

# Fence Block Specifications & Installation Instructions



## Article 1: Background

- 1.1 Nature of Project
  - 1.1.1 The work to be performed includes sourcing, providing, and installing concrete free-standing fence wall blocks to the lines and grades as specified on the project construction drawings and as may be further specified herein.
  - 1.1.2 All free-standing fence walls are to be built pursuant to a site specific design and analysis prepared by a registered professional engineer who is familiar with the product (the "wall engineer").

## Article 2: Fence Wall Blocks

- 2.1 The Fence Block
  - 2.1.1 The fence wall block shall be produced by authorized ReCon manufacturers. (Check at [www.reconwalls.com](http://www.reconwalls.com) for a complete list of authorized manufacturers.)
  - 2.1.2 The block shall have average 28-day compressive strength of no less than 4000 PSI.
  - 2.1.3 Concrete shall have air entrainment by volume (as measured in the plastic state in accordance with ASTM C172) of:
    - 2.1.3.1 5.5 - 8.5 percent, or
    - 2.1.3.2 In conformity with ASTM C94 (Table 1 and Section 7), latest revision.
  - 2.1.4 Exterior dimension at the face shall be 48" by 16" for the full fence block; 24" by 16" for the half fence block; and 48" by 6 1/2" for the capstone. Depth of the full and half fence block shall be 24". Depth of the capstone shall be 26".
  - 2.1.5 Texture on the face of the fence block should be as specified. Check with the authorized manufacturer in your area for availability of LeSueur County Limestone, North Shore Granite, Rustic, or Weathered Edge.

## Article 3: Free Standing Fence Wall Construction

- 3.1 Excavation
  - 3.1.1 The contractor shall excavate to the lines and grades shown on the construction drawings. The contractor shall be careful not to disturb base beyond the lines shown.
- 3.2 Foundation Soil Preparation
  - 3.2.1 Foundation soil shall be excavated as required for footing or base dimensions shown on the construction drawing, or as directed by the Engineer. Foundation soils must have a minimum bearing capacity of 2000 pounds per sq. ft.
  - 3.2.2 Walls constructed on frost susceptible or expansive soils may require special provisions, to avoid the detrimental effects of volume changes in the soils. Generally, differential vertical movement of bearing surfaces greater than 1 inch in 10 feet would be unacceptable. Special provisions may include increased depth of embedment, installation of buried drain tile, positive surface drainage away from the wall, etc. A qualified geotechnical engineer should be engaged to confirm soil bearing capacity and other soil properties which may require special design considerations.
- 3.3 Base / Leveling Pad
  - 3.3.1 Base must be placed as shown on the construction drawings with a minimum thickness of 6 inches. Base materials are to be as specified by the wall engineer. Generally the Base shall be on a layer of compacted granular material to permit drainage beneath the wall. Suitable granular materials are coarse sand, crushed stone, or a stabilized base material typical for pavements (Class Five). The width of

- the prepared base must extend a minimum of 6 inches in front of both faces of the Fence Block (i.e., a minimum width of 36").
- 3.3.2 Base materials shall be placed on engineered fill or competent natural soils with a minimum bearing capacity of 2000 pounds per sq. ft.
  - 3.3.3 Base material shall be compacted so as to provide a smooth, hard surface on which to place the first course of units. Compaction will be with mechanical plate compactors to 95% of standard proctor.
  - 3.3.4 Base shall be prepared to ensure contact of Fence Base Block unit with base. Spacing or gaps between blocks shall not be allowed.
  - 3.3.5 Base materials shall be to the depths and widths shown. The contractor may opt for using reduced depth of sands and gravel and a 1" to 2" concrete topping. Concrete shall be lean, unreinforced and a maximum of two inches thick. Where a reinforced footing is required, place below frost line.
- 3.4 Unit Installation
- 3.4.1 First course on units shall be the **Base Fence Block** units and shall be placed on the prepared base. The first course is the most important to ensure accurate and acceptable results.
  - 3.4.2 Ensure that units are in full contact with base.
  - 3.4.3 Units are placed end to end for full length of wall alignment. Alignment shall be done by using a string line or offset from a base line.
  - 3.4.4 After the Base Fence Block has been placed and before proceeding to the placement of the next row of block, compaction to the specified embedment depth must be done on both sides of the Base Fence Block taking care to keep the blocks level.
  - 3.4.5 See Fence and Guardrail Block Reference Manual for the various types of Fence Blocks available for construction of the wall.
  - 3.4.6 A Capstone or a Full High Cap (see Fence and Guardrail Block Reference Manual) should be used to cap the Fence Block. The Capstone should be glued with a concrete adhesive.
- 3.5 Turning Radius
- 3.5.1 Given the design of the Fence Block with an "end to end tongue and groove", it is possible to do curved walls using the standard Fence Block. When building curved fence walls, be aware that on the outside / concave curve side of the wall there will be a "gap" between the textured portion of the fence blocks. However, the tongue which protrudes from the end of the Fence Block will fill that "gap" so that the wall remains a solid wall with no visible spaces or gaps into the wall itself. The minimum turning radius that can be achieved so that the tongue on the end of the Fence Block reaches across the "gap" is 15 feet.
  - 3.5.2 A curved wall can reduce the "engineered strength" of the Fence Wall. It is important that the registered professional engineer that designed the wall be aware of the curves in the wall and consider the impact of the curves in the design of the wall.
  - 3.5.3 Capstone Placement
    - 3.5.3.1 With a curved wall, the Capstone Block will need to be cut in the field before it is installed and glued.

