From coatings for economical to expensive cookware...

To coatings for every kind of appliance...

From a wide range of superior industrial coatings...

To outstanding flexible finishes for automotive...

Whitford

Makers of the world's largest, most complete line of fluoropolymer coatings

- **Cookware (nonstick and decorative)**
- **Bakeware (interiors and exteriors)**
- **Small appliances (superior release)**
- **Industrial applications**
- **Automotive (flexible finishes)**
- **Powders (fluoropolymer/high-temperature)**
- **And much more...**

Whitford's worldwide headquarters, located in Elverson, Pennsylvania, in the United States.

Whitford manufactures high-performance fluoropolymer and ceramic coatings (nonstick, decorative, anti-corrosion, etc.) for countless applications, including food contact, high-temperature use, decorative, industrial, aerospace, automotive, chemical processing, reprographics, textiles, etc. We manufacture and maintain sales offices in many countries, with agents in many more. We make the largest, most complete line of fluoropolymer coatings in the world. But size is not the only thing that distinguishes Whitford from its competitors.

Whitford's headquarters for Asia are located in Singapore.

The secret weapon

Whitford spends a higher percentage of sales on research and development than any competitor. We run training programs for our customers around the world. We often formulate coatings to solve a customer's specific problem. And we provide unsurpassed technical support for our products worldwide.

Consumer products

ETERNA
From Whitford: the world's long-lasting nonstick

The pinnacle in nonstick coatings — outstanding nonstick (release) that lasts — was finally achieved by Whitford with Eterna® (in versions for cookware and bakeware).

The "Dry-Egg" Test proved this. An egg is cooked in a pan with no butter or oil. The test is repeated until the eggs no longer lift off with ease. Tested were 3 competitive nonstick pans. A similar pan coated with Eterna was tested. The results: Nonstick "A" lasted for 13 fried eggs. Nonstick "B" went to 15. Nonstick "C" went to 33. New Eterna went for 350 fried eggs — at which time the test was stopped.

That's more than 26 times better than one of today's most popular nonstick coatings, and more than ten times better than the nearest top-end competitive nonstick system.

EXCALIBUR
Whitford's patented nonstick reinforced with stainless steel

Excalibur® won the reputation of the "toughest, longest-lasting, most durable nonstick system in the world". That's because Excalibur is reinforced externally with stainless steel. The result: Only Excalibur offers the strength of stainless steel plus the release of the world's finest nonsticks.

ECLIPSE
Engineered by Whitford to outlast other reinforced coatings

The Eclipse® primer contains a unique combination of resins and unusually hard materials. Because it contains no nonstick, it can be dedicated entirely to (a) adhesion and (b) reinforcement. The midcoat also contains the special reinforcements, which permits the topcoat to be dedicated entirely to release. This integrated system provides resistance to wear that exceeds by far all internally reinforced systems. For cookware and bakeware.

HALO
The Whitford nonstick that helps cook quickly and evenly

HALO® contains special additives that absorb and distribute heat more quickly, eliminating hot spots, cooking food more quickly, evenly and saving energy in the process. And it has unsurpassed wear resistance and release.

QuanTanium
Reinforced with titanium by Whitford for use with metal utensils

QuanTanium® contains a unique blend of titanium particles that reinforce as they provide unusual durability. QuanTanium's nonstick system has been formulated to create maximum synergy with the titanium, resulting in outstand-

ing resistance to all kinds of wear with superb release. For cookware and bakeware.

Quantum2® was developed to outlast conventional nonsticks (even the latest improved versions). It is reinforced internally with a diverse blend of space-age inorganic particles. And the nonstick surface is smoother, with higher eye-catching gloss than conventional nonsticks. For cookware and bakeware.

Xylan,® Whitford's oldest and largest line of nonstick coatings, is specified for use on products from the most economical to the more expensive cookware, bakeware, electric grills and griddles, to rice cookers, breadmakers, coffee makers, sandwich makers, waffle makers, etc. Xylan (and Xylan Plus) come in one-, two- and three-coat versions.

