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LASER: New design finish from ThyssenKrupp Nirosta for prestige architecture

Stainless steel offers many ways of highlighting prestige building facades. ThyssenKrupp Nirosta has now created a new variant – the LASER design finish. With its rolled surface texture, LASER is ideal for facades which are intended to reflect light uniformly and diffusely. LASER was firstly shown at the “Euroblech” in October 2010.

The design finish is characterized by a complete lack of design – at least if design is understood to mean a uniform pattern. LASER has a completely random texture. Unlike regularly aligned surface patterns, which reflect light differently depending on the angle of incidence, LASER provides for diffuse reflection.

Like other design finishes from ThyssenKrupp Nirosta, LASER is produced by cold rolling the stainless steel using appropriately patterned rolls, permitting continuous, high-yield, cost-effective production. Previously high-pressure glass bead blasting was required on stainless steel to achieve the same effect as LASER.

LASER is the result of a joint project between ThyssenKrupp Nirosta and Wetzel Processing Group, a leading manufacturer of printing and embossing rolls. The two partners developed a method of transferring randomly textured surfaces to patterned rolls and from there to stainless steel strip. The challenge lay in the fact that completely random textures are far more difficult to produce on rolled surfaces than regular patterns. The conventional approach is to design lots of individual, irregularly shaped microfigures on a computer – a complex process – and then combine these tiny elements into larger areas which are then reproduced until the entire roll surface is covered. The design is transferred to the surface of the roll using a computer-controlled combination laser and etching process. The disadvantage of this method is what specialists call pattern repeat: Depending on what angle they are viewed from, and especially from further away, the patterns can be seen to recur, which is exactly the opposite of what is required.

In the new approach, the shapes making up the microelements are no longer random but right-angled. That makes it possible to digitize the elements and then, via a random generator, spread them randomly over the surface of the roll using a new direct laser technology developed by Wetzell. From the distance at which building facades are observed, it is not possible to see that the individual microfigures are no longer completely random.

Stainless steel is a material of choice for prestige building facades. LASER provides a further high-end alternative, one more reason for using this material in the building envelope. LASER's rolled surface offers the additional benefit of being less sensitive to dirt and easier to clean than glass bead-blasted facade panels.

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