



C185 SYSTEM: TECHNICAL DATA SHEET

Product Name: SmartSlope C185 Living Retaining Wall System

Manufacturer: SmartSlope, LLC
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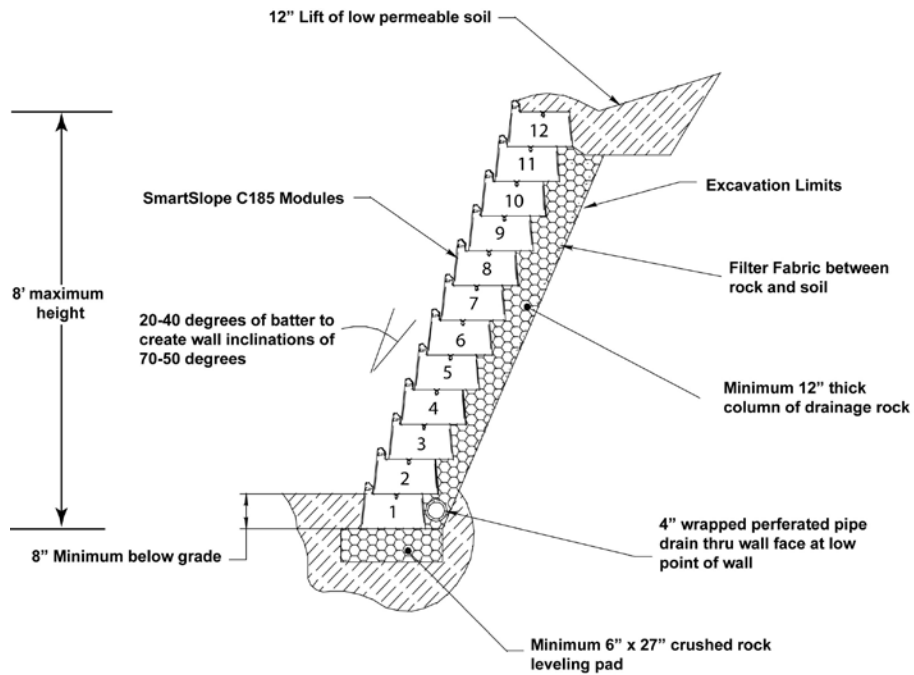
Description:

The SmartSlope C185 System is a **wet-cast** concrete modular retaining wall and slope system comprised of individual 20" wide by 8" high x 15" deep modules, each having a **polymer liner** bonded to the interior surfaces. Modules allow **mechanical connection** to reinforcement, accept system **accessories** and are comprised of a face wall, two side walls and a **solid bottom** wall, thus creating a large, accurate fill receiving trough which is open and unbounded at the rear. The modules are segmented facing units designed as planting containers providing two functions – structural wall or slope facing and plant growth. SmartSlope Living Retaining Wall System is designed to be installed in accordance with these specifications and the installation manual ([click for install guide](#)). Following the lines and grades designated on the drawings/plans, work shall include foundation, drainage, plantable unit infill, compaction, reinforcement, irrigation components (optional), surface applied stain, approved plants and related system accessories per specification.