Whitford Brand		Product Cookware* Series	Rating/Use
	Eterna®	71-050 (basecoat) 73-353 (topcoat)	10 Gourmet, Upper Moderate
	Excalibur®	Various versions. Contact Whitford for details.	10 Gourmet, Commercial
	Eclipse®	7050 or 7151 (ground coat) 7252 or 7253 (midcoat) 7353 7353 (topcoat)	10 Gourmet, Commercial, Upper Moderate
	HALO®	7161 (basecoat) 7262 (midcoat) 7363 (topcoat)	10 Gourmet, Commercial, Upper Moderate
	QuanTanium®	7141 (basecoat) 7242 (midcoat) 7343 (topcoat)	8 Upper Moderate, Moderate
	Quantum2®	7131 (basecoat) 7232 (midcoat) 7333 (topcoat)	7 Moderate, OPP
	Xylan®	The Xylan range includes 1-, 2- and 3-coat products of varying performance. Ask Whitford which would be best for your needs.	4-6 Opening price point, Promotional
	Skandia®	Skandia roller coatings include Skandia Xtreme (with Eterna technology). Ask Whitford which would be better for your needs.	6-8 Promotional to Moderate
	Fusion®	8088, 8089	6-8 Moderate
	Xylac®	Variety of decorative finishes for the exteriors of cookware, bakeware and appliances.	N/A Exteriors

Note: Other series of most brands are available for bakeware and small electrics. PFOA-Free versions of all brands are also available.

The new Skandia® and Skandia Xtreme systems improve the flexibility and performance of roller-coating lines. The reason: a unique basecoat technology that improves adhesion to non-uniformly roughened surfaces. This means less time and effort in surface preparation for improved efficiency.

Skandia and Skandia Xtreme are solving problems everywhere.

With Skandia, you have the option of using 3, 4, or 5 coats depending on the quality level desired. Choose Skandia for good release and durability. Choose Skandia Xtreme, which incorporates Eterna technology, for outstanding release and durability.

Fusion,® made without PTFE or PFOA, is a waterborne sol-gel nonstick that withstands heat up to 850˚F/455˚C. Most "ceramics" are two-coat systems, with each coat having several components that require careful mixing and have a short pot life. Fusion, also a two-coat, has far fewer components, is much simpler to use and more user-friendly.

Fusion comes in a variety of colors, including white.

Regulatory compliance

Regulations covering many products are becoming more and more stringent around the world. It's comforting that all Whitford interior coatings, solvent- and water-based, comply with the relevant regulations of the USDA, FDA, JIS, Commission Regulation (EC) 1935/2004 as amended (for the EU), as well as many others. Note: Compliance with a regulation in one country does not automatically mean compliance with a similar regulation in a different country.

Whitford's Quality Cooperative Program

As an additional step to expand quality control, Whitford has established the Quality Cooperative Program (QCP), and it's free.

Its primary purpose is to achieve and maintain the highest quality by preventing problems from occurring before any coated products reach point-of-sale.

Effective (and free) testing to assure quality control, courtesy of Whitford's worldwide QCP.

The QCP sets quality standards that must be met by those who apply Whitford coatings. It also outlines specific test procedures that must be carried out on random samples of all coated products to make sure that these application standards are maintained. Note: Only members of Whitford's QCP are entitled to use the Whitford trademarks.

Industrial products

Whitford offers a broad range of coatings for diverse industrial applications. For example, we make products with outstanding release characteristics for applications such as food processing, shoe molds, and photocopy rollers.

Other products provide superior corrosion resistance for critical parts such as threaded fasteners for the chemical-processing, energy, transportation, and waterworks industries. Other coatings reduce friction on many items (examples just in automotive include pistons, brake shafts, seat-belt brackets, throttle shafts).

