

GUIDE SPECIFICATION FOR MEL- DRAIN™ DRAINAGE SYSTEM

SECTION 07 10 00

DAMPPROOFING AND WATERPROOFING

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) Format. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project. Coordinate this section with other specification sections and the drawings.

Specifier Notes: W. R. MEADOWS® MEL-DRAIN Drainage System is a dimple raised, molded polystyrene sheet bonded to a high strength polypropylene fabric. The geocomposite allows the passage of moisture through the fabric while preventing fine soils from entering the drainage channel. Various drain designs are available, depending on soil pressures and flow specifications.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Application of a geocomposite drainage system.

1.02 RELATED SECTIONS

Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 07 21 00 – Thermal Insulation.
- C. Section 07 60 00 – Flashing and Sheet Metal.
- D. Section 07 92 00 – Joint Sealants.
- E. Section 31 50 00 – Excavation Support and Protection.

1.03 REFERENCES

- A. ASTM D1621 (modified) – Standard Test Method for Compressive Properties Of Rigid Cellular Plastics.
- B. ASTM D1777 - Standard Test Method for Thickness of Textile Materials.
- C. ASTM D3776 - Standard Test Methods for Mass Per Unit Area (Weight) of Fabric.
- D. ASTM D3786 - Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics- Diaphragm Bursting Strength Tester Method.
- E. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
- G. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- H. ASTM D4716 – Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.

- I. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.

1.04 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Submit manufacturer's product data and application instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in a clean dry area in accordance with manufacturer's instructions.
- C. Protect materials during handling and application to prevent damage or contamination.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Product not intended for uses subject to abuse or permanent exposure to the elements.
- B. Protect rolls from direct sunlight until ready for use.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. W. R. MEADOWS, INC., PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976. (847) 683-4500. Fax (847) 683-4544. Web Site www.wrmeadows.com.

2.02 MATERIALS

Specifier Notes: Drainage board selection should be performed on a project basis and should depend on the application. Various types are available based on type of application, soil pressures and flow specifications. Select performance requirements from the chart below. Many types are available; consult W. R. MEADOWS for assistance in selecting the correct system.

PHYSICAL PROPERTIES	Test Method	Unit of Measure	5012	5012-B	5035	5035-B	7955	7955-B	9055	9055-B
FABRIC										
Material ²			PP,NPNW	PP,NPNW	PP,NPNW	PP,NPNW	PP, WM	PP, WM	PP,NPNW	PP,NPNW
Grab Tensile Strength	ASTM D 4632	Lbs N	100 445	100 445	100 445	100 445	365 x 200 1624 x 890	365 x 200 1624 x 890	205 912	205 912
Grab Elongation	ASTM D 4632	%	65	65	65	65	24 x 10	24 x 10	70	70
CBR Puncture	ASTM D 6241	Lbs kN	275 1.22	275 1.22	275 1.22	275 1.22	675 3.00	675 3.00	600 2.66	600 2.66
Water Flow Rate	ASTM D 4491	gpm/ft ² Lpm/m ²	165 6,724	165 6,724	165 6,724	165 6,724	145 5,907	145 5,907	90 3,668	90 3,668
Permittivity	ASTM D 4491	sec ⁻¹	2.4	2.4	2.4	2.4	2.1	2.1	1.5	1.5
Apparent Opening Size	ASTM D 4751	Sieve Mm	70 0.210	70 0.210	70 0.210	70 0.210	40 0.430	40 0.430	80 0.177	80 0.177
UV Resistance	ASTM D 4355	% 500 Hrs	70	70	70	70	90	90	70	70
Survivability	AASHTO M 288-06	Class	-	-	-	-	-	-	1	-
CORE										
Material ²			HIPS	HIPS	HIPS	HIPS	PP	PP	HIPS	HIPS
Thickness	ASTM D 5199	in mm	0.25 6.35	0.25 6.35	0.44 11	0.44 11	0.40 10	0.40 10	0.44 11	0.44 11

Compressive Strength	ASTM D 6364	psf KPa	11,000 527	11,000 527	15,000 718	15,000 718	18,000 862	18,000 862	18,000 862	18,000 862
Compressive Strength	ASTM D 1621	psf kPa	11,000 527	11,000 527	15,000 718	15,000 718	18,000 862	18,000 862	18,000 862	18,000 862
In-Plane Flow Rate	ASTM D 4716 ³	gpm/ft Lpm/m	12.5 155	12.5 155	17 211	17 211	21 261	21 261	21 261	21 261
Perforated			No	No	No	No	No	No	No	No
Backing Film			No	Yes	No	Yes	No	Yes	No	Yes
COMPOSITE										
Recycled Content ⁴	Calculated	%	> 70	>70	> 75	> 70	> 70	> 70	> 65	>65
Roll Size	Measured	ft	4 x 50	4 x 50	4 x 50	4 x 50	6 x 50	6 x 50	4 x 50	4 x 50
Roll Weight (approx.)	Measured	lbs	28	29	38	39	73	74	53	50
TYPICAL VALUES FOR ALL TEST RESULTS										