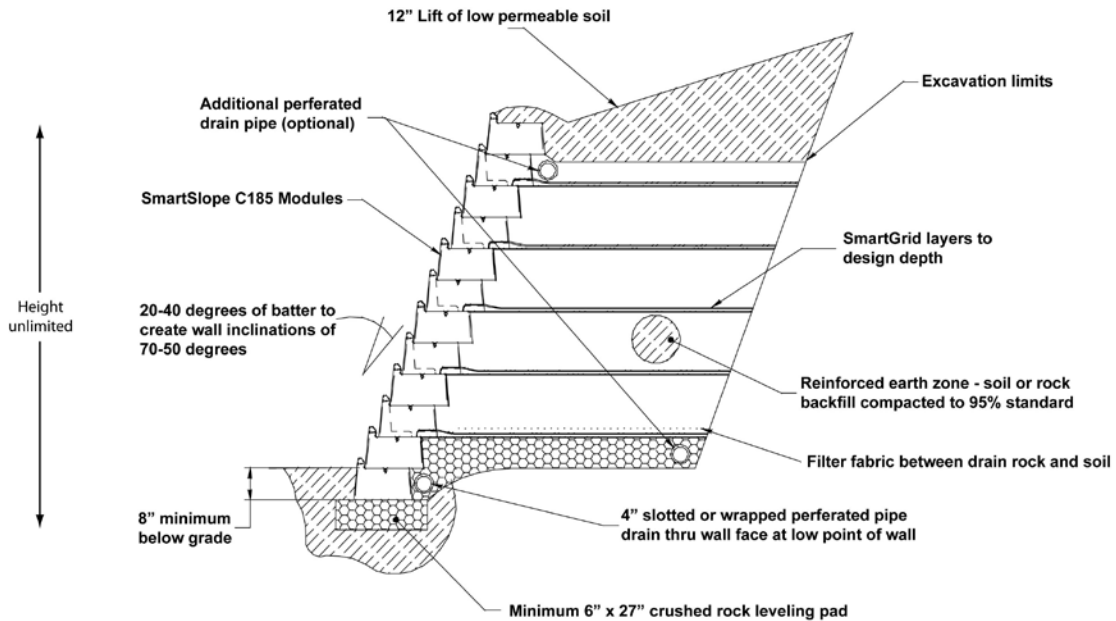


A SmartSlope installation can range from 70 degrees inclination (20 degrees of batter) to 50 degrees inclination (40 degrees of batter). Thus design flexibility offers application as segmented retaining wall or slope stabilization, always with the intention of full vegetated cover.

