

KEYSTONE[®] CONSTRUCTION MANUAL



REGAL STONE PRO[®]



REGAL STONE PRO® ROCKFACE

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Definitions

AASHTO – American Association of State Highway and Transportation Officials

ASTM – American Society for Testing and Materials

Backfill – Soil used to replace a zone of excavated soil.

Backslope – The angle of the slope or finished grade located behind the top of the wall, usually expressed in a ratio such as 3:1 (3-foot horizontal to 1-foot vertical) or in degrees, 18.4° or in percent, 33%.

Base Course – First row of Keystone units placed on top of the leveling pad.

CIP – Cast-in-place concrete.

Compaction – Mechanical effort used in densifying soil to a defined minimum percentage of the maximum compacted density of the soil. See ASTM D698 and D1557 for reference.

Core Fill – See Unit Drainage Fill.

Course – A horizontal layer or row of Keystone units.

DOT – Department of Transportation

Drainage Composite – Three-dimensional geosynthetic drainage medium encapsulated in a geotextile filter, used to transport water.

Drainage Pipe – A perforated or slotted PVC pipe manufactured in accordance with ASTM D3034, or corrugated HDPE pipe manufactured in accordance with AASHTO M 252, used to transport water away from the drainage zone or reinforced backfill.

Drainage Zone – A predetermined depth of clean crushed angular stone located within and behind a Keystone unit to prevent the development of hydrostatic forces on the Keystone wall facing. Also see Unit Drainage Fill.

Efflorescence – A whitish substance that can naturally occur on all concrete products. Efflorescence occurs when salts from within the concrete unit are transported to the exterior surface by water or from external chlorides.

Embedment – Depth of retaining wall below existing or proposed ground in front of the wall.

Exposed Wall Face – The exposed visible portion of the retaining wall when installed.

Extensible Reinforcement – See Geogrid.

Foundation Soil – Either in-situ soil or compacted backfill, located beneath wall leveling pad and reinforced fill volume.

Geogrid – A synthetic extensible structural soil reinforcement element formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth; functions primarily as reinforcement and is typically a HDPE or Polyester material.

Geosynthetics – A range of generally polymeric (plastic) products used to solve civil engineering problems.

Geotextile Filter Fabric – Material is used for a separation and filtration of dissimilar soil types; typically consists in two forms, woven or non-woven synthetic fiber (polymer-based).

Global Stability – The general mass movement of a soil-reinforced retaining wall structure(s) and adjacent soil masses and slopes.

HDPE – High-Density Polyethylene

IBC – International Building Code

Impermeable or Low Permeable Soil – Soil with clay content used to prevent water percolation into the drainage zone and the reinforced backfill behind the retaining wall.

Inextensible Reinforcement – Galvanized steel soil reinforcement.

Keystone unit – A concrete retaining wall element, machine-made from Portland cement, water, and aggregates by a Keystone manufacturer.

Leveling Pad – Material used to support the Keystone unit, typically compacted crushed stone material or unreinforced CIP concrete.

Definitions

Modular Block – See Keystone unit.

MSE – Mechanically Stabilized Earth

NCMA – National Concrete Masonry Association

Parapet – Keystone units or CIP concrete installed above finished grade to create a freestanding wall that does not retain soil.

Polyester – A polymer fiber used in the production of geogrids.

PPE – Personal Protective Equipment, i.e.: hard hat, gloves, eye protection, boots, etc.

PVC – Polyvinyl Chloride; a thermoplastic polymer.

Reinforced Soil (Reinforced Backfill) – Compacted soil that is placed within the reinforced soil volume as outlined on the plans.

Reinforcement – See Geogrid.

Retained Soil – In-situ soil or compacted backfill located directly behind the reinforced soil volume or gravity wall system.

Segmental Wall Unit – See Keystone unit.

SRW – Segmental Retaining Wall; i.e., multiple Keystone units installed to create a retaining wall.

Surcharge – Any loading imposed on the soil behind the wall that exerts an additional force on a wall structure. Surcharge loadings are assumed to be uniform live or dead loads.

