



Media Information
28 August 2019

New BMW X6 as a spectacular show car: world's first vehicle in Vantablack®.

“The world's blackest black” polarises and creates a special visual effect for the BMW SAC's latest generation.

Munich. This September, the Frankfurt Motor Show will provide the backdrop for the world premiere of the third-generation BMW X6 (fuel consumption combined: 10.7–6.1 l/100 km; CO₂ emissions combined: 243–159 g/km)*, the car that established the Sports Activity Coupé segment a good ten years ago. At the event, BMW will also present a spectacular one-off vehicle with a Vantablack® VBx2 nanostructure paint finish that highlights the expressive design language and confident, dominant and muscular appearance of the new BMW X6 to perfection. This exclusive show car is the result of a collaboration between BMW and Surrey NanoSystems, the inventors of the Vantablack technology.

The BMW X6 is the first and only vehicle in the world to feature a Vantablack VBx2 paint finish. “We turned down numerous requests from various automobile manufacturers in the past,” explains Ben Jensen, founder and Chief Technical Officer of Surrey NanoSystems. “It took the BMW X6 and its unique, expressive design for us to entertain the idea.” With design highlights like the optional Iconic Glow kidney grille, distinctive twin headlights and striking taillights, the new BMW X6 provides fascinating contrasts to offset the Vantablack VBx2 paint finish, which changes the viewer's visual perception of an object's three-dimensional shape.

The human eye perceives Vantablack as two-dimensional.

A surface coated in Vantablack loses its defining features to the human eye, with objects appearing two-dimensional. This can be interpreted by the brain as staring into a hole or even a void, making Vantablack a rather unsuitable vehicle paint finish, as it blots out virtually all the design details and highlights. For this reason, the BMW X6 was coated in the VBx2 variant initially developed for use in architectural and scientific applications. This coating can be sprayed on and has a one-per-cent total hemispherical reflectance (THR), meaning it is still considered “super black” while enabling a small amount of reflection from every

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* All figures relating to the performance, fuel/electric power consumption and CO₂ emissions are provisional.

The figures for fuel consumption, CO₂ emissions and power consumption are calculated based on the measurement methods stipulated in the current version of Regulation (EU) 2007/715. The figures are calculated using a vehicle fitted with basic equipment in Germany, the ranges stated take into account differences in selected wheel and tyre sizes as well as the optional equipment. They may change during configuration. The figures have already been calculated based on the new WLTP test cycle and adapted to NEDC for comparison purposes. In these vehicles, different figures than those published here may apply for the assessment of taxes and other vehicle-related duties which are (also) based on CO₂ emissions.

For further details of the official fuel consumption figures and official specific CO₂ emissions of new cars, please refer to the “Manual on fuel consumption, CO₂ emissions and power consumption of new cars”, available free of charge at all sales outlets, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Schamhausen and at <https://www.dat.de/co2/>.



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angle. Thus, materials painted with it seem to lose their three-dimensional appearance – as demonstrated impressively on the BMW X6.

Vantablack: the “blackest black”, developed for aerospace applications.

The name Vantablack has already become synonymous with an entire range of extremely black coatings and paints such as VBx2. It contains an acronym of the technology enabling this superior black in its first two syllables, which stand for **V**ertically **A**ligned **N**ano **T**ube **A**rray, a matrix made out of carbon. Each of these carbon nanotubes has a length of 14 to 50 micrometres, with a diameter of 20 nanometres, making it around 5,000 times thinner than a human hair. As a result, around a billion of these vertically aligned carbon nanotubes fit into one square centimetre. Any light striking this surface is almost completely absorbed rather than reflected, and effectively converted into heat.

This technology was initially developed for coating space-borne components. As Vantablack can be applied at temperatures from as low as 430 degrees Celsius, it is suitable for delicate materials such as aluminium, and optical components coated in Vantablack enable observation of faint stars and distant galaxies that stray light from the sun makes difficult to detect. The first generation of Vantablack introduced by Surrey NanoSystems in 2014 absorbed up to 99.965 per cent of light, almost completely eliminating reflectance and stray light.



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An interview with Ben Jensen, Vantablack inventor and founder of Surrey NanoSystems.

What was your first thought when you were approached with the idea of providing the BMW X6 with a Vantablack paint finish?

