Basalite

Basalite Concrete Products, LLC, is a leader in the manufacture of concrete products and segmental retaining wall systems, having supplied over 60 million square feet of walls installed in our local communities over the past 20 years. With locations in Northern California, Nevada, Oregon, Washington, Idaho, British Columbia and Colorado, Basalite has the products and expertise to meet any grade separation or earth retention requirement.

Commitment to Sustainability

Basalite is committed to the advancement of sustainable construction practices. The Basalite GEOWALL™ System is locally produced from natural materials (products using recycled content are available) and offers excellent durability. The wall units are dry stacked, and can be removed and repositioned if the structure is no longer needed. Concrete products also can be crushed and reused as clean fill. As a result of these benefits, Basalite Walls may contribute to the attainment of LEED® Credits under the United States Green Building Council’s LEED 2009 rating system, as summarized below:

<table>
<thead>
<tr>
<th>LEED Credit</th>
<th>Description</th>
<th>Points</th>
<th>Solutions</th>
</tr>
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<tbody>
<tr>
<td>Sustainable Sites SS Prerequisite 1</td>
<td>Construction Activity Pollution</td>
<td>Required</td>
<td>Use of retaining walls to prevent erosion of site soils may assist to meet this prerequisite</td>
</tr>
<tr>
<td>Sustainable Sites SS Credit 1</td>
<td>Site Selection</td>
<td>1</td>
<td>Segmental retaining walls can minimize the footprint of the developed portion of a site, and help preserve wetlands and other sensitive areas on a site.</td>
</tr>
<tr>
<td>Sustainable Sites SS Credit 2</td>
<td>Development Density &amp; Community Connectivity</td>
<td>1</td>
<td>Segmental retaining walls facilitate development of sites in dense urban areas by maximizing usable area in hilly terrain.</td>
</tr>
<tr>
<td>Sustainable Sites SS Credit 5.2</td>
<td>Site Development: Maximize Open Space</td>
<td>1</td>
<td>Use segmental retaining walls to preserve and protect open space.</td>
</tr>
<tr>
<td>Materials &amp; Resources MR Credit 2.1 &amp; 2.2</td>
<td>Construction Waste Management: Divert 50%-75% From Disposal</td>
<td>1</td>
<td>Unused concrete masonry products can be redirected to the manufacturing process either for reuse or recycling. Waste masonry or concrete products also can be used as clean fill at the construction site, or crushed into aggregates for use as backfill or base material.</td>
</tr>
<tr>
<td>Materials &amp; Resources MR Credit 4.1 &amp; 4.2</td>
<td>Recycled Content: 10%/20% (postconsumer + 1/2 pre-consumer)</td>
<td>1</td>
<td>Concrete products can be manufactured with recycled materials. Check with Basalite for recycled content product options.</td>
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<td>Materials &amp; Resources MR Credit 5.1 &amp; 5.2</td>
<td>Regional Materials: 10%/20% Extracted, Processed &amp; Manufactured Regionally</td>
<td>1</td>
<td>Most concrete products are made by local production facilities using sand, aggregates, water and cement from local sources. Basalite can confirm the percentage of local origin of its products.</td>
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Expertise and Solutions

- Basalite provides design software, detail drawings and specifications for design professionals.
- Construction resources include installation guidelines and specialty details.
- Contact your Basalite Representative for assistance in locating design resources or check our website.

www.basalite.com

Colors and face styles shown are available in California markets and availability will vary elsewhere. Contact your local manufacturer for availability. "MESA" is only available in Straight Face. Colors of concrete products naturally vary, and may not exactly match colors shown in this brochure. We recommend that you request a product sample if color matching is important.
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Basalite Structural Wall Products

Basalite offers both the GEOWALL™ system and the Tensar® Mesa® Retaining Wall System. GEOWALL™ is an excellent solution for a variety of wall applications, ranging from simple landscaping projects to critical structures. Available in four face styles and attractive earth-tone colors, these walls will meet your structural requirements while providing lasting beauty that will complement your design for years to come. Mesa® offers a positive mechanical connection for public projects.

