



Description This procedure describes the steps taken to protect pipelines and their components that are exposed to the atmosphere from external corrosion.

Note: In the state of Texas, 'atmospheric corrosion' means aboveground corrosion caused by chemical or electrochemical reaction between a pipe material, usually a metal, and its environment, that produces a deterioration of the material."

**Regulatory
Applicability**

All aboveground pipelines or portions of a pipeline

- Regulated Transmission Pipelines
- Regulated Gathering Pipelines (Type A)
- Regulated Gathering Pipelines (Type B)
- Regulated Distribution Pipelines

NOTE: Except for portions of pipelines in offshore splash zones or soil-to-air interfaces, pipelines do not have to be protected if the operator can demonstrate by test, investigation or experience appropriate to the environment of the pipeline that corrosion will only be a light surface oxide or will not affect the safe operation of the pipeline before the next scheduled inspection.

Frequency

- Provide protection against atmospheric corrosion as needed.

Reference

49 CFR Part 192.479 *Atmospheric Corrosion Control: General*
16 TAC 8.203 **Supplemental Regulations**
LA Title 43 Part XIII 2131 *Atmospheric Corrosion Control: General*

**Forms / Record
Retention**

None



Related Specifications None

OQ Covered Task 0991 Coating Application and Repair: Brushed or Rolled
 1001 Coating Application and Repair: Sprayed

(In order to perform the tasks listed above; personnel must be qualified in accordance with West Texas Gas's Operator Qualification program or directly supervised by a qualified individual.)



Procedure Steps

Atmospheric Coating Requirements

Each pipeline exposed to the atmosphere must be cleaned and coated with a coating material suitable for the prevention of atmospheric corrosion. Except for portions of pipeline in offshore splash zones or soil-to-air interfaces, pipelines exposed to the atmosphere need not be coated where test, investigation or experience appropriate to the environment indicates that corrosion will:

- Be a light surface oxide only; and
- Not affect the pipeline's safe operation before the next scheduled inspection.

Document testing, investigation or experience justification where it is determined that coatings are not needed and secure approval from the Operations Manager, or designated representative, for any pipeline facility that will not require coating in accordance with the criteria above.

Prevention against Atmospheric Corrosion

Note: Prior to abrasive blasting, the following steps must be taken to contain and capture blast residue in the vicinity of the work:

Fugitive Emissions Containment

1. Prior to abrasive blasting, steps must be taken to contain and capture blast residue in the vicinity of the work.
2. Tarps 20 ft. x 30 ft. or larger shall be placed over plastic before any blasting begins. The purpose of the plastic is to contain fine rust/paint particles while tarps contain coarse spent blast media.
3. At night, tarps should be pulled back from the pipeline facility to cover spent blast media and to keep it dry and easier to handle during cleanup.
4. Tank shells and/or other pipeline facilities may require containment screens in accordance with local or state fugitive emissions laws. The engineer must ensure that the company is in compliance with these laws and regulations.
5. If containment screens are required, 95-100% of the blasting area shall be covered to contain the dust and blast media.
6. No blasting shall be performed within 10 feet of the edge of containment screens.
7. Containment screen(s) design and installation shall be approved by the engineer prior to abrasive blasting.

Surface Preparation

The performance of any paint system relies on its adhesion to the steel surface, which is the direct result of adequate surface preparation.



Abrasive Blasting

1. All surfaces to be abrasively blasted should be evaluated to see if they must first be power washed to remove dirt, chalk, oils, grease, salts and other contaminants. These contaminants can be driven into the steel by mechanical cleaning or sandblasting that can cause premature failure of the newly applied paint system.
2. Abrasive blasting shall be in accordance with NACE #3 or SSPC #6 specifications for commercial blast. These specifications are defined as a surface from which all oil, grease, dirt, rust scale and foreign matter have been completely removed. Mill scale and old paint have been removed except for slight shadows, streaks or discolorations caused by rust stain. If the surface is pitted, slight residues or rust/paint can be found in the bottom of the pit.
3. NACE #3 or SSPC #6 visual specifications shall be the only reference used to measure surface preparation compliance. An anchor profile of 1.5 MILS shall be achieved on all surfaces that are blasted.
4. The compressed air used for abrasive blasting shall be free of detrimental amounts of water and oil. Adequate traps and separators shall be provided at the compressor.
5. All gauges, gauge boards, nameplates, valve stems, etc. shall be covered during blasting and painting processes to prevent damage. All equipment damaged by blasting or painting shall be repaired or replaced at the contractor's expense. Upon completion of the painting process, all protective coverings shall be removed by the contractor.
6. Prior to abrasive blasting, all detrimental amounts of oils, grease, and organic matter shall be removed from the surface by solvents or detergent washing. The engineer shall determine when solvent cleaning of the surface is necessary.
7. Blasting shall be done with media of mineral sand, or equal, that is no larger than that passing through a 16 mesh screen, and no smaller than that passing through a 40 mesh screen. The media shall be clean, dry, and free of extraneous matter. The media must be approved by the engineer before blasting begins.
8. Galvanized steel, brass, aluminum or stainless steel surfaces shall not be abrasive blasted.

Power Washing

1. Existing painted/coated surfaces that have good adhesion to the substrate may be power washed and scrubbed to remove chalk, dirt, and contaminants.
2. Water pressure is dependent on job requirements, but will normally be 400 - 500 PSI with a cleaning detergent added to the water.
3. The cleaning agent shall be trisodium sulfate or common liquid dish washing soap. Both agents are biodegradable and accepted by the EPA.
4. The areas power washed shall subsequently be rinsed thoroughly with clean water and allowed to dry prior to any coating application.



