

Quantum350

Whitford's long-life nonstick that makes cleanup easy

New low-cure one-coat nonstick helps avoid casting blisters, gives all the release of two-coat nonsticks

Reduce costly rejects in cast aluminum dramatically. Offer better, longer-lasting release. Enjoy significant savings in energy costs, easier application, plus a more attractive product. All this in a remarkable one-coat.

As manufacturers of appliances know all too well, one of the most costly problems with aluminum castings is "outgassing", the sudden "pop" of trapped air escaping from inside the aluminum as it is heated during the curing of the nonstick coating, often leaving an ugly "blister" that means the piece is a reject.

The higher the cure temperature, the greater the incidence of such blisters.

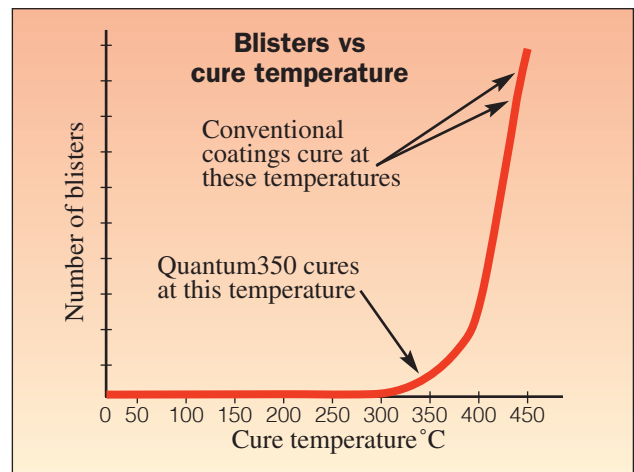
Nonstick coatings cure between 400-430°C/750-805°F. And most blistering begins to occur at 380°C/715°F. What's remarkable about new Quantum350 is that it cures at 350°C/660°F.

In terms of damage from blisters, Quantum350 is far better than conventional two-coats.

The benefits of a two-coat in one coat (and then some)

1. Reduces warping: Castings such as griddles often warp when cured at 400°C/750°F. Quantum350's lower cure avoids most of this risk.

2. Saves energy and money: Running the cure ovens at 350°C is far more energy-efficient than running them at 400-430°C. Reducing the number of rejected pieces cuts the cost of remelting. It also avoids the cost of creating new castings to replace



A typical cure graph illustrates how the problem of blisters begins to skyrocket at approximately 380°C/715°F.

the rejects (which then have to be coated again).

3. The release of a two-coat: Quantum350's unique formula gives all the release of a two-coat nonstick in one economical coat, something that was impossible until now.

4. Outstanding corrosion resistance: Passes immersion in 10% saltwater for 120 hours with no blisters, no visible changes.

5. Brighter sparkle: Quantum350's unique one-coat formula permits the metallic effect in the black coating to have all the sparkle of a two-coat, which increases eye appeal at POS.

6. User-friendly: Quantum350 requires only a light gritblast (most conventional coatings require a heavy gritblast) or an etch prior to coating, making it easier (and more economical) to use. It is also more easily recoated than conventional nonsticks.

Find out more

For more detailed information on Quantum350, see the product information on the next page. Or simply call your Whitford representative, or email us at sales@whitfordww.com, or go to Whitford directly via our website: whitfordww.com.



In the Grilled-Chicken test, the first piece stuck to the grill with the conventional one-coat. Rated a "fail".



The grilled chicken on the grill coated with Quantum350 did not stick, but released and fell off the surface. A perfect "pass".

Product Information: Quantum350

Description: Quantum350 High-Release
One-coat.

Code: D10017.

General Information

The primary end use for this coating is: grills and griddles for small appliances.

Product Specifications

Solids, theoretical: 35.00 +/- 2.0% by weight,
28.91 +/- 2.0% by volume.

Density, theoretical: 9.40 +/- 0.3 lb/gal,
1.13 +/- 0.03 kg/liter.

Coverage, theoretical: 463.71 sq.ft./gal.@ 1 mil,
10.10 sq.m./kg.@ 25 microns.

Viscosity, as shipped: 20-25 seconds Zahn #3
(S90) Cup at 25°C/77°F.

Typical Properties

Flash point: 100°C/212°F.

Volatile Organic Compounds: 2.66 lb./gal.,
319.20 grams/liter.

Preparation of parts for coating

Parts must be free of dirt, oil and other soils to achieve good adhesion and defect-free coatings. The following are the recommended substrates and substrate preparations used with this coating:

Substrates: cast or rolled aluminum.

Preparation: degrease, gritblast with 60-80 mesh AL oxide to 100-150 microinch profile.

Primers or basecoats: None required.

Preparation of coating material

Mix containers thoroughly by shaking or stirring until any solid material on the bottom has been eliminated. Best results are obtained when the coating temperature is 18-32°C/65-90°F. Adjust viscosity if necessary, using the recommended thinner and an accurate Zahn Viscosity Cup. Add water in increments of 2% until proper viscosity is achieved. Low viscosity produces runs, sags and low film thickness. High viscosity produces poor sprayability and uneven appearance.

Application viscosity: as supplied.

Viscosity adjustment: D.I. water only.

Other information

Material may settle. Mix by rolling for 10-15 minutes. Do not high-shear mix. After mixing, check bottom of container for solids.

Application information

Apply the dry-film thickness as specified. The proper amount of coating should be achieved with two or three passes of the spray gun across the work piece. Apply the coating to a uniform, full wet appearance.

Dry-film thickness: 0.6-1.2 mils/16-30 microns.

Cleanup solvent: water.

Curing the coating

In order to cure the coating completely, the substrate temperature must remain at the specified temperature for the entire bake schedule.

Flash or air-dry: 2-3 minutes at 93-104°C/
200-220°F.

Bake schedule: 10-12 minutes at 349-354°C/
660-670°F, or 5 minutes at 400°C/750°F.

Coating specifications

Evaluate the coating according to the following specifications:

Gloss: medium to low. Cured film should be smooth with uniform gloss.

Other: Use temperature: 230°C/445°F continuous; 260°C/500°F intermittent.

Excellent food-release properties.

Handling and storage

Keep containers tightly closed when not in use. Store between 4-35°C/40-95°F. Avoid breathing fumes during application and curing. Wash hands thoroughly before smoking or eating. Wear appropriate protective equipment while handling.

Shelf life: 6 months. Note: mix 30 minutes per month to maintain quality.

Prepared by: TJB/JFR, 15 December 2010.



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