**GEOWALL™ MAX**
- **Dimensions:** 18" w x 8" h x 12" d
- **Face Area:** 1 sq. ft.
- **Face Styles:** Straight, Tri-Plane, Straight Bevel, Ashlar
- **Unit Weight:** 90 pounds
- **Delivery:** 30 per pallet

**GEOWALL™ PRO**
- **Dimensions:** 18" w x 8" h x 11" d
- **Face Area:** 1 sq. ft.
- **Face Styles:** Straight
- **Unit Weight:** 75 pounds
- **Delivery:** 45 per pallet

**TENSAR MESA®**
- **Dimensions:** 18" w x 8" h x 21.5" d
- **Face Area:** 1 sq. ft.
- **Face Styles:** Straight, Tri-Plane, Straight Bevel, Ashlar
- **Unit Weight:** 90 pounds
- **Delivery:** 30 per pallet

**GEOWALL™ Features:**
- Multiple face styles and colors.
- Easy construction of curves and corners (especially corner units are available).
- Two setback positions offer choice of near vertical or battered wall construction.
- Pin connection system for easy alignment and proper geogrid installation.
- Open cores allow core-fill interlock for greater drainage, shear resistance and geogrid connection strength.
- Matching cap units are available to finish the wall beautifully.

**Wall Unit Specifications:**
- **Compressive Strength:** 3000 psi
- **Reference Standard:** ASTM 1372
- Products conforming to AASHTO specification requirements are available upon request. Check with your local manufacturer.

**GEOWALL™ MAX and Pro**
GEOWALL™ Max and Pro units use pultruded fiberglass pins for connection and alignment. The pins control the amount of setback in the wall and assist in connecting geogrids properly.

**Geowall Fiberglass Pin Specifications:**
- **Dimensions:** 5/8" x 0.125" x 0.125" x 0.062"
- **Flexural Strength:** Minimum 132,000 psi
- **Short Beam Shear Strength:** 6400
- **Reference Standards:** ASTM D-4475, ASTM D-4476

**MESA Connectors**
Unique, locking connectors that are designed to mechanically connect the Tensar Geogrid to the Mesa Units. Also, allows walls to be built with a near vertical or 5/8" setback.

www.basalite.com
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- Matching cap units are available to finish the wall beautifully.

GEO WALL™ Pro and Max units use pultruded fiberglass pins for connection and alignment. The pins control the amount of setback in the wall and assist in connecting geogrids properly.

GeoWall Fiberglass Pin Specifications:
- Dimensions: 5-1/8" x 1/2"
- Flexural Strength: Minimum 125,000 psi
- Short Beam Shear Strength: 6400
- Reference Standards: ASTM D-4475, ASTM D-4476

MESA Connectors
Unique, locking connectors that are designed to mechanically connect the Tensar Geogrid to the Mesa Units. Also, allows walls to be built with a near vertical or 5/8” setback.

www.basalite.com
Choosing the Right Wall System for Your Project

Basalite Wall Systems are an excellent solution for a variety of wall applications, ranging from simple landscaping projects to critical tall structures. GEOWALL™ units are made of high-strength concrete and use pultruded fiberglass pins for alignment and inter-unit connection. GEOWALL™ is designed to optimize construction of both gravity walls and mechanically stabilized wall structures using geogrid reinforcement. GEOWALL™ units feature two setback options (either near vertical or 1 inch setback per unit) for design and construction flexibility. The Tensar® Mesa® Standard Unit is an excellent choice for reinforced walls where a positive mechanical connection is specified. Here are some general guidelines for selecting which product may be the best choice for your project:

### Product Specifications

**GEOWALL™ Max**

- **8”h x 18”w x 21.5”d**
- Gravity Walls to approximately 6’; Reinforced walls to 40’ or more in height with proper design.

**GEOWALL™ Pro**

- **8”h x 18”w x 12”d**
- Gravity Walls to approximately 3.5’; Reinforced walls to 35’ or more in height with proper design.

**MESA® Standard**

- **8”h x 18”w x 11”d**
- Gravity Walls to approximately 3.5’; Reinforced walls to 35’ or more in height with proper design.
- Mechanical connection to geogrids has been approved for use by many public authorities. Straight face only.

* Consult a qualified engineer regarding the maximum heights for your wall and the design requirements that are required for your particular soil conditions, loadings, and wall geometry.