Typical Gravity Wall Section



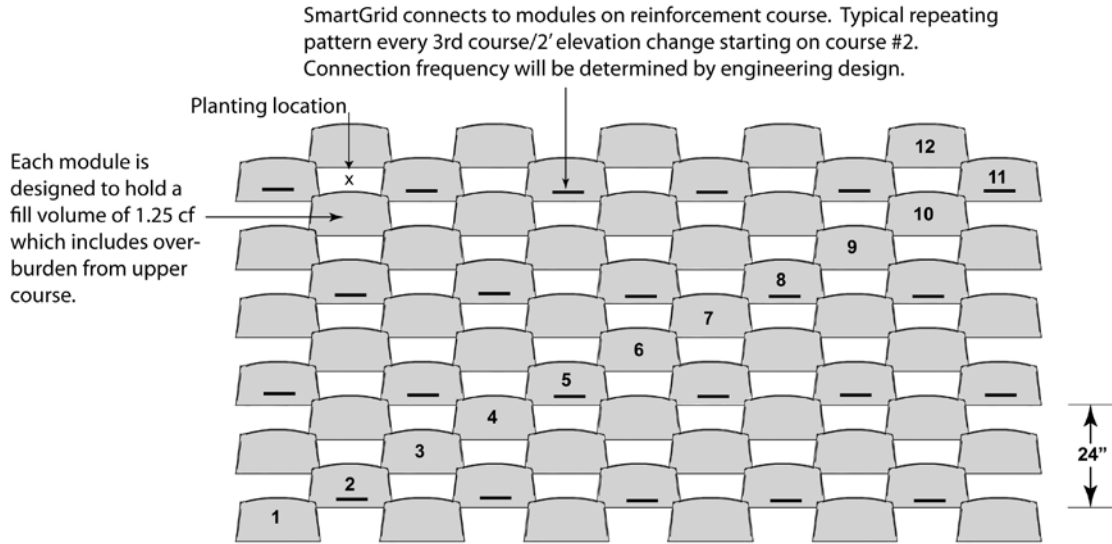
Typical Reinforced Section



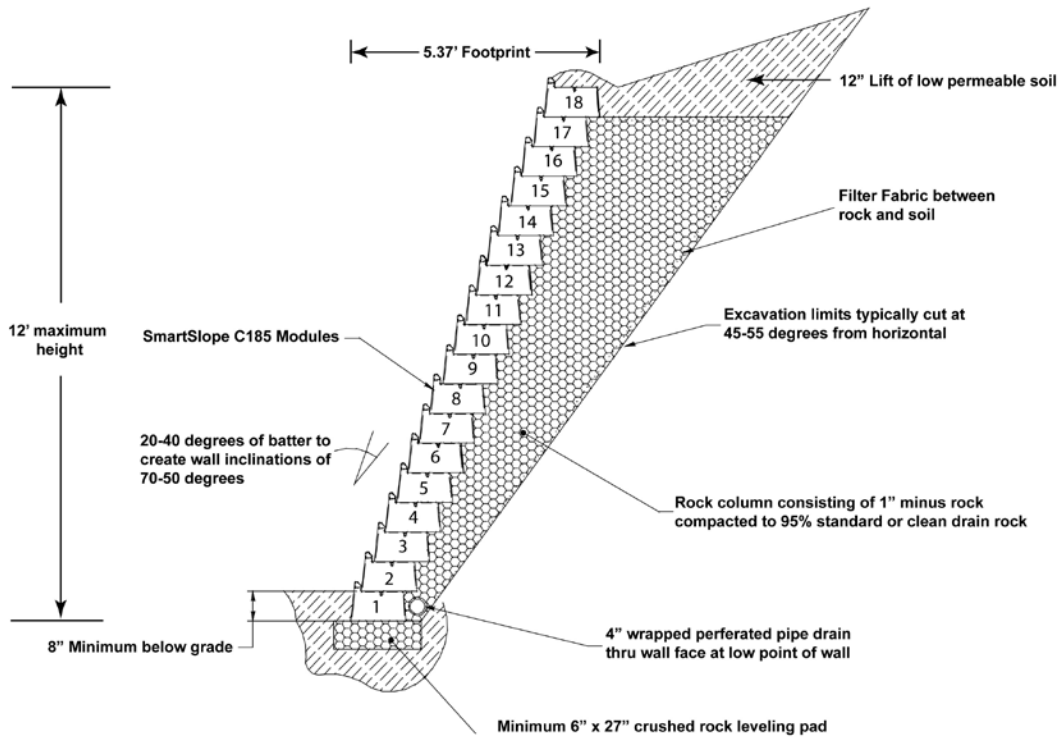
SmartSlope batter enables design of greater wall height construction before reinforcement is required. Where reinforcement is required, SmartSlope system includes a true mechanical connection through the module itself (no need for additional pins, rods, pipes, or other means of attachment) creating high connection values regardless of wall height. Wall design employs the same engineering protocols as any segmented retaining wall or slope stabilization.

The modules are wet cast vs. the dry cast method used by other manufacturers. Wet casting provides superior dimensional consistency which facilitates rapid installation by reducing shimming and adjustment during the stacking process. Additionally, wet cast production provides superior freeze/thaw characteristics and allows more efficient use of the concrete than dry-cast methods.

Because each module covers 1.85 square feet of wall face (vs.1 sf for typical SRW systems), approximately 46% fewer modules are needed which reduces labor and speeds installation. The modules are spaced 14" apart. SmartSlope modules, with their solid bottoms and no rear walls, provide for a plantable unit in-fill volume of at least 1.25 cubic feet. Each module straddles two modules on the course below creating a checker board pattern of planting pockets. Every module pocket is then planted. As the plants mature, the entire concrete wall facing is obscured by vegetation. SmartSlope walls and slopes facilitate plant palettes to meet any design objective.



Note: Because SmartSlope Wall Systems require batter between 20 and 40 degrees from vertical, installations impose a minimum footprint of 2.91' per course plus 15" for the length of the top module. A 12' tall wall at 70 degrees, will have a footprint of 5.37' as measured from the face of course #1 to the rear of course #18.

