

Proportion of aluminium in European motor vehicles continues to rise

A current study from Ducker Worldwide in cooperation with the European Aluminium Association (EAA) reveals that the proportion of aluminium per automobile virtually tripled between 1990 and 2012, from 50 kg to 140 kg. It is estimated that this quantity will rise to 160 kg or possibly even 180 kg by 2020, when compact and medium size cars follow the trend in the upper class, with respect to the use of aluminium.

According to the study, besides savings in weight, the higher proportion of aluminium will lead to an average reduction in fuel consumption of 65 litres per vehicle annually. This corresponds to savings of a total of approx. 43 million tonnes CO₂ emissions, based on the life expectancy of all 17 million vehicles produced in Europe in 2012.

The main results of the study are:

- The use of profiles and sheets made of aluminium has seen a significant rise in the last six years. It accounts for approx. 30% of the entire product mix of semi-finished aluminium products in European passenger vehicles.
- In the long term it is expected that aluminium profiles and sheets will account for 40 to 45% of this product mix, particularly when new applications in the body, chassis and suspension are taken into consideration.
- The proportion of cast parts, which currently accounts for approx. 70% of overall aluminium use, will decline correspondingly. Cast parts are mainly used in the power train and for wheels.
- Rolled aluminium products are used in heat exchangers (100% market share) and in the body, especially in hang-on parts. Aluminium bonnets and mudguards are the state of the art today. Today 21% of all automobiles produced in Europe have a bonnet made of aluminium. New developments in aluminium are now concentrating on the doors and structural elements.
- A main area of use of aluminium profiles is in crash management systems (CMS). Today nearly 40% of all front CMSs are made of aluminium.
- Other important areas of use for cost-efficient lightweight parts made of aluminium sheet exist in the area of hang-on parts, as well as for the various semi-finished products in the area of the vehicle structure, suspension and other frame elements.

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