



Surface Preparation Guidelines For Deck Applications Over Metal & Wood Surfaces

Dex-O-Tex deck coverings can be applied over any existing type of deck surface or to the structural deck surfaces in new construction providing that the area has first been properly prepared. Metal surfaces must be properly and adequately prepared to remove contaminants that may adversely affect coating adhesion and to roughen the surface in order to achieve a mechanical bond. The degree and type of surface preparation will vary depending on the type of metal surface to be coated and the intended service.

Proper surface inspection and preparation is a very important factor in any successful decking or underlayment project. The following guidelines are provided to ensure a properly prepared substrate for application of latex and resin based underlay materials and deck covering systems.

STEEL DECKS

Steel decks should be cleaned to near white blast cleaned surface finish. Dependent upon circumstances, this can be done by abrasive blasting, chipping and wire brushing or power sanding. Immediately after the proper cleaning, the steel must be protected with a suitable primer to prevent oxidation.

CARBON STEEL

Carbon steel is the most commonly used metal for tanks, structural steel and equipment. Tank linings protect the steel against corrosion and prevent product contamination. This immersion service requires optimum surface preparation and environmental conditions. For splash/spillage or chemical fume exposure, less stringent preparation is required.

Immersion Service

Tanks should be designed and fabricated in accordance with NAE Standard RP-0178-89 Design, Fabrication, and Surface Finish of Metal Tanks and Vessels to be Lined for Chemical Immersion Service. This standard addresses the following items from a lining standpoint.

1. **Joints:** Butt welds are recommended instead of continuous lap welded joints. Rivets and bolted joints are not recommended. Welds should be continuous rather than spot welded. All rough welds should be ground to remove sharp edges, undercuts and pinholes. All weld splatter must be removed.
2. **Connections:** Flanged connections are preferred over threaded screwed connections. Connections greater than two inches in diameter shall be lined. Those less than two inches I diameter shall be lined. Those less than two inches in diameter cannot be easily coated. Instead, fiberglass insets made of chemical resistant resin should be used.
3. **Appurtenances:** These include agitators, baffles and internal piping. If these cannot be lined then they should be constructed of corrosion resistant materials. Dissimilar metal should be electrically insulated from the steel tank surface. Heating elements should be at least six inches from the tank surface. Structural reinforcement members, if any, should be fabricated of smooth round bars or pipe for ease of lining. The use of angles, I-beams and other complex shapes should be avoided.



4. **Surface Finish:** Sharp edges and fillets should be ground to a smooth radius of ½ to ¼ inch. Surfaces should be free of gouges, deep scratches, slivered steel and other surface flaws.
5. The surface should be degreased prior to grit blasting. Use organic solvents, caustic solutions, steam or hot water with detergents to remove dirt and grease. Pre-baking of old tanks is recommended.
6. The surface should be grit blasted to an SSPC-SP5 or NACE No. 1 White Metal surface. This is accomplished using a Venturi blast nozzle supplied with 80-100 psi. The anchor pattern in the metal shall correspond to about 20% of the film thickness of the coating. The anchor pattern should be sharp with no evidence of a polished surface.
7. The blasting media should be a natural abrasive, steel grit or slag grit. The ideal grit is angular with a hard cutting surface, properly raded, dry, free of contaminants and produces little dust. Contaminated grit should not be used for the finish work.
8. Any traces of grit should be vacuumed from the surface. Care should be taken not to contaminate the blasted surface with fingerprints, perspiration, etc. The surface temperature should be maintained at a minimum of 5°F above the dew point to prevent oxidation of the surface.

The lining should be applied within the same day that the surface has been prepared unless dehumidification equipment is used to prolong the window of coatability.

Atmospheric Service

For non-immersion service, such as atmospheric or occasional splash/spill, follow these steps:

1. Degrease the surface as described in #5 above.
2. The surface should be grit blasted to an SSPC-SP10 or NACE No. 2 Near White Metal surface. The finished surface should be free o loose mill scale, rust scale and old paint.

STAINLESS STEEL

There are various types of stainless steel, including 304 (the softest), 316, 316L and 904. The steps outlined under he Carbon Steel section generally apply. Because grit blasting may be more difficult to achieve the proper anchor profile, use 120 psi blast nozzle pressure. Avoid using iron or steel grit abrasive.

GALVANIZED METAL

The surface should be clean and free of grease and properly etched with a standard solution or a phosphate solution. After the surface is properly etched, it should be rinsed thoroughly with potable water and dried completely prior to coating application.

ALUMINUM DECKS

If free from primer and paint films or other superficial coatings, the surface may be wiped down with a suitable solvent to remove all grease, oil or any other residue that would prevent good adhesion.

ALUMINUM

Surface should be clean and free of grease with a blast produced anchor profile as outlined under the Carbon Steel section above. Normally, the blast media used should be 80 mesh or finer grit. In addition,



the blasted surface should be given a chemical treatment.

If the surface is prepared only by chemical etching, the total film thickness of the coating applied should be restricted to only half the film normally applied to blasted surfaces.

COPPER OR BRASS

These metals should be lightly blasted to remove oxides or the surface treated with a solution consisting of 5% ferric chloride and 5% muriatic acid. After allowing the material to react for a few minutes, the surface should be rinsed thoroughly with potable water and allowed to dry.

CAST IRON

Cast iron is a porous material that is likely to absorb moisture or other liquids with which it comes into contact. Heating before blasting will drive out absorbed material from its pores. This can be done by placing it in an oven for 8-12 hours at 300°F or by heating with torches until this temperature is reached.

WOODEN DECKS

Existing, firm wooden decks should receive a reinforcing and waterproofing application before the finished decking is applied. The proper type should be determined by consultation with a Dex-O-Tex Representative.

For further information or clarification on the appropriate surface preparation methods for metal surfaces, contact your local Dex-O-Tex Marine representative via www.dexotexmarine.com or by contacting one of our regional offices: West Coast 310-886-9100 • East Coast 908-245-2800.

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CAUTION: ALWAYS KEEP OUT OF THE REACH OF CHILDREN.



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