Filtration Rating

Filters are rated on the basis of their ability to separate particulate matter of certain size levels from a fluid, under specific operating conditions.
The following definitions are used to specify filter performance:

Absolute Filtration Rating – The diameter of the largest hard spherical particle that will pass through a filter under specified test conditions. This is an indication of the largest opening in the filter element. The concept of the retention of the largest particle is shown diagrammatically under "Filtration Mechanism."

Verification test method is described under "Maximum Particle Passed Test."

Efficiency – The Ability of a filter, expressed as a percent, to remove a specified artificial contaminant at a given concentration, under specified test conditions. There are two principle means of expressing efficiency:

Nominal Filtration Rating – An arbitrary value determined by the filter manufacturer, who may claim a nominal filtration rating, based on a 90%, 95%, of 98% retention by weight of a specified artificial contaminate at a given concentration under specified conditions. The test used is normally the Degree of Filtration test described "Filtration Test Methods."

Due to the lack of reproducibility and uniformity throughout the industry, this rating is losing favor, especially to the more modern and sophisticated Beta-rating described below.

Beta (B) Filtration Rating - The ratio of the number of particles greater than a given (X) size in the influent fluid to the number of particles greater than the same size (X) in the effluent fluid. The ration can be expressed by the following equation: