



# Material Performance Specification

## Five Star® HP Epoxy Grout

- A. Non-shrink epoxy grout shall be 100% solids, pre-packaged system containing thermosetting epoxy resins, expansive additives, and inert fillers.
- B. The manufacturer shall be ISO 9001 certified and have a minimum of 25 years of experience in the manufacture of non-shrink epoxy grouts.
- C. The manufacturer shall provide an experienced technical representative to be present during a pre-grout meeting and during the initial mixing and placement of the materials with sufficient notice (5 working days).
- D. The grout material shall meet all the following typical performance criteria when cured at 70 °F (21 °C) <sup>1</sup>:

1.	<b>Compressive Strength</b> , ASTM C 579B at Load Rate II (0.25 inches per minute)	
	16 Hours	11,000 psi (75.9 MPa)
	1 Day	15,000 psi (103.5 MPa)
	7 Days	16,500 psi (113.9 MPa)
	Post-cured at 140 °F (60 °C)	17,500 psi (120.8 MPa)
2.	<b>Compressive Modulus</b> , ASTM C 579B at Load Rate II (0.25 inches per minute)	
	16 Hours	1.6 x 10 <sup>6</sup> psi (11.0 x 10 <sup>3</sup> MPa)
	1 Day	2.0 x 10 <sup>6</sup> psi (13.8 x 10 <sup>3</sup> MPa)
	7 Days	2.2 x 10 <sup>6</sup> psi (15.2 x 10 <sup>3</sup> MPa)
	Post-cured at 140 °F (60 °C)	2.5 x 10 <sup>6</sup> psi (17.2 x 10 <sup>3</sup> MPa)
3.	<b>Height Change</b> , ASTM C827, 90 °F (32 °C)	Positive expansion
4.	<b>Effective Bearing Area (EBA)</b> , ASTM C1339/1339M-18	95%
5.	<b>Creep</b> , ASTM C1181, 1 Year, 400 psi (2.8 MPa), 140 °F (60 °C)	1.2 x 10 <sup>-3</sup> in/in (mm/mm)
6.	<b>Tensile Strength</b> , ASTM C307	2,400 psi (16.6 MPa)
7.	<b>Flexural Strength</b> , ASTM C580	4,800 psi (33.1 MPa)
8.	<b>Coefficient of Thermal Expansion</b> , ASTM C531	17 x 10 <sup>-6</sup> in/in/°F (30 x 10 <sup>-6</sup> mm/mm/°C)
9.	<b>Bond to Concrete</b> , ASTM C882	Concrete Failure
10.	<b>Working Time</b>	60 minutes
11.	<b>Placement Depth</b> (in a single/monolithic pour)	4 inches – 6 inches (100 mm – 150 mm)
12.	<b>Application Temperature</b>	55 °F – 95 °F (13 °C – 35 °C)

- E. An acceptable product which meets the above criteria is **Five Star® HP Epoxy Grout** as manufactured by Five Star Products, Inc., Shelton, CT [203-336-7900].
- F. The grout shall be installed in accordance with the grout manufacturer's installation instructions. Any deviations to the grout manufacturer's handling, mixing, and/or installation instructions that are required shall be approved in advance by the project engineer and/or the project manager.

<sup>1</sup> The data shown above reflect typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result in the field. Test methods are modified where applicable.

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