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### Design Considerations

**Gravity Walls**

A gravity wall relies on the mass of the retaining wall units and their core fill to resist the pressure from the retained soil. The maximum height of a gravity wall depends on the depth, weight and setback of the retaining wall units, the type of soil retained and any additional surcharges such as road traffic or slopes above the wall. Typical maximum gravity wall heights range from about 3.5 ft. with the GEOWALL™ Pro Unit to up to about 6 ft. with the GEOWALL™ Max unit depending on the setback, the type of soils and whether the wall is subject to any surcharges. The Max unit is a great choice for taller gravity wall structures due to its greater embedment depth.

**Reinforced Walls**

A reinforced wall typically uses geogrid to stabilize the soils behind the retaining wall units. This stabilized soil mass resists earth pressures. This type of wall is often referred to as a Mechanically Stabilized Earth ("MSE") structure. The addition of geogrid reinforcement connects the entire reinforced soil mass to the retaining wall units. The reinforced soil zone and facing units perform as a mass “gravity wall” restricting movement of the retained soil zone. MSE retaining walls allow construction of tall, critical structures.

**Design Methods**

Many gravity walls and all reinforced retaining walls should have engineered plans (this is required by Code in most cases). Various standardized design methods are used to design segmental walls. In the private sector, designers use the National Concrete Masonry Association (NCMA) Design Method for Segmental Retaining Walls. In the public sector they use the American Association of State Highway Transportation Officials (AASHTO) design methods. MESA may be designed using the LFRD design methodology for public projects. A wall designer needs the following information to begin a wall design:

- the soil strength of the wall foundation soils and retained earth
- the proposed wall geometry (height, degree of batter, tiers)
- Any surcharge conditions on the proposed structure.

Based on these factors, the design will determine whether geogrid reinforcement is required, and if so, the strength of the geogrids to be used, and the number, length and placement of geogrid layers.

**Basalite GEOWALL™ Design Software**

Basalite has secured extensive third party testing of our retaining wall products to provide the test data necessary to support design of our products using accepted design methodologies, and reports containing this data are available to designers (and can be imported into the relevant design programs). Basalite offers both standard engineering for typical non-critical structures and GEOWALL™ Design Software (available by Summer, 2011) that will assist engineers in designing our walls to industry standards. GEOWALL™ Design Software also will provide materials take-offs and CAD layouts of the proposed wall design. Please contact your Basalite representative if you need assistance in locating design resources.

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<th>Key Features</th>
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<td>Gravity Walls to approximately 6’; Reinforced walls to 40’ or more in height with proper design.</td>
<td>Allows greater spacing between geogrid layers. More stable during construction—improves installation productivity. Best choice for taller gravity walls. Available with Straight, Tri-Plane, Straight Bevel and Ashlar face styles.</td>
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<td>GEOWALL™ Pro 8”h x 18”w x 12”d</td>
<td>Gravity Walls to approximately 3.3’; Reinforced walls to 35’ or more in height with proper design.</td>
<td>Cost effective for many walls. Lighter weight and tall design make handling easier. Versatile all around performance. Available with Straight, Tri-Plane, Straight Bevel and Ashlar face styles.</td>
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California  
605 Industrial Way  
Dixon, CA 95620  
800-776-6690  
11888 West Linne Road  
Tracy, CA 95376  
800-776-6690  
1201 Golden State Blvd  
Selma, CA 93662  
559-896-0753  

Nevada  
355 Greg Street  
Sparks, NV 89431  
888-296-3719  
2600 Boeing Way  
Carson City, NV 89706  
888-296-3719  

Colorado  
4900 Race Street  
Denver, CO 80126  
303-292-2345  

Washington  
3299 International Way  
Dupont, WA 98322  
800-964-9424  

Oregon  
1740 NE Lombard Place  
Portland, OR 97211  
800-208-9202  

Idaho  
1300 East Franklin Road  
Meridian, ID 83642  
208-888-4050  

British Columbia  
1280 West 77th Avenue  
Vancouver, BC, Canada V6P 3G8  
604-269-2120  
13066 88th Avenue  
Surrey, BC, Canada V3W 1G1  
800-596-3844  

Columbia Roof Tile, LLC  
8650 130th Street  
Surrey, BC, Canada V3W 1G1  
604-596-3388  

Please visit www.basalite.com for more information.