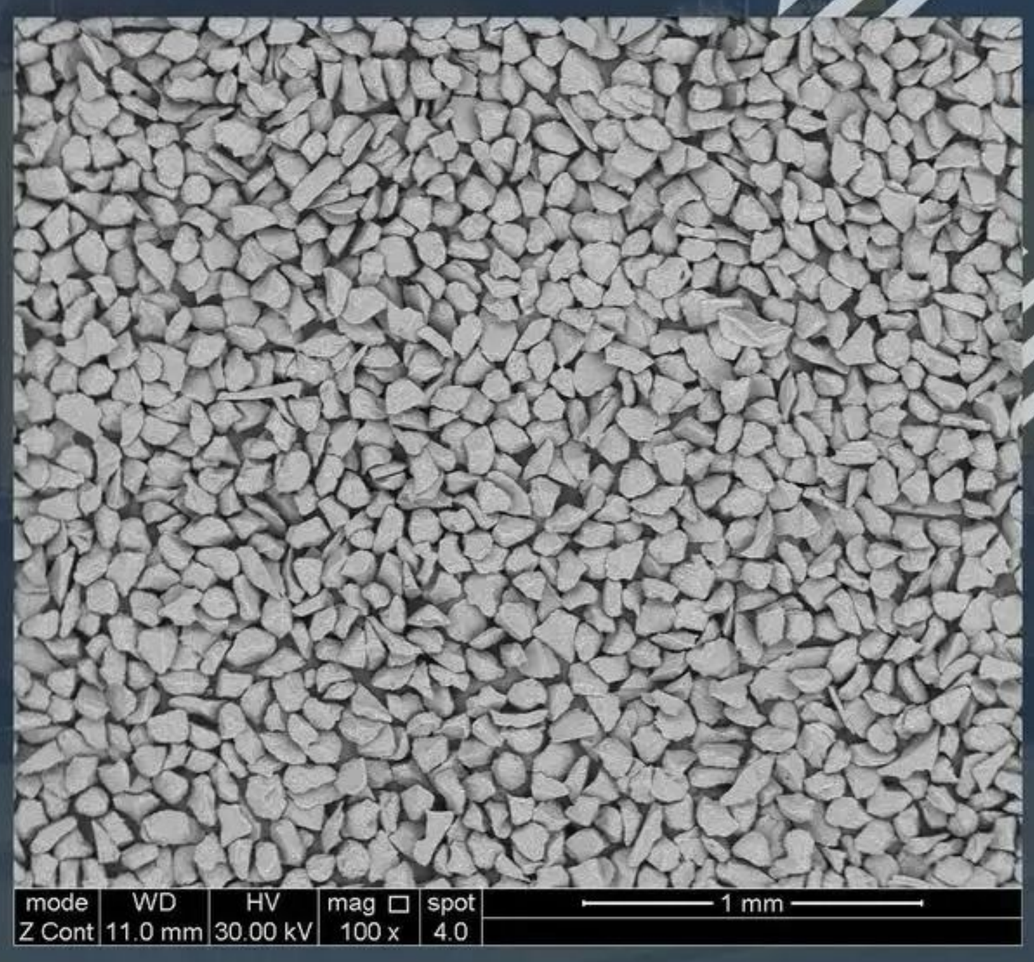
MARINE COATING

WHITE
ALUMINUM OXIDE/ CORUNDUM
NON SKID

HOW GRAIN SHAPE IMPROVES COATING & BOND STRENGTH



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NON SKID PERFORMANCE

Our grains have a sharp, angular shape, and that plays a big role in how white fused alumina performs in anti-slip coatings. Here's why the shape matters:

Better Grip and Traction

Angular particles create more mechanical grip than rounded ones. Their edges and corners bite into shoe soles, tires, or whatever comes into contact with the surface. This increases friction and reduces the chance of slipping, especially when the surface is wet or oily.

Stronger Anchoring in the Coating

The irregular shape helps the grains lock into the coating material. They don't roll or shift easily once embedded, which helps the coating stay effective for longer. Rounded grains would be more prone to loosening over time.