Corrosion, sticking, or friction are usually the reasons for choosing a high-performance coating. Yet, applications generally have several performance requirements. So we make hundreds of coatings tailored to the specific problems,

Xylan provides controlled friction and corrosion resistance.

Whitford's Leading Industrial Coatings

Brand and Product Code	Solvent -borne	Water-borne	Colours	Working temp °C min/max	# of coats	DFT per coat	Low friction rating	Non-stick rating	Corro-sion resist	Abra-sion resist	Cure temp °C/# min (PMT)	General comments Uses
Xylan 1010			No light shades	-195 to +260	1 or more	20 ± 5µ	10*	2	4	3	220-345/ 20-5 min	General-purpose coating for dry lubrication in high-speed and/or low-temperature environments. Typical applications include rotary actuators, bearings, carburetors and garden tools.
Xylan 1014			No light shades	-195 to +260	1 or more	20 ± 5µ	8	NNS	5	4	220-345/ 20-5 min	Improved abrasion resistance over Xylan 1010. Typical applications include hinge pins, piston casings, compressors, fasteners, etc.
Xylan 1052			Dark only	-195 to +260	1 or more	15 ± 5µ	6	NNS	4	4	220-345/ 20-5 min	Extreme pressure capability. Coating contains MoS2/PTFE. Typical applications include bearings, valve springs, sealing rings, etc.
Xylan 1070			No light shades	-195 to +260	1 or more	20 ± 5µ	8	NNS	6	4	205-345/ 30-5 min	Stud-bolt coating used over phosphate or other pretreatment to achieve up to 3,000 hours salt spray. Typical applications include threaded fasteners.
Xylan 1331			No light shades	-20 to +230	1	22.5 ± 2.5µ	9	NNS	9	6	375-400/ 15-5 min	Dry-film lubricant with PPS and PTFE for outstanding wear, abrasion and chemical resistance. Typical applications include offshore down-hole tools.
Xylan 4018			Range of colours	-40 to +260	1	10± 2µ	Powder topcoats can be applied over this primer wet or flashed.					Solvent-based primer for powder coatings. Typical applications include chemical processing equipment and industrial bakeware.
Xylan 1424			Range incl. off-white	-20 to +180	1 or more	17.5 ± 2.5µ	8	NNS	8	4	205-275/ 15-5 min	Low-friction coating with excellent corrosion resistance. Designed for fasteners, piston casings, compressors, etc.
Xylan 1514 Xylan 1518			Range incl. white	-40 to +220	1 or more	20 ± 5µ	9	3	3	4	220-275/ 30-5 min	Decorative coating with low-friction properties. Good UV and abrasion resistance. Typical applications include cooling fans, light fittings, personal-care products, radomes, I-O drives, etc.
Xylan 5420			Range	-50 to +200	2 or 3	7 ± 1µ	3	NNS	7	3	200-230/ 20-10 min	Application by dip/spin. Provides controlled friction to suit torque tension. 480 hours salt spray over phosphate. Typical applications include fasteners, especially for the automotive industry. Xylan 5230 is solvent-borne version.
Xylan 8840			Range	-40 to +205	1 or more	15 ± 2µ	NNS	7	NNS	6	375-420/ 15-5 min	Excellent nonstick, easy-clean, food-safe coating for mold release in both engineering (e.g., for tires/polyurethane) and food industries (e.g., bakeware).
Xylan 80-510 Xylan 80-511	PFA powders		Natural to white	-40 to +260	1 or more	>50µ	7	8	8	7	400/ 15 min	Excellent for high-build systems in which chemical resistance and permeation resistance are needed and service temperatures can exceed 200°C. FDA-compliant grades available.
Xylan 80-550 Xylan 80-551	FEP powders		Natural to white	-195 to +205	1 or more	>50µ	7	9	6	5	400/ 15 min	Excellent for high-build systems in which resistance to chemicals and permeation are needed and service temperatures are below 200°C. Release is superior to PFA systems. FDA-compliant grades available.

