

# COATINGWORLD®

© by Whitford Worldwide Volume XX/11

Special HOMEWORLD Section On Nonstick Coatings

## New Low-Cure One-Coat Nonstick Helps Avoid Casting Blisters, Gives All The Release Of Two-Coat Nonsticks!

**R**educe costly rejects in cast aluminum dramatically. Offer better, longer-lasting release. Enjoy significant savings in energy costs, easier application, plus a more attractive product. That's what new Quantum® 350 offers — all 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 probably 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 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

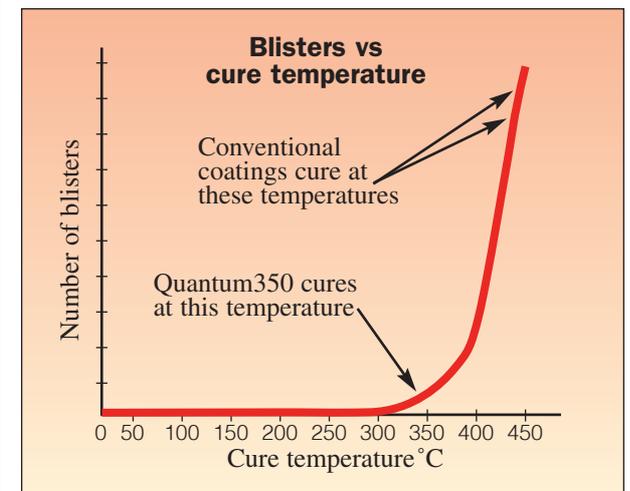
light gritblast (most conventional coatings require a heavy gritblast) or an etch prior to coating, making it easier (and more economical) to use. It is also more easily recoated than conventional nonsticks.

### Find out more

If a one-coat nonstick with all the benefits of a two-coat, plus the advantage of avoiding most casting blisters, sounds interesting, please contact us. Simply call your Whitford representative or go to Whitford directly via our website: whitfordww.com, or email us at sales@whitfordww.com.



*Quantum350 is the only one-coat that provides outstanding release as good as and for at least as long as most two-coat nonsticks, a genuine breakthrough.*



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



*In the Dry-Egg test, the first egg fried on the conventional one-coat stuck fast to the surface of the ungreased griddle. A “fail”.*

*The fourth egg fried on the ungreased griddle with Quantum350 lifted off with no residue. A “pass”, a “pass”, a “pass” and a “pass”.*

*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”.*

## New Line Of Ceramic Cookware Works Perfectly On Induction — And All Cooking Surfaces!



The magic of ZhongYe's cookware is a silver alloy under the Xylan coating.

ZhongYe is a major manufacturer of porcelain/ceramic cookware items, founded in 1990 and located in Chao Zhou, in Guang Dong Province, China.

Long noted for its innovations in ceramic cookware products, ZhongYe has now developed the world's first ceramic cookware that functions perfectly on induction stovetops, as well as every other type of cooking method: gas, electric, even in the microwave oven!

Metal is usually the common heat conductor in cookware, mostly aluminum, because it conducts heat rapidly and evenly. But aluminum won't work on induction. And metal prevents such items from being used in the microwave, since metal can act like a microwave antenna, which can create arcs and possibly start a fire within.

How does ZhongYe do it?

The innovation of their new porcelain/ceramic cookware is ingenious. It is based on a silver alloy, which forms the active element required for induction cooking. Part of the magic of the technology is that it is unaffected by microwaves, so that the new line of ceramic cookware is safe to use in a microwave oven as well as on gas, electric and induction stovetops.

The sturdy ceramic cookware is completely unaffected by cleaning in the dishwasher.

The technology developed by ZhongYe for their unique product has been patented in China.

ZhongYe has specified Whitford's Xylan® coatings for its new line of cookware (Whitford supplies nonstick coatings for the interiors of all lines of ZhongYe cookware).

## Excalibur® Continues Its Long-Standing Popularity At The Top End Of The Cookware Market

Excalibur, long known as “the toughest, longest-lasting, most durable nonstick system in the world”, remains the first choice of many manufacturers of high-end stainless-steel cookware.

One of the latest launches using Excalibur is by Altenbach, a leading German manufacturer since 1901.

### Key features

**1. Tri-Ply body:** The cookware is made of premium tri-ply materials (stainless steel-aluminum-stainless steel), which enhances the strength of each individual material.

**2. Excalibur coating system:** The hefty stainless-steel bodies take full advantage of Excalibur, which begins with an arc-spray-applied matrix of stainless-steel “peaks and valleys” into which the coatings are applied. So even if the cookware is abused by someone using a knife or fork, the implement bounces off the

peaks, while the nonstick in the valleys is protected from damage.

**3. Excellent thermal conductivity:** The aluminum “sandwich” between the two layers of stainless steel on the bottoms of the pans provides rapid and even distribution of heat, which not only means more consistent cooking (fewer errors) but also protects against any hot spots that could damage food.

