Application Guideline (AG)

General

a) This Application Guideline (AG) is designed to assist coating applicators with ConduCoat application. The AG is supplementary to the ConduCoat Product Data Sheet (PDS), the WIWA Thick-Film/Mortar Pump Series 600.12 fact sheet, and the WIWA LP 600.12 System Users Handbook. https://www.wiwausa.com/catalog/pumps-2/mortar-pumps/thick-film-mortar-pumps/ Users must carefully review all documents prior to a ConduCoat application.

b) In addition to the afore-mentioned documents, SAE strongly recommends a detailed project specific coating specification be developed to guide the project. The project specific specification will include additional specific details with regards to surface preparation, coating application, and dry film thickness requirements. Contact SAE for additional details.

Surface Preparation

a) Prior to any other surface preparation, the surface must be cleaned in accordance with SSPC SP1, “Solvent Cleaning”. The substrate must be clean, dry and free of oil, grease and other contaminants.

b) Carbon Steel, Below Ground Service: Abrasive blast clean to NACE No.1, SSPC SP5, “White Metal Blast Cleaning” to produce a minimum 2 mil surface profile.

c) Carbon Steel, Atmospheric Service: Abrasive blast clean to NACE No. 2, SSPC SP10, “Near White Metal Blast Cleaning” to produce a minimum 2 mil surface profile.

d) Galvanized Steel, Below Ground Service: Abrasive blast clean to SSPC SP16, “Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels and Non-Ferrous Metals to produce a minimum 2 mil surface profile.

e) Galvanized Steel, Atmospheric Service: Abrasive blast clean to SSPC SP16, “Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels and Non-Ferrous Metals to produce a minimum 2 mil surface profile.

f) Ductile Iron, Below Ground Service: Abrasive blast clean to NACE No.1, SSPC SP5, “White Metal Blast Cleaning” to produce a minimum 2 mil surface profile.

g) Ductile Iron, Atmospheric Service: Abrasive blast clean to NACE No. 2, SSPC SP10, “Near White Metal Blast Cleaning” to produce a minimum 2 mil surface profile.

h) Weathering Steel, Below Ground Service, Abrasive blast clean to NACE No.1, SSPC SP5, “White Metal Blast Cleaning” to produce a minimum 2 mil surface profile.

i) Weathering Steel, Atmospheric Service, Abrasive blast clean to NACE No.3, SSPC SP6, “Brush Off Blast Cleaning” to produce a minimum 2 mil surface profile.

Minimum Environmental Conditions

a) Prior to commencement and during abrasive blast cleaning ensure the following environmental conditions are present:

   i. Substrate temperature: 3°C (5°F) above the dew point

   ii. Relative Humidity: Maximum <85%; Optimum: <50%

b) Prior to commencement and during ConduCoat application and curing ensure the following environmental conditions are present:

   i. Substrate and air temperature: Minimum 10°C (50°F); Maximum 40°C (104°F)

   ii. Substrate temperature: 3°C (5°F) above the dew point

   iii. Relative Humidity: Maximum <85%

Equipment Check Prior to Coating Application

a) Ensure that there is a proper air supply that is free of moisture or oil. To ensure a clean air supply, perform a “blotter test” in accordance with ASTM D 4285, “Standard Test Method for Indicating Oil or Moisture in Compressed Air”.

b) Ensure the compressor is capable of delivering a minimum of 100 Cubic Feet per Minute (CFM) at 100 Pounds per Square Inch (PSI). These values should be physically confirmed by performing a CFM test at the compressor and a PSI test at the blast nozzle.

c) The only pump approved for use by SAE is the WIWA Thick-Film/Mortar Pump Series 600.12. ***This pump must be dedicated exclusively for the application of ConduCoat.***

d) Remove the hopper to access the bottom end of the pump.

e) Disassemble the bottom of the pump leg. Ensure there is no remaining debris/coating from the previous use of the pump.

f) Completely remove the paint gun from the 1” paint line. Remove the nozzle. Inspect for remaining debris/coating. Ensure that coating has not leaked back into the air chamber of the paint gun.

g) Reassemble the bottom leg and hopper.

h) Reassemble the paint gun except for the tip.

i) Test the atomizing air at the paint gun to ensure it is working.

j) Ensure the 1” paint line is free of a debris/coating.

k) Pump Methyl Ethyl Ketone (MEK) through the system until a clear flow is achieved.

l) Once the hopper is empty of MEK pour in half the 4.5-gallon kit of ConduCoat and start up pump at low pressure increasing as required to pump the ConduCoat through the paint line and into the paint gun.

m) Add ConduCoat to the pump as required.

n) Once you have a clean flow of ConduCoat at the paint gun reinstall the paint tip.

o) Prior to applying ConduCoat to the substrate perform a test spray on a sample surface (such as cardboard) and adjust the pressure as required.

