Standards, Regulations and Recommendations

EN 779:2012 Classification

Group	Filter Class	Final pressure drop (test) Pa	Average arrestance (Am) of synthetic dust %	Average efficiency (Em) for 0.4 µm particles %	Minimum efficiency ²) for 0.4 µm particles %
Coarse	G1	250	50 ≤ Am ≤ 65	-	-
	G2	250	65 ≤ Am ≤ 80	-	-
	G3	250	80 ≤ Am ≤ 90	-	-
	G4	250	90 ≤ Am	-	-
Medium	M5	450	-	40 ≤ Em ≤ 60	-
	M6	450	-	60 ≤ Em ≤ 80	-
Fine	F7	450	-	80 ≤ Em ≤ 90	35
	F8	450	-	90 ≤ Em ≤ 95	55
	F9	450	-	95 ≤ Em	70

¹The characteristics of atmospheric dust vary widely in comparison with those of the synthetic loading dust used in the tests. Because of this, the test results do not provide a basis for predicting other operational performance or service life. Loss of media charge or shredding of particles or fibers can also adversely affect efficiency.

²Minimum efficiency is the lowest of any of the following three values: initial efficiency, discharged efficiency, or efficiency throughout the test's loading procedure.

Test Standard Correlations



The test standard correlations above are approximations based on results obtained on a sampling of products. Actual results on products may differ somewhat from these correlations, and a product tested to one standard that needs to meet the requirements of another standard should be tested in accordance with the specified standard.



AAF has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.

www.aafintl.com

Supply (SUP) Air Categories

	Description	General Ventilation	Industrial Ventilation
 SUP1	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2003) guidelines aftin values multipled by a factor x 0.25 (annual mean for PMZ.5 \leq 2.5 µg/m3), m3 and PM10 \leq 5 µg/m3).		Applications with high hygienic demands Hospitals, pharmaceutics, electronic and optical industry, supply air to cleanrooms.
SUP2	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2005) guidelines a puidelines aftir values multipled by a factor x 0.5 famual mean for PM2.5 \pm pg/m3 and PM10 \pm 10 pg/m3).	Rooms for permanent occupation Kindergartens, offices, horels, residential buildings, meeting rooms, exhibition halls, conference halls, theaters, cinemas, concert halls.	Applications with medium hygienic demands Food and beverage production.
 SUP3	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2005) guidelines a puritive later and the values untitpleted by a factor $x_0.5^2$ (annual mean for PMM2.5 ≤ 7.5 µg/m3 and PM10 ≤ 15 µg/m3).	Rooms with temporary occupation Storage, shopping centers, washing rooms, server rooms, copier rooms.	Applications with basic hygienic demands Food and beverages production with a basic hygienic demand
 SUP4	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2005) guidelines aftir values multipled by a factor x 1.0 (amual mean for PM2.5 \pm 10 µg/m3 and PM10 \pm 20 µg/m3).	Rooms with short-term occupation Restrooms, storage rooms stairways.	Applications without hygienic demands General production areas in the automotive industry.
SUP5	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2008) guidelines aftir values multipled by factor x 1.5 guinual mean for PM2.5 \pm 15 µg/m3 and PM10 \leq 30 µg/m3.	Rooms without occupation Carbage room, data centers, under- ground car parks.	Production areas of the heavy industry. Steel mill, smelters, welding plants.

Selecting Filter Efficiency

						Better SUP			
				,	Supply	Supply Air Quality (SUP)	(SUP)		Test Duct and Discharge Chamber- ISO 16890
				SUP1*	SUP2*	SUP3**	SUP4	SUP5	
		Annua	Annual Mean	PM2.5 ≤ 2.5 μg/ m3 and PM10 ≤ 5 μg/m3	PM2.5 ≤ 5 µg/m3 and PM10 ≤ 10 µg/m3	PM2.5 ≤ 7.5 μg/ m3 and PM10 ≤ 15 μg/m3	PM2.5 ≤ 10 μg/m3 and PM10 ≤ 20 μg/m3	PM2.5 ≤ 15 µg/m3 and PM10 ≤ 30 µg/ m3	
		PM2.5 µg/m3	PM10 µg/m3	ePM1	ePM1	ePM2.5	ePM10	ePM10	
hir Adir	0DA1	≤ 10	≤ 20	60%	50%	60%	%09	50%	
tdoor (O	ODA2	≤ 15	≤ 30	80%	70%	70%	80%	%09	
ono On	ODA3	≥ 15	≥ 30	%06	80%	80%	%06	80%	
* Minim refer t ** Minim refer t	 Minimum filtration requirements ISO PM1 50% refer to a final filter stage Minimum filtration requirements ISO PM2.5 50% refer to a final filter stage 	n requiren er stage 1 requirem er stage	rents ISO F	M1 50% M2.5 50%	Source: EU 16890 ratec applications 9, 2018.	ROVENT 4/23 I air filter clas: s", 1st Edition	Source: EUROVENT 4/23 2017 "Selection of EN ISC 16890 rated air filter classes for general ventilation applications", 1st Edition (Update 1), published Jan. 9, 2018.	Source: EUROVENT 4/23 2017 "Selection of EN ISO 16890 rated air filter classes for general ventilation applications", 1st Edition (Update 1), published Jan. 9, 2018.	7
NOTE: S	NOTE: Some countries (e.g. Sweden) may have	ries (e.g. S	weden) má	ty have					

