Everything you need to know about nonstick-coated houseware products — FREE.

Reinforced vs. Unreinforced Coatings

Introduction

Adding reinforcement to a nonstick coating was one of the big technological advancements taken back in the late 1970's/early 1980's to help improve the durability and scratch resistance of nonstick coatings. With these reinforcements added to the coating, intercoat adhesion (the internal ability for the different layers of the coating to bond together) and the ability to withstand metal utensils and other surface abuse, the coating is stronger and will last longer.

There are three types of coatings that will be explained:

1.Unreinforced Coatings

2.Internally Reinforced Coatings

3.Externally Reinforced Coatings

Unreinforced Coatings

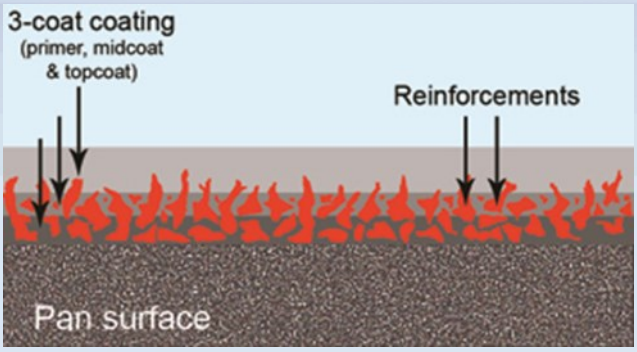
Unreinforced coatings still exist. These are often basic one- and two-coat systems, where the ultimate goal is hitting a specific price point, while still offering a nonstick feature. These coatings are used on promotional and opening price point housewares products. They usually only withstand a limited number of uses and will wear out quickly. But the driving factor for these coatings is that they are less expensive and that they offer products in the lower end of the market the ability to achieve lower target retails.

Reinforced vs. Unreinforced Coatings

Internally Reinforced Coatings

Internally reinforced coatings have ceramic particles, of varying sizes, added to the primer and midcoat to strengthen the coating. These particles help “lock” the layers together (intercoat adhesion) and help increase the coating's ability to withstand scratching and other external abuse to the surface. It is due to internal reinforcements that nonstick coatings began carrying 10, 15, even 20+ year warranties.

This type of reinforcement can further improve the durability of the coating. For example, if the reinforcement uses titanium or if the hardness of the reinforcement is high on the MoHs hardness scale.



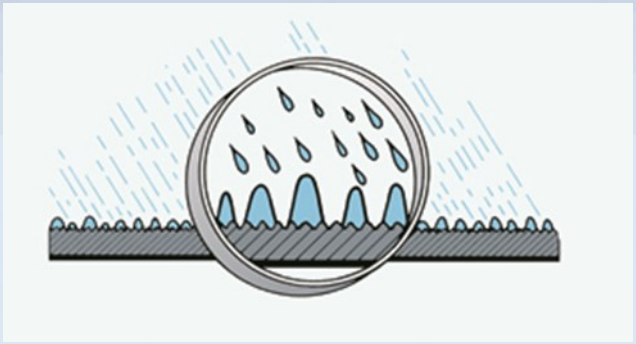
Externally Reinforced Coatings

Externally reinforced coatings strengthen the coating from the outside. The external reinforcement is another step in the surface preparation of the pan, before the coating is applied. For example, after grit-blasting, the pan is arc, or flame-sprayed, with molten stainless steel. When applied using the proper technique, the molten steel hits the pan, quickly cools and hardens into a series of “peaks” and “valleys” for optimized reinforcement. The nonstick coating is then applied over this surface, filling in the valleys and covering the peaks, locking the coating in place.

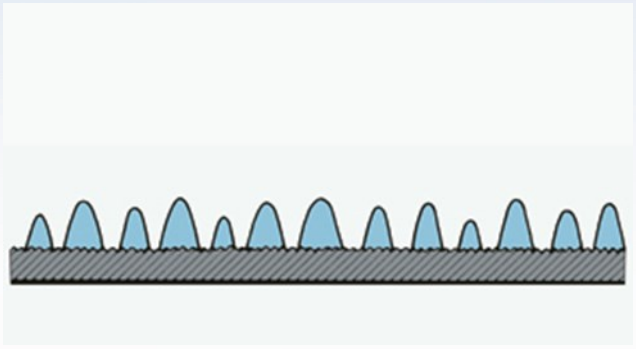
For the ultimate in reinforced coating options, you can apply an internally reinforced coating over an externally reinforced system.

Reinforced vs. Unreinforced Coatings

1. First, the surface of the pan is blasted with an abrasive to roughen it, so that other elements adhere better.



2. Then, the most important part: White-hot metal, including stainless steel, or ceramic particles are applied to the surface.



3. The particles cool and harden, welded to the surface, forming a series of "peaks" and "valleys" that provide a permanent base for the coatings.

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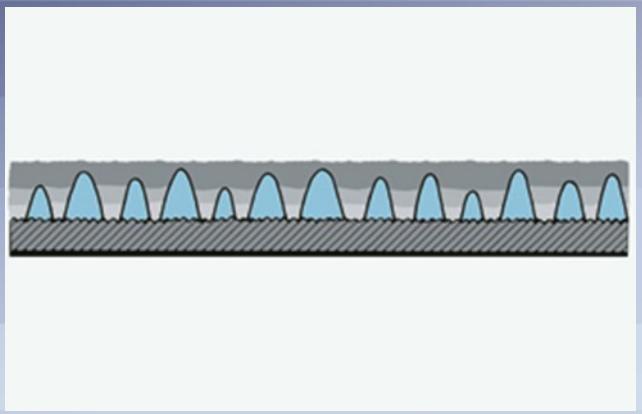

4. Several coats of tough nonsticks fill the "valleys" and cover the "peaks," locked permanently into place by the stainless steel "peaks."

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Where good ideas come to the surface.