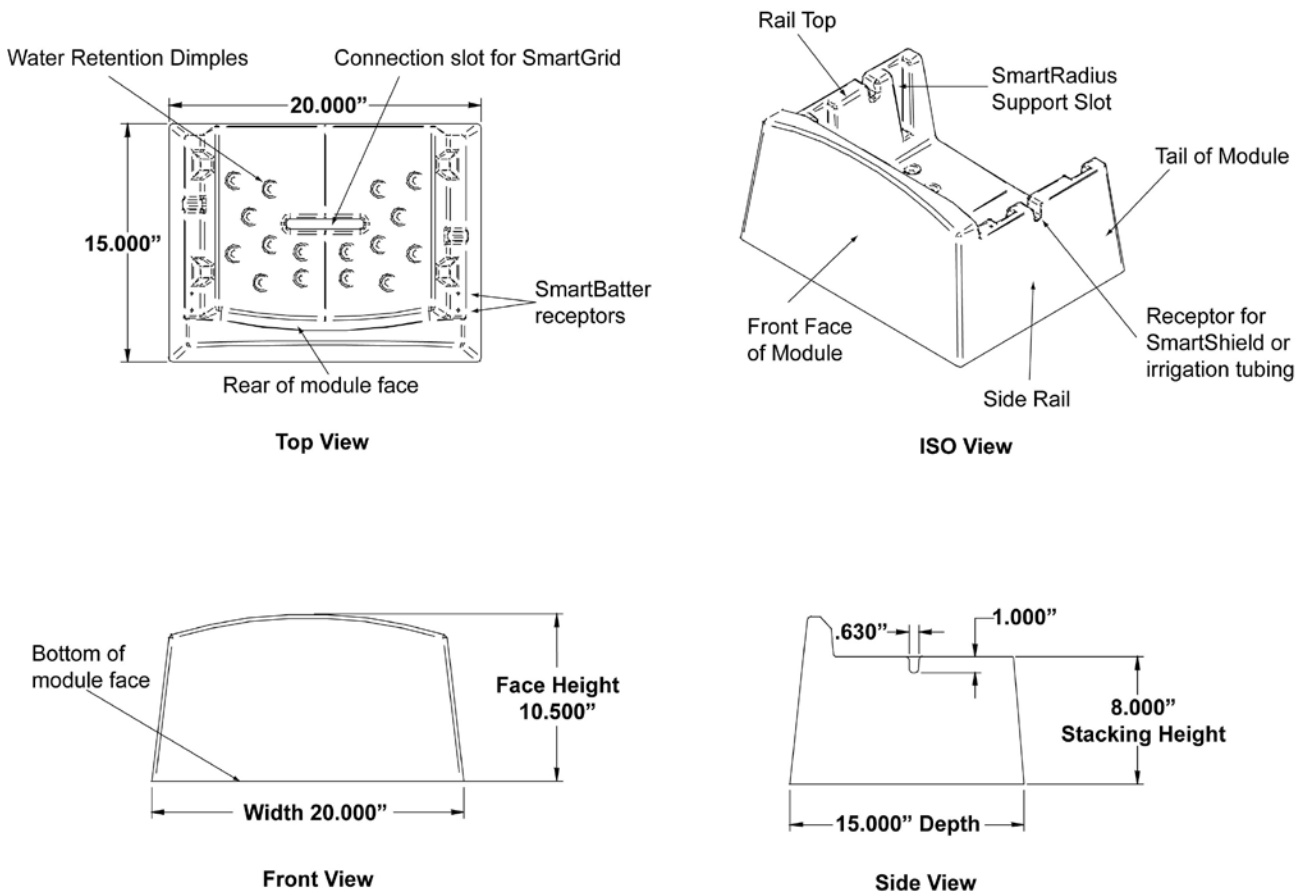


Properties of the Composite Series Modules and Accessories

Modules:

