

**ITEM 11573.99 M - LOCALIZED CLEANING, APPLYING
PENETRATING SEALER &
CAULKING EXISTING STEEL**

DESCRIPTION.

The work shall consist of cleaning and applying penetrating sealer to crevices, joints and back-to-back angles of the existing structural steel. The work shall also include applying caulking material to seal the crevices of the existing steel.

MATERIALS.

A. Equipment:

The Contractor shall provide all brushes, discs, wheel, scrapers, descalers, blast cleaning and other cleaning and surface preparation equipment including vacuum-shrouded tools, as needed to conduct the steel cleaning work as indicated. The contractor may supply any recyclable abrasive which contains less than one percent free silica, and is compatible with the requirements of the equipment.

Provide paint brushes, roller, spray equipment and caulking gun to apply the penetrating sealer and caulking material.

All equipment shall be acceptable to the Engineer both prior to, and during, cleaning operations.

B. Penetrating Sealer:

The penetrating sealer used for this work shall be compatible with the paint system used for the localized painting of existing steel (preferably produced by the same paint manufacturer). A list of approved paint types and their manufacturers appears on the Department's approved list.

The unopened containers of penetrating sealers in storage shall be protected from damage and maintained between 5°C and 25°C.

The color of the penetrating sealer will be the Contractor's option. However, it shall be such that it can be completely hidden by a single coat of paint system applied at the minimum specified dry film thickness.

The penetrating sealer shall have the following performance characteristics:

- Low V.O.C. (Volatile Organic Compound)
- Formulated without lead, chromate or mercury components

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- Penetrates surface rust, crevices, back to back angles or any tight rusted surfaces
- Penetrates existing, tightly adhered rust to provide a “tight” substrate
- 100% volume solids
- No shrinkage
- Low viscosity

C. Caulking:

The caulking material for sealing the crevices of the existing steel shall be compatible with the paint system used for the localized painting of existing steel.

The color of the caulking material will be the Contractor's option. However, it shall be such that it can be completely hidden by a single coat of paint system applied at the minimum specified dry film thickness.

The penetrating sealer and caulking material will be accepted on the basis of the manufacturer's written certification that the batch produced meets their product specification. Only sealer arriving at the work site in new, unopened containers and labeled with the manufacturer's name, product name, component part, batch number and shelf life date shall be used. Sealer in containers having expired shelf life dates shall be immediately removed from the work site and not used.

CONSTRUCTION DETAILS.

A. Cleaning.

The contractor is specifically forewarned that cleaning of corrosion, pack rusting, rust staining shall be required by this item at locations indicated by the contact documents, or where ordered by the Engineer.

The contractor shall assume that all material removed is lead-based. Therefore, all wastes resulting from removals shall be treated and disposed as hazardous waste in accordance with all applicable Federal, State, and Local rules and regulations. The contractor's attention is directed to subsection 107-05; SAFETY AND HEALTH REQUIREMENTS.

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All materials not collected by the steel cleaning equipment shall be collected by vacuum methods only. No shoveling, dry sweeping, wet sweeping, or air blowing will be permitted. All vacuums will be equipped with high efficiency particulate (HEPA) filters.

Remove all rust scale and loose pack rust. Remove tight pack rust until highest point is a minimum of 3mm below the surface of the surrounding sound steel. Pack rust that cannot be removed by prying and probing with a dull putty knife is considered to be adherent. Pay particular attention to the crevice areas when removing pack rust and rust scale. Exercise care to avoid nicking or gouging the steel during removal.

B. Penetrating sealer.

Penetrating sealer may be applied by brush, roller or airless spray method unless otherwise recommended by the manufacturer. Complete protection from sealer spatter, spillage, overspray, wind blown sealer, or similar releases of sealer shall be provided. Covers, tarps, mesh and similar materials shall be placed around the work area to protect the public and private property, pedestrian, vehicular, other traffic, all portions of the bridge, highway appurtenances and similar surrounding areas and property, upon, beneath, or adjacent to the structure.

The penetrating sealer is a two components product. The mixing amount and method of mixing for these components must be in accordance with the manufacturer's instruction. Using all material before pot life expiration, and cleaning lines and equipment immediately after use.. Wet coat sufficiently to completely cover and penetrate to the steel surface but do not apply heavy coat. Use coat thickness as recommended by the manufacturer

The penetrating sealer shall be applied within 16-hours after completion of the cleaning operations and before the condition known as flash-rusting occurs. No bare steel surface prepared for penetrating sealer application shall be left uncoated long enough to allow the formation of rust. Cleaned areas upon which rust has formed shall be recleaned in accordance with the cleaning requirement at no additional cost. The presence of rust shall be determined by the Engineer.

The receiving steel surface shall be clean and absolutely dry. The permissible steel surface temperature and the ambient temperature shall be as recommended by the sealer manufacturer. However, in no case, shall the penetrating sealer be applied when the steel surface or the ambient temperatures is below 5°C or above 38°C, and the relative humidity exceeds 85%.

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Drying time is temperature, humidity and film thickness dependent. Use manufacturer's recommended drying schedule to estimate the drying time of the sealer for application of the other coatings.

C. Caulking.

Apply caulking to seal the crevices and areas of pack rust. The contractor shall apply caulking between the application of the intermediate coat and finish coat of paint system.

The contractor shall mix and install the caulking in strict accordance with the approved Cleaning, Surface Preparation, and Painting Plan and the caulking manufacturer's instructions. Allow the caulking to cure in accordance with the manufacturer's instructions prior to the application of additional coatings.

METHOD OF MEASUREMENT.

The work will be measured as the number of linear meters of length required for cleaning steel, applying penetrating sealer and installing caulking. Measurement will be taken at each side of steel girder flange separately.

BASIS OF PAYMENT.

The unit price bid per linear meter shall include the cost of all labor, material and equipment necessary to complete the work.