



**FIVE STAR**

# Material Performance Specification

## Five Star® Rapid Epoxy Grout

- A. Non-shrink epoxy grout shall be 100% solids, rapid strength gain, 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)	
	8 Hours	8,000 psi (5.2 MPa)
	1 Day	14,000 psi (96.5 MPa)
	7 Days	15,000 psi (103.5 MPa)
	Tested at 180 °F (82 °C)	11,000 psi (75.9 MPa)
2.	<b>Compressive Modulus</b> , ASTM C 579B at Load Rate II (0.25 inches per minute)	
	8 Hours	1.3 x 10 <sup>6</sup> psi (0.9 x 10 <sup>4</sup> MPa)
	1 Day	1.6 x 10 <sup>6</sup> psi (1.1 x 10 <sup>4</sup> MPa)
	7 Days	1.7 x 10 <sup>6</sup> psi (1.2 x 10 <sup>4</sup> MPa)
	Tested at 180 °F (82 °C)	1.2 x 10 <sup>6</sup> psi (0.8 x 10 <sup>4</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, 600 psi (4.1 MPa), 140 °F (60 °C)	1.8 x 10 <sup>-3</sup> in/in (mm/mm)
6.	<b>Tensile Strength</b> , ASTM C307	2,400 psi (16.5 MPa)
7.	<b>Flexural Strength</b> , ASTM C580	
	7 Days	5,000 psi (34.5 MPa)
	Tested at 180 °F (82 °C)	4,000 psi (27.6 MPa)
8.	<b>Flexural Secant Modulus</b> , ASTM C580	
	7 Days	2.0 x 10 <sup>6</sup> psi (1.3 x 10 <sup>4</sup> MPa)
	Tested at 180 °F (82 °C)	1.4 x 10 <sup>6</sup> psi (0.9 x 10 <sup>4</sup> MPa)
9.	<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)
10.	<b>Bond to Concrete</b> , ASTM C882	Concrete Failure
11.	<b>Working Time</b>	30 minutes
12.	<b>Placement Depth</b> (in a single/monolithic pour)	½ inch – 3 inches (13 mm – 75 mm)
13.	<b>Application Temperature</b>	55 °F – 95 °F (13 °C – 35 °C)

- E. An acceptable product which meets the above criteria is **Five Star® Rapid 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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