

# GENERAL INFORMATION

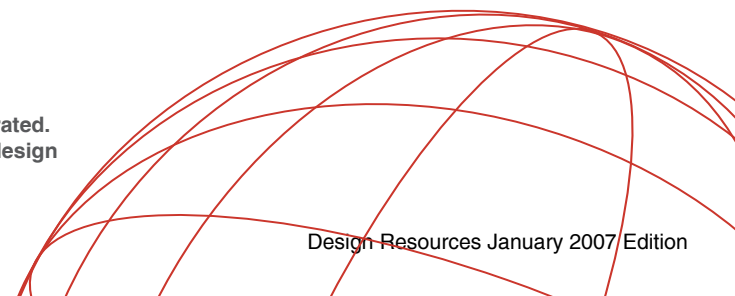
**REDI★ROCK**

**ASSUMPTIONS**

**SOFTWARE AVAILABLE**

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Every Redi-Rock distributor/manufacture is independantly owned and operated. Patents pending on various design criteria. We reserve the right to modify design or specifications without incurring obligation.



## Engineering Assumptions

The gravity wall and reinforced wall charts shown on the following pages are based on our understanding of the concepts and principles for the design of segmental retaining walls as described in the National Concrete Masonry Association (NCMA) [Design Manual for Segmental Retaining Walls, Second Edition](#). The design calculations used to derive these charts are available upon request. These charts are not intended to be used for actual construction and all final designs for construction purposes must be performed by a registered professional engineer qualified to design segmental retaining wall structures, using the actual conditions of the proposed site. Many other design applications that are not specifically shown in these charts may also be possible. Contact your local engineer to determine the suitability of Redi-Rock blocks on unique sites.

### Assumed Criteria for Chart Calculations

- Soil friction angles ( $\Phi$ ) of 28°, 30°, and 34° for standard walls.
- Soil friction angle ( $\Phi$ ) of 28°, 30°, 34° and 40° for specialty walls using planter blocks.
- **Global stability has not been considered.** It is recommended that a local engineer compute and apply all local conditions and factors, including global stability, to the site-specific wall design.
- Testing of the Redi-Rock mechanical geo-connectors and interface shear was completed by Bathurst, Clarabut Geotechnical Testing, Inc. Test reports are available on the Redi-Rock website [www.redi-rock.com](http://www.redi-rock.com)

### Factors of Safety

Wall Sliding Resistance =	1.5
Wall Overturning =	1.5 – Non Reinforced, 2.0 - Reinforced
Wall Bearing Capacity =	2.0

### Material Assumptions

Unit Weight of Concrete =	143 pcf
Minimum Concrete Compressive Strength =	4000 psi
Steps & Pavers Average Concrete Compressive Strength =	4000 psi
Moist Soil Unit Weight =	120 pcf
Infill Soil Unit Weight =	100 pcf

## Engineering Assumptions Continued

### Minimum Turning Radius

<u>Length of Block</u>	<u>Radius in Feet</u>	<u>Direction of Turn</u>
46"	14.5'	convex or concave
23"	8.0'	convex or concave

These assumptions were made to provide Redi-Rock International with an approximate retaining wall height. These wall heights were calculated using the assumed material properties and may vary from location to location depending on the soil properties. For this reason, all final designs for construction purposes must be performed by a registered professional engineer qualified to design segmental retaining wall structures, using the actual conditions of the proposed site.

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## Commercially Available Engineering Resources

NCMA Design Manual for Segmental Retaining Walls (SRW), 2<sup>nd</sup> Edition, National Concrete Masonry Association, 13750 Sunrise Valley Drive, Herndon, Virginia 20171-4662 (703) 713-1900  
Available at [www.ncma.org](http://www.ncma.org)

NCMA Design Software for Segmental Retaining Walls – SRWall  
SRW design for both conventional gravity and soil reinforced walls with simple geometry. Excludes overall stability analysis.  
Available at [www.ncma.org](http://www.ncma.org)

MSEW (Mechanically Stabilized Earth Walls) by ADAMA Engineering, Inc.  
MSEW will handle more complex loading and wall geometry, including tiered walls. MSEW follows AASHTO and FHWA guidelines.  
Available at [www.msew.com](http://www.msew.com)

ReSSA (Reinforced Soil Slope Analysis) by ADAMA Engineering, Inc.  
Global stability analysis to assess the rotation and translational stability of slopes.  
Available at [www.msew.com](http://www.msew.com)

## IMPORTANT NOTICE

The design specifications for Redi-Rock blocks suggest maximum installation heights under certain assumed conditions. These wall heights were calculated using the assumed material properties and loading conditions in The Design Resource Manual and will vary from location to location depending on the soil properties and terrain. Since soil conditions and topography vary greatly from site to site an engineering analysis must be performed for each wall installation.

Because Redi-Rock International does not build the blocks or install the wall system, Redi-Rock International does not assume any responsibility regarding structural stability of any particular blocks or particular wall system. In addition, Redi-Rock International assumes no responsibility in connection with any injury, death or property damage claim whatsoever whether asserted against a Lessee, Lessor, Purchaser or others, arising out of or attributable to the operation of or products produced with Redi-Rock International equipment.