

DESCRIPTION



Five Star Grout is the industry's leading cement-based, non-metallic, non-shrink grout for supporting machinery and equipment. It is formulated with Air Release technology that combines high performance with the greatest reliability. When tested in accordance with ASTM C 827, Five Star Grout exhibits positive expansion. Five Star Grout meets the performance requirements of ASTM C 1107-02 Grades A, B and C, ASTM C 1107-07, and CRD-C 621-93 specifications for non-shrink grout over a wide temperature range.

KEY BENEFITS

- Pour, pump or dry pack
- 45 minute working time
- Air release expansion technology
- No gas generating additives such as aluminium powder
- Expansive, non-shrink from time of placement
- Reliable expansion in varying conditions
- High effective bearing area, typically 95%
- Permanent support of machinery, bearing pads, baseplates etc.

TYPICAL APPLICATIONS

- Precision support of machinery & equipment
- Precision support of bearing pads & baseplates
- Precision support of tanks & vessels
- Non-shrink precision grouting of structural steel
- Non-shrink precision grouting between precast elements

TECHNICAL DATA

Typical Properties at 21°C	
Early Height Change ASTM C 827	1 to 4%
Hardened Height Change ASTM C 1090	0 to 0.3%
Effective Bearing Area	95%
Bond Strength ASTM C 882	13.8MPa @ 28 days
Pull out Strength, Shear bond #5 deformed bar	16.6MPa @ 7 days
Working Time at 21°C	45 minutes
Compressive Strength ASTM C 942 (C 109 Restrained)	MPa
1 day	19.9
7 days	54.7
28 days	64.0

The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result. Test methods are modified where applicable.

PACKAGING & YIELD

Five Star Grout is packaged in heavy-duty, polyethylene lined bags and is available in 20 kg units yielding approximately 0.0124 cubic metres (12.4 L) of hardened material at maximum water content.

SHELF LIFE & STORAGE

1 year in original unopened packaging when stored in dry conditions. High relative humidity will reduce the shelf life.



▶ APPLICATION GUIDELINES

NOTE: Prior to application, read all product data & packaging thoroughly. For more detailed placement procedures, refer to Five Star's Design-A-Spec installation guidelines.

SURFACE PREPARATION:

All surfaces in contact with Five Star Grout shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound and roughened to ensure a good bond. Soak concrete surfaces for 8 to 24 hours prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water.

FORMWORK:

Formwork shall be constructed of rigid non-absorbent materials, securely anchored, liquid-tight and strong enough to resist forces developed during grout placement. The clearance between formwork and baseplate shall be sufficient to allow for a headbox. The clearance for remaining sides shall be 25 - 50 mm. Areas where bond is not desired must be treated with form oil, paste wax or similar material. Isolation joints may be necessary depending on pour dimensions. Use suitable baseplate air relief holes as required. It is important to refer to Five Star's cementitious grout shoulder design recommendations. Refer to Five Star's Design-A-Spec or seek technical advice if further information is required.

MIXING:

Follow printed instructions on the package. Always add mixing water first to mixer followed by grout. Mix Five Star Grout thoroughly for approximately 4 to 5 minutes to a uniform consistency with a mortar mixer (stationary barrel with moving blades). A drill and paddle mixer is acceptable for single bag mixes. For optimum performance condition materials & surfaces to between 15°C & 25°C. Use chilled or heated water to help adjust working time. At time of placement, if temperatures are below 5°C & above 30°C refer to Five Star's Design-A-Spec & Technical Bulletins for cold & hot weather grouting procedures. Mix Five Star Grout with maximum 4L of potable water per 20 kg bag. Do not exceed 4L of mixing water or an amount that will cause segregation. Working time is approximately 45 minutes at 21°C.

METHODS OF PLACEMENT:

Five Star Grout may be dry packed, poured or pumped into place. Minimum placement thickness for Five Star Grout is 25 mm. For pours over 150 mm in depth Five Star Grout should be extended with a clean, damp coarse aggregate meeting the requirements of ASTM C 33. Refer to the Five Star's Design-A-Spec & Cement Grout Aggregate Extension technical bulletin for guidelines. When extending with coarse aggregate, pre-project trials & testing are recommended.

POST-PLACEMENT PROCEDURES:

Five Star Grout shall be wet cured for a minimum of 3 days, or coated with an approved curing compound meeting the requirements of ASTM C 309 after a minimum 24 hour wet cure. In-service operation may begin immediately after the required grout strength has been reached.

▶ **HEALTH & SAFETY**

Contains cementitious material & crystalline silica. International Agency for Research on Cancer has determined that there is sufficient evidence for the carcinogenicity of inhaled crystalline silica to humans. Take appropriate measures to avoid breathing dust. Avoid contact with eyes & contact with skin. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Immediately call a physician. Wash skin thoroughly after handling. Keep product out of reach of children. Prior to use, refer to the material safety data sheet.