



**TESORO LOGISTICS OPERATIONS, LLC.
HIGH PLAINS PIPELINE SYSTEM – ND**

**BEULAH BASIN
RAIL LOADING 10" PIPELINE
PROJECT**

**POWERCRETE "J" COATING
OF
GIRTH WELDS**

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1.0 SCOPE

1.1. GENERAL

These specifications are intended to cover the complete mill application of Powercrete "J" over Fusion Bonded Epoxy (FBE) coated girth weld; the testing and repairing of the coating, and the handling of the coated pipe. Nothing contained herein shall be construed to relieve the CONTRACTOR of the obligation necessary for complete and satisfactorily coated pipe.

The minimum thickness of the Powercrete "J" coating to be applied to the girth welds shall be 50 Mils.

1.2. CLARIFICATION OF REQUIREMENT

When coating or accessory material application or, other requirements are omitted, uncertain, or in conflict with other project documents, the COMPANY shall be notified for clarification of such requirements before quoting this Specification or the application of the material in question.

2.0 GENERAL

2.1. MANUFACTURER'S PUBLISHED DATA

Manufacturer's published data regarding coating and accessory materials storage, mixing, application, curing, etc., shall be considered an integral part of this Specification.

2.2. STORAGE OF MATERIAL

All coating and accessory materials shall be stored at the temperature and under the conditions required by the material manufacturer to prevent damage to and deterioration of the materials. Materials that have been damaged or allowed to deteriorate shall not be used for any application under this Specification.

3.0 POWERCRETE "J" COATING

This specification covers the requirement of spray or hand application of Powercrete "J", a polymer concrete coating to be applied over the girth weld on the primary FBE coating.

CONTRACTOR shall furnish all labor, supervision, materials, equipment and related hardware required for completing an acceptable coating.

Coating materials shall be plainly and permanently marked, stored, and applied in

accordance with the manufacturer's specification as directed by the COMPANY'S authorized representative.

3.1. SURFACE PREPARATION

The surface of the girth weld must be free of all deterioration of the primary coating, mud, oil, grease, moisture and other contamination. This coating shall be applied within two (2) days of Fusion Bond Epoxy application to the girth weld.

The entire primary coated surface shall be checked for holidays using a continuous electric holiday detector. The detector shall be set at 125-150 volts per mil thickness of coating, and shall be checked and re-calibrated, if necessary, every four (4) hours. All coating defects shall be marked with a nongrease marker and repaired and electrically re-inspected in accordance with the primary coating manufacturer's recommendations and to the satisfaction of the COMPANY.

The area of the primary coating to be repaired shall be cleaned of all rust, damaged coating and foreign material. The edges of the primary coating shall be lightly abraded adjacent to pinholes and shall be feathered adjacent to larger areas by hand sanding. All repaired areas shall maintain the proper anchor pattern required by the original shot blasting criteria.

Repair material shall be compatible with the primary coating manufacturer's recommendations, and shall be approved for use by COMPANY.

The repair compound shall be applied in accordance with the manufacturer's recommendations to a thickness no less than the specified primary coating and, except for pinholes, shall overlap the adjacent undamaged coating by a minimum of one inch.

3.2. POWERCRETE "J" COATING APPLICATION

The girth weld shall be preheated to insure that no surface moisture is present during actual coating application. Surface temperature can be as high as 130°F depending on local atmospheric conditions. Under no conditions should the coating be applied with a pipe surface in excess of 160°F, and less than 120°F. The pipe temperature shall be checked with appropriate temperature sticks.

The areas to be coated shall be shielded from the wind so that the coating is not contaminated. Dust and contaminants blown onto the wet coating shall necessitate stripping, re-blasting, and re-coating.

The girth weld shall be coated immediately after heating using a spray gun or other methods acceptable to the COMPANY, suitable for the purpose.

The first layer shall be applied uniformly to dry film thickness of not more than 18 Mils unless a casting mold is being used, or a thinner coating thickness is desired.

Successive layers of 20-40 Mils can be applied allowing 10 minutes between applications until desired thickness is achieved.

The coating shall taper uniformly and feather into the original coating with 12" of lap on both sides of the girth weld.

Any field joint having less than the specified minimum thickness shall be completely re-cleaned per Section 3.2 as necessary, reheated as per Section 3.3.1, and additional coating applied to achieve the specified dry film thickness.

Cured coating shall be of uniform color, gloss, and thickness, and shall be free of blisters, pinholes, fish eyes, sags, pimples, craters, and other irregularities. It is understood that contact with moisture after application may cause discoloration without affecting the quality of the coating.

Complete cure of the coating shall be verified prior to handling or installation.

The coating shall have a Shores Durometer Type "D" minimum reading of 75 after 24 hours.

Any joint of pipe having less than the specified minimum hardness will, at the COMPANY'S option 1) be re-tested after 24 hours, or 2) have the defective coating removed and reapplied as per this specification.

3.3. INSPECTION AND TESTING

All work done under this specification shall be subject to inspection and acceptance by the COMPANY. All parts of the CONTRACTOR'S facilities associated with this work shall be accessible to the COMPANY.

Coating thickness checks shall be made at ambient temperature with a magnetic pull-off film thickness gauge, which has been calibrated within the previous 24 hours, using a U.S. Bureau of Standards certified coating calibration standard. The thickness of the calibration standard shall be within 20% of the minimum required coating thickness. Thickness measurements shall be made in accordance with Steel Structures Painting Council, Surface Preparation Standards (SSPC)PA2, Section 2. The thickness measurements shall be made at the 12 o'clock and 6 o'clock position on the girth weld. Coating hardness checks shall be made at ambient temperature with a Type "0" Shores Durometer, laboratory calibrated within the previous 60 working days, in good working condition and no obvious damage. The checks will be made at 12 o'clock and 6 o'clock position on the girth weld.

Adequate lighting shall be available to facilitate a through visual inspection of the coating surface.

3.4. COATING REPAIRS

The CONTRACTOR, at no additional cost to the COMPANY, shall repair all damage detected by visual inspection.

Scars, dents, damaged areas, and large holidays shall be cleaned by removing all rust, scale, dirt or other foreign material and loose coating by using hand or power driven wire brushes. The area to be patched (holiday plus at least 3/4 inch of surrounding coating) shall be suitably roughened before patching (preferably by 120 grit "wet" or "dry" sandpaper). Files may not be used. Dust generated by the sanding is to be removed with a clean, dry cloth or brush prior to patching.

Areas not meeting hardness requirements shall be removed using a method that will not damage the primary coating or pipe.

COMPANY approved coating mixtures shall be used for patching holidays and damaged coating.

The surface to be patched shall be heated with a small torch until the patch area is thoroughly dry. The Powercrete "J" shall be mixed and applied over the heated surface.

Patches shall overlap the surrounding undamaged coating by a minimum of 3/4 inch.

Repairs are subject to re-inspection at the discretion of the COMPANY.