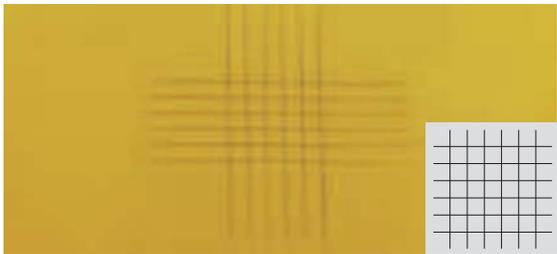


MAGNET EPOXY COAT TEST METHODS

The simplest and most practical test method for determining the quality of epoxy coatings on various magnet materials is the Cross Hatch test (ASTM D3002 or ASTM D3359, DIN EN ISO 2409). This test helps determine how well the epoxy coating has adhered to a magnet substrate. The test kit can be purchased from BYK Gardner (1-800-343-7721). Catalog # TAR-8601, 8602, or 8603 (depending on the thickness of blade).

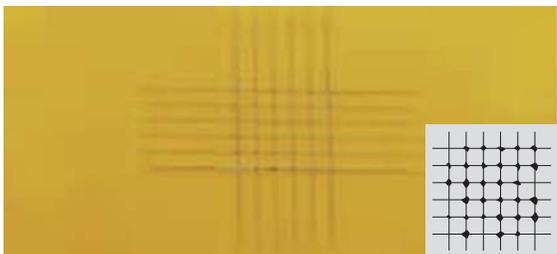
PROCEDURE:

1. Make a lattice pattern in the epoxy coat with the cutting tool
2. Remove excess material formed by the blade using a fine brush. Brush in the direction of the cuts
3. Using Permacel or other strong adhesion tape, place tape with pressure over the lattice area and slowly remove
4. Examine the lattice and compare to the below ISO Class levels



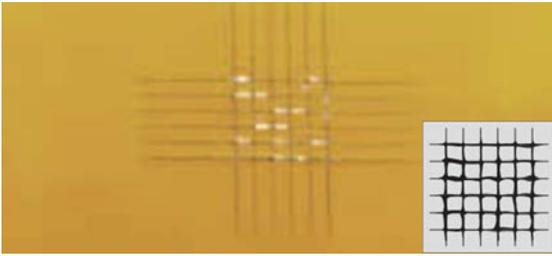
ISO CLASS: 0 ASTM CLASS: 5 B

The edges of cuts are smooth. None of the squares in the lattice are detached.



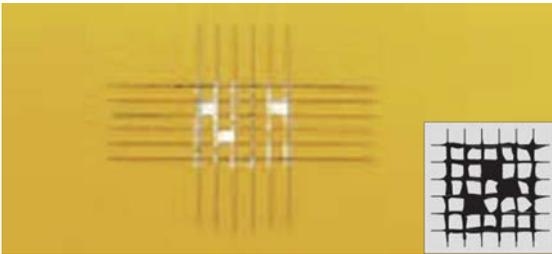
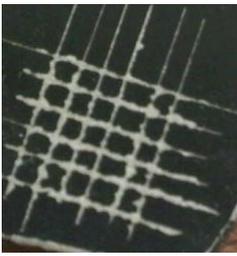
ISO CLASS: 1 ASTM CLASS: 4 B

Some of the squares in the lattice have small flakes in the corners. Affected area is no more than 5% of entire lattice area.



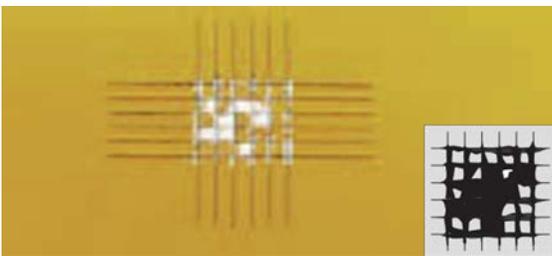
ISO CLASS: 2 ASTM CLASS: 3 B

The lattice lines have flaking as well as intersections. Affected area is about 5% to 15% of the entire lattice area.



ISO CLASS: 3 ASTM CLASS: 2 B

The lattice lines have significant flaking and entire non adjacent squares have been removed. Affected area is about 15% to 35% of the entire lattice area. Magnets should be rejected.



ISO CLASS: 4 ASTM CLASS: 1 B

Edges have flaked in large ribbons and entire adjacent squares have been removed. Affected area is about 35% to 65% of the entire lattice area. Magnets should be rejected.

While this test is a practical method for determining adhesion of epoxy coatings to magnets, your supplier should at the minimum conduct a salt water spray test of 5% NaCl at 35°C and for 24 hours. Proper coated magnets should not show significant signs of rust during that time period.

For more information on Epoxy coatings, preparations, and test methods, please contact Alliance engineering at 219-548-3799 or email to engineering@allianceorg.com