Ben Jensen: To be honest, we received inquiries from most of the big-name automotive manufacturers, almost from the day we launched the original material in 2014, but we'd always said no. This was also due to the fact that we only had a suitable material once we came up with VBx2. When we were approached by BMW, we were still quite hesitant to begin with. But the new X6 looked so incredibly different that it just felt like a really good fit.

Have your expectations been met?

Jensen: I think it went beyond all our expectations. The BMW X6 in Vantablack looks absolutely fantastic. We also realised that it wouldn't have worked if we'd put on the original material, as the viewer would have lost all sense of three-dimensionality. VBx2 with its one-per-cent reflectance provides just enough of a hint of shape. Add to that the contrast between the matt black surface and details such as the Iconic Glow kidney grille, the headlights and the windows – everything is just set off beautifully.

Hypothetically speaking, could you imagine Vantablack VBx2 becoming a regular paint finish option for people buying a car in the future?

Jensen: I think it worked really well on the BMW X6, because of the size of the car, its distinctive shape, and how imposing it is. But putting a paint like that on a conventional car lacking a distinctive design would probably detract from it in some way. In addition, developing a Vantablack VBx2 car paint durable enough for daily use is a huge technological challenge.

However, Vantablack already has an important role in advanced automotive technology ...

Jensen: Indeed, the material is now being used more and more in various types of, laser-based sensor equipment for driver assistance systems and technologies for autonomous driving, for instance. That is because incident sunlight can cause a degradation of performance in these systems as well. A Vantablack coating eliminates these issues and results in increased safety.



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An interview with Hussein Al Attar, Creative Director Automotive Design at Designworks and the designer responsible for the new BMW X6.

What does it mean to you that “your” BMW X6 is the first car in the world to have been chosen for such a project by the makers of Vantablack?

Al Attar: I first heard about Vantablack a few years ago – and I've been absolutely fascinated with the technology ever since. So, for me personally, this is a big deal. When my colleagues told me about a possible collaboration some months ago, I was very excited.

What makes the BMW X6 the perfect car for this project?

Al Attar: Internally, we often refer to the BMW X6 as “The Beast.” I think that says it all. The Vantablack VBx2 finish emphasises this aspect and makes the BMW X6 look particularly menacing. Moreover, the BMW X6 has always been the most provocative and in-your-face model in our portfolio. So why not emphasise this even further, with a finish that simply captivates the viewer's attention? After all, that's what the BMW X6 has always been about.

But a Vantablack finish makes objects appear two-dimensional. Doesn't that render it supremely unsuitable as a car paint, especially for a car with a design as expressive as the BMW X6?

Al Attar: Yes, there is a certain inherent contradiction. But that's exactly what makes this interesting and explains why the BMW X6 is the perfect car for this project. In addition, Vantablack VBx2 opens up new possibilities for us as designers. We often prefer to talk about silhouettes and proportions rather than surfaces and lines. The Vantablack VBx2 coating foregrounds these fundamental aspects of automotive design, without any distraction from light and reflections. I am very proud of how beautiful the new BMW X6 has turned out, including its bold and expressive surfaces. But the most remarkable evolution over the predecessor concerns its proportions. And that is precisely what Vantablack underscores, albeit in a rather unexpected fashion.



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Hypothetically speaking, could you imagine Vantablack VBx2 becoming a regular paint finish option for people buying a car in the future?

AI Attar: Absolutely. BMW X6 drivers are among our most extrovert and free-spirited customers. If anyone were to opt for a Vantablack paint option, it would definitely be a BMW X6 driver.

Third-generation BMW X6 to start in November 2019.

The latest incarnation of the car that established the innovative and distinctive Sports Activity Coupé (SAC) segment will have its world premiere at the 2019 Frankfurt Motor Show, from 12 to 22 September. The showroom launch will begin shortly afterwards, in November 2019. The third-generation BMW X6 employs a precise and exclusive design language to underscore its confident, dominant appearance. In addition, its advanced powertrain and chassis technology combines with numerous innovations to provide a uniquely sporty yet luxurious driving experience. Like its predecessors, the new BMW X6 is produced at the BMW plant in Spartanburg in the United States.



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The BMW Group

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.

In 2018, the BMW Group sold over 2,490,000 passenger vehicles and more than 165,000 motorcycles worldwide. The profit before tax in the financial year 2018 was € 9.815 billion on revenues amounting to € 97.480 billion. As of 31 December 2018, the BMW Group had a workforce of 134,682 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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