OAO seroW

1

HVAC Filter Designations

The Evolution of Air Filter Standards - Efficiency and Arrestance

Efficiency flange 35% 40% 55% 50% 55% 70% 75% 80% 90% 55% 10% 0% 5% 10% 15% 20% 25% 30%

e PMU-5 E, average fricterory e manual describate → 	ISO16890: 2016			50% 55% 60% 53% 70% 77% 80% 55% 90% 95% 100%	0% 35% 1	5500
Arrestance – ASHAE - Li, average efficiency E, >50%, repo Arrestance – ICN Fines Dist -0.3 – 2.4m particulate → E, >50%, repo Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50%, repo Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50%, repo Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50% Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50% Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50% Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50% Arrestance – ICN Fines Dist -0.3 – 1.0m particulate → E, >50% Arrestance – ICN Fines Dist -0.4m particulate F Arrestance Fines Dist -0.4m particulate F </td <td></td> <td></td> <td></td> <td>E_i >50%, reported as actual ePM10 = %, if ePM2.5 <50%</td> <td>5 <50%</td> <td>_</td>				E_i >50%, reported as actual ePM10 = %, if ePM2.5 <50%	5 <50%	_
			 ePM2.5 - E_m, average efficiency (initial and discharged) 0.3 - 2.5µm particulate → 	E_m >50%, reported as actual ePW2.5 = %, if ePM1.0 <50%	0 <50%	
			 ePM1.0 - E_m average efficiency (initial and discharged) 0.3 - 1.0µm particulate → 	E _m >50%, reported as actual ePM1.0 = %		
State offer offer <th< th=""><th></th><th>Arrestance - ISO Fines Dust Contract <50% @DP200Pa >50% @DP200Pa</th><th></th><th></th><th></th><th></th></th<>		Arrestance - ISO Fines Dust Contract <50% @DP200Pa >50% @DP200Pa				
Minimum efficiency for the Alphyse Dask MS MS MS Annum efficiency for 0.4µm particulate F1 F8 F9 F9 F F F8 F9 F1 F1 F1 F F F8 F9 F1 <	EN779: 2012		35% 40% 45%	Efficiency 50% 55% 60% 55% 70% 75% 80% 85% 10	0% 95%	100%
Minimum efficiency F7 F8 F9 F9 Amountum efficiency F7 F8 F8 F9 F8 F1 F1 F7 F8 F8 F9 F8			Average efficiency for 0.4µm particulate	M6	F8 F9	
= -54H05 [Dist		To Mi				
Efficiency 108 155 206 256 208 258 408 428 505 508 608 708 758 808	1	estance – ASHRAE Du 55% 00% 00% 00% 00% 00% 00% 00% 00% 00%				
	ASHRAE Standard 52.	10% 15%	25% 30% 35% 40% 45%	55% 60% 65% 70% 75% 80% 85%	90% 85%	10.0%
	where M = MERV				1	-

ASHRAE Standard 52.2	- 201	2								Eff	fficiency									
	0% 5	5%	10%	15%	20%	25%	308	35%	40%	45%	50%	55%	60%	65%	70%	125%	80%	85%	90%	965%
where M = MERV				_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	2
 E3 – <u>average</u> efficiency P = 10 provision factor 		W FW	6 Mg	NW.		ME			MG				7W2		M8	M9	W	0 W1	1 M12	

● 53 - manage efficiency 3.0 - 10.0µm particletters 3.2 - 10.0µm particletters 1.0 - 3.0µm particle										
M8 M9 M10 M11 M12 M13 M14 M11 M12 M13 M13 M14 M15	 E3 <u>– average</u> efficiency 3.0 – 10.0µm particulate → 		<u>M5</u>	We	ZW	<u>M8</u>	<u>6W</u>	10 M1	1 M12 M13	<u>M15</u> M15
M13 M13 M13 M13 M13		 E2 - <u>average</u> efficiency 1.0 - 3.0µm particulate → 	<u>M8</u>	<u>6W</u>	<u>M10</u>	<u>M11</u>				<u>M16</u>
		 E1 – <u>average</u> efficiency 0.3 – 1.0µm particulate → 	<u>M11</u>	<u>M12</u>	<u>M13</u>		<u>M14</u>		<u>M15</u>	<u>M16</u>
									L	L

Dust Spot Efficiency → 20% Arrestance % → <90%





VariCe/® VXL V-Bank Filter

DriPak® NX Bag Filter

 \tilde{c}

MEGApleat[®] Prefilter

national guidelines.