*Rating: 10 = best. NNS = not normally specified. Note: These products are a small sampling of Whitford coatings. For a complete listing, call your Whitford representative or Whitford directly.

whether extreme temperatures, heavy loads, abrasive environments, difficult weather conditions, harsh chemicals, galling, fire, etc.

Our expanding universe

1. Xylan liquid coatings are usually applied using common spray techniques to achieve a dry-film thickness in the range of one mil (25 microns). However, certain applications call for other coating techniques (dip/spinning) to coat large numbers of small parts efficiently.

Xylan has been protecting large fasteners of many kinds for many years.

Most Xylan coatings were formulated with organic solvents but recently we have developed easy-to-use waterborne analogues that are far more environmentally friendly.

One of our best is Xylan XLR ("Xtra Long Release"). Xylan XLR outperforms all release coatings available, significantly reducing the need for re-coats during the life of the component. And it offers a variety of benefits including enhanced resistance to abrasion, improved hardness, resistance to permeation and higher gloss.

Xylan HB (High-Build) is an innovative 2-coat, waterborne, fluoropolymer release coating that can be applied in thicknesses up to 3 mils (75 microns) with only one baking cycle. Xylan HB is an alternative to fluoropolymer powder coatings where a liquid coating is preferable.

2. Xylan powder coatings can be applied using electrostatic spray or fluidized-bed techniques in thicknesses greater than 1.5 mils (37 microns), advantageous (versus liquids) where a thicker coating is required. These powder coatings can be applied with almost zero environmental problems: there are no VOC-bearing effluents or wash-down solutions to clean up.

Xylan offers low friction combined with superb resistance to abrasion and corrosion for the oil patch.

Whitford offers a growing range of fluoropolymer powder coatings. For example, PFA+ is ideal for the industrial market. Compared to standard PFA powder coatings, PFA+ offers better release and superior smoothness.

Industrial bakeware is a key market for some of Whitford's newer products that provide extended release.

We also offer a range of decorative and functional powder coatings for use in high-temperature applications such as mufflers, wood stoves, BBQs, and gaskets. For example, Xylan 94P can withstand temperatures up to 1000°F (540°C). Also included is our Xylan 26P one-coat, hot-hardness, easy-clean, food-grade, high-temperature powder with enhanced resistance to corrosion and abrasion.

Flexible Finishes

Whitford has developed a line of specialty automotive coatings called Resilon® (waterborne) and Xylan (solvent-borne) that offer a complete range of benefits to solve many problems on flexible substrates.

These include low friction, freeze-release, excellent resistance to abrasion, elimination of "itch and squeak". There is improved resistance to weathering and chemicals, plus aesthetics (including clear coatings).

Major manufacturers worldwide from Ford to Volkswagen have insisted on flexible finishes made by Whitford.

These flexible finishes are easily applied to a variety of substrates, including EPDM, NBR, PVC, ASA, acrylics, ABS and polyester, sometimes in combination with Whitford-provided primer systems or other pretreatment options. They are used for glass runs, door, boot and bonnet seals as well as for decorative effects.

Many major automotive manufacturers of the world now specify at least one of these highly versatile flexible finishes.

