



Nordson Filter Efficiency Information

Econo-Coat II® Powder Coating Systems

The two-stage filtration of the Nordson Econo-Coat II Powder Coating System has been specifically designed to ensure that the air returned to the plant from the powder coating booth is as clean as possible.

- The primary filters knock down a majority of the over-sprayed powder for easy collection and reuse.
 - The secondary filters eliminate any particles that get through the primary filters before the booth air is exhausted back to the plant.
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Primary Filters

The first stage of filtration in the Nordson Econo-Coat II Powder Coating Booth is a set of 36-inch long cartridge filters (Nordson High-Efficiency, part 153134) made of a high-efficiency blend of cellulose and polyester.

These tests were conducted with 26-inch filters at 500 cfm using Valspar Flat Black Epoxy 1000B3 Powder Paint with a particle size distribution and specific gravity typical of most powder paints. Most of the powder that gets through the cartridge filters is 1–5 microns or less.

Since there is not a standardized test for determining the efficiency of cartridge filters subject to pulse cleaning, a procedure similar to the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) paper RP531 was followed to determine the efficiency by weight of all three types of cartridge filter.

	Primary Filter
Nordson Part Number	153134
Nominal Length	36 inches
Diameter	12.75 inches
Filter Media Material	cellulose and polyester blend
Design Airflow	1000 cfm per cartridge
Efficiency by Weight**	99.999699%
** The Efficiency by Weight value listed can be used to determine the amount of powder by weight which will be captured by the cartridge filters during normal operation. For example, the efficiency by weight of the High-Efficiency filter is 99.999699%, meaning that for every 100 pounds of powder fed to the cartridge, it should capture 99.999699 pounds and allow 0.000301 pounds to go to the secondary filters.	

Secondary Filters

The second stage of filtration in the Nordson Econo-Coat II Powder Coating Booth is a set of panel-type filters (Nordson part 101432) made from glass micro-fiber media.

These filters are rated as 90–95% ASHRAE filters. This means that the media used in the filters has been tested using ASHRAE Standard 52–76 test procedures. The ASHRAE Standard 52–76 test is a standardized test common to the filtration industry, which measures the filtration efficiency of the filter media using a standard test dust at a specific airflow.

Testing has shown these panel filters to be 100% efficient with particle sizes over 5.0 microns.

By weight, these filters will capture 99.99% of the powder fed to them. This was determined using ASHRAE Standard 52–76 test procedure using ASHRAE Standard Test Dust.

These filters capture the particles 1–5 microns or less that are not captured by the primary filters.

Percent Removal Efficiency by Particle Size	
0.3 micron	60%
0.7 micron	94%
1.0 micron	98%
3.0 microns	99.99%
5.0 microns and greater	100.00%

	Secondary Filter
Nordson Part Number	101432
Filter Material	90–95% ASHRAE glass micro-fiber media
Rated Airflow	1700 cfm per filter
Test Procedure Used	ASHRAE 52–76
Test Dust Used	ASHRAE Standard Test Dust
Average Synthetic Dust Spot Efficiency	90.2%
Average Synthetic Dust Weight Arrestance	99.99%
Initial Pressure Drop	1.0 inch w.c.

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