

Structural Compressive Testing On Precast Bond Beam Grout

The following tech sheet summarizes the results of compression tests performed on grout samples used in an AB Fence Panel Precast Bond Beam. This summary provides information on test procedures and results.

The test was conducted to obtain compression strength data on grout samples produced in a field setting. Stork-Twin City Testing of St. Paul, MN, using ASTM C1019 grout testing criteria, tested the samples. This test is a direct extension of bond beam tests summarized in **AB Fence Tech Sheet #2002**. Figure 1 shows a portion of the sand mix grout bond beam after flexural testing. It shows a nearly monolithic consistency with the AB Panel Block and horizontal reinforcement. The grout samples were mixed in a field size mixer using an approximate ratio of 5 shovels of Portland cement to 20 shovels of sand with water to a mortar consistency. The grout cubes were formed by casting them in the hollow cores of the AB Fence Panel Block and vibrated to achieve 100% fill, which simulates the actual field construction process the bond beam will undergo in the field. Once cured, the cubes were cut from the Panel Block for testing. There were 6 samples produced, 3 for 7 days and 3 for 28 days.



Figure 1: Sand Mix Grout in Panel Block

Results

These tests show that even under site conditions sand mix grout will achieve greater than the minimum design strength of 3000 psi (20.7 MPa). Table 1 shows the results of all six samples well exceeding the minimum.

Test Number	7 DAY		28 DAY	
	Psi	MPa	Psi	MPa
1	3890	26.8	4150	28.6
2	4030	27.8	5120	35.3
3	4570	31.5	6040	41.6
Average	4163	28.7	5103	35.2
% Exceeding Minimum	139%		170%	

Table 1: Compressive Test Results