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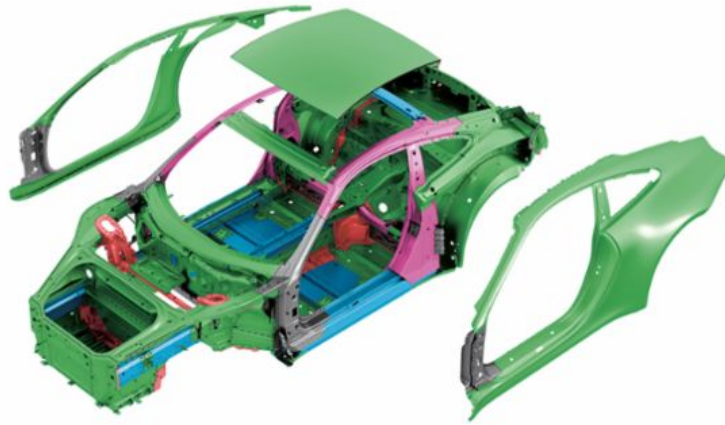
The lightweight gene

Weight optimization has always been a top priority for Porsche. The latest Porsche 911 sports the next major innovation in its bodywork: side panels made entirely of aluminum. But why stop there? Other components have also become lighter. Construction of the new sports car also employs innovative joining methods and pursues sustainable production.



Making the new 911's side panels entirely from aluminum was a logical step, then. The side panels now weigh twelve kilograms less, with no loss of stability. Designing them was quite the challenge for everyone involved. Compared with steel, aluminum offers less favorable material properties. "It's far more prone to tearing through tensile deformation. This means the components require much more intense engineering," Christlein explains. Among the tools used during development, stamping simulations were found to be indispensable, allowing the engineers to check the material's behavior.

Another aspect key to completing the project successfully was the close collaboration of all departments from design engineering to Porsche's in-house toolmaking division: There were meetings once a week, with everyone working on honing the details until all design and quality requirements were met. In some cases, the specialists needed to find their way to the ideal, millimeter by cautious millimeter. "The art lies in taking the vastly emotive look of the new Porsche 911 and adding lightweight design to form a unit," says Christlein. It took all of the engineers' decades of experience—and true grit: From start to production maturity, the process took more than two years.



More aluminum, less steel: the quickest way to describe the material composition in the new 911 (type 992)

Info

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