

Excerpted from: National Air Filtration Association: Understanding MERV

This ANSI/ASHRAE Standard 52.2 “Understanding MERV” User Guide was created by the National Air Filtration Association (NAFA), an international group of air filter distributors, manufacturers and engineers. This Guide, and the application of a particle-based contaminant removal standard prescribed by ANSI/ASHRAE Standard 52.2-2012 “*Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*,” are intended to assist end-users and specifiers in their selection of appropriate air filtration products and understanding of the MERV values in the 52.2 test reporting

Minimum Efficiency Reporting Value (MERV)

An “overall” reporting value of a 52.2-evaluated air filter is the expression of the **Minimum Efficiency Reporting Value (MERV)**. The MERV is a single number that is used, along with the air velocity at which the test was performed, to simplify the extensive data generated by the method of testing. MERV is expressed on a 16 point scale and is derived from the PSE for each of the three groups. (See Table 3: MERV Parameters.) The average PSE for each of the three groups (E1, E2 and E3) is referenced against the Minimum Efficiency Reporting Value Parameters (see Table 3: MERV parameters). Move up the appropriate Range Group (E1, E2 and E3) on Table 3 and record the MERV to the left of the first true statement. Do this for all three groups.

TABLE 3: MERV PARAMETERS

Standard 52.2 Minimum Efficiency Reporting Value (MERV)	Composite Average Particle Size Efficiency, % in Size Range, μm			Average Arrestance, %
	Range 1 (0.3-1.0)	Range 2 (1.0-3.0)	Range 3 (3.0-10.0)	
1	n/a	n/a	$E_3 < 20$	$A_{\text{avg}} < 65$
2	n/a	n/a	$E_3 < 20$	$65 \leq A_{\text{avg}} < 70$
3	n/a	n/a	$E_3 < 20$	$70 \leq A_{\text{avg}} < 75$
4	n/a	n/a	$E_3 < 20$	$75 \leq A_{\text{avg}}$
5	n/a	n/a	$20 \leq E_3 < 35$	n/a
6	n/a	n/a	$35 \leq E_3 < 50$	n/a
7	n/a	n/a	$50 \leq E_3 < 70$	n/a
8	n/a	$20 \leq E_2$	$70 \leq E_3$	n/a
9	n/a	$35 \leq E_2$	$75 \leq E_3$	n/a
10	n/a	$50 \leq E_2 < 65$	$80 \leq E_3$	n/a
11	$20 \leq E_1$	$65 \leq E_2 < 80$	$85 \leq E_3$	n/a
12	$35 \leq E_1$	$80 \leq E_2$	$90 \leq E_3$	n/a
13	$50 \leq E_1$	$85 \leq E_2$	$90 \leq E_3$	n/a
14	$75 \leq E_1 < 85$	$90 \leq E_2$	$95 \leq E_3$	n/a
15	$85 \leq E_1 < 95$	$90 \leq E_2$	$95 \leq E_3$	n/a
16	$95 \leq E_1$	$95 \leq E_2$	$95 \leq E_3$	n/a