PRESS RELEASE

Perforated sheets in automotive industry supply chain

Design Win for SCHÄFER Perforated Metal in off-road vehicles from INEOS Automotive

Neunkirchen, Tag. Monat 2021. For the automotive industry, perforated metal sheets are a functional construction and design element. Prominent examples are engine-protecting ventilation grilles and perforated body parts for weight optimisation. For the British off-road vehicle, the INEOS Grenadier, SCHÄFER Perforated Metal developed nine individual protection and ventilation grilles, which can be seen prominently on the front of the vehicle. Though they have an optimised air flow for cooling the engine, they still protect it permanently from all the usual mechanical influences in such a vehicle's everyday use. The grilles are manufactured in Neunkirchen, North-Rhine Westphalia, and supplied ready for installation.

"A diamond-shaped perforation was originally planned for engine protection in the INEOS Grenadier, and we could have supplied them, of course. But during the design-in process, working with the INEOS engineers and designers, we were able to work out the benefits of hexagonal perforations for this application. The air flow increase of 8% that this achieved had a measurable effect on engine cooling. The engine runs more efficiently and is protected from impact just as well as with diamond perforations", explains Torsten Schoew, automotive expert for cooling and engine protection at SCHÄFER Perforated Metal.

Each perforation type has specific areas of application and offers specific benefit. A diamond-shaped perforation allows an open area of just under 75%. In other words: a square metre metal sheet consists of 25% metal and 75% open area. With Hv 6.0–6.7 hexagonal perforations, the open area can be increased to over 80%. This, on the one hand, optimises the air flow and, on the other, protects the engine from the impact of objects larger than 6 mm in diameter.

The challenge involved in manufacturing the Hv 6.0–6.7 perforation pattern is the ratio of hole size (6 mm), material thickness (1.0 mm) and margin width (0.7 mm). The fine 0.7 mm margins must not break during production and have to withstand external influences, even in harsh environments. This requires expertise, as well as production facilities with high-precision punching tools, which SCHÄFER Perforated Metal manufactures in its own toolmaking department.

All in all, SCHÄFER Perforated Metal can realise complex customer projects, which always include expert advice. The product range covers over 400 immediately available perforation patterns, using round, square, diamond, slot or hexagonal holes. The materials the company processes are steel, stainless steel, aluminium, copper, zinc, brass, and plastic. The development of customized patterns is the responsibility of an in-house design department, which means virtually any conceivable patter is possible. In addition to perforation, SCHÄFER Perforated Metal offers a wide range of finishing and machining services,

especially laser cutting, bending, notching, punching, de-greasing, powder coating, lacquering, and anodising.

About SCHÄFER Perforated Metal (www.schaefer-lochbleche.de):
Working with the slogan “Perforated metal made to measure – individual and fast”, SCHÄFER Perforated Metal in Neunkirchen supplies a wide and quickly available range of high-quality perforated metal sheets for all industries and applications. Using high-precision tools, the company can meet virtually any customer requirements regarding material, perforation pattern, dimensions, machining and delivery. SCHÄFER Perforated Metal is a division of the internationally successful SCHÄFER WERKE.
This owner-led enterprise is headquartered in Neunkirchen in Germany´s Siegerland region and operates globally with diversified business areas: EMW Steel Service Centre, perforated sheets, expanded metal, standard and special containers in stainless steel and installations for data centres, workshops and factories, as well as data management systems for load carriers. The work of all these divisions is based on high-quality fine steel sheet. The processing of this material is one of the core competencies of this enterprise.

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