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SIMPLY CLEVER

PRESS RELEASE

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The all-new ŠKODA OCTAVIA: Intelligent material mix combines maximum strength and low weight

- › **Maximum safety and high efficiency – 20.6 per cent of the all-new ŠKODA OCTAVIA's body consists of ultra-high-strength hot-formed steel**
- › **Innovative production process – tailor-rolled blank means even the hardest components can benefit from varying sheet thickness**
- › **One of the safest vehicles in its class – ŠKODA OCTAVIA boasts maximum five-star score in Euro NCAP test**

Mladá Boleslav, 22 April 2020 – With a maximum five-star score in the Euro NCAP test, the all-new ŠKODA OCTAVIA is one of the safest vehicles in its class. A key factor contributing to this result is its intelligent material mix. In the ŠKODA best-seller's fourth generation, over 20 per cent of the body is made from ultra-high-strength hot-formed steel. Another almost 14 per cent of the structure is composed of ultra-high-strength steel and multi-phase steel. This ensures supreme stability and safety combined with low weight, enabling superior fuel economy.

Vehicles today are expected to fulfil numerous requirements that at times seem contradictory. They are supposed to be lightweight and low-cost, and deliver outstanding fuel economy. But at the same time, occupants demand ever more comfort and safety, which calls for a stronger and stiffer body. In the fourth-generation OCTAVIA, ŠKODA is utilising an intelligent material mix, with comprehensive use of high-strength steels, to combine superior economy and efficiency with outstanding comfort and optimal occupant protection. The five-star rating that the latest generation of the brand's best-seller has achieved in the Euro NCAP test is the result of a fruitful collaboration between various development departments in areas such as Styling, Concept, Numerical Simulations, Design and Quality Assurance.

Large proportion of high-strength steels lowers weight and enhances safety

The all-new OCTAVIA's exceptionally strong body is above all the result of a high proportion of high-strength steels. While using only 26.3 per cent of so-called deep-drawn steel – mainly for surface components – 20.6 per cent of the body is made of ultra-high-strength hot-formed steel. This type of steel is up to seven times stronger than conventional deep-drawn steel variants. During manufacture of components, it is heated to a temperature of around 950 degrees Celsius and then pressed. Afterwards, being still part of the shape, it is cooled down to 180 degrees Celsius during a controlled process that takes 5.5 seconds. The resulting exceptional material strength allows for thinner and therefore more lightweight components to be used even in areas designed to withstand frontal and lateral impacts in a collision.

Tailor-rolled blank for variable sheet thickness

The tailor-rolled blank technology was first used by the Volkswagen Group in 2004 for the ŠKODA OCTAVIA II. The combination of the tailor-rolled blank process and hot forming was first used for the ŠKODA OCTAVIA III. Until then, it was not technically feasible to combine these production processes. The tailor-rolled blank allows for the production of parts with varying sheet thickness. Increased thickness is only used where it is needed to achieve the required strength. The all-new OCTAVIA uses this technology to produce the A-pillar and B-pillar, for example. In numerous areas



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that are also subject to such high stresses the Czech manufacturer relies on multi-phase steel (dual-phase steel), which shows a high mechanical strength after the forming process has been done, and as a result, it is very ductile and very strong. In the OCTAVIA the dual-phase steel is first used also in the boot lid surface. Multi-phase steel and ultra-high-strength steel account for almost 14 per cent of the body's weight. Using innovative materials and the most advanced computation methods, such as topology optimization, enables continuous optimisation of body characteristics. To give an example, in the fourth-generation OCTAVIA ŠKODA has once again achieved an increase in dynamic torsional stiffness compared to the predecessor model. The result is that ride comfort has been taken to an even higher level than before.

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- › is this year celebrating 125 years since the company was founded during the pioneering era of the automobile in 1895, making it one of the longest-established car manufacturers in the world.
- › currently offers its customers nine passenger-car series: the CITIGO, FABIA, RAPID, SCALA, OCTAVIA and SUPERB as well as the KAMIQ, KAROQ and KODIAQ.
- › delivered 1.24 million vehicles to customers around the world in 2019.
- › has belonged to Volkswagen Group since 1991. The Volkswagen Group is one of the most successful vehicle manufacturers in the world. In association with the Group, ŠKODA AUTO independently develops and manufactures vehicles, as well as components such as engines and transmissions.
- › operates at three locations in the Czech Republic; manufactures in China, Russia, Slovakia and India mainly through Group partnerships, as well as in Ukraine and Kazakhstan with local partners.
- › employs approximately 42,000 people globally and is active in more than 100 markets.
- › is pressing ahead with the transformation from a traditional car manufacturer to the 'Simply Clever company for the best mobility solutions' as part of the ŠKODA 2025 Strategy.