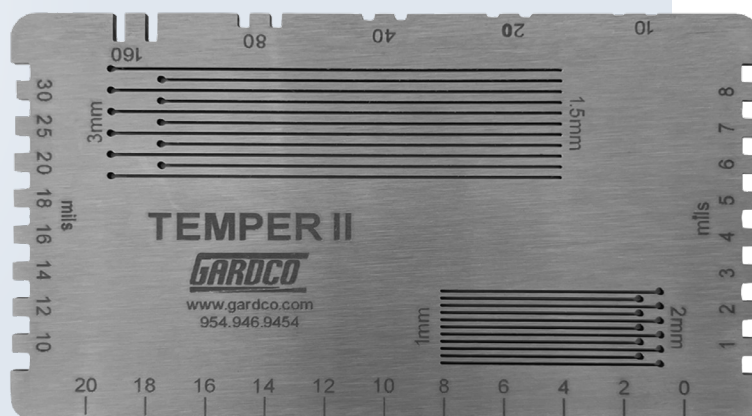




Paul N. Gardner Company

TEMPER II CROSS HATCH ADHESION

The TEMPER II Cross Hatch instructions on using the cross hatch adhesion template to evaluate coating performance.



TEMPER II Cross Hatch



The GARDCO TEMPER II is a handy cross hatch tool. It includes a Wet Film Thickness gauge, a NYPC Leveling Test Blade and a bottom wedge design from 0-20 mil to allow for hiding power measurement.

Testing Functions

- **Cross Hatch Tool (Center Templates)** - The TEMPER II Cross Hatch Template (ASTM D 3359) adhesion testing
- **Wet Film Thickness Gauge (Ends)** - Measures all types of wet coatings, paints, lacquers, enamels, and adhesives that are sprayed, dipped, or brushed on a smooth surface. The gauge makes it easy for anyone to obtain fast, highly accurate measurements on flat surfaces
- **NYPC Leveling Test Blade (Top Edge)** - A drawdown blade with five pairs of successively shallower notches, whereby leveling is rated according to the separation or merger of the corresponding pairs of stripes. It was developed by the New York Society for Coatings Technology (NYPC = New York Paint Club) and has the distinction of being the first practical laboratory device to provide numerical values for leveling
- **Wedge Scale (Bottom Edge)** - Use this side as you would a wedge gap applicator. Keep the gauge perpendicular to the wet film as you draw down. The scale indicates the depth of the wedge in mils at that point

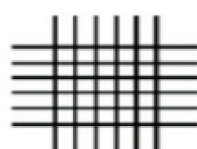
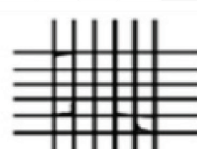
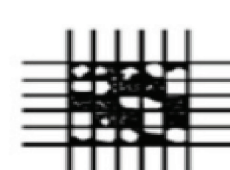
Instruction for Cross Hatch Tool (Center)

1. Prepare the test specimen as outlined in ASTM D3359 tape and knife method.
2. Position the Temper II so the cross hatch grid lines in the center of the gage are over the test area.
3. Using the cutting tool, follow the chosen spacing line (1, 1.5, 2, or 3 mm) and cut through the coating to the substrate with each steady motion.
4. Repeat the procedure with a second series of cuts that intersect the first pattern at 90°.
5. Lightly brush the panel with the flaking brush to remove any detached flakes.
6. Cut a piece of tape about 3 inches long and place the center of the tape over the cuts; smooth it into place with your fingertip.
7. Remove the free end of the tape rapidly at as close to a 180° angle as possible.
8. Inspect the cuts for removal of coating from the substrate using the illuminated magnifier and evaluate the results according to ASTM D3359 Method B.



Classification of Adhesion Test

Refer to the ASTM D3359 adhesion rating chart below to interpret your cross-hatch results.

Classification	% Of Area Removed	Surface Of Cross-cut Area From Which Flaking Has Occurred For 6 Parallel Cuts & Adhesion Range By %
5B	0% None	
4B	Less than 5%	
3B	5-15%	
2B	15-35%	
1B	35-65%	
0B	Greater than 65%	

Instruction for NYPC Leveling Test Blade (Top)

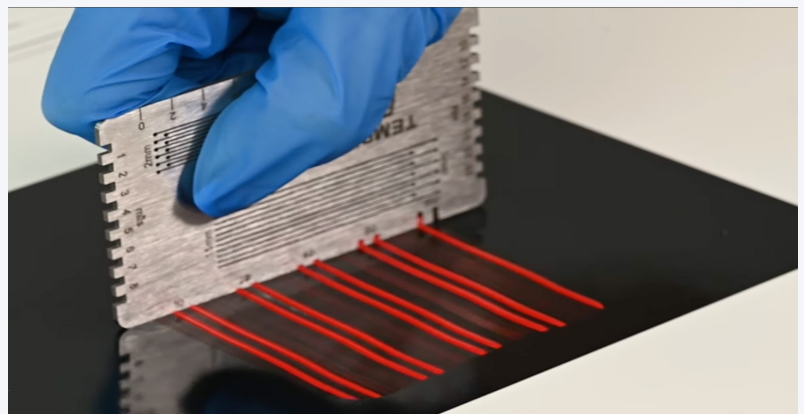
The NYPC Leveling Test Blade is used to create controlled stripes of different film thicknesses so you can visually rate how well the coating flows and levels. Use the instructions below to make the drawdown and determine the leveling value for your coating.

How to Apply Coating

1. Fasten the Straight-Edge onto the drawdown plate in suitable position.
2. Place a test chart on the drawdown plate in suitable position.
3. Place blade at top of chart, open side toward operator and shoulder against Straight-Edge.
4. Position the Catch-Paper.
5. Place a suitable quantity (8-10cc) of pre-sheared paint directly in front of the blade and draw down with a uniform speed of about 1 ft (30cm) per second.
6. Allow to dry at 23°C (73.4° F) in a horizontal position with normal ventilation.

How to Rate the Drawdown

1. After the drawdown is made, the five pairs of stripes are considered as being numbered 0, 2, 4, 6, 8 respectively from left to right.
2. Ignore the leading and trailing edges and rate only the central 5 1/2" (140mm) as indicated by the black area of Form 7B.
3. Note the lower numbered pair that has failed to merge completely. The Leveling Value is that number, plus 1 if merger is about half. If all stripes have merged completely, the Leveling Value is 10.



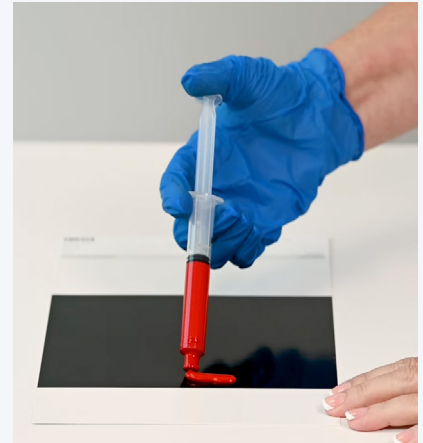
TEMPER II Cross Hatch



Wet film thickness (WFT) is the measurement of the thickness of an applied paint or coating before it dries.

Instruction for Wet Film Thickness Gauge (Ends)

1. Immediately after applying the film, place the Temper II at a 90° angle (perpendicular) so the wet film thickness gauge edge contacts the coated surface.
2. Press into the film.
3. Remove the gauge straight up and inspect which steps are wetted.
4. Read the wet film thickness as the highest numbered step that shows wet coating on its edge.
5. Clean gauge in any suitable solvent immediately after use.



NYPC Leveling Test Blade

