



PRESS RELEASE 27 November 2017

Swedish Company Launches World's Hardest Steel

Steel that does not need forging or machining to turn into a finished product. The hardest and most wear-resistant metal on the market. Any shape you wish can be produced. And as a bonus, considerably less material is consumed. Swedish company VBN Components continues to make steel history.

VBN Components, based in Uppsala, Sweden, produces steel using additive manufacturing, so-called 3D-printing. This means that metal powder is melted layer-by-layer into the shape of your choice. The company's technology makes it possible to manufacture industrial tools and components, such as drills and cutters, in the shape end-users choose and in metals of extremely high quality. Its new steel has a wear resistance that substantially increases the life-span and efficiency of products, which also lowers material consumption. In contrast, traditional steel manufacturing is not able to produce a tool with the qualities of this new steel: it would be too hard to process, cut or shape, for example.

"The limitations of traditionally-made products result in a compromise. Instead of choosing the material best-suited to the product in mind, producers are instead forced to use a material that they can process. By focusing on material performance, we turn this completely around", says Martin Nilsson, CEO of VBN Components.

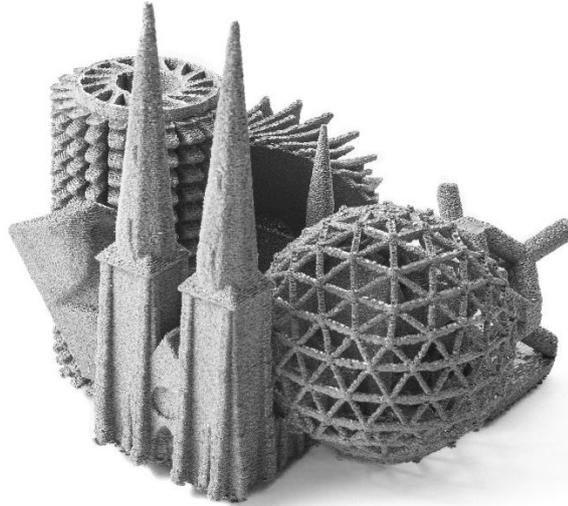
Large market

VBN Components' new, wear-resistant steel is unique. The engineering industry has a constant need to find tool and component materials with increased wear and heat resistance, but until now has come up against numerous obstacles to finding the ideal material. The properties of the new steel not only overcome these limitations, but also shorten lead-times thanks to fewer processing steps. Companies using these products will increase productivity, thereby saving money, and lower their environmental impact. What's more, competitors are far behind in wear resistance. This makes VBN Components' worldwide market very large.

VBN Components has been producing extremely hard and wear-resistant steel products using this technique for many years. Step-by-step, the company has moved towards what is today the world's hardest steel – a milestone in materials development.

The need for less material in both end-use and manufacturing is one of the reasons why environmental impact is reduced by 90% compared to traditional industry (according to tests at one large Swedish company).

"Many people we've talked to have doubted that we could achieve 'the impossible'. Today we're very proud to introduce this unique metal. Its users will enjoy all its aspects of more environmentally-friendly manufacturing and be able to increase their competitiveness", says Ulrik Beste, CTO of VBN Components.



Caption: Additive manufacturing using metal powder opens up endless shape possibilities, in strong contrast to traditional processes that must always start from a steel bar.

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VBN Components in brief

VBN Components AB is a frontline materials development company that manufactures wear-resistant metal components directly from powder, so-called 3D-printing (additive manufacturing, free forming). The company, which has won numerous awards, is conducting a range of important customized projects to improve the competitiveness of the engineering industry. An alumnus from Uppsala Innovation Centre, ranked as the world's 10th best business incubator, VBN is supported by the Swedish Energy Agency. The company provides Near-Net-Shape components branded Vibenite® to clients needing metal components with high complexity and/or extreme wear-resistance. www.vbncomponents.com