SmartSlope modules as locally manufactured by, or under license from SmartSlope, LLC shall be identified from the face by their smooth finish, unique olive green color (after surface applied stain) and a generally arched face coming to a peak at center of its width in accordance with the drawings. Lining the trough of each module shall be a 100% post-consumer polymer liner which is permanently bonded to the concrete. The liner will facilitate the use of proprietary structural accessories such as SmartShields for water applications, SmartRadius support for tight radii applications and mechanical connection to reinforcement straps. SmartSlope C185 modules are designed to be installed with a side-to-side spacing between modules of 14" to optimize load bearing capacity. The modules shall be designed to interlock when installed according to the specifications so as to form a flexible, stable and plantable structure. The modules allow for variable setbacks between 70° without spacers and 60° or 50° from horizontal by utilizing SmartBatter spacers as shown in the construction drawings and system specifications. Each SmartSlope module shall have a solid bottom fill-receiving trough, which is open and unbounded at the rear, allowing fill within the modules trough to be completely compacted and in contact with the retained mass. All SmartSlope accessories are made from a 100% post-consumer polymer. The modules shall be made of wet-cast concrete meeting the requirements of ASTM C 1372-01a for SRW units (or later versions) with the following exceptions: minimum 28 day compressive strength of 5000 psi, entrained air appropriate to the region of use, maximum absorption of 5%, may contain up to 20% Portland cement replacement with post-industrial cementitious material, no more than +/- 1/16" variation from published dimensions in stacking height.

SmartSlope C185 modules shall be 20" wide x 15" deep with an 8" course (stacking) height, weighing approximately 80 lbs per unit before backfill and yield 1.85 sf installed coverage per unit. Larger and smaller size modules are to be introduced in the near future.



Accessories: SmartMedia

Blended growth media sourced within 100 miles of the installation location and specified to match the planting list for the region of use, in order to facilitate successful grow-out and long-term coverage of the completed wall or slope system. Growing media shall be properly mixed and homogenous, so as not to be able to determine the separate components when inspected. The material may be delivered in bulk or packaged for precise, modular placement within each module.

- **Bulk SmartMedia:**
Certified compost from local source, blended with suitable waste stream aggregates, also locally sourced and blended at percentages that may range between 30% - 70% compost by volume. The actual project blend will facilitate best wall grow-out and plant health per project specific plant palette.
- **Packaged SmartMedia:**
Same material as formulated in bulk (above) and packaged within 8" diameter GardenSoxx® so as to fit precisely into the SmartSlope infill pocket and the space between each module, generally resulting in two GardenSoxx® per module. The GardenSoxx® exterior mesh material will consist of 150 denier multifilament polypropylene; UV treated and have a filled length of approximately 20". Review technical data sheets from manufacturer at the following link [Filtrexx cut sheets](#)
- **GardenSoxx® Filling:**
Adequate density for GardenSoxx® shall be achieved by filling at a Certified Filtrexx Manufacturer. For a list of Certified Manufacturers, contact Filtrexx International, LLC. Product not filled by a Certified Filtrexx Manufacturer will NOT be allowed on the project. Additional product information and specifications may be found at www.filtrexx.com.

