

The Filtration Society Addresses the Cost of Getting it Wrong

by Graham Rideal, President, Filtration Society

The Filtration Society was formed over 40 years ago with the prime objective of collating the information of the day and advancing the frontiers of new developments in the science and technology of filtration.

Through its highly respected journal "FILTRATION" and a series of very popular one day technical meetings, the Filtration Society rapidly expanded into a major international organisation with members in 26 countries.

The technical meetings review important subjects such as New Developments in Filter Media, the Latest Filtration Technologies, Environmental Issues and Increasing Profits by Improving Efficiency, but one of the most popular over the years has been on Filter Testing.

THE LAST CONFERENCE AND EXHIBITION ATTRACTED OVER 100 DELEGATES FROM 7 COUNTRIES. THE HIGH CONCENTRATION OF 'TESTING SPECIFIC' PAPERS EQUALLED THAT OF ANY MAJOR INTERNATIONAL CONFERENCE AND ACCORDING TO A RECOGNISED AUTHORITY, DR CHRISTOPHE PEUCHOT OF IFTS FRANCE, THE CONFERENCE IS REGARDED AS 'THE FOREMOST OF ITS KIND IN EUROPE'.

PORE SIZE - WOULD YOU BELIEVE IT!

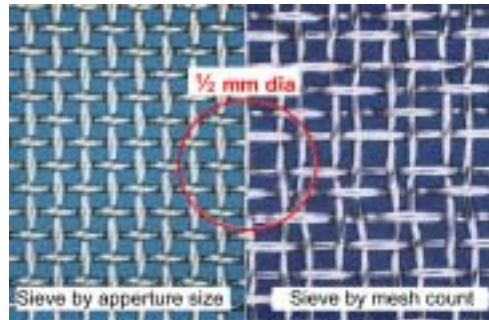
This is hardly surprising given some of the non scientific hyperbole spouted by some salesmen in an attempt to clinch a deal; one of the worst example of which was the recommendation to one client to buy 40 micron wire mesh and wrap it round twice to produce a 20 micron pore size filter tube. Unbelievable, but true!

By way of balance, it must be said that the technical background of salesmen today has never been higher. Having first class data on

filtration performance can only assist in helping them sell quality filtration products.

The inappropriate selection of sand screens in offshore oil rigs can incur enormous cost penalties. For example seven oil rigs in the South China sea recently catastrophically failed because the pore size in the sand screens was too small. The cumulative cost was \$140 million, not to mention huge embarrassment.

In another example of poor pore size measurement, a certain type of air filter was historically labelled as 5 microns without any real scientific back up. When challenged with a new range of precision glass microspheres recently, the 5 micron air filter was found to have pore sizes up to 140 microns. This has caused enormous problems in writing new ISO standards.



Specifying a Mesh by Wire Count (Mesh Number) Disguises Irregular Aperture Sizes (Courtesy of Gbopp)

FILTER TESTING CONFERENCE

Given the problems exemplified above, it is hardly surprising that the unique Filter Testing conferences put on by the Society have been the most popular events in the filtration calendar.

The last conference and exhibition attracted over 100 delegates from 7 countries. The high concentration of 'Testing specific' papers equalled that of any major international conference and according to a recognised authority, Dr Christophe Peuchot of IFTS France, the conference is regarded as 'the foremost of its kind in Europe'.

In the next 'Testing' conference this October, equal emphasis will be placed on liquid and air filtration and the relevant ISO standards will be reviewed by Christophe Peuchot of IFTS (France) and Stephen Smith of Parker from the UK.

The remaining four sessions will deal with Aerosol Testing, Challenge Testing, Pore Metrology and a Poster Session.

Two very interesting lectures will then be given by Martin Schmidt of Palas and Christian Peters of Topas who will describe the latest developments in measuring pore sizes down to



the submicron region and the use of specially designed test rigs to comply with a number of ISO test methods.

The Aerosol challenge test methods as they are known, are an extension of a much more traditional form of challenge testing where particles are presented to a filter either as a dilute suspension or as a dust cloud and the effect on particle size distribution studied.



A Whitehouse Scientific Challenge Test Apparatus for Air Filters

LIFE OR DEATH SPECIFICATION

Ron Buxton of Particle Technology (UK) will discuss the preparation and use of test dusts in filter testing from laboratory to large scale applications such as military vehicles where poor filter selection can cause helicopters to drop out of the sky and tanks to grind to a halt in minutes when used in desert conditions.

Whitehouse Scientific will address the development of new challenge test microspheres that have solved the commercially disastrous consequences of using the wrong sand screens in oil extraction from the sea bed. The new high speed sonic method has been extended to measure pore size distribution as well as cut points and is currently being written into a number of new standards.

In the final session, Patrice Hellibaut of PMI will present the latest innovations in Porometry and Porosymmetry where variations on the original bubble point method now reveal details not only on pore size distribution but information on the shape of the pores.

POSTER SUCCESS

In addition to the main speakers, the 5 minute poster presentations have become a very popular feature of the 'Testing' series of conferences. This year there are some exciting posters including Nanosight and CPS who specialise in nanoparticle measurement, GT Vision and Carl Zeiss will describe their filter paper contaminant measurement systems and precision electroformed meshes will be reviewed by Tecan.

The bound notes given free to all the delegates have proved to be a very useful reference source. They can also be purchased by anyone unable to attend the event.