Application Methods for Nansulate® High Heat or Nanoboost™

SURFACE PREPARATION

Metallic Surfaces: Remove all loose contamination by wire brushing.
Remove all dirt, grease, oil, soluble salts and other contamination by using a suitable cleaner/degreaser and clean water rinse.
Remove all loose, flaking rust and/or paint by one of the following standards:

If unable to sandblast use:

St 3 Power Tool Cleaning

If able to sandblast use one of the following:

Sa 1 Brush-Off Blast Cleaning
Sa 2 Commercial Blast Cleaning
Sa 2.5 Near-White Blast Cleaning

Profile shall be 1-1.5 mils in depth and angular in appearance.

Painted Surfaces: Ensure paint is not flaking or peeling. Remove all loose dirt, oil, grease or other contaminates. Abrade the surface prior to Nansulate® application.

Other Surfaces: Remove all loose contamination by wire brushing. Remove any dirt, oil, grease, etc. using a suitable cleaner/degreaser that does not leave a residue.

APPLICATION METHOD

Preferred application method is by brush or paint sprayer. Use either airless sprayer at low pressure, or HVLP (high volume low pressure) sprayer. DO NOT thin product. Product should not require thinning, if necessary a SMALL amount of water only (not to exceed 1/4 - 1/2 cup per gallon) may be used. Excessive thinning will negatively effect the product's properties.

Care should be taken during mixing prior to application not to cause particle shear of the nanocomposite. Preferred method of mixing is using a mixing paddle at slow speed for approximately 3-5 minutes.

The temperature extremes for the substrate to which the material can be applied are 4º C to 100º C (40º F to 212º F). If applying to surfaces over 100° C, see special instructions.

Our minimum recommended application is 3 separate coats. Subsequent coats can be applied for further insulation benefit.

One gallon (3.79 litres) yields approximately 3 coats over 150-175 square feet (13.94-16.26 square meters) of surface area, depending on surface texture.
It is recommended that each coat be allowed to dry for a minimum of one hour before applying an additional coat. If in high (75%+) humidity environment, allow three hours before applying an additional coat.
Hard dry for a three coat coverage is in approx. 48 hours (normal humidity) and 96 hours (high humidity). Hard dry for a five coat coverage is in approx. 72 hours (normal humidity) and 6 days (high humidity). Full cure time is approximately 30-60 days, depending on climate and humidity.

APPLICATION PROCEDURE

Apply first coat at 100 microns. Allow to dry thoroughly. (see timeframe above)
Apply second coat at 100 microns. Allow to dry thoroughly.
Apply third coat at 100 microns. Allow to dry thoroughly.
Repeat for each additional coat.

Allow application to hard dry (see timeframe above) before stacking, etc.. to allow for proper adhesion.

IMPORTANT: If you are experiencing cracking, peeling, or flaking during initial dry time this indicates your coat application is too thick.

CURE TIME AND TEMPERATURES: The application should not go below freezing (0º C) or above boiling (100º C) until it has had a chance to cure for at least 15 days (normal humidity) or 30 days (high humidity), or you may experience blistering, cracking and/or peeling.

FOR APPLICATION TO SURFACES ABOVE 100º C it is recommended that the first coats be applied as thinly as possible (approx. 30 microns) to prevent blistering. Each subsequent coat may be applied slightly more thick as the first coats will reduce surface temperature. Recommended application would be via paint sprayer, misting. Suggested application for above 100C:

First coat applied at 30 microns
Second coat applied at 45 microns
Third coat applied at 60 microns
Fourth coat applied at 75 microns
Fifth coat applied at 90 microns

SAFETY PRECAUTIONS

Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid contact with skin and eyes.

Airless Spray Equipment Recommendations: Graco Silver Gun 395, Titan 440i (or similar) with a 0.011 or 0.013 tip.
Keep pressure low.

