



EFFECT OF TEST CONDITIONS ON CLAIMED PERFORMANCES OF FILTERING CARTRIDGES

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ABSTRACT

Filtering cartridges are surely the most broadly used types of liquid filters. They are applied to clarify, purify or decontaminate many liquids in several industrial fields. Because of these so different applications and characteristics of liquids and processes, industrial market is offered infinity types of cartridges the probably only common one of which is the dimensions of their hydraulic/mechanic interface with the filter housing. This makes end users' choice not easy.

End users have to trust brochure claims when making a choice. The question is then raised of the conditions claimed values have been measured. Indeed it is known that whatever product is tested in view of whatever parameter to determine, the result is directly influenced by the conditions applied.

Standard methods are drafted by groups of experts aiming at defining acceptable protocol, products and equipments to evaluate one parameter. In cartridge filtration, several standards are available at national and international levels. Very few are validated through round robin exercises, i.e. a group of laboratories testing in presumed identical conditions presumed identical filtering cartridges to quantify the spread of results.

Previous experiments have shown that an important data on cartridge performances, its efficiency, is affected by any change in the testing conditions. As examples, influence of viscosity, temperature, flowrate and final differential pressure will be presented.

This allows focusing on the need for detailed standards forbidding options on either test products (e.g. particulate contaminant or fluid) or conditions (contaminant concentration or particle size).

Results measured on drinking water cartridges will illustrate the situation the market can currently face when buying "certified" products tested in relatively free conditions compared to standard ones.