

## **CARBOPRINT® – SGL Group and The ExOne Company aim to make carbon ready for the 3D printing market**

- Optimal synergies between both partner companies
- Initial material design study complete
- Start of component development and production with selected customers

*Wiesbaden, February 27, 2018.* Beside constantly developing its current product solutions and cultivating growth markets, SGL Group is continuously working on additional future growth areas for carbon and graphite material applications. One very promising area is 3D printing of components made of carbon. 3D printing describes the building of individual layers of material into three-dimensional parts based on a digital file, without tooling or machining. SGL Group is bringing carbon and graphite components created using 3D binder jet printing technology provided by ExOne to the market under the brand name CARBOPRINT®.

Collaboration between the companies is founded in expertise from both sides: SGL Group offers extensive knowledge on the raw material and powder preparation, as well as versatile technologies for post-processing carbon components. As the leading supplier for industrial binder jetting technology, ExOne contributes its competences in 3D printing. This technology enables not only the production of small prototypes, but also efficient serial production and fast development of customer-specific solutions.

As the carbon body is initially porous after printing, SGL Group post-processing, such as polymer impregnation or silicon or metal infiltration, play a major role. These additional processes allow the adjustment of versatile material properties to the specific application. Initial material properties for carbon 3D printing along with the relevant finishing processes can be found in the SGL Group [CARBOPRINT® product brochure](#).

After this initial material development study, it is now time to engineer components and transform the extreme degree of design freedom in 3D printing into real benefits for customers. Thanks to the basic properties of carbon, such as high chemical stability and good electrical and thermal conductivity, first trial components are being developed for testing in applications in the areas of chemical apparatus construction and environmental technology. Concrete examples include heat exchangers and components for distillation columns, as well as pump components made of siliconized 3D-printed carbon.

The new material has been presented officially to a larger application specialist audience for the first time at the Berlin Waste Management and Energy Conference in late January.

### About the SGL Group – The Carbon Company

The SGL Group is a leading manufacturer worldwide of products and materials made from carbon. The extensive product portfolio ranges from carbon and graphite products, carbon fibers all the way through to composites. The SGL Group's core expertise comprises the control of high-temperature technologies as well as the deployment of many years' application and engineering know-how. This is used to exploit the company's wide materials base. These carbon-based materials combine a number of unique material properties such as very good conductivity of electricity and heat, resistance to heat and corrosion as well as lightweight construction coupled with high firmness. The level of demand for the SGL Group's high-performance materials and products is increasing due to the industrialization of the growth regions of Asia and Latin America and the ongoing substitution of traditional construction materials by new materials. The SGL Group's products are deployed in the automotive and chemicals industries as well as in the semiconductor, solar, LED industry segments and in the field of lithium-ion batteries. Carbon-based materials and products are also used in wind energy, aviation and space travel as well as in the defense industry.

**With 32 production locations in Europe, North America and Asia as well as a service network in over 100 countries, the SGL Group is an enterprise with a global orientation. In the 2016 financial year, approx. 4,000 employees generated 769.8 million euros in sales revenue. Its Head Office is based in Wiesbaden / Germany.**

*Further particulars on the SGL Group can be found in the Newsroom of the SGL Group at [www.sqlgroup.com/press](http://www.sqlgroup.com/press) and at [www.sqlgroup.com](http://www.sqlgroup.com). Contact Corporate Communications: Telephone +49 611 6029 100 / Fax +49 611 6029 101, E-mail: [press@sglgroup.com](mailto:press@sglgroup.com) / [www.sqlgroup.com](http://www.sqlgroup.com)*

### About ExOne - Technology leader for industrial grade additive manufacturing.

ExOne, a publicly traded manufacturing technology company, provides 3D printing machines, 3D printed products and related materials and services to industrial customers in multiple segments, including pumps, automotive, aerospace, heavy equipment and energy. The ExOne process, which utilizes Binder Jetting technology with industrial materials, gives traditional manufacturers an opportunity to reduce costs, lower the risk of trial and error and create opportunities for design innovation. ExOne collaborates with customers through the entire development and production process so that they are able to materialize new concepts, designs, prototypes, and production parts precisely when needed. Production scale is irrelevant and a lot quantity of one is just as efficient as lot quantities of one thousand. ExOne offers both the services and the equipment to enable rapid point-of-use manufacturing and supports the use of traditional industrial strength materials ranging from metals to silica sand, carbon and ceramics, all used in revolutionary ways. The ability to print in a variety of industrial materials, as well as the industry-leading volumetric output (as measured by build box size and printing speed) make ExOne the ideal partner for any industrial manufacturer who is transitioning their manufacturing business to the digital age.

#### **Important note:**

To the extent that our press release contains forward-looking statements, the latter are based on information that is available at present and on our current forecasts and assumptions. Forward-looking statements, by their very nature, entail known as well as unknown risks and uncertainties that may lead to actual developments and events differing substantially from the forward-looking assessments. Forward-looking statements must not be understood to be guarantees. Instead, future developments and events depend on a large number of factors; they comprise various risks and imponderables and are based on assumptions that may possibly turn out not to be appropriate. These include unforeseeable changes to fundamental political, economic, legal and societal conditions, particularly in the context of our main customers' industries, the competitive situation, interest and exchange rate trends, technological developments as well as other risks and uncertainties. We perceive additional risks e.g. in pricing developments, unforeseeable events in the environment of companies acquired and Group member companies as well as in current cost savings programs from time to time. The SGL Group assumes no obligation and does not intend to adjust or otherwise update these forward-looking statements either.