5. To check for chalk and contaminant removal from previously painted surfaces that have been power washed and rinsed, rub the area with a clean black cloth on the surface. Any chalk that remains will be detected on the black cloth.

Painting/Coating Application

1. Application shall be in accordance with the paint manufacturer's recommendations.
2. All sand and dust from the blasting operations shall be removed from surfaces before the painting application is begun.
3. Surface preparation or painting shall not be conducted when the relative humidity of the surrounding air meets or exceeds 85%, or when the ambient temperature is below 50° F and the dew point is within 5° F of the surface temperature.
4. A sling psychrometer, or equal, shall be used by the engineer to measure the wet and dry bulb temperatures of the surrounding air. These temperatures shall be converted to relative humidity. These measurements shall be taken prior to all surface preparation and painting procedures.
5. The sequence to be followed in the painting process shall be such that minimum damage to the finish coating will result.
6. All areas of surface preparation shall be kept "squared" up and coated the same day or sooner with one coat of primer to avoid surface contamination.
7. Corners and decorative breaks or protrusions will be coated in a manner to maintain specified film build on all edges, corners, and joints.
8. Areas coated are to be checked by the contractor at least once every 50 sq. ft. for proper film thickness with a wet film thickness gauge.
9. Primer shall not be applied closer than 2-4 inches to a non-blasted area. All subsequent blasting operation shall not result in sand particles becoming embedded in the coating.
10. All drops on tanks shall be completed in their entirety before proceeding to the adjacent areas.
11. The contractor shall ensure uniformity of texture throughout entire job. Abraded or otherwise marred spots shall be blended to surrounding areas.
12. Specified film thickness shall be stated as "MILS D.F.T." signifying acceptable dry film thickness per coat.
13. The primers, intermediate coat, and top coat shall be painted/coated with material manufactured no more than 12 (twelve) months prior to work commencing.
14. The prime coat shall be an alkyd rust-inhibitive primer of red or gray color. Primer shall be applied in one-coat, 4.0 - 6.0 MILS wet and 2.0 - 3.0 MILS dry. Allow adequate drying time between prime coat and the first finish coat.
15. All sandblasted surfaces shall be primed immediately following proper surface preparation.



16. All primers and finish coats shall be applied by roller on large flat areas and brush in areas impractical for rollers.
17. Following is a recommended procedure for maintenance painting. The engineer may approve an alternative system.
18. The bottom 1', cone roof, top side of wind girders and areas of water pooling or condensation forming shall be painted with two coats of a hi-solids epoxy (white in color) applied at 4 -5 dry MILS per coat as a prime, intermediate or finish coat. Allow 24 hours drying time between the two coats of epoxy.
19. The intermediate/first finish coat shall be a controlled chalking alkyd structural enamel or equal paint white in color. This first finish coat shall be applied 6 - 8 MILS wet and 3 - 4 MILS dry. Allow adequate drying time between subsequent coats.
20. The final/second finish coat shall be a controlled chalking alkyd structural enamel or equal paint white in color. The final coat shall be applied with 6 - 8 MILS wet and 3 -4 MILS dry.

Paint Maintenance

1. A sound, totally intact, previously applied paint/coating requires a minimum of surface preparation prior to maintenance painting. GOOD PAINT SHOULD NOT BE BLASTED OFF.
2. A careful examination of old coatings is a necessary step in deciding on an adequate routine of surface preparation.
3. A close visual inspection followed by the "knife test" is recommended to determine the amount of flexibility in the old coating. Brittle coating indicates its susceptibility to thermal shock and should be removed.
4. The degree of performance of the newly applied coating is directly proportionate to the performance value of the old coating over which it is applied.
5. Some coatings require an etch pattern prior to recoating. If required, a very fine abrasive - approximately 60 mesh - is recommended, which will eliminate the impact of large grit particles on the painting/coating to be saved.
6. Touch-up painting of bare spots requires application of an extremely low viscosity, high aromatic highly penetrating primer to the surface that will permeate any edge areas of poor adhesion in the feathered areas. The primer shall be a low viscosity, low molecular weight material, thoroughly compatible with both the existing coating and the steel surface, and that has high wetting characteristics for each.
7. Mechanical application, preferably by brush, will aid in the wetting and penetration of the primer into the porosity of the feathered section of the coating.
8. Subsequent intermediate coat and final coats shall be applied in accordance with the application procedure described previously.



Waste Disposal

1. The removal by abrasive blasting of most paints/coatings creates a waste material that has to be disposed of in accordance with EPA regulations. The containment and disposal of this material shall be coordinated with the company's compliance supervisor on each project.
2. The blast media shall be collected on tarps and/or plastic sheets and dumped into clean 55-gallon drums with lids and sealing rings at the job site. Each drum shall be labeled in accordance with EPA rules and regulations. On large jobs, a properly labeled roll off trailer may be used to dump the spent blast media. The roll off shall be lined with plastic and covered with a tarp to prevent rain water from entering the trailer.
3. Spent abrasive material is classified as hazardous when it contains more than 5 PPM of leachable lead or chromium compounds as determined by the EPA's toxicity characteristic leaching procedure (TCLP). This test shall be conducted on each project generating spent blast media except new construction blasting.
4. Spent blast media that is not hazardous according to EPA guidelines may be hauled to a local landfill approved by the company's environmental supervisor.



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