

SAMPLE SPECIFICATION OR SPECIAL PROVISION

548-8.6 Compressible Free Draining Seal: Seal all joints between MSE precast wall panels with an approved compressible free draining seal material to prevent plant growth from seeds or spores that may be in the joints or transported to the joints by wind and/or rain or that may be existing within select backfill, and to block sunlight from entering the joint to prevent germination. The installation must be secure and sufficiently free draining to keep the seal in place until MSE precast wall panel(s) are removed or replaced. Insure walls have sufficiently settled as per plan.

Installations

Insure joints are free from all loose materials, debris and vegetation. Install in accordance with manufacturer's recommendations and instructions. Install the compressible free draining seal under a typical range of 25% to 85% maximum compression in order to allow a fit tight enough to seal the joint without gaps or open spaces between the sections within the joint. Insure the compressible free draining seal is sized to properly fit into all vertical and horizontal joints of the MSE wall including the joints fitting up to any adjacent structures.

New Installations:

- Remove any vegetation, soil or other debris that has begun to grow over the life of the project between MSE wall panel joints.
- Evaluate existing joints and determine the proper size of compressible free draining seal material needed to properly fit.
- Cut pieces to proper lengths fit each horizontal and vertical exposed joint of the MSE wall panels.
- Insert compressible free draining seal material into the joint to a depth approximately 1 inch from the exposed face of the MSE wall construction. Insure the material sufficiently compresses into the joint utilizing a narrow blunt tool so that it fits tightly between each concrete panel upon installation.
- Butt the compressible free draining seal joint material end to end when installed in a continuous fashion, sealing all gaps.
- Butt all intersecting compressible free draining seal joints together, sealing all gaps.

Remedial (Retrofit) Installations:

- Remove all existing vegetation, soil or other debris that has grown between existing MSE wall panel joints.

- DO NOT spray herbicide behind or allow to come in contact with the compressible free draining seal materials since herbicides are known to contain carcinogenic chemicals that may be hazardous and potentially cause the compressible free draining seal material to rapidly deteriorate.
- Evaluate existing joints and determine the proper size of compressible free draining seal material needed to properly fit.
- Cut pieces to proper lengths fit each horizontal and vertical exposed joint of the MSE wall panels.
- Insert compressible free draining seal material into the joint to a depth approximately 1 inch from the exposed face of the MSE wall construction. Insure the material sufficiently compresses into the joint utilizing a narrow blunt tool so that it fits tightly between each concrete panel upon installation.
- Butt the compressible free draining seal joint material end to end when installed in a continuous fashion, sealing all gaps.
- Butt all intersecting compressible free draining seal joints together, sealing all gaps.

Material Specifications:

The compressible free draining seal material shall be manufactured in a range of varying diameters of continuous lengths that remain chemically inert when exposed to most chemicals commonly used in construction. The compressible free draining seal material shall consist of a permeable low modulus resilient open-cell foam core wrapped within a non-woven geotextile filter fabric in a manner such that the core remains integral and cannot freely separate from the exterior of the fabric or be removed. Compressible free draining seals may be comprised of recycled materials. Core materials shall be non-corrosive. Note: Certain core materials could be adversely affected and compromised if exposed to acids, solvents, UVA/UVB rays or strong alkali. Polyesters and Nylons are specifically prohibited from use.

Core Materials

Color: Black

<u>Property</u>	<u>Value</u>	<u>ASTM Test Method</u>
Density: lb/ft ³ (kg/m ³), avg.	1.7 (27)	D1622
Compression Recovery: %, min	>98	D5249
Compression Deflection: psi (kPa)	1.4 (9.4)	D5249
Tensile Strength: psi (kPa)	25 (172)	D3575
Temperature Range:	-60° to +500° F.	D5249

Nonwoven Materials

<u>Property</u>	<u>Value</u>	<u>ASTM Test Method</u>
Tensile Strength (Grab)	300 x 300 lbs	D4632
Elongation	50 %	D4632
CBR Puncture	825 lbs	D6241
Trapezoidal Tear	115 x 115 lbs	D4533
UV Resistance (500 hrs)	70 %	D4355
Apparent Opening Size (AOS)*	100US Std. Sieve	D4751
Permittivity	1.0 sec ⁻¹	D4491
Water Flow Rate	75 gpm/ft ²	D4491

COMPOSITE SECTION

Durability Evaluation ASTM G154

UVB (degradation by means of accelerated weathering)

Compressible free draining seal material of a composite cross-section upon undergoing testing as per ASTM G154 – Cycle 3- UVB Exposure – 500 hrs. shall have no less than 0.05 % total weight loss over a 6.5-inch length of material 1 $\frac{1}{8}$ in diameter.

Permeability

The composite section should have a permeability of more than 0.1 centimeters per second.

Storage and Handling

Store materials in the manufacturer's original undamaged packaging. All packaging shall be labeled with the manufacture's name, type of material and compressible free draining seal product brand name including lot number if available. Should product materials arrive to the project site in a compressed state; allow 2-4 hours to allow materials to decompress upon opening of packaging. All compressible free draining seal materials are to be stored in a dry well-ventilated area protected from weather, moisture, soiling, and extreme temperatures. Do not store near open flames.

Settlement

Should the geotechnical engineer determine that the MSE wall is expected to settle in excess of a normal expected settlement range for short term, long term including differential settlement, then the sizing of the compressible free draining seal material may need to be reevaluated. Increase the size of the compressible free draining seal material in order to accommodate potential variations in joint width due to excess wall settlement.

Adhesive

If an adhesive is required at any point due to concerns of the engineer, consult with the manufacturer prior to use for proper adhesive selection and utilization.

Buy American Act

All materials and manufacturing are to be accordance with the "Buy American Act".