- A. Performance Based Specification: Geocomposite Drainage Board shall consist of a dimple raised core bonded to a high strength geotextile fabric. Drainage board shall consist of the following physical properties:
1. Core
 - a. Thickness, ASTM D5199: [XXXX]
 - b. Core Compressive Strength, ASTM D6364 or ASTM D1621: [XXXX]
 - c. In-Plane Flow Rate, ASTM D4716: [XXXX]
 2. Fabric
 - a. Grab Tensile Strength, ASTM D4632: [XXXX]
 - b. Grab Elongation, ASTM D4632: [XXXX]
 - c. CBR Puncture, ASTM D6241: [XXXX]
 - d. Water Flow Rate, ASTM D4491: [XXXX]
 - e. Permittivity, ASTM D4491: [XXXX]
 - f. UV Resistance, ASTM D4355: [XXXX]
- B. Proprietary Based Specification:

Specifier Notes: Drainage board selection should be performed on a project basis and should depend on the application. Select specific version of MEL-DRAIN drainage board based on the project requirements and delete the remaining version in the listing. Consult W. R. MEADOWS for assistance in selecting the correct version.

1. MEL-DRAIN 5012: dimple raised moulded polystyrene core with a non-woven geotextile fabric bonded to the dimples of the core.
2. MEL-DRAIN 5012-B: dimple raised moulded polystyrene core with a non-woven geotextile fabric bonded to the dimples of the core. Attached to the back side of the dimples is a polyethylene sheet designed to prevent soft waterproofing membranes from working their way into the back-side of the dimples.
3. MEL-DRAIN 5035: high strength dimple raised moulded polystyrene core with a non-woven geotextile fabric bonded to the dimples of the core.
4. MEL-DRAIN 5035-B: high strength dimple raised moulded polystyrene core with a non-woven geotextile fabric bonded to the dimples of the core. Attached to the back side of the dimples is a polyethylene sheet designed to prevent soft waterproofing membranes from working their way into the back-side of the dimples.
5. MEL-DRAIN 7955: high strength dimple raised moulded polypropylene core with a high strength woven geotextile fabric bonded to the dimples of the core.
6. MEL-DRAIN 7955-B: high strength dimple raised moulded polypropylene core with a high strength woven geotextile fabric bonded to the dimples of the core. Attached to the back side of the dimples is a polyethylene sheet designed to prevent soft waterproofing membranes from working their way into the back-side of the dimples.
7. MEL-DRAIN 9055: high strength dimple raised moulded polystyrene core with a monofilament fabric bonded to the dimples of the core. Used for horizontal deck and landscaping applications.
8. MEL-DRAIN 9055-B: high strength dimple raised moulded polystyrene core with a monofilament fabric bonded to the dimples of the core. Used for horizontal deck and landscaping applications. Attached to the back side of the dimples is a polyethylene

sheet designed to prevent soft waterproofing membranes from working their way into the back-side of the dimples.

2.03 ACCESSORIES

- A. Termination Bar: TERMINATION BAR from W. R. MEADOWS.
- B. Pointing Mastic: POINTING MASTIC from W. R. MEADOWS.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive membrane. Notify Architect if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Protect adjacent surfaces not designated to receive drainage system.
- B. Clean and prepare surfaces to receive drainage system in accordance with manufacturer's instructions.

3.03 APPLICATION

- A. Vertical Application
 1. Unroll drainage board with flat, core side against the wall or waterproofing membrane. Drainage board can be fastened at the top side with a suitable mechanical fastening system that is compatible with the substrate.
 2. Adhere remainder of drainage board with mastic, compatible with this installation.
 3. Overlap the flat side core lip with second sheet of drainage board to provide a continuous drainage layer (shingle fashion). Ensure excess filter fabric is overlapped with this next sheet.
- B. Horizontal Application
 1. Unroll drainage board and apply from high point to low point ensuring that overlap is in such a way so that water runs with the overlap.
 2. Add appropriate ballast as needed to hold down drainage board.

3.04 PROTECTION

- A. Backfill immediately using care to avoid damaging drainage layer and to ensure permanent placement of the drainage board.

END OF SECTION