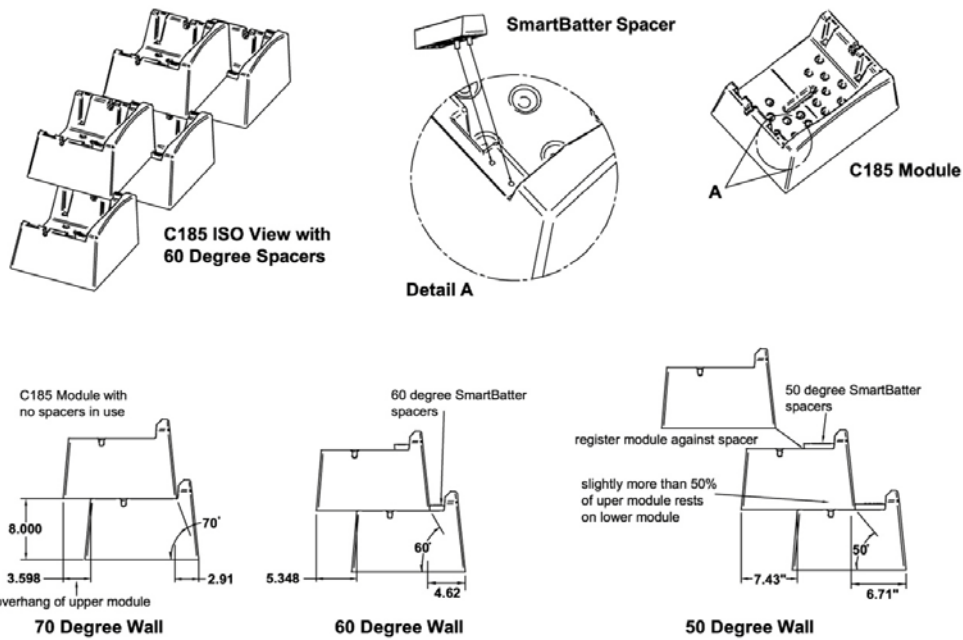
Accessories: SmartColor

Traditional retaining wall modules are available in natural grey or internally colored with dry or liquid pigments. All SmartSlope modules are to be stained a unique, dark olive color in order to minimize their visual impact on the completed site prior to full vegetation grow-in. By coloring only the visible facial area of each module, SmartSlope is able to lessen the environmental and economic impact of color, while offering a unique color not available by internal coloring that is effective at reducing the visual impact of a structural concrete product. By region, the modules may be stained at the local manufacturer or after installation on the actual completed project, prior to planting. Regardless of location, stain application will be a surface applied spray on stain. All stains are LEED compliant and water-based. Complete information may be viewed at the following link –

[Stain Manufacturer Tech-Data](#)

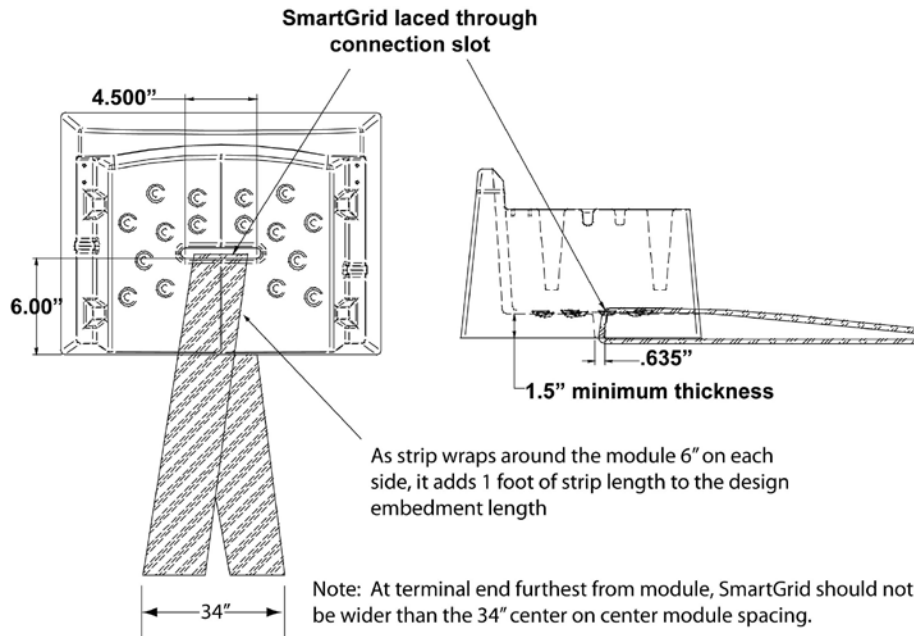
Accessories: SmartBatter

SmartBatter Spacers are rigid, durable, easy-to-use accessories that economically and precisely add increased set-back (batter) to elevations of the wall, or the entire wall, in order to guarantee planned wall inclinations. During efficient mechanical compaction of the backfill zone, SmartBatter spacers maintain correct alignment as they are full depth spacers, fully engaged between the upper and lower modules to prevent shifting and movement.