The temperature extremes for the substrate on which the material can maintain its integrity after fully cured are:

Nansulate® PT and GP: a low of minus 40º C (minus 40º F) to a high of 125º C (257º F).
Nansulate® High Heat: a low of minus 40º C (minus 40º F) to a high of 204º C (400º F).
Nanoboost™: a low of minus 40º C (minus 40º F) to a high of 204º C (400º F).

Manufacturer's Limited
Warranty: is for 5 years when applied as instructed. See full copy of Warranty for details. (For a copy of full warranty go to www.nansulate.com or call 1-800-767-3998 or +1-239-254-0346.)

NANSULATE®

AWARD-WINNING ENERGY SAVING & ASSET PROTECTION COATINGS

Application - Film Thickness

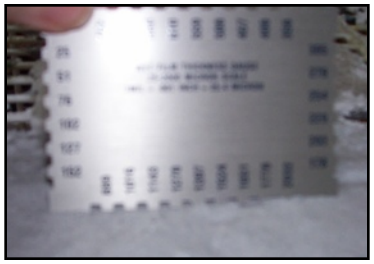
It is important to make sure your final application is the correct specified thickness so that you will achieve the desired result. By using paint film thickness gauges (either Dry or Wet) you can ensure that you have applied the appropriate insulation thickness. Each coat of Nansulate® translucent coatings (all except for EPX) is applied at between 3-5 wet mils, or approximately 100 microns in wet film thickness and will dry to approximately 50 microns in dry film thickness.

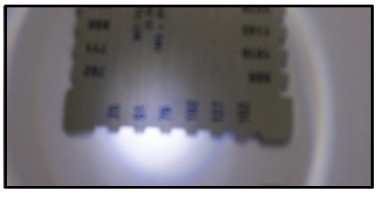
For water-based coatings, the Dry Film Thickness (after moisture has dissipated) is typically less than the applied Wet Film Thickness. Coverage rates are always specified in wet film thickness, as applied. Corresponding dry film thicknesses are then given.

For example:	Wet film thickness	Dry film thickness
Nansulate® High Heat, PT, HP *(Dry thickness is 50% of wet thickness)*	100 microns	50 microns
Nansulate® EPX *(Dry thickness is 60% of wet thickness)*	1000 microns	600 microns

Dry Film Thickness Gauge

The dry film thickness gauge is used after the coating has completely dried to touch (non-tacky). It is placed on the surface of the coating and will display the thickness in either microns or mils on the display.





Wet Film Thickness Gauge

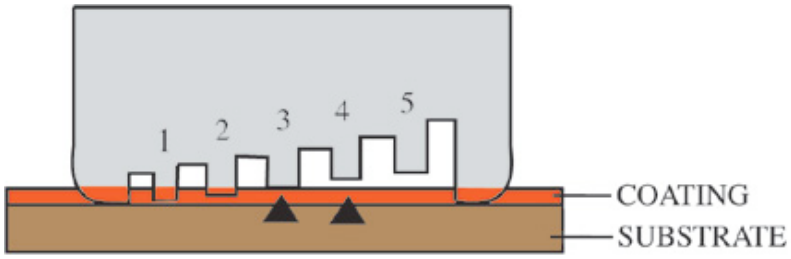
The wet film thickness gauge is used when the coating is still wet, immediately after application. It is placed into the surface of the coating and will leave a mark on the gauge which can be read. One side measures in microns, and the other side measures in mils.

A light source can assist in reading the wet coating marks on the Wet Film Thickness Gauge.

NANSULATE®
AWARD-WINNING ENERGY SAVING & ASSET PROTECTION COATINGS

How to read a Wet Film Thickness gauge:

1. Place gauge on wet film at 90° angle
2. Press into film
3. Withdraw and note deepest tooth having paint on it and next higher tooth that is not coated
4. The wet film thickness lies between these two readings. One side of the gauge will show Mils and the other side will show Microns.



The drawing indicates that tooth marked 3 mils is covered with the wet paint and tooth marked 4 mils is not covered. This indicates that the true wet film thickness of the material is between 3 and 4 mils thick.