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TECHNICAL BULLETIN

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**TopGard® 4000 and TopGard® 5000 Coating Measurements
 Available To Ensure Application Thickness Requirements**

This technical bulletin can be used as a resource to measure total cured coating thicknesses for JM TopGard 4000 and TopGard 5000 acrylic elastomeric coatings.

Variables that affect the application thickness may be caused by the following:

- Over spray of the coating
- Uneven roller application
- Roller changes
- Spray lines, pumps, pressures and spray tip sizes
- Granule dispersion on the surface to be coated
- Number of laps
- Amount of sand or talc on the surface
- Wind

To ensure a sufficient amount of coating has been applied to meet the 20 mil requirements for most applications, Johns Manville recommends the use of a:

1. Wet film thickness (WFT) calculation
2. WFT gauge

WFT Calculation

To calculate the WFT, take the desired dry film thickness (i.e. 20 Mil) and divide it by the percentage of solids by volume. To locate the percentage of solids by volume for JM's TopGard products, refer to the physical properties section on the JM product datasheets.

$\text{WFT} = \frac{\text{desired dry film thickness}}{\% \text{ of solids by volume}}$	<u>Percentage of solids by volume</u> TopGard 4000 52 TopGard 5000 55
$\text{WFT} = \frac{20 \text{ mil (desired dry film thickness)}}{52 (\% \text{ of solids by volume})}$	$\text{WFT} = \frac{20 \text{ mil (desired dry film thickness)}}{55 (\% \text{ of solids by volume})}$
TopGard 4000 WFT = 38 mil	TopGard 5000 WFT = 36 mil

Wet Film Thickness Gauge*



Once the WFT has been calculated as illustrated above, a WFT gauge should be used to ensure the calculated mil thickness is applied.

The WFT can be measured with a wet film comb or wheel as illustrated to the left. Generally, a wet film comb is a flat aluminum, plastic, or stainless steel plate with calibrated notches on the edge of each face.



To test the film thickness, the gauge should be placed squarely and firmly onto the wet surface coating. When the gauge is lifted a number of impressions will be visible in the wet coating (they will disappear). Count the number of marks, subtracting the two on the ends where the gauge feet contact the surface. The number of impressions will indicate how many mil tabs touched the coating indicating the thickness.

The WFT test should be conducted immediately after the coating application and repeated in the same manner at least twice in order to obtain representative measured values.

Please note that different gauges and methods are available to measure WFT. The one illustrated above is for educational purposes only. Be sure to read and follow the WFT manufacturer's instructions before conducting any analysis.

This measurement should provide a suitable on-site quality control.

Refer to ASTM D4414 for a standard method of measurement for WFT by notch gauges.

WFT gauges can be purchased at The Paul N. Gardener Company at <http://www.gardco.com/navigation.html> or 800-762-2478 or other suppliers throughout the country.

James Taylor
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**Images courtesy of National Coatings*