Mixing Procedure

a) A three-man team is required, i.e. a dedicated 2 man mixing team and a pump operator.

b) ConduCoat is very viscous requiring a heavy-duty Jiffy mixer and appropriate heavy-duty drill to mix the coating.

c) Prior to mixing, ensure both the A and B parts of the coating are between 21ºC (70ºF) and 27ºC (80ºF).

d) Mix both parts A and B separately for minimum of two minutes ensuring a homogenous mixture is achieved.

e) Slowly pour part B into the part A bucket. Have the mixer in the A bucket and running to start the mixing process. Mix for approximately five minutes ensuring that they are thoroughly mixed.

Application Procedure

a) Prior to application, ensure that the environmental conditions are as specified above.

b) At commencement of the application frequently check the Wet Film Thickness (WFT) and periodically as the application progress. Ensure checks are performed on all representative areas.

c) Due to the fact that ConduCoat is heavily filled, a typical WFT gauge is not likely to produce an accurate reading. It will be necessary to use a custom WFT gauge, with a single point of entry (as opposed to the multiple points of entry on a typical gauge).

Inspection Procedure

a) All inspections should be performed by a qualified inspector who preferably carries a formal coating inspection certificate. SAE recommends the inspector hold a minimum of AMPP Level 2 inspection certification.

b) All inspections performed by the inspector must be thoroughly and accurately documented using an inspection form reviewed and approved by the owner and SAE.

c) The inspector must verify and document the specified ambient conditions are present during both abrasive blast cleaning and coating application.

d) Prior to abrasive blast cleaning the inspector must verify that the substrate is free of visible and nonvisible contaminants.

   This includes but is not limited to:

   i. Oil, grease, dirt, and dust

   ii. Residual soluble salts are below 10µg per cm^2

   iii. Galvanized Steel: Free of residual surface treatments, e.g., chromates/phosphates/residual acid or alkaline cleaners. The Galva-Check Passivator Test Kit https://greatlakeslaboratories.com/cleaning-techniques/preparing-galvanized-steel-for-painting/ can be used for this purpose.

e) Prior to abrasive blasting the inspector must confirm there is a proper air supply that is free of oil or moisture. To ensure a clean air supply, perform a “blotter test” in accordance with ASTM D 4285, “Standard Test Method for Indicating Oil or Moisture in Compressed Air”.

f) Prior to coating application, the inspector must verify and document the following details regarding the air supply to the pump.

   i. CFM at compressor is a minimum of 100 CFM

   ii. PSI at pump is minimum 32 PSI

g) Following abrasive blasting and immediately prior to coating application the inspector must confirm that the surface cleanliness and surface profile meet the specification requirements for the identified substrate.

h) Prior to coating application, the inspector must verify and document the following details of the coating:

   i. Coating temperature

   ii. Batch numbers

   iii. Manufacturing/Expiry dates

i) During coating application, the inspector must ensure the WFT measurements are being taken and are within the required thickness range.

j) Before the coating is completely dry, the inspector must perform a thorough visual inspection to identify any missed area or other visual defects such as, runs, sags, inclusions, etc.

k) After the coating has dried to touch, the inspector must perform a dry film thickness (DFT) verification using a non-ferrous gauge to ensure the coating meets the following minimum requirements:

   i. 1st Coat DFT: 20 – 25 mils

   ii. After 2nd Coat Total Dry Film Thickness (TDFT): Minimum 40 mil

Recommended Repair Procedure

Repair procedures will vary depending on repair size and site-conditions. The on-site application team is responsible to determine the procedure to be used.

This procedure is provided as guidance only.

a) Galvanizing Repairs

   i. Prior to any coating application to galvanizing, ensure any galvanizing that has been previously repaired post-blast cleaning, receives a minimum 2 mil surface profile. This can be achieved by the use of a Bristle Blaster such as is manufactured by www.montipower.com

b) ConduCoat Repairs:

   i. Minor Repairs: < 1 sq. ft: Ensure the area is clean and apply additional ConduCoat using an appropriate tool such as a putty knife or spatula.

   ii. Medium Repairs: > 1 - 10 sq. ft: Ensure the area is clean and apply additional ConduCoat using a siphon feed undercoat gun such as the HAQQI Air Undercoating Gun.

   iii. Large Repairs: > 10 sq. ft: Ensure the area is clean and apply additional ConduCoat use the WIWA Thick-Film/Mortar Pump Series 600.12.

Clean-Up

a) Pump remaining coating out of the hopper, scraping the coating down the hopper. When all of the coating is out, pour in MEK. Keep pumping the MEK until there is a clean flow at the tip.

b) Remove and clean the hopper.

c) Remove the bottom leg and clean all parts.

d) Remove the paint gun. Remove the tip and nozzle assembly. Check to ensure no coating has worked its way down to the atomizing air - port.

e) Ensure the 1” paint line is thoroughly cleaned.

Published Date: February 2025