



TNEMEC INDUSTRIAL TANK COATING ASSESSMENT & RECOMMENDATION

Assessment Date	June 6, 2017	Tank Capacity	250,000 Gallons
Tank Name	8 th Street Tank	Tank Style	Multi-Leg (5)
City, State	Kill Devil Hills, NC	Tank Fabricator	PDM (Now Chicago Bridge & Iron
Owner	Town of Kill Devil Hills	Year Constructed	1980
Designated Use	Potable Water Storage	Last Repaint	Unknown

EXTERIOR COATINGS

Existing Coating	From my understanding, the last repaint included a noxyde coating system		
Clear Coat Present	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Sample Applied
			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Overall Condition

<input type="checkbox"/> Excellent	No chalking, fading, cracking, peeling or delamination. Few spot rust areas and excellent adhesion.
<input type="checkbox"/> Good	Minor chalking and fading. Few spot rust areas and good adhesion.
<input type="checkbox"/> Fair	Widespread chalking, fading, cracking, peeling or delamination. Widespread rust areas and fair adhesion.
<input checked="" type="checkbox"/> Poor	Cracking of the coating has exposed the steel. Widespread rust, chalking, peeling and poor adhesion.

Dry Film Thickness

Exterior Ground	32.3 mil average	Ladder Leg	NA
Exterior Roof	25.6 mil average	Exterior Shell	24.3 mil average

Tests Performed

Result

ASTM D 3359 Tape Test	N/A
ASTM D 6677 Knife	4 - Coating is somewhat difficult to remove. Coating chips in excess of 1/4" x 1/4" removed using light pressure with knife blade.
Field Lead Test*	N/A
Test Patch	Series 118 Uni-Bond Mastic was applied on June 6 th 2017 to test compatibility with the existing topcoat.

**Note: This is a field lead test performed with LeadCheck swabs. We recommend sending a sample to be lab tested.*

Exterior Notes

The existing coating is a noxyde coating system, which is an elastomeric acrylic coating that snaps down over the tank. The goal of this coating is to prolong the lifecycle of the existing paint before the need to blast remove the older coatings. Overall, it appears this topcoat is holding the coating system with decent adhesion. There is a lot of coating thickness currently on the tank with an average of about 30.0 dry mils. Typically at this stage in the life of a coating system, I would recommend the existing coatings to be completely removed and start over. However, due to saving costs and with the goal of extending the current coating system roughly 7-10 years, an overcoat with Themec Series 118 Uni-Bond Mastic should be considered. A test patch was applied to verify adhesion.

There are many spots of corrosion on the ladder, belly, legs, rods and the catwalk and handrails. I recommend a structural analysis of the integrity of the several rusted areas to determine if any needs to be replaced.

Coating Recommendation:

Exterior Overcoat: Pressure wash to remove all loose coating and SSPC-SP3 Power Tool Cleaning to all rust and abraded areas, Spot Prime Mastic Waterborne Acrylic, Full Prime Mastic Waterborne Acrylic, Full Fluoropolymer Topcoat.

INTERIOR COATINGS

Existing Coating

The interior coatings appear to be an epoxy.

Condition

<input type="checkbox"/> Excellent	No cracking, peeling, blistering or delamination. Less than 5% rust areas along weld seams and adhesion appears to be good.
<input type="checkbox"/> Good	No cracking, peeling, blistering or delamination. Less than 10% rust areas along weld seams and adhesion appears to be good.
<input checked="" type="checkbox"/> Fair	No cracking, peeling, or delamination. Minor blistering. Less than 20% rust areas along weld seams and adhesion appears to be good.
<input type="checkbox"/> Poor	Blistering and delamination is apparent. 30% or more rust visible.

Dry Film Thickness

Interior Dry

N/A

Interior Wet

N/A

Interior Notes

Interior Wet

The interior coating is in fair condition. There are heavy stains and corrosion apparent. The interior pipe has severe corrosion. Due to corrosion being present, I typically recommend the interior for a full removal of the existing coating. However, if the goal to provide a 7-10 year coating life, I recommend a spot repair to all corrosion on the interior.

