

ITEM 564.21010011 – PACK RUST REPAIR

DESCRIPTION

This work shall consist of repairing built up steel members that have been deformed by pack rust (rust build-up) at locations indicated on the Contract Plans and at other locations directed by the Engineer in accordance with the repair procedure described herein and on the Contract Plans.

MATERIALS

Materials for this work shall conform to the following:

1. Epoxy penetrating sealer shall be one of the following or an approved equal:
 - Rustbond Penetrating Sealer, as manufactured by the Carboline Company, St. Louis MO
 - Amerlock Sealer as manufactured by PPG, Montvale NJ
 - MACROPOXY 920 Pre-Prime as manufactured by The Sherwin Williams Company, Cleveland OH
2. Polyurethane Sealant meeting the requirements of Federal Specification TT-S-00230 C, Type II, Class A, Non-Sag, One Component
3. Preformed, closed-cell foam material meeting the requirements of 705-08.

CONSTRUCTION DETAILS

1. The Engineer shall determine the areas requiring repair. The Engineer will identify the locations and limits and shall include all areas shown on the Contract Plans and other locations where built-up steel plate sections are deformed over 3/8 inch and, which in the opinion of the Engineer, require repair.
2. Rivets that interfere with the work or are deteriorated, deformed, or failed shall be removed as determined by the Engineer. Removal of rivets along a gage line shall be staggered such that two adjacent rivets are not removed at the same time.
3. After the existing paint has been removed in accordance with the requirements of Sections 573-3 or 574-3, pack rust in the deformed area shall be removed by power tool cleaning to the depth of separation between the plies, but not less than a minimum depth of one inch. The Engineer may specify a depth of less than one inch but in no case shall the removal depth be less than one-half inch. The Contractor shall comply with all applicable OSHA worker protection requirements.
4. Pressure washing between steel plies where pack rust is present is prohibited.
5. With the pack rust removed, the repair area shall be dried by applying artificial heat until the surface temperature reaches 250° F. The method of applying artificial heat shall be approved by the Engineer. If torches are used the Contractor shall demonstrate to the Engineer that the area can be dried without damaging the steel, or coating that is to remain.

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6. Immediately after the surface has been dried, saturate the repair area by applying a epoxy penetrating sealer (sealer). The sealer shall be applied in accordance with the manufacturer's instructions.
7. After the sealer has dried the empty rivet holes shall be filled with high strength bolts per Section 586.3.03 of the Specifications. The torqueing and sequencing of bolt installations shall be performed in such a manner that separated and deformed plies of plate may be sequentially drawn together.
8. After the bolting has been completed the exposed surfaces and edges of the repair area shall be encapsulated (caulked) with closed-cell foam material and polyurethane sealant. The areas to be sealed shall be free of dirt, dust, rust, or loose paint, and any other material that would interfere with the adhesion of the sealant (caulk). Sealed areas of pack rust repair shall be filled flush with the vertical edges of steel flanges and without voids or air pockets. The sealant (caulk) shall be applied in accordance with the manufacturer's instructions.

METHOD OF MEASUREMENT

The quantity to be measured will be the number of square feet of pack rust removed and sealed, measured on the horizontal surface of the affected flange to the nearest whole square feet.

BASIS OF PAYMENT

The price bid shall include the cost of all labor, materials and equipment necessary to complete the work, except where separate payment has been provided for in this specification or the contract documents.

Removal of rivets and replacement with high strength bolts identified by the Engineer shall be paid under Item No. 586.05.

Removal of lead-based paint shall be paid under the appropriate items in Sections 573 & 574 as shown on the Contract Plans and as directed by the Engineer.

Painting of repaired areas shall be paid under Item No. 573.01nnnn or Item No. 574.03nnnn as shown on the Contract Plans and as directed by the Engineer.