

Datum FG

Datum FG is a stainless steel with superior fatigue strength, super smooth surface and elevated wear factor. Datum FG has all the benefits of Datum PhD Stainless Steel such as excellent flatness and the ability to be half-etched without distortion. Standard stainless steel has a grain size of 20 to 30 microns. Datum FG has a grain size of just 1 to 2 microns.

This super-fine crystal grain is achieved by reducing carbon which moderates recrystallization behaviour and prevents the formation of Cr₂₃C₆ (chrome-carbide which is seen as smut and also shows as rust on the surface as it prevents formation of the passivation later), adding nitrogen which gives solid solution-strengthening and the addition of niobium to yield fine grain size and provides secondary protection against the formation of Cr₂₃C₆.

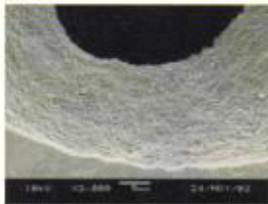
This results in a huge increase in the number of grains in the substrate and thus the number of grain boundaries. Energy is absorbed at the grain boundary so this increase in the number of grain boundaries means higher energy absorption.

This means that we are able to provide a material with hardness greater than 430HV and that has a cycle life of 107 cycles in mechanical applications such as springs or gaskets before failure.

Like Datum PhD, Datum FG also has the 'wetcoat' surface treatment to deliver enhanced lubrication and wetting characteristics.

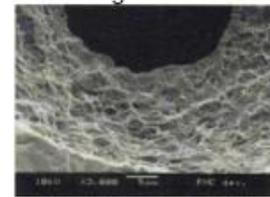
Finer Printing

The two photos below show the differences between regular stainless steel and Datum FG on etched apertures:



Datum FG

As you can see here, much finer features and smoother walls are achieved with Datum FG than with standard 304 or 301SS



Standard 304/301SS

Datum FG is also used in the manufacture of photocopiers and laser printers. It was found when using standard stainless steel that the toner would 'stick' to the laser cut and etched walls. This is because the typical grain size of toner is 8 microns and because the grain size of the stainless was up to 30 microns it was very easy for the toner to adhere into the grain. This would result in corrosion in the device and mechanical failure.

With the introduction of Datum FG, this stops because it is impossible for the toner particle to adhere to the surface as the grains are smaller. This means that for solder paste that you will see improved print quality and release and especially with paste types 6, 7 and 8 where PSD can be as low as 1 or 2 microns.

Super Smooth

Super smooth surface technology, coupled with our unique wetcoat treatment results in a stencil substrate that will out-print any stainless steel on the market.

Available Thicknesses: 0.080mm, 0.100mm, 0.120mm, 0.130mm, 0.150mm, 0.180mm
Material Width: 610mm
Delivery Format: in cut sheet or coil
Inspection: 100% inspection of material during processing is guaranteed