Floor Scales

Floor Scale Finishes
for Demanding Applications

There's more to a scale's surface than how it looks. The material that a scale is made of and the finish applied to the metal's surface determine the scale's ability to resist corrosion or meet sanitary cleaning requirements. For some applications, how a scale is finished is almost as important as how well it weighs.

Consumer product safety standards are driving increased needs for sanitary equipment. To meet those needs, food processing, pharmaceutical, and biotechnology customers require scales with specific material grades and finishes. METTLER TOLEDO has the specialized manufacturing capabilities to supply floor scales for the most demanding sanitary applications.

Our standard materials and finishes satisfy the needs of most floor scale applications. The basic options are painted carbon steel for general industrial environments and type 304 stainless steel for wet or corrosive environments.

Carbon steel floor scales are given a protective coating of two-part epoxy paint.

Painted steel

Carbon steel depends on a high-quality painted finish to protect against corrosion. We use a three-step finishing process: (1) blast the metal with steel grit/shot, (2) coat the metal with a two-part epoxy paint, and (3) treat the painted metal in a curing oven. This process provides a durable, protective finish that is suitable for many industrial applications.

METTLER TOLEDO

In addition to our standard paint, we offer a variety of special paints formulated to resist the corrosive effects of acids, alkalis, solvents, salts, fuels, and other aggressive chemicals. These paints are for use on scales that will be exposed to organic and inorganic acids, caustics, and high temperatures. We can help select a paint with the level of chemical resistance and performance characteristics that an application demands.

Stainless steel

Type 304 stainless steel is a low-carbon steel with 18 percent chromium and 8 percent nickel. Chromium is what gives stainless steel the unique properties that enable it to resist corrosion. Type 304 stainless steel with a standard glass-bead-blasted finish is suitable for many wet environments where corrosion resistance and cleaning are essential.

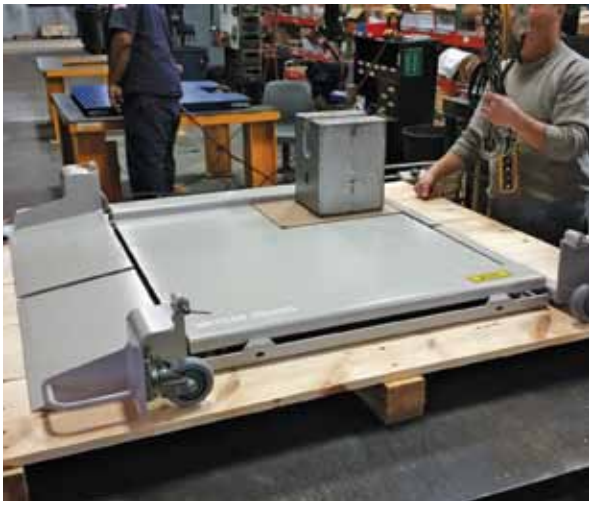
In addition to our standard materials, we offer type 316 stainless steel as an option. Type 316 stainless steel includes 2 percent molybdenum for greater resistance to corrosion from chloride and sulfur dioxide. Note that type 316 stainless steel cannot be used for all components. In some cases, a scale made of type 316 stainless steel will include type 304 components.

Stainless steel finishes

Most floor scale customers who have special requirements are looking for a specific stainless steel finish. Because unfinished metal has a rough surface, food and other materials tend to stick to it. If material from one batch is not completely removed, it can cross-contaminate other batches. Various finishing processes are used to reduce the roughness of the metal's surface.

Sanitary applications often require finishes with a specific surface roughness average (Ra). This average quantifies the vertical deviations (peaks and valleys) of a metal surface from its centerline. Ra is measured in micro-inches (or millionths of an inch). The lower an Ra number is, the less rough the surface will be.

Our standard glass-bead-blasted finish produces a 70-95 Ra value. Electropolishing is a chemical treatment that produces a very shiny surface with a 70-100 Ra value. When applications require stainless steel with lower Ra values, mechanical polishing is an



Carbon steel scales can be coated with special paints that resist the corrosive effects of acids and other chemicals.

