

## **Embossed Aluminium Technology**

A new aluminium heat shield material for engine compartments saves a significant amount of weight, provides a high level of thermal efficiency and can also be installed in combination with complex components thanks to its excellent formability.

Downsizing strategies and an ever-growing number of turbochargers are leading to an increased demand for effective and lightweight products for thermal management in order to protect heat-sensitive electronic components in engine compartments such as sensors and materials. One of the products that meet this demand is Nimbus GII, heat shield technology produced by the company Federal-Mogul that combines a high level of thermal efficiency with excellent formability.

Nimbus GII is formed from a combination of two thin and embossed aluminium sheets that are very easy to form and provide increased structural rigidity. An insulating layer of air between the two sheets increases the naturally high thermal performance of the aluminium material, resulting in a 15 to 30 percent improvement in the heat protection provided compared to conventional sandwich constructions.

The special structure of Nimbus GII also makes the material very easy to form. It can be extended without tearing and be compressed without creasing, wrinkling or overlapping, whilst also maintaining its attractive appearance and strong material properties. Thanks to these characteristics, Nimbus GII can also be integrated into narrow engine compartments. It can even be processed in one single piece to form a heat shield for large and complex geometries, an application that previously often required several separate sheets. As a result, the material also enables the development of extremely complex geometries. When it comes to weight, Nimbus GII has an advantage of up to 80 percent compared to heat shields using the steel sandwich construction that has been conventional up to now.

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