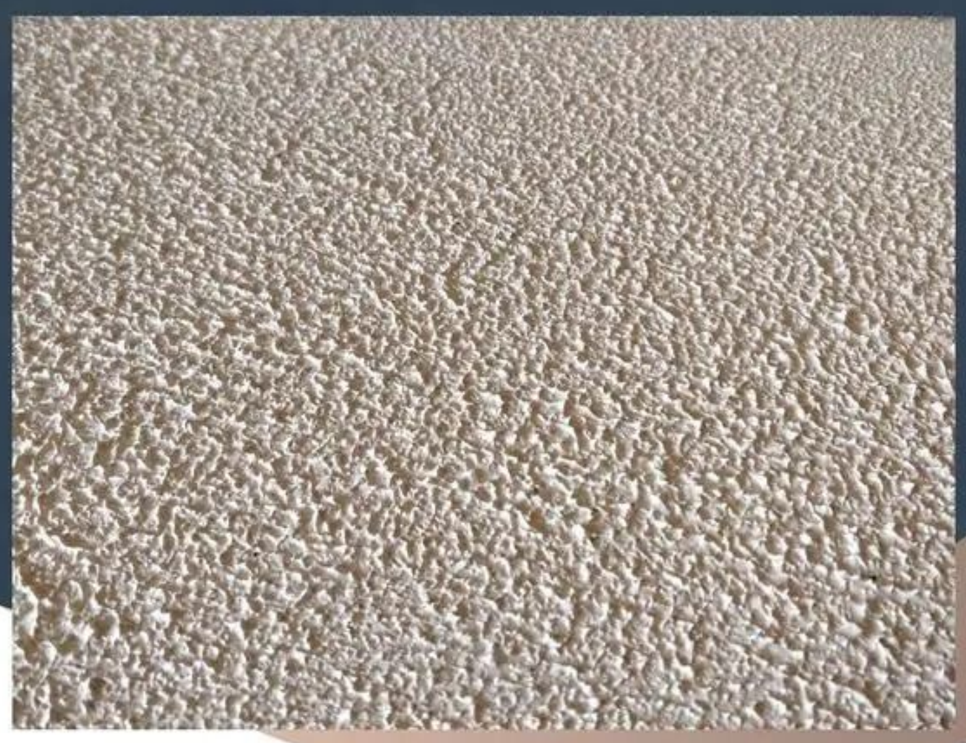
Higher Surface Roughness

The sharp geometry produces a more textured surface. This roughness is key for anti-slip performance. Even a thin layer of the coating keeps a profile that interrupts sliding surfaces, improving safety on floors, stairs, decks, and industrial walkways.

Durability Under Wear

White fused alumina is very hard and wear-resistant. Combined with the angular shape, it maintains its rough profile even as it gradually wears down. That means the anti-slip performance lasts longer compared to softer or more rounded fillers.

In short, the sharp, angular shape helps white fused alumina grip better, stay fixed in the binder, create a rough surface, and hold that structure over time.



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When the grains are more box-like with flatter faces, they give the coating more “contact area” to grab onto. That helps the bond in a few ways:

More Surface Area for the Resin to Hold

Flat faces give the binder (resin, paint, or adhesive) a larger area to wet and cure against. Instead of just touching at points or thin edges, the resin can form a broader contact layer with each grain. More contact area usually means a stronger mechanical hold.

Better Mechanical Keying

A blocky grain doesn’t rotate or shift as easily once the coating cures. The flat surfaces and edges act like little anchors. The binder settles around these faces and locks them in place, which helps resist wear, peeling, and particle loss over time.

Lower Stress Points

Rounded or needle-like grains can create single high-stress spots in the coating. Flat-topped grains spread the load more evenly into the surrounding binder. That reduces the chance of micro-cracks forming around each particle, which improves the coating’s durability.

More Uniform Texture

Boxy grains sit more evenly and create a more consistent texture across the surface.
A uniform profile helps the coating wear evenly instead of losing particles in weak spots.

So, the flat top and bottom surfaces give the resin more “real estate” to bond to, improve mechanical interlocking, reduce stress, and help the coating hold the grains firmly for longer.

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