## Article 4: Staining and Sealing

### 4.1 Staining

- 4.1.1 Before staining, the wall should be power washed and allowed to dry. This removes any dirt and / or form oil from the face of the block. This is very important.
- 4.1.2 Recommended stains include Sherwin Williams H & C Shield Plus Concrete Stain or TK Products Stain #5272. Both are latex / water based and can be applied with either an electric airless sprayer or a compressed air sprayer. Sherwin Williams is

available at retail outlets across the country. For a distributor of the TK Products near you, contact TK Products at 11400 West 47<sup>th</sup> Street, Minnetonka, MN 55343, 1-800-441-2129. It is suggested that you have your customer provide a sample of the color they want to replicate. That color can then be taken to the stain distributor and used to mix the base coat and the highlights. Some staining contractors may have samples that they can provide to you to choose from. The concrete should be at least 28 day cured before staining.

- 4.1.3 The wall can be stained a one coat one color stain, or it can be stained with a base color and then highlighted with several different shades to more closely approximate a weathered natural stone look. Generally, the "highlights" are applied to several blocks in a random fashion, and then before the highlights dry, they are wiped out with a wet sponge. This helps to blend the highlights into the block, making them look more natural.
- 4.1.4 The stain should not be applied if it is going to be below 45 degrees prior to the stain having a chance to dry. Consult the manufacturer's instructions for proper application of the stains.

#### 4.2 Sealing

- 4.2.1 Some customers ask that their wall be sealed. This may be particularly relevant if the wall is in a road splash zone where winter road salts might get on the face of the wall.
- 4.2.2 If you are using the TK Products stain, then TK Products also sells a number of sealers that are compatible with their stains, including TK-290-12. This is a solvent-based 12% Siloxane sealer. The manufacturer indicates that it must be 32 degrees or above before this should be applied. In addition, the blocks must be completely and thoroughly dry before sealing. This is more than just dry to the surface touch. The water and the mineral based sealer do not mix. Thus, after the power wash, you will need dry warm weather and the passage of time before the sealer can be applied. Yes, the sealer is applied **before** the stain is applied.

## Article 5: Warranty

- 5.1 Each Block will have a 28 day compressive strength of at least 4000 PSI for 15 years after proper installation. If a Block does not meet this warranty standard, please notify the manufacturer in writing. If after it has been determined that the Block has not met the specifications, the manufacturer will have shipped to you, replacement Blocks which shall be the manufacturer's sole remedy for breach of this warranty. However, neither the manufacturer nor ReCon Wall Systems, Inc. shall have any obligation to install such replacement Blocks.
- 5.2 This warranty shall not apply to any Block which is damaged, defective or fails to meet the warranty standard due to improper installation of the Block, chemical contact, structural design of the wall, or excessive and unforeseen site conditions beyond the manufacturer's or ReCon Wall Systems, Inc.'s control.
- 5.3 The above warranty is the exclusive limited product warranty. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED

This Specification and Installation Instruction should be read in conjunction with the Fence and Guardrail Block Reference Manual.

Index of Important Engineering Reports:

Ericksen Roed & Associates Structural Engineers Report dated 12/2/05, Section 1.0, Free-Standing Wall and Exhibit A.

MRJ Engineering Barrier Sliding Analysis 10/3/05 and 11/5/05