

# ASHRAE 52.2-1999 MERV Parameters

Performance						Application		
ANSI/ASHRAE Standard 52.2				ASHRAE Standard 52.1		Controlled Particulate		Typical Application
MERV	Composite Average Particle Size Efficiency, % in Size Range			Average arrestance	Average dust-spot efficiency	Size	Examples	
	E <sub>1</sub> (0.3 µm to 1.0 µm)	E <sub>2</sub> (1.0 µm to 3.0 µm)	E <sub>3</sub> (3.0 µm to 10.0 µm)					
1	--	--	<20%	<65%	<20%	>10.0 µm	<ul style="list-style-type: none"> <li>• Pollen</li> <li>• Dust mites</li> <li>• Sanding dust</li> <li>• Carpet fibers</li> <li>• Spray paint dust</li> <li>• Textile fibers</li> </ul>	Minimum filtration, residential, window air conditioners
2	--	--	<20%	65 to 70%	<20%			
3	--	--	<20%	70 to 80%	<20%			
4	--	--	<20%	75 to 80%	<20%			
5	--	--	20 to 35%	80 to 90%	<20%	>10.0 µm	<ul style="list-style-type: none"> <li>• Pollen</li> <li>• Dust mites</li> <li>• Sanding dust</li> <li>• Carpet fibers</li> <li>• Spray paint dust</li> <li>• Textile fibers</li> </ul>	Minimum filtration, residential, window air conditioners
6	--	--	35 to 50%	85 to 90%	<20%			
7	--	--	50 to 70%	>90%	20 to 30%			
8	--	--	>70%	>90%	30 to 35%			
9	--	<50%	>85%	>90%	40 to 45%	1.0 to 3.0 µm	<ul style="list-style-type: none"> <li>• Legionella</li> <li>• Lead dust</li> <li>• Coal dust</li> <li>• Auto emissions</li> <li>• Milled flour</li> <li>• Humidifier dust</li> <li>• Nebulizer drops</li> <li>• Welding fumes</li> </ul>	Better commercial buildings, hospitals, laboratories
10	--	50 to 65%	>85%	>95%	50 to 55%			
11	--	65 to 80%	>85%	>95%	60 to 65%			
12	--	>80%	>90%	>95%	70 to 75%			
13	<75%	>90%	>90%	>98%	80 to 90%	0.3 to 1.0 µm	<ul style="list-style-type: none"> <li>• Bacteria</li> <li>• Most tobacco smoke</li> <li>• Cooking oil</li> <li>• Droplet nuclei</li> <li>• Most smoke</li> <li>• Insecticide dust</li> <li>• Copier toner</li> <li>• Most face powder</li> <li>• Most paint pigments</li> </ul>	Superior commercial, general surgery, smoking lounges, hospital inpatient care
14	75 to 85%	>90%	>90%	--	90 to 95%			
15	85 to 95%	>90%	>90%	--	>95%			
16	>95%	>95%	>95%	--	--			