

# SOLUTIONS | Case Study



Grouting took place in accommodating conditions of between approximately 66°F and 73°F (19°C and 23°C) with surface temperatures of the baseline and substrate above 59°F (15°C).

Port of Brisbane — Berth 6 & 7

Phases 1-2

Queensland, Australia

Product:

Five Star® Crane Rail Grout



**FIVE STAR**

Specified by the World's Best™

# Port of Brisbane – DP World Terminal



**Date of Project:** June 2017 – September 2017

**Project Owner:** Port of Brisbane (PBPL)

**Project Contractor:** McMahon Services

**Project Engineer:** KBR

**Market/Environment:** Wharf Crane Rail

**Substrate:** Concrete

**Size of Project:** Approximately 644 x 12.25 liter units

## The Challenge

McMahon Services, assisted by sister company Ballestrin, needed to finish each phase of this project within a very short window of time. They ran day and night shifts to get each phase completed and when it came to the grouting, they needed a product that would be easy to mix and apply, thereby minimizing the time required to get the grout placed. The grout also needed to gain strength quickly to allow them to complete the rest of the rail installation and give the phase back to PBPL with minimum down time to the terminal.

## Five Star® Solution

Because it readily met all requirements for this job, Five Star® Crane Rail Grout was chosen for this project. The concrete trenches were prepared using high pressure water blasting to provide a coarse, exposed aggregate finish, which served as a mechanical key for the subsequent grout placement. Prior to grouting, compressed air was used to blow out any dirt and debris from the trenches, thereby ensuring that the substrate was clean, dry and sound.

Grout was placed from between 0.75" up to +/- 2" (19mm up to +/- 50mm). In some sections however, the grout exceeded 3" (75mm) in depth. In these areas, the heat sink offered by the rails and the use of isolation joints at approximately 13 foot (4 meter) centers negated the danger of any excessive exotherm.

In each of the phases the grouting was completed efficiently and effectively in a matter of hours. The performance of the Crane Rail Grout more than met the expectations of the team and contributed to the successful, on-time completion of each phase.

## Five Star® Crane Rail Grout

### 0.4" to 3.0" Crane Rail Clearance

Five Star® Crane Rail Grout is a highly flowable, non-shrink, rapid strength gain, epoxy grout for tight clearance applications and dynamic loads. As a three component, 100% solids epoxy system it exhibits positive expansion when tested in accordance with ASTM C 827 for precision grouting and alignment of crane rail. Five Star® Crane Rail Grout has excellent chemical resistance.

- High flow for tight clearances
- Excellent adhesion to steel
- 95% Effective Bearing Area
- Expansive, non-shrink
- Chemically resistant
- Rapid strength gain for fast turnaround
- Easy to mix and place

## FIVE STAR® SERVICES

- Design-A-Spec™ engineering specification assistance
- Technical on-call center with field and project experienced staff
- Field support representatives for on-site consultation
- Corporate research laboratory available to customize products for unique applications

For worldwide availability, additional product information and technical support, contact your local Five Star® licensee, distributor, local sales representative, or you may call the Five Star Products' Engineering and Technical Service Center at 1-800-243-2206.



FIVE STAR PRODUCTS, INC.  
60 Parrott Drive • Shelton, CT 06484-4733 USA  
Phone: +1 203-336-7900 • Fax: +1 203-336-7930

FiveStarProducts.com