

Striking signature lights for a cult car

MINI 60 Years Edition: Union Jack taillights shine brightly thanks to PLEXIGLAS® molding compounds

- **PLEXIGLAS® molding compounds for homogeneous light design**
- **Different product types to achieve the appearance of the Union Jack**

Alongside safe lighting, individual design is a key factor for headlights and taillights, as these components are part of the brand identity. To celebrate the 60th birthday of the MINI, the most quintessentially British of all cars has received a unique detail: LED taillights with a Union Jack motif. Taillights with the national flag are a real first in the world of automobiles. The Union Jack light motif first appeared on the 2014 MINI Superleggera Vision concept car. "The positive reception led us to develop the Union Jack light design for the MINI 60 Years Edition," said Sebastian Morgenstern from the BMW Group, who has been responsible for the design of all exterior details on the MINI since 2014. This was not an easy task, however: One tricky aspect of the special Union Jack design only became apparent on the drawing board. And this snag threatened to derail the entire project.

Union Jack breaks the mold

Morgenstern has designed many taillights and therefore knows what is important when it comes to their design. "From the beginning, the individual light functions such as the taillights, brake lights and indicator lights must all be considered as well as the actual shape and design." The designer's eye initially sees a flag like the Union Jack as a graphical element. Morgenstern raves about its balanced combination of thin and thick lines, both straight and diagonal – a timeless and simultaneously modern design. "These attributes are perfect for a signature light – in this case, for the Union Jack taillights of our MINI."

So far, so good, so illuminating. But the British flag is asymmetrical: If it is split down the middle, the two halves are not exactly the same. And this slight asymmetry causes issues with the majority of international regulations for vehicle lighting, as they require a certain symmetry for lights which appear in pairs. The designers came up with a clever solution for this: They simply emphasized the symmetrical exterior edges of the Union Jack.

PMMA: a proven material for car lights

The Union Jack design is created by combining different components made from PLEXIGLAS® molding compounds, the brand polymethyl methacrylate (PMMA) from Röhm which has long been a proven solution for taillights. "Every component in the taillight has a different function," explains Andrea Menotti, project manager at automotive supplier Magna in Italy. "That's why we needed different materials which met the specific requirements for heat deflection temperature, appearance, color and performance in injection molding."

The experts for vehicle lighting combine different colorings in signal colors to achieve the appearance of the Union Jack – whether the lights are switched on or off. "The desired effect is only made possible by using the range of PLEXIGLAS® products," confirms MINI exterior designer Morgenstern. The material is initially completely colorless and can therefore be colored in all standardized signal colors used worldwide. Its optical properties, such as the excellent light transmission and light guidance or scattering, are retained – and in the long term, too, as PLEXIGLAS® molding compounds are both UV and weather-resistant. The color of the taillight covers therefore remains unchanged throughout the entire vehicle life cycle.

Darmstadt, November 13, 2019

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PLEXIGLAS® for homogeneous light design

In addition, a light-scattering molding compound ensures the homogeneous illumination of the taillights, as Morgenstern explains: “A clear and easily recognizable design language is best supported by homogeneous light design.” This measurable homogeneity is achieved by using the light-scattering PLEXIGLAS® Satinice DF23 molding compound, for example. Without a material with excellent light-scattering properties, the strong point light generated by LEDs would result in undesirable hot spots. The visual impression of the taillights is rounded off by a transparent PLEXIGLAS® cover. “Transparent exterior light covers – here in the signal color red – help create a high-quality overall impression,” comments Morgenstern.

And this is not the only place where PLEXIGLAS® is used in the anniversary MINI: The A-pillar covers are made from a piano black and non-transparent PLEXIGLAS® Hi-Gloss molding compound. The pillar covers have a glass-like appearance, which makes the windscreen appear larger – an effect which on different MINI models has been used and extended to further pillar covers all around for over 15 years.



MINI 60 Years Edition with Union Jack tail lights (© BMW AG, München)

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