

Encore Rail Concrete Tie Repair Systems



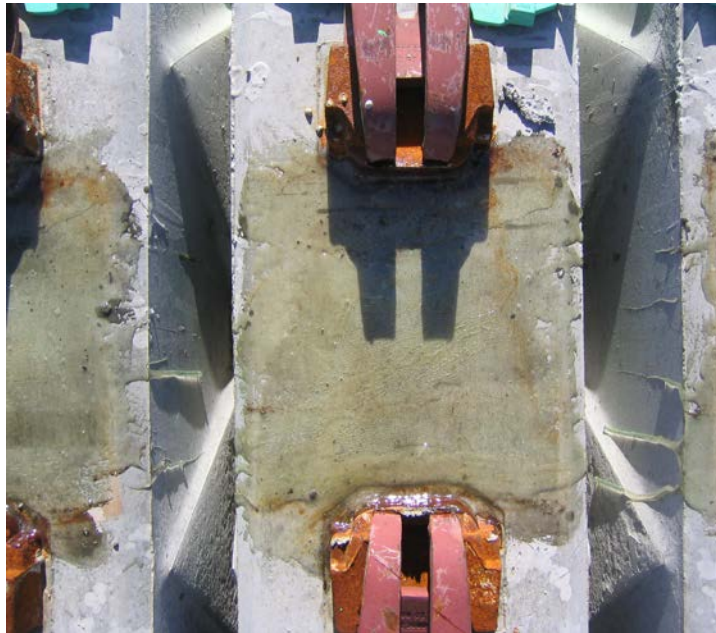
Encore[®]
Rail Systems, Inc.

History

In 2002 Encore Rail developed new equipment and epoxies for the purpose of repairing the rail seat abrasion. By formulating odorless epoxies that would set in a matter of minutes rather than hours and mixing the product through a static mixer. Encores' concrete tie machine and products helped speed up the rail relay and tie repair process to be as fast as on wood.



Encore Rail was responsible for developing many of the specifications for the epoxy used for seat abrasion. We developed two distinct products for the different applications needed. Both products are 1 to 1 in ratio. The medium viscosity is for deep seat abrasion (>1/2"). The other for light seat abrasion. Both products were designed to develop high adhesion and compressive strengths so that the epoxy would take the brunt of the wear as well as seal the concrete from moisture.*



Encore Rail Tie Epoxy Specifications

Description

Encore's High Viscosity (HV) Epoxy is a two component, flexible, gray, filled, epoxy system designed especially for the repair of concrete ties. The two part system is formulated to withstand the heating necessary for application with no crystallization. This material can be heated up to over **400 Degrees F** without signs coagulating or crystallizing. The two part system cures at ambient temperatures with in **10 to 20 minutes** (<40 F) to a minimum of **50 Shore D hardness**. It has been determined that at a Shore D hardness of 50 the epoxy is hard enough to withstand the weight of a locomotive with out distortion.



Encore Rail Epoxy Seat Abrasion Specifications



**Compressive Strength (ASTM-D-695)
13,000 psi at 7 days**

**Bond Strength (ASTM-C-882 3,000 psi at 14
days**

**Modulus of Elasticity (ASTM-D-790)
535,000 psi**

**Meets all ASTM-C 881 specifications for
Type I, II, IV, AND V Grade 3, Class B and C.**

**Encore Rail tests its products at independent
laboratories. Documentation of testing available at
request.**



Encore Light Viscosity Epoxy Cartridges

Encore's manually applied LV Epoxy Cartridges come in 600ml cartridges (12 per case). LV Epoxy is fast curing and easily dispensed for repair of light rail seat abrasion.

600ml Cartridge, Mixers
and Spreading Tool



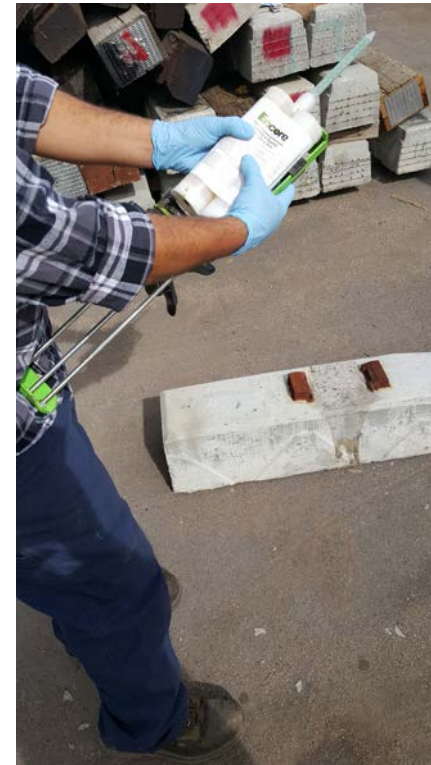
Using threads, screw on
mixing chamber



Place cartridge with mixer
in manual applicator



Snap firmly in place



Cartridge is ready to
dispense



Encore Light Viscosity Epoxy Cartridges

The material is dispensed on the rail seat and can then be spread along the rail seat using a putty knife or trowel. The chemical is pulled to the high side of the rail seat and fills the damages areas. The epoxy is made to cure quickly and reached a hardness of 70 to 80 shore D hardness.



Encore Light Viscosity Epoxy Cartridges

The epoxy is made to cure quickly and reached a hardness of 70 to 80 shore D hardness.



Encore improves the process and products

SpeedSet® UV Light Curing Epoxy System is a patent-pending UV light curing epoxy system for rail seat abrasion protection. SpeedSet® is a single-part, clear, unfilled, low viscosity, epoxy system designed for instant setting with UV light, and performance in all climates.

Encore has developed custom dispensing systems for multiple concrete tie plants for coating in the concrete tie rail seats. This is an effective way to protect and prolong the life of concrete ties.



Encore Rail provides the equipment and training necessary to insure the products and application of the concrete tie repair materials is consistent with improved productivity. Encore can provide epoxy equipment or the dual purpose RTP to suit whatever production needs are.