Interior Coating Recommendation - Spot Repair: SSPC SP 11 Power-Tool Cleaning to Bare Metal and achieve a minimum 2.0 Mil Profile. Spot apply a 100% volume solids, NSF approved modified amine cured epoxy.

MISCELLANEOUS

Lock on Roof Hatch

Yes

No

Overflow Vent Screen	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Roof Vent Screen	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Functioning Water Level Indicator	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Safety Climb Equipment Operational	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Coating Recommendation:

Exterior Tank Coating System:

Surface Preparation: Minimum surface preparation of bare steel or previously painted steel requires a cleanliness level as defined by SSPC-SP WJ-4/NACE WJ-4 Light Cleaning by power washing with 3,500 PSI with a rotating turbo nozzle. This includes the removal of all loose dirt, dust, mildew, loose coating and other foreign matter. A chloride removal system shall be use to remove surface salts prior to coating application. Chloride levels shall be tested according to chloride removal system manufacturer recommendation. If all visible contaminates, loose mill scale, loose rust and other corrosion products, and loose paint have not been removed, SSPC-SP2 Hand Tool Cleaning or SSPC-SP 3 Power Tool Cleaning should be employed until the surface cleanliness definition is met. Spot prime using a Mastic Waterborne Acrylic applied at 6.0 – 8.0 dry mils. (or performance equal to Tnemec Series 118 Uni-Bond Mastic)

1st Coat: Mastic Waterborne Acrylic applied at 6.0-8.0 dry mils.

(or performance to Tnemec Series 118 Uni-Bond Mastic)

2nd Coat: Advanced Thermoset Solution Fluoropolymer applied at 2.0-3.0 dry mils.

(or performance equal to Tnemec Series 700 Hydroflon)

Ladders/Catwalk: On the ladders and catwalk floor, a Modified Polyamideoamine Epoxy (performance equal to Tnemec Series 135 Chembuild) may be used in lieu of the mastic waterborne acrylic as the spot coat and 1st coat.

Lettering / Logo: Two coats of Advanced Thermoset Solution Fluoropolymer shall be used for the lettering/ logo applied at a dry film thickness of 2.0-3.0 per coat.

Interior Wet Surfaces (Full Removal Option):

Surface Preparation: In accordance with SSPC-SP10/NACE 2 Near White Blast Cleaning to remove the existing coating and provide a 2.0 mil angular anchor profile. All unwelded seams, lapped plates, joints and other inaccessible areas will be filled. The surface shall be clean and dry prior to coating application.

1st Coat: Zinc-Rich Aromatic Urethane applied at 2.5-3.5 dry mils

(performance equal to Tnemec Series 91H20 Hydro-Zinc)

2nd Coat: NSF Approved Polyamide Epoxy applied at 6.0 -8.0 dry mils.

(performance equal to Tnemec Series 20HS Pota-Pox)

3rd Coat: NSF Approved Polyamide Epoxy applied at 6.0 -8.0 dry mils.

(performance equal to Tnemec Series 20HS Pota-Pox)

Interior Wet Surfaces (Spot Removal Option):

Surface Preparation: In accordance with SSPC-SP11 Power Tool Cleaning to Bare Metal and provide a minimum 2.0 mil angular profile. Feather edges smooth. Any rusted areas that have unwelded seams, lapped plates, joints and other inaccessible areas will be filled. The surface shall be clean and dry prior to coating application.

1st Coat: NSF Approved 100% Volume Solids Modified Amine-Cured Epoxy applied at 10.0 -20.0 dry mils.
(performance equal to Tnemec Series FC22 Epoxoline Touch-Up Kit)

PICTURES

Follow this link to view pictures from site visit:

<https://www.dropbox.com/sh/trfe90kpxyv0vc/AACT91MoLNFIR5Kk3z3PcVNVa?dl=0>

Completed by:



6/9/2017

Michael Anderson

Date

NACE Level III Certified Coating Inspector # 41214