**4. Special honeycomb design** drains grease or oil away from the food being cooked, creating a more healthful meal.

**5. Ergonomic handles** make handling the cookware easy, avoiding accidental slips and spills.

**6. Induction ready:** Altenbach



Excalibur, launched by Whitford in 1985, carried nonstick coatings to the very top end of stainless-steel cookware with its externally reinforced stainless-steel matrix system. It is still going strong, the favorite of many stainless-steel cookware manufacturers and their happy customers.

works perfectly on induction and all other stovetop heating systems.

Altenbach Korea Ltd. (produced

by Songji Korea) set a very successful sales record of 5,000 sets purchased during a one-hour TV home-shopping promotion in Korea.



Whitford Italy's offices are on the left, housing customer service, purchasing, main laboratory, sales, administration, management plus three meeting rooms, a small dining room and archives. To the right are the new structures: the warehouse, special laboratory for powders, housing for the new powder production equipment.

## Whitford Italy Doubles Its Capacity To Cope With Growth As It Doubles Its Size

Whitford S.r.l., the Italian facility of Whitford, was born from the 1998 merger between Whitford Corporation and Becherplast, an Italian company manufacturing a variety of cookware coatings in Brescia, Italy.

Becherplast was founded in 1967 by Attilio Vallaperta. In 1982, after his untimely death, the eldest son, Giuseppe, joined the firm. Five years later, his younger brother, Francesco, also joined.

The two brothers started looking for ways to expand the business, primarily in the area of nonstick coatings for cookware and bakeware. (The European coating market was then dominated by DuPont, Akzo Nobel and Ilag.)

During a coating show, Giuseppe Vallaperta was introduced to Dave Willis, president of Whitford, who was looking for a production site in Italy to expand Whitford's business in the Italian market.

A friendship began, the relationship developed and the companies agreed to merge.

In May 2009, Whitford bought the nonstick division of AkzoNobel, the largest paint company in the world, which included significant business from Akzo's manufacturing



Giuseppe "Chicco" Vallaperta (left) and Francesco Vallaperta (right) of Whitford Italy.



site in Fombio, Italy (both liquid and high-temperature powder coatings), along with production equipment required to manufacture the products. Whitford also hired some of Akzo's key coating personnel.

In order to

manage the additional growth, Whitford Italy has expanded by building a warehouse, research and devel-

opment labs, adding an area used for manufacturing, and an area for office space. Total personnel has grown from 22 to 42.

Now, a year and a half later, the Akzo operation has been fully integrated in the Whitford operation in Brescia.

Today Whitford Italy produces and supplies Europe from Scandinavia to Africa, from Spain to Iraq, supplying the lion's share of the cookware coatings sold in Europe.

In the process, Whitford Italy has grown to become Whitford's third largest facility in terms of sales, with plenty of room to keep growing.

Says Chicco Vallaperta: "Joining forces was the right move for all of us in Whitford Italy, as well as for our customers".



One of several new conference rooms in the significantly expanded Italian facility.



Whitford Italy has invested heavily in new lab equipment as part of its expansion.



The new facility for housing the powder extruder and cooling belt.

Dave Willis adds, "Finally we have the presence in this key European market that we have wanted for many years".

## Whitford's State-Of-The-Art Confocal Microscope: Seeing What Others Can't

Whitford has always dedicated a greater percentage of sales to Research and Development than its competitors (we call it our “secret weapon”). Part of that investment is in state-of-the-art equipment that lets our scientists and chemists see deeply inside the ingredients that make up our coatings.

The new Keyence Color 3D Laser Scanning Microscope (“Confocal”) is typical.

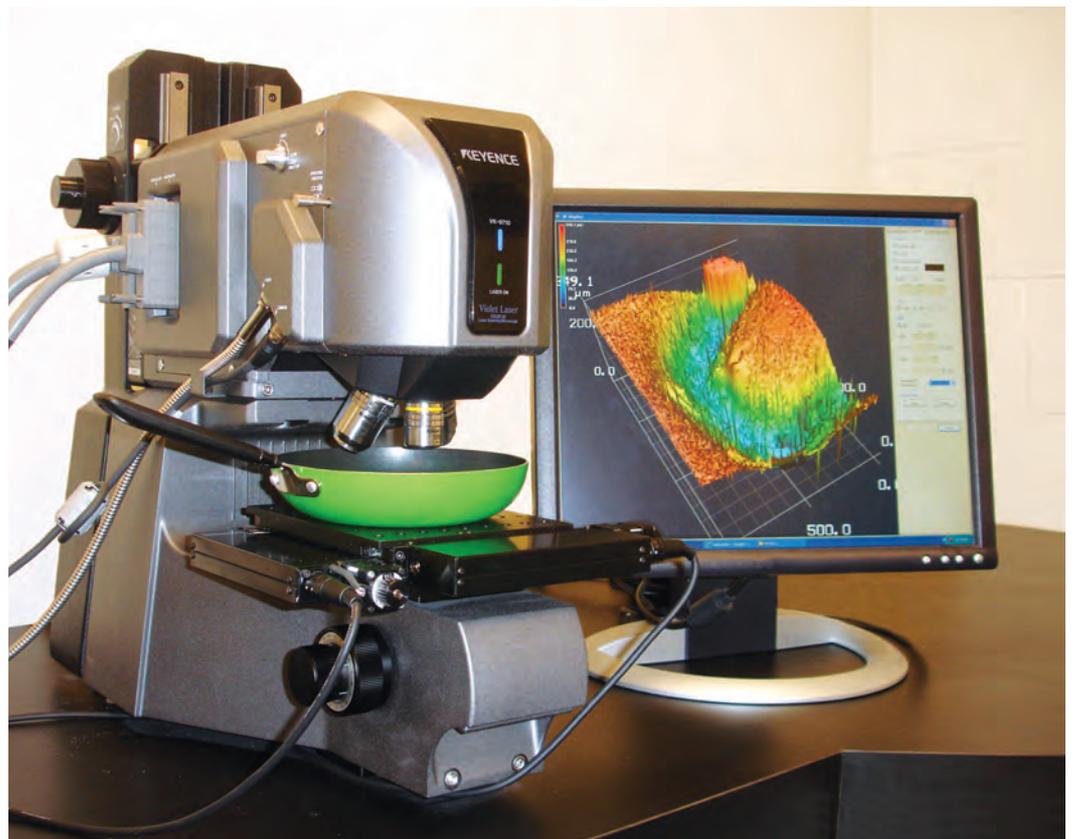
The Confocal Microscope is really three pieces of high-tech equipment in one. It combines (1) the convenience of a high-powered optical microscope with (2) the high definition and ultra depth of a scanning electron microscope and (3) the shape measurement of a precise roughness gauge.

### How small is small?

The Confocal Microscope has magnification capacity up to 16,000 times, with resolution down to one nanometer. (A nanometer is one-millionth of a millimeter, or one billionth of a meter:  $10^{-9}$ . For comparison, the average human hair is 100,000 nanometers in width.)

Because of its special white-light system, the Confocal provides a full color spectrum, so photographs taken are accurate in terms of color.

The microscope converts surface roughness into flexible three-dimensional images that can be viewed from any angle.



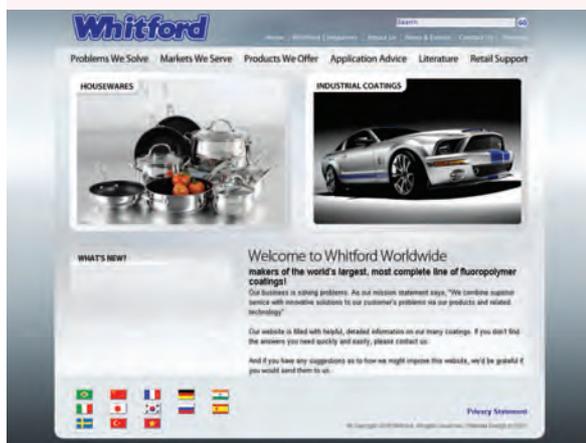
One of the newest pieces of high-tech laboratory equipment at Whitford is the Keyence Confocal Laser Scanning Microscope. It combines three capabilities in one: non-contact profilometry (surface roughness), high-definition depth measuring, and high-powered magnification (up to 16,000X) — all in living color.

Profiles can be measured in height, width, cross section, shape, angle and R measurement (roughness of the surface). The Confocal can measure minute steps, measure at steep angles, measure large areas with high precision, and make clear

observations of tiny shapes.

While expensive, Whitford's Confocal Microscope has already led to some significant improvements in our products, and will continue to do so for many years to come — more than paying its way.

## Whitford Launches New Website With Easier Navigation, Even More Useful Information



On the left is the home page of Whitford's new website. With one simple click on “Housewares”, the visitor is taken to the Housewares Coating Guide (shown at the right), where finding all the information you might want is easy.

As part of Whitford's continuing investment in new technology, a giant step has been taken in terms of updating, redesigning and improving navigation on Whitford's website, which includes a massive amount of information.

The new site offers an enhanced interface, easier navigation, and streamlined content, to name a few of the features.

We've broken the site into the two main categories of our business: Coatings for Housewares Products

and coatings for a wide variety of Industrial products.

For those interested in coatings designed for housewares, you can now explore our coatings three different ways: (1) by category (cookware, bakeware, kitchen electronics and specialty items), (2) by Whitford brand (Eterna®, Excalibur®, Eclipse®, QuanTanium®, etc.), and (3) by application method (spray, coil, roller, curtain and powder).

There are also some new helpful links to help enhance your visit, such

as information on testing methods, our Quality Cooperative Program (still the best way to get quality assurance on your coated products — for free), the Retail Marketing Program and a link to our coatings knowledge portal, “The Product Knowledge Network” (product-knowledge.com). This special site, provides important information to retailers interested in learning about the variety of coating options available to them.

You can check out our new website at whitfordww.com. There are still some sections under development, and for those we have provided links to our previous site.

We welcome all questions and suggestions, as this site is designed for you, our customers.