

S2.2.2 MINIMESH RPD HIFLO-S - High Performance Metal Filter Cloth

Judith Ahlke, Friedrich Edelmeier

Haver & Boecker Wire Weaving Division

Compared to other filter media, the specific properties of a woven wire mesh may be precisely described geometrically and defined through the type of weave, wire diameter and mesh count. For the user and manufacturer of woven wire filters, this is a considerable advantage because geometric pore size and permeability can be precisely calculated beforehand. With these “precision pores” it is possible to attain a higher separation effect and shape stability.

Where conventional filter cloths have reached their limits, the new developed Reverse Plain Dutch Weave with High Flow Capacity (RPD HIFLO-S) opens up new dimensions in filtration. Using new weaving technology developed by Haver & Boecker, a three-dimensional pore geometry is created that increases the number of pores and thus the open surface. For a given pore size, the flow rate is more than doubled compared to conventional Dutch Weaves. In addition, the flow conditions are optimized and turbulence around the filter cloth is effectively avoided. The pore size within a batch can be calibrated as desired from 5 µm to 40 µm.

The depth structure of RPD HIFLO-S facilitates high separation efficiency without rapid blinding. This leads to longer filtration processes between cleaning intervals and longer service life for greater production reliability.

The new filter cloth can be manufactured from standard diameter wires. This has a positive effect on cost. Moreover, it is now possible to weave special materials such as Alloy 310 S, Hastelloy C 22, Inconel 600 or titanium even in the small pore range. Thus, for the first time, filter cloth with pore sizes below 40 µm can be manufactured in corrosion- and temperature-resistant alloys.

Characteristics:

- Twice the flow for a given pore size compared with conventional Dutch Weaves in the low pore size range
- Extremely sharp cut-point (verified and certified by Whitehouse Scientific glass bead challenge testing)
- High degree of mechanical stability due to the robust three-dimensional design
- Corrosion and temperature resistant special alloys
- Optimum dirt holding and purging properties
- Different pore sizes in one batch from 5 µm to 40 µm