Filter Manufacturers Council

Technical Service Bulletin 02-2

FILTRATION MEDIA

Back to *Technical Service Bulletins*

The purpose of filtration is contamination control. Contamination control is the process of achieving a balance between the sources of contamination and the ability of a system to tolerate contamination. The ultimate goal is to balance filtration performance with the desired cleanliness level.

The media in a filter is the physical mechanism used for contamination control. Media construction and filter configuration are used to determine the filter's efficiency for particle removal, it's contaminant capacity and the pressure drop, or resistance to flow, through the filter. By working with these variables - efficiency, capacity, pressure drop - the filter's performance level can be determined.

With filter media being so critical to contamination control, what is available to construct media from? The options are virtually limitless. They range from mesh screens to depth style media such as threads or chopped paper to 100% natural cellulose to 100% man-made microfibers to almost any conceivable combination in between.

With so many media choices, how does an engine, system or filter manufacturer choose which media to use? While keeping in mind the purpose of filtration is contamination control, the manufacturer has to make a performance decision regarding the physical size of contamination that can be tolerated by the system.

Typically, if only larger particles are to be removed, a very basic cellulose media is used. As the size of contamination to be removed gets smaller and smaller, the type of media changes from a more complex cellulose to blended media where cellulose and man-made fibers are blended together in various configurations. For the removal of extremely small contamination, media typically changes from one dominated by cellulose to one made exclusively from various types of man-made microfibers.

It should be noted that filter manufacturers usually have between 50 and 75 different media grades at their disposal. Some of these are proprietary to a particular manufacturer and some are more commonly used across the entire industry. The reason for such a variety is not only the ability to control a certain size of particle contamination but the fact that media designed for oil filtration cannot be effectively used for air filtration and air filtration media cannot be used for coolant filtration, etc.

Today's automotive and heavy duty filtration needs are very different than those of just 20 to 25 years ago. Media design, construction and availability has changed to meet the performance needs of today's systems. Media research and development continues to be very dynamic to insure the needs of future systems are met.

For additional information, contact:

Filter Manufacturers Council
P.O. Box 13966
Research Triangle Park, NC 27709-3966
Phone: 919/549-4800 Fax: 919/549-4824
Used Filter Recycling Hotline: 800/993-4583
www.filtercouncil.org

Administered by Motor & Equipment Manufacturers Association

Back to *Top*
Back to *Technical Service Bulletins*