Selecting the right Flexible Finish

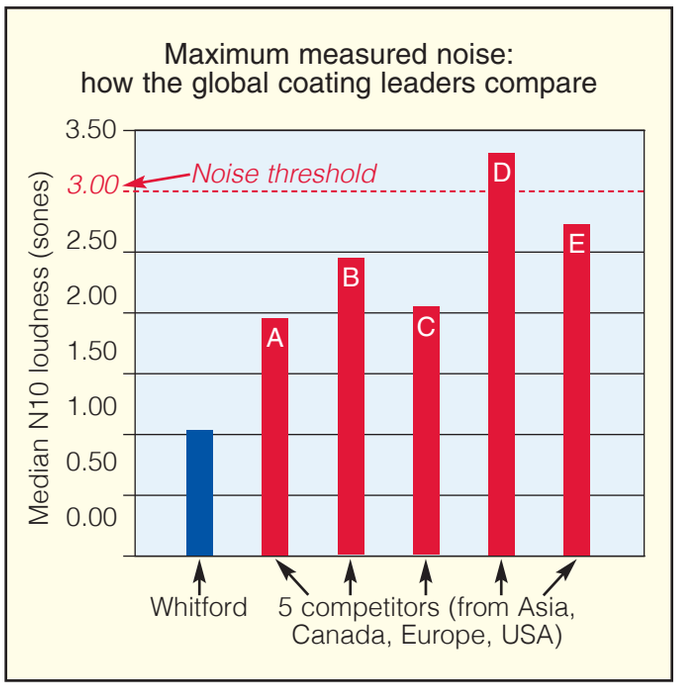
Many automotive manufacturers have approved one or more of Resilon or Xylan coatings to solve a variety of problems.

They include Aston-Martin, Bentley, BMW, Chrysler, Fiat, Ford, GM, Honda, Kia/Hyundai, Mercedes, Nissan, Suzuki, Tata, Toyota, VW.

Whitford is one of a select group of coating companies that have achieved the rating of an ISO TS 16949 supplier. In addition, we have been awarded ISO 14001 for our commitment to environmental management. This commitment to the most exacting standards is maintained by quality assurance teams at all Whitford facilities.

No more "itch and squeak"

Controlling and reducing noise are of paramount importance to auto manufacturers today. That's why Whitford has installed the world's most advanced noise-analysis equipment, designed to replicate "itch and squeak" on cars. Whitford's advanced low-noise technology (LNT) can virtually eliminate the noise generated by micromovement between mating surfaces such as a car door and the door's sealing system.



Whitford's state-of-the-art noise laboratory conducted 5,000 tests on 80 different profiles against 40 different mating surfaces. The clear advantage: Whitford.

This LNT is incorporated into most Resilon coatings, all of which comply with the toughest noise specifications such as Ford (CETP 01.07-L400) and GM (GM9842P).

Guide to Whitford's Flexible Finishes

Trade name	Product Code	Main properties	Typical applications
Resilon	2020	Low-noise weatherstrip coating for most rubber compounds. Single component, water-based.	Automotive weatherstrip, seals, gaskets and O-rings.
Resilon	2120	High abrasion-resistant weatherstrip/glass-run coating. Single component, water-based.	Automotive weatherstrip/glass run where high abrasion resistance is a requirement.
Resilon	2121	Exceptional resistance to abrasion for glass runs. Two components, water-based.	Automotive glass runs (replaces flock).
Resilon	2251	Installation/fitting aid to give controlled friction values to rubber substrates.	Fitting aid for weatherstrip and glass-run profiles.
Resilon	2420	Quick-cure coatings for rubber and plastic. Single component, low-temp. cure, water-based.	Weatherstrip seals, molded details and temperature-sensitive substrates.
Xylan	4016	Exceptional solvent-based primer that provides superior adhesion for all problem applications.	Suitable primer for all Resilon and Xylan rubber coatings. Excellent performance on high oil-content compounds.
Resilon	4020	Market-leading water-based primer. No VOCs. Suitable for temperature-sensitive substrates.	Suitable primer for all Resilon and Xylan rubber coatings.

Whatever your coating problem, Whitford probably has the right product to solve it. If not, we will work closely with you to develop the coating that will.

How to contact Whitford

Whitford manufactures and maintains sales offices in many countries of the world. For more information, please contact your Whitford representative or the nearest Whitford office (see our website: whitfordww.com) or sales@whitfordww.com.

Whitford

Where good ideas come to the surface