Our standard finish for stainless steel floor scales is provided by glass bead blasting.

Stainless steel floor scales can be supplied with custom finishes for use in a variety of washdown applications.

effective solution. An in-house polishing bench allows METTLER TOLEDO to offer the finishes listed in the following table:

Surface Finish Specification	Abrasive Band	Ra Value
#3 Mill	100-120 Grit	50-70 Ra
#4 Industrial	120-150 Grit	30-40 Ra
#4 Sanitary	150-180 Grit	18-22 Ra
#4 Dairy	180 Grit	13-17 Ra

Other factors

Welding is an important consideration for scales that will be used in sanitary applications. While intermittent welds are acceptable for many floor scales, continuous welds are often specified when frequent cleaning is required. They create a seamless joint between the metal components and help eliminate gaps where contaminants can collect. Another option for sanitary applications is grinding the weld bead down to its base to create a uniform surface.

When requesting a particular finish, the customer must specify whether to apply the finish to the top surface only (the contact surface) or to all surfaces. If the finish is applied to all surfaces, we strongly recommend continuous welds with a ground finish to ensure the best possible results from polishing.

Traction in wet environments

Many scales are used in production areas where wet, oily, or dusty conditions can make footing treacherous. Among the most common applications are food and pharmaceutical facilities where scales are washed down regularly. When wet surfaces are combined with frequent foot traffic, a slip-resistant surface can be a valuable asset.

A smooth-plate platform is our basic offering for stainless steel floor scales in wet environments. Although it is an easy surface to clean, it provides very little traction, especially when wet. Tread plate improves footing in dry applications, but its benefits are limited when the platform is wet. Adding to its limitations is the fact that it is available only for type 304 stainless steel.

An in-house stroke belt sander is used for polishing floor scale platforms to meet the requirements of sanitary applications.

For sanitary applications, welds are ground smooth before a scale is polished.

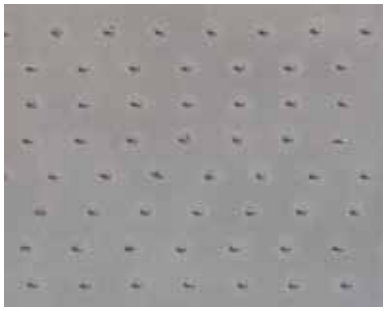
Slip-resistant surfaces

For wet applications where there is frequent foot traffic across a scale, ALGRIP® and SlipNOT® surfaces are safer options. Both have high coefficients of friction, providing scale platforms with excellent traction even in the wettest conditions. Used widely in the food-processing industry, these surfaces comply with standards set by the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA).

ALGRIP® and SlipNOT® surfaces can be applied to various metals, including type 304 and 316 stainless steel. In addition to supplying these surfaces for new floor scales, we can retrofit scales by replacing existing platforms with new slip-resistant ones.

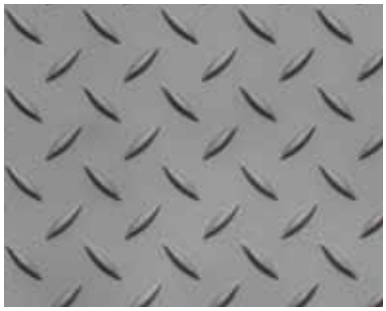
Custom materials and finishes

METTLER TOLEDO has extensive experience providing scales for all types of applications and environments. If you have a request for a custom floor scale, contact us about it. We can help match a material and finish to your application.



ALGRIP® laser-welding process applies more than a thousand slip-resistant laser deposits to each square foot of metal substrate.

SlipNOT® surface is applied using a plasma-stream process that deposits a random hatch matrix on the metal substrate.



Tread plate provides very little traction when the surface is wet. It is not available for Type 316 stainless steel.

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