel Release of Adhesives (T-Peel)

KS F 4917 Standard Practice for Rubber - Measurements of Dimensions

KS F 4934 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes

1.04 SUBMITTALS

A. Product Data: Submit manufacturer’s product data, installation instructions, use limitations and recommendations.

B. Samples: Submit representative samples of the following for approval:

1. Preformed Gel Sheet Waterproofing Membrane

2. Drainboard (opt.)

3. Termination bar (opt.)

4. Caulking (opt.)

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Installer must be licensed, certified in writing and approved by membrane manufacturer RE-Systems Group Americas for the installation of the GTR-900 waterproofing system.

B. Membrane Manufacturer shall have available an in-house technical staff to assist the contractor, when necessary, in application of the products and final inspection of the assembly.

C. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details.

D. Discontinue the application when raining and resume work only after the area has been dried and ready for re-application as determined by the Engineer or manufacturer’s representative. .

E. Waterproofing material manufacturer shall have a representative on site for key point observation. The representative shall sign off on the approval of the substrate for each location of the application of the waterproofing material. The representative shall also sign off on the acceptability of the installed system immediately prior to final covering of the waterproofing system. [Specifiers Note: INCLUSION OF 1.05E IS A REQUIREMENT FOR 20 YEAR RE-ASSURANCE WARRANTY]

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer’s instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of membrane on the job site. Provide cover on top and all sides, allowing for adequate ventilation.

2. Protect materials from moisture and potential sources of ignition.

3. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.

B. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.08 WARRANTY

1. Various warranties are available differing in terms and conditions, Contact RE-Systems Group Americas for exact terms and conditions to meet specific project requirements.
2. Warranties available from the manufacturer: *(Edit to project requirements)\**
   1. Material Warranties; excludes labor.

Duration: 10 year

* 1. Water tightness Warranties; includes labor and material.

Duration: 5-, 10-, 15-, 20-year

*NOTE: \* Contact RE-Systems Group Americas for exact warranty terms and conditions.*

PART 2 — PRODUCTS

2.01 MATERIALS

A. Sheet Membrane Waterproofing: GTR-900 membrane by RE-Systems Group Americas; a self-adhesive, polymer rubber gel composite sheet consisting of a thickness of 75.5 mils of rubberized gel. No special adhesive or heat shall be required to form laps.

PHYSICAL PROPERTIES FOR GTR-900:

|  |  |  |  |
| --- | --- | --- | --- |
| **TEST ITEM** | **UNIT** | **TEST RESULTS** | **TEST METHOD** |
| Thickness, Average | Mils (mm) | 98.5(2.5) |  |
| Tensile Performance-  ***Tensile Strength*** | N/mm | 13.5 (Length)  10.4 (Width) | **KS F 4917** |
| Tensile Performance-  ***Extension Percentage*** | % | 47.2 (Length)  40.0 (Width) |
| Tearing Strength | N | * 1. (Length)   118.1 (Width) |
| Temperature Performance-  ***Tensile Strength at - 4°F*** | N/mm | 18.4 (Length)  14.3 (Width) | **KS F 4934** |
| Tensile Performance-  ***Extension Percentage at - 4°F*** | % | 56.6 (Length)  162.0 (Width) |
| Temperature Performance-  ***Tensile Strength at 140°F*** | N ⋅ % / mm | 3.0 (Length)  2.1 (Width) |
| Tensile Performance-  ***Extension Percentage at 140°*** | % | 224.1 (Length)  225.9 (Width) |

B. Waterstop: Hydrophilic non-bentonite waterstop for non-moving concrete construction joints or approved equal.

C. Miscellaneous Materials: GTD-400 Drainage Board, Protection Board and accessories specified or acceptable to manufacturer of sheet membrane waterproofing.

PART 3 — EXECUTION

3.01 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION OF SUBSTRATES

A. Refer to manufacturer’s literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

B. Cast-In-Place Concrete Substrates:

1. Do not proceed with installation until concrete has properly cured and dried.

2. Fill form tie rod holes with concrete and finish flush with surrounding surface.

3. Repair bugholes over 13 mm (0.5 in.) in length and 6 mm (0.25 in.) deep and finish flush with surrounding surface.

4. Remove scaling to sound, unaffected concrete and repair exposed area.

5. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.

D. Wood Substrates: Apply waterproofing membrane over securely fastened sound surface. All joints and fasteners shall be flush to create a smooth surface.

E. Expansion Joints: Install expansion joints per expansion joint manufacturer’s recommended procedures.

F. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.03 INSTALLATION

A. Refer to manufacturer’s literature for recommendations on installation, including but not limited to, the following:

1. Seal daylight terminations with troweled bead of UV rated caulking.

2. Lap seams a minimum of four inches.

3. Apply mastic at all penetrations, drains and cold joint transitions.

4. Apply protection board and related materials in accordance with manufacturer’s recommendations.

**3.04 WATER TEST**

A. If feasible, it is strongly recommended that the deck area or portions thereof be water tested by means of electronic testing or ponding water to a minimum depth of 2" for a period of 24 hours to check the integrity of the membrane installation.

B. VERIFY that the structure can support the dead load weight of a water test before testing.

C. If leaks should occur, the water must be drained completely and the membrane installation repaired.

1. Place subsequent topping materials as soon as possible.

3.05 CLEANING AND PROTECTION

A. Remove any excess materials and debris from job-site after installation.

B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

* + 1. **JOB COMPLETION**

1. Contractor and a representative of the membrane manufacturer shall inspect the waterproofing assembly and notify the contractor of any defects. All defects must be corrected at the expense of the contractor.
2. Clean up all debris and equipment and remove from site.
3. Place subsequent topping materials as soon as possible.

**END OF SECTION**