Wound filter cartridges versus melt blown cartridges.

Wound filter cartridges

Wire wound (wound string) filter cartridges are the original cartridges. The filter medium is a wire made from, for example, polypropylene, cotton, fiber glass, or polyester. The wire is wound tightly against each other to a core. The wires closest to the centre core is wound the narrowest. Further to the outside the string is wound gradually further apart, creating bigger openings to catch the biggest dirt particles on the outside and the smallest nearest to the centre core. This winding technology provides an actual density gradation.

A core is required to provide the wound filter cartridge of structural firmness. The core may be made of various materials depending on the application. The most commonly used materials are: polypropylene, stainless steel or galvanized steel.

A wound filter cartridge is effective in the removal of particulate matter with great variety in size (wide particle size distribution). The filter cartridge removes particles of its own micron rating perfectly, without being clogged by larger particles. Because of the overlapping characteristics of the wound wires, this type of filter cartridge, has a significant larger, effective surface area when compared with a melt blown filter cartridge. Wound filter cartridges are exceptionally useful for surface water filtration, such as river water, wastewater and process water.

Despite the fact that the wound filter cartridges is the predecessor of all other filter cartridges with polypropylene fiber constructions, this type of cartridge is still great for general use and for some applications it is even the best choice.

Wound filter cartridges are cost effective and widely deployed for filter applications.
Wound cartridge filter versus melt blown filter cartridge.

Melt blown filter cartridges

Melt blown filter cartridges are a huge advancement in the filter technology. In many cases, they have replaced the wound filter cartridges because they have a number of advantages. Melt blown filter cartridges are made of polymer fibers. The polymer fibers are pressed through an extruder and heated to their melting point. Then, the molten polymer fibers are being blown through a nozzle with hot air. Due to the high turbulent air flow, the fibers form a porous matrix and are collected on a rotating collecting tube. The fiber layers are built up to a predetermined thickness and thus form an effective "depth" filter.

Modern melt blown filter cartridges are made from of layers of different fineness or density. These different density layers can be achieved by, among other things, the change of polymer fiber size, rotation speed and air flow. This process can be automated, PLC controlled allowing constant and high quality filters cartridges.

Various polymer fibers can be used, but most of the melt blown filter cartridges are manufactured from polypropylene. The melt blown filter cartridges do not require a core where the fiber can be wrapped around. This is because the fiber is very firm of itself. However, a core can be added for additional structural strength or higher temperature load.

A melt blown filter cartridge is a depth filter cartridge type which is good for the removal of particles and collect the dirt in the whole depth of the filter material. Melt blown filter cartridges are especially effective in spring water and normal city water, RO filtration and pharmaceutical processes.

The melt blown filter cartridges do not lose fibers due to their thermal bonding.

The end caps can be fixated by a thermal weld without the use of adhesives or binders. The thermal weld creates a very strong fixation of the end caps. This type of cartridge filter is extremely chemically resistant and can be used in a wide variety of filtering applications.

With fixed pore structures, they are also available as absolute filter cartridge.