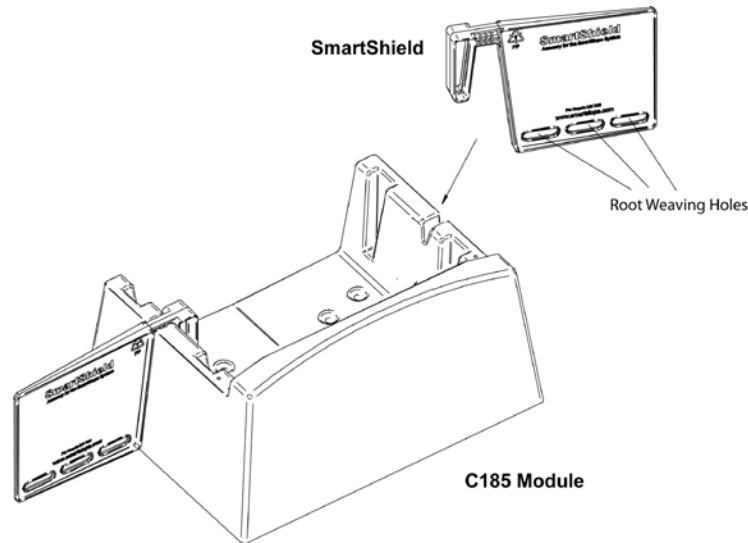
Accessories: SmartGrid (web-based resources at <http://www.smartslope.com/designcenter/index.html>)

Rolls of inextensible structural straps varying in width between 2"-4" by strength, composed of high tenacity polyester yarns placed in tension, then co-extruded with polyethylene to form a polymeric strap.



Accessories: SmartShields

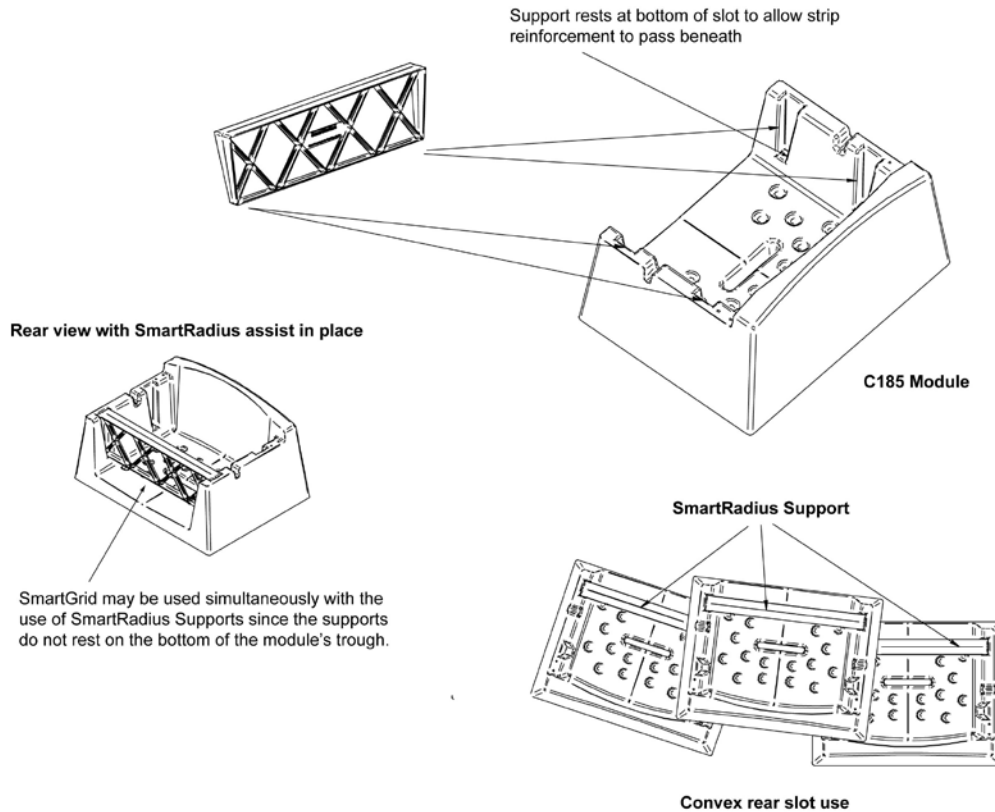
SmartShields are rigid, durable, easy-to-use accessories that add increased erosion protection to elevations of the wall exposed to the energy of flowing water or wave action. When installed, the shields overlap one behind the other in order to dissipate energy and protect backfill between each module.



