

### **S1.5.3 ENGINE AIR MEDIA WITH IMPROVED PERFORMANCE**

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The design of an engine filter element depends on available space under the hood, place of installation, service interval, and additional requirements of the filter and car manufacturer. This presentation shows how flat sheet tests can be used to predict the performance of the filter. Flat sheet tests were used to look at improved performance in following parameters: dust holding capacity, flame retardancy and wet properties.

The DHC's improvements of filter media through a gradient structure strongly depend on the applied face velocities. DHC improvements can only be observed when a high face velocity is applied. Thus, media with better gradients are more suitable for passenger car applications than for truck applications.

Importance of flame retardant media has been increasing. Different norms define flat sheet testing for flame retardant media. Additionally, filter media without heavy metals and halogen reduce the environmental impact. Filter media using phenolic resin fulfill those requirements.

A "Re – drying speed test" and the "wet stiffness test" are suitable flat sheet tests to determine the performance of air filters under wet conditions.