

Durable stainless steel mesh stands up against abrasion and sanitization

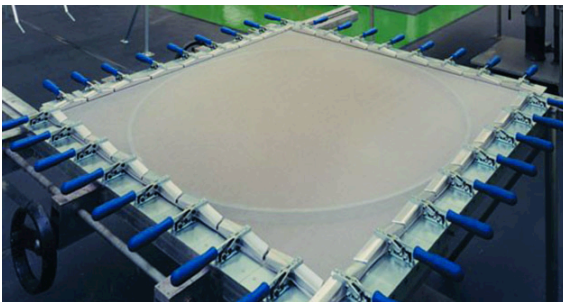
By *Carroll McCormick*

Mesh screens or sieve screens are used to sift just about anything. Metal powders, sand, flour, toner powder, sugar, pharmaceutical powders and adhesives all need to be screened. And though there are many materials available for making screens, nickel-containing stainless steel mesh provides many major benefits both during production and in maintenance operations.

London, England-based Russell Finex Group manufactures screening machines for many industries. Their largest market is the pharmaceutical industry, followed by food applications. The company makes most of its stainless steel screens from S30400 and S31600 woven wire mesh. S31600 is considered a more sanitary grade because it is less likely to react with pharmaceutical powders and foods such as flour, baking ingredients, tea, artificial sweeteners, spices and flavourings. Both screens and machines, which are also made of stainless steel, must be able to withstand severe weather, chemical attack, abrasion, acidic ingredients and corrosive agents, harsh cleaning chemicals, and hot water washing.

Among the harshest products screened are metal powders. Stainless steel better withstands the abrasion of these materials, and also the abrasion of cleaning agents. "Stainless steel is far more durable than nylon for screening abrasive products such as metal powders or ceramics," says a spokesperson for the company.

Stainless steel mesh is rigid, thereby providing better resistance to oversized materials that can jam or squeeze through the mesh. It also retains its specified gauge in high production temperatures and in high water temperatures during cleaning. These demanding conditions can shrink synthetic mesh and cause it to become brittle.



Screens made of woven wire mesh for corrosion resistance

Since it cleans so well and does not stain, the same stainless steel screen can be used to process a wide variety of materials, as well as materials of different colours. Chocolate powder, for example, can be a nightmare for cleaning people, says Dennis Cowles, maintenance manager for New Jersey-based Farbest Brands, a manufacturer and distributor of specialty food ingredients.

Also, after cleaning, synthetic sifter socks may not be completely dry, and the residual dampness can cause material to stick to the sock during the next production run. That's not a problem with stainless steel mesh.

Cowles also notes that stainless screens do not pick up static during production runs – a problem sometimes encountered with their synthetic counterparts.

As for longevity, the durability of stainless steel screens is product-specific and depends on the operating environment. However, if handled properly, they can last almost indefinitely.

"I have not found anything better than stainless for screening," says Cowles. "Synthetics may be cheaper in the short term, but you can go through 20 to 30 in a month, versus one stainless screen every six months. Stainless simply lasts longer over time."

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