Note: SmartShields are usable on left and right hand sides

Accessories: SmartRadius

SmartRadius Supports are rigid, durable, easy-to-use accessories that economically add increased load bearing surface to tight radius sections of the wall that require the modules to be installed "off-bond". They do not interfere with reinforcement placement or separate unit infill material.



Availability and Cost

SmartSlope Living Retaining Wall Systems are produced by local pre-casters and available through the manufacturer, SmartSlope, LLC.

Visit our website at www.smartslope.com

Technical Support

SmartSlope, LLC staff is available for specification assistance and jobsite review of various installation stages at (443) 874-7465 or e-mail [tech-support](mailto:tech-support@smartslope.com) for information and technical advice. SmartSlope, LLC should be contacted at least 14 days prior to the start of construction if technical representatives are needed during the installation process.

Maintenance

The modules themselves do not require maintenance.

Maintenance and care of the vegetated portions of the wall system is required at least until the vegetation is established (grown in). The initial and continuing maintenance required will depend on the plantable unit infill, type of vegetation, local weather conditions and exposure. SmartSlope, LLC may, at its discretion, provide maintenance review visits for the purpose of documenting the progress and condition of the completed system. At such regular visits within the first 24 months from completion, reports will be generated and shared with stakeholders as a tool to facilitate successful grow-out. Any provisions, by and for, the project owner in addition to those listed above, such as % plant coverage by calendar date, shall be placed in a separate document and included with the plans and specifications of the project prior to bidding and selection of installer.

Warranty

SMART SLOPE, LLC warrants to its customers that each SmartSlope retaining wall Module is manufactured in accordance with current ASTM standards on compression strength, and absorption for concrete masonry Modules for 3 years after it is properly installed. If a Module does not meet this warranty standard, the customer shall notify SMART SLOPE, LLC in writing and, pursuant to Smart Slope's directions, such customer shall return the applicable Modules to the manufacturer or destroy them. SMART SLOPE, LLC shall ship to its customer, as applicable, at SMART SLOPE's expense, replacement Modules which shall be SMART SLOPE's sole remedy for breach of this warranty. SMART SLOPE, LLC shall have no obligation to install such replacement Modules.

This Warranty shall not apply to any Module which is damaged or defective or fails to meet the warranty standard due to the manner in which it was installed, any chemicals coming in contact with the Module, the design of the structure in which a Module is used, excessive or unforeseen site conditions, soil conditions, manufacturing defects, or other conditions beyond SMART SLOPE LLC's control. THE ABOVE SETS FORTH THE SOLE WARRANTY FROM SMART SLOPE LLC REGARDING THE PRODUCT AND IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SMART SLOPE, LLC SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Warranty information should be sent to:

SMART SLOPE, LLC
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