High-quality look thanks to a variety of surfaces

Acoustics
Optimal acoustics and a sophisticated design

Project description: When designing this engine cover the focus was not just on realisation of the acoustic concept but also on development of a high-quality and cost-efficient surface design. The combination of grained, painted, printed and high-gloss surfaces is realised on two individual plastic elements, which are then permanently joined together.

The injected plastic frame which is subsequently painted silver and printed is welded together with the insert which includes the high-gloss elements, the galvanised Audi emblem and the noise-reducing PU foam mat. The ultrasonic puncture welding process allows four individual parts to be joined together in a single step. The optimal heat input during the welding process ensures that the components are securely bonded without comprising the quality of the sensitive high-gloss surfaces. The PU foam mat with contour-aligned welding and 3D relief ensures optimised overall acoustics. In addition, it enhances the stability of the cover, thus guaranteeing dimensional stability with pull-off forces down to -40°C.

Specifications:
• Development work: design engine cover with three different surface grains and a high-gloss finish
• PU foam mat optimises the acoustics and stability
• Cost-efficient realisation with a plastic frame and insert
• Subsequent printing of painted surfaces
• Reduction in assembly steps with the ultrasonic puncture welding process
• Tested dimensional stability with pull-off forces down to -40°C