



Material Performance Specification Five Star® XP 230 Epoxy Grout

A. Non-shrink epoxy grout shall be a 100% solids, premeasured, prepackaged system containing thermosetting epoxy resins, expansive additives, and inert fillers. The manufacturer shall be ISO 9001 certified and have a minimum of 10 year's experience in the manufacture of non-shrink epoxy grouts. The manufacturer shall offer technical services and provide a representative at the jobsite upon request with sufficient notice (5 working days).

B. The grout material shall meet all the following typical performance criteria when cured at 70 °F (21 °C): ¹

1.	Compressive Strength , ASTM C 579B ²			
	Age	50 °F (10 °C)	70 °F (21 °C)	90 °F (32 °C)
	12 Hours	1,000 psi (6.9 MPa)	15,000 psi (103.4MPa)	19,000 psi (131.0 MPa)
	1 Day	10,000 psi (68.9 MPa)	19,000 psi (131.0 MPa)	21,000 psi (144.7 MPa)
	7 Days	20,000 psi (137.8 MPa)	22,000 psi (151.6 MPa)	23,000 psi (158.5 MPa)
	28 Days	21,000 psi (144.7 MPa)	23,000 psi (158.5 MPa)	23,500 psi (162.0 MPa)
2.	Height Change , ASTM C1090, 90 °F (32 °C)		0.0 - 0.3%	
3.	Effective Bearing Area (EBA)		≥ 85%	
4.	Modulus of Elasticity , ASTM C469, 28 days		> 4.0 X 10 ⁶ psi (27.6 GPa)	
5.	Tensile Strength , ASTM C307		≥ 2,500 psi (17.2 MPa)	
6.	Creep , ASTM C1181, 1 Year, 400 psi (2.8 MPa), 140 °F (60 °C)		≤ 5 x 10 ⁻⁴ in/in (mm/mm)	
7.	Flexural Strength , ASTM C580		≥ 5,500 psi (37.9 MPa)	
8.	Bond to Concrete , ASTM C882		Concrete Failure (> 4,000 psi)	
9.	Coefficient of Thermal Expansion , ASTM C531		≤ 12 x 10 ⁻⁶ in/in/° F (22 x 10 ⁻⁶ mm/mm/° C)	
10.	Peak Exotherm , ASTM D2471 (6" x 12" Cylinder)		≤ 110 °F (43 °C)	
11.	Working Time		≥ 45 minutes	
12.	Placement Depth (in a single/monolithic pour)		2 inches – 18 inches (50 mm – 457 mm)	

An acceptable product which meets these criteria is: **Five Star® XP 230 Epoxy Grout** as manufactured by Five Star Products, Inc., Shelton, CT [203-336-7900].

C. The grout shall be installed in accordance with the grout manufacturer's installation instructions.³

¹ 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.

² Materials tested per ASTM C579 B. Rate of loading 0.25 inches per minute.

³ 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.