Surcharge-slope – Any additional loading imposed on the wall structure due to backslope conditions behind the wall.

Swale – A ditch or depression in the soil at the top or bottom of the retaining wall used to divert water to another location away from the wall.

Toe Slope – The slope angle of the soil located in front of the wall base, usually expressed in a ratio such 3:1 (3-feet horizontal and 1-foot vertical) or in degrees, 18.4° or in percent, 33%.

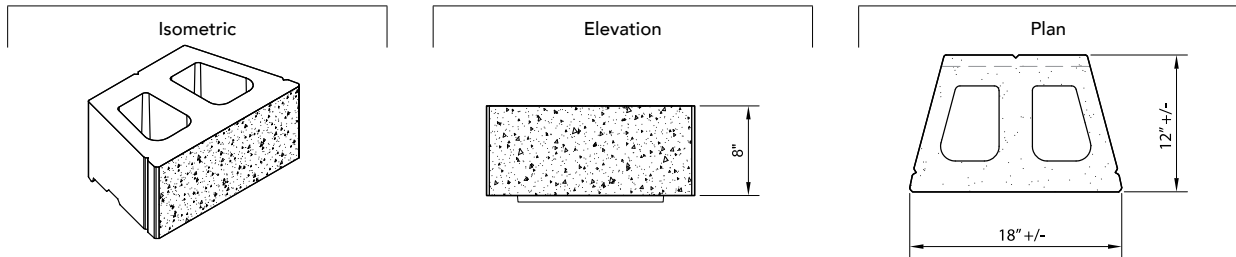
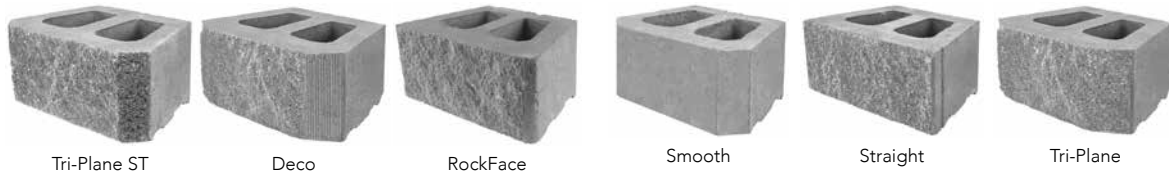
Unit Drainage Fill – Free-draining crushed stone that is placed within and immediately behind the Keystone concrete units, measuring 2-feet in total depth from the proposed wall face. Also see drainage zone.

Wall Batter – The wall face angle measured in degrees from vertical.

Regal Stone Pro® Series

DESIGN AND BUILD WITH CONFIDENCE

Our Regal Stone Pro® series includes a comprehensive assortment of face styles to satisfy virtually any aesthetic requirement. Having a block design proven by an extensive field performance record and supported with technical resources, this rear-lipped Regal Stone Pro® series has become a trusted favorite of specifiers, installers, and owners alike.



	Tri-Plane ST	Deco	RockFace	Smooth	Straight	Tri-Plane	Medley	RockFace 3-pc		
								Small	Medium	Large
Unit Height (in.)	8							8		
Unit Width (in.)	17.9	17.9	18	17.9	18.6	17.9	18	7	11	18
Unit Depth (in.)	12							12		
Face Area per Unit (SF)	0.99	0.99	1.00	0.99	1.03	0.99	1.00	0.39	0.61	1.00
Unit Weight (lbs.)	76-84							28-32	47-53	76-84
Volume of Voids to Tail (CF)	0.42							0.20	0.30	0.42

Note: Unit weights, dimensions and availability vary by manufacturer. Please contact your local representative.

The information contained herein has been compiled by Keystone Retaining Wall Systems® LLC and to the best of our knowledge, accurately represents the Keystone product used in the applications which are illustrated. Final determination of the suitability for the use contemplated and its manner of use are the sole responsibility of the user. Design and analysis shall be performed by a qualified engineer.