

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.

Scale materials

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 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.



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

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.



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

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

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 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.

A smooth stainless steel surface can be slippery, especially in wet applications. To provide safe footing, we offer type 304 and 316 stainless steel platforms with special ALGRIP™ or SlipNOT® slip-resistant surfaces.

METTLER TOLEDO has extensive experience providing scales for sanitary 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.



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.

Mettler-Toledo, LLC
1900 Polaris Parkway
Columbus, Ohio 43240
Tel. (800) 786-0038
(614) 438-4511
Fax (614) 438-4900

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