

Grout Bond Strength of Masonry Containing DRY-BLOCK®

Concrete masonry is often filled with grout to increase its structural performance. The high water content of the grout not only facilitates placement, but it also helps compensate for highly absorptive concrete masonry units (CMU) allowing for adequate compressive strength and bonding.

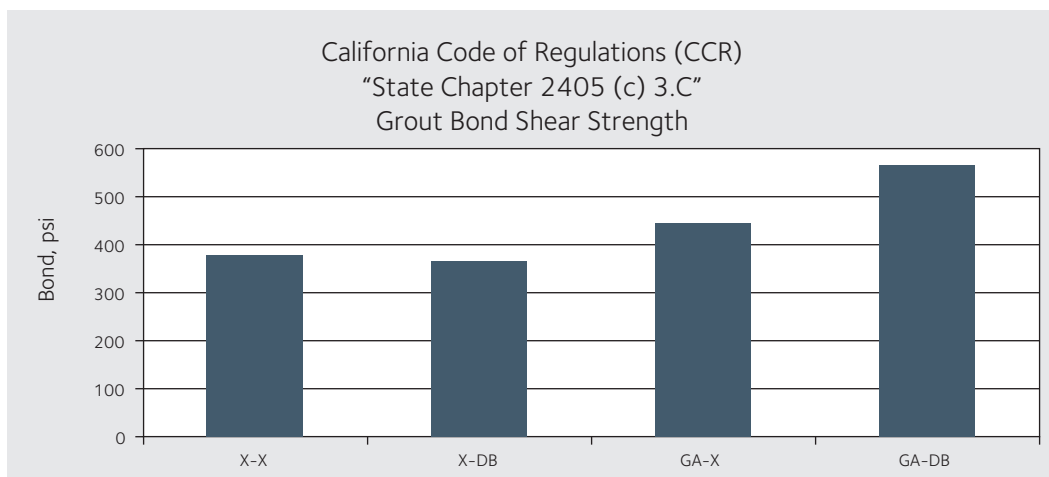
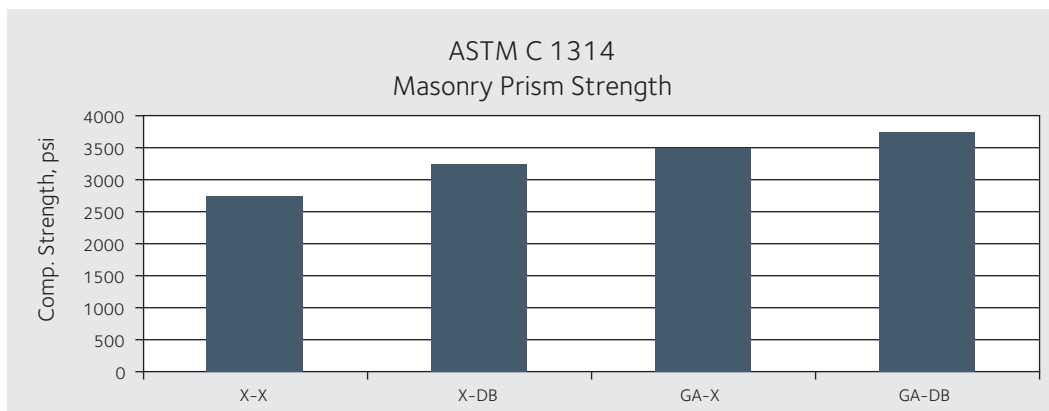
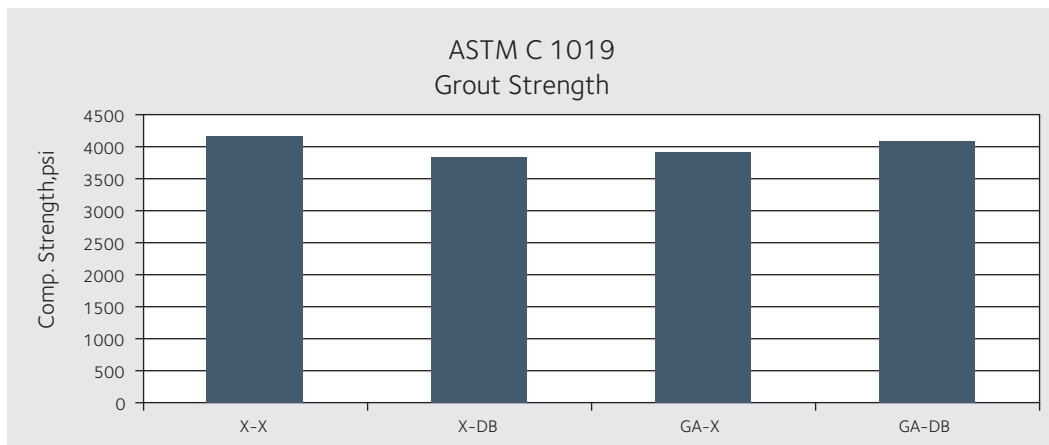
Often times masonry containing DRY-BLOCK® admixtures is grouted. However, because the CMU and mortar are less absorptive, questions arise as to whether adequate compressive strength and bond are achieved. DRY-BLOCK masonry is designed to withstand approximately two inches of hydrostatic head pressure, which is equivalent to a +60 mph wind driven rain conducted in accordance with ASTM E 514 Standard Test Method for Water Penetration and Leakage Through Masonry. Grout, when properly placed, typically exerts hydrostatic head pressures greater than two inches. Thus, rather than the CMU pulling the water and cement paste into its matrix, it is pushed or forced into the CMU. This mechanism creates intimate contact between the grout and the CMU and ensures adequate performance.

Independent tests, conducted at the National Concrete Masonry Association Research and Development Laboratory, support this fact. Concrete masonry prisms (two block high) and piers (six block high) were constructed using CMU and mortar with and without

DRY-BLOCK® admixtures. Coarse grout, with and without a water-reducing, expansive grout admixture, was mixed according to requirements stated in ASTM C 476 Standard Specification for Grout for Masonry. The DRY-BLOCK and non-DRY-BLOCK prisms and piers were each filled with the plain and admixed grout. **Neither DRY-BLOCK Block nor DRY-BLOCK Mortar Admixtures were added to the grout.**

The grout was tested in accordance with ASTM C 1019 Standard Test Method for Sampling and Testing Grout. The compressive strength of the masonry prisms was determined in accordance with ASTM C 1314 Standard Test Method for Compressive Strength of Masonry Prisms. Finally, the grout bond shear strength of the piers was determined following guidelines of the California Code of Regulations, (CCR) State Chapter 2405 (c) 3.C.

The results from these tests are illustrated in the tables on the reverse side of this technical bulletin. In summary, the addition of DRY-BLOCK® admixtures to the CMU and mortar does not compromise the compressive strength of the grout, the compressive strength of the masonry prisms or the bond between the grout and CMU.



XX-X = Plain grout/Non-DRY-BLOCK CMU & Mortar; **X-DB** = Plain grout/DRY-BLOCK CMU & Mortar
GA-X = Grout admixture/Non-DRY-BLOCK CMU & Mortar; **GA-DB** = Grout admixture/DRY-BLOCK CMU & Mortar

gcpat.com | North American Customer Service: 1-877-423-6491

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

Strux is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2016 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

In Canada, 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

GCP0083 STRUX-46-1016



gcp applied technologies