



Air Filter Test Standard Comparison Chart

ASHRAE 52.2, ISO16890, EN779

ASHRAE Standard 52.2-2017					ISO 16890				EN779 (Obsolete)				
Minimum Efficiency Reporting Value	Composite Average Particles Size Efficiency E value (%) in Size Range			Avg. Arrest.	Average of Initial and Discharged Efficiency $E_m = (E_i + E_d)/2$		Initial Efficiency (E_i)	Initial Efficiency (A_i)	Filter Class	Avg. Arrest. (A_m) of Synthetic Dust	Avg. Eff. (E_{min}) at 0.4 μ m	Min. Eff. (E_{min}) at 0.4 μ m	
	MERV	Range 1 (μ m)	Range 2 (μ m)	Range 3 (μ m)	%	ePM1 (%)	ePM2.5 (%)	ePM10 (%)					ISO Coarse (%)
		0.3 - 1.0	1.0 - 3.0	3.0 - 10.0		0.3-1.0	1.0-3.0	3.0-10.0					ISO Fine Dust
1			$E_3 < 20$	$A_m < 65$				$A_i < 50$ Final dP 200 Pa	G1	$50 \leq A_m < 65$			
2			$E_3 < 20$	$65 \leq A_m$									
3			$E_3 < 20$	$70 \leq A_m$						G2	$65 \leq A_m < 80$		
4			$E_3 < 20$	$75 \leq A_m$									
5			$E_3 \geq 20$	N/A				$A_i \geq 50$ Final dP 300 Pa	G3	$80 \leq A_m < 90$			
6			$E_3 \geq 35$	N/A									
7			$E_3 \geq 50$	N/A						G4	$90 \leq A_m$		
8		$E_2 \geq 20$	$E_3 \geq 70$	N/A									
9		$E_2 \geq 35$	$E_3 \geq 75$	N/A			$E_i \geq 50$		M5		$40 \leq E_m < 60$		
10		$E_2 \geq 50$	$E_3 \geq 80$	N/A									
11	$E_1 \geq 20$	$E_2 \geq 65$	$E_3 \geq 85$	N/A			$E_m \geq 50$	$E_i \geq 70$	M6		$60 \leq E_m < 80$		
12	$E_1 \geq 35$	$E_2 \geq 80$	$E_3 \geq 90$	N/A									
13	$E_1 \geq 50$	$E_2 \geq 85$	$E_3 \geq 90$	N/A	$E_m \geq 50$	$E_m \geq 65$	$E_i \geq 80$		F7		$80 \leq E_m < 90$	$E_{min} \geq 35$	
14	$E_1 \geq 75$	$E_2 \geq 90$	$E_3 \geq 95$	N/A	$E_m \geq 70$	$E_m \geq 75$	$E_i \geq 85$		F8		$90 \leq E_m < 95$	$E_{min} \geq 55$	
15	$E_1 \geq 85$	$E_2 \geq 90$	$E_3 \geq 95$	N/A	$E_m \geq 80$				F9		$95 \leq E_m$	$E_{min} \geq 70$	
16	$E_1 \geq 95$	$E_2 \geq 95$	$E_3 \geq 95$	N/A									

A_i = Initial Arrestance
 A_m = Average Arrestance
 E_i = Initial Efficiency
 E_d = Discharged Efficiency
 E_m = Average Efficiency
 E_{min} = Minimum Efficiency

- The filter class is the highest class where the filter meets all requirements.
- Comparisons are approximations given for reference only. Filters should be tested to the most recent standards.
- For ISO ePM1 and ePM2.5 both initial and discharged efficiency need to be over 50% to qualify for a class.
- Comparisons between ISO 16890 and ASHRAE 52.2 are more accurate when the MERV-A value is used.

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