



BigRep and Forward AM Expand Strategic Partnership with new Material, **CONCRETE FORMWORK**

*BigRep and Forward AM, the 3D printing business of BASF, are excited to introduce a new material, **CONCRETE FORMWORK**, targeted to the architecture and construction industry.*

Berlin, Germany. May 10, 2021. Architecture is the representation of a cultural era. By transforming its design language, creators can redefine the world around us. However, reality comes crashing down when conventional formwork solutions quickly reach their limits as construction elements become more complex. To overcome this challenge, Forward AM and BigRep are expanding their partnership and have joined forces again to leverage the synergies between their main areas of expertise: Virtual Engineering, Additive Manufacturing, advanced material development, and large-format printing.

Formwork, the molds used in concrete construction, can make up 40 - 60% of a total budget, especially for complex shapes. Without 3D printing, some designs like organic geometries, double-curved surfaces, and cavities are simply not feasible to produce. They require highly skilled laborers to build customized formwork resulting in high costs, long lead times, and material waste.

“We are excited to work with Forward AM to bring more solutions to the architecture and construction industry,” said Dr. Sven Thate, Managing Director of BigRep. “Our customers are seeing huge gains in terms of cost and speed thanks to our large-format machines and the new **CONCRETE FORMWORK** filament. Our solutions are opening the doors to many new possibilities.”

BigRep 3D printers, which are up to 1 cubic meter in build volume, can produce large, complex formwork up to 3x faster at a fraction of the cost of traditional methods. With BigRep's new **CONCRETE FORMWORK** filament enabled by Forward AM, the massive benefits of 3D printed formwork are yours for the taking.

“At Forward AM, we developed a highly dimensionally stable, rigid formwork material, especially tailored to work seamlessly on the BigRep’s large-format 3D printers. We are excited to be able to deliver this ready-to-use, end-to-end fabrication solution for bespoke formwork,” says François Minec, Managing Director BASF 3D Printing Solutions.

Demonstrating the material's effectiveness and advantages for the construction industry, Forward AM and BigRep showcase the “Bespoke Stair at Nest Step2,” designed by DBT at ETH Zürich with ROK, SW Umwelttechnik, and WaltGalmarini. The innovative concrete staircase expands the design possibilities of structural architectural elements, while minimizing costs, material waste, and skilled labor. NEST, to be built at EMPA in Zürich, is an innovative building utilizing digital fabrication and circular economy.

For more information on the partnership and to see the printers and material in action, visit

- **BigRep** <https://bigrep.com/applications/concrete-formwork/>
- **Forward AM** <https://forward-am.com/use-cases-and-whitepapers/concrete-formwork/>



About BigRep

A global leader in large-format FFF 3D printing, BigRep strives to transform its user's productivity and creativity with easy-to-use additive manufacturing solutions. With an aim to help companies accelerate innovation and rethink manufacturing, BigRep's German-engineered 3D printers enable engineers, designers and manufacturers from start-ups to fortune 100 companies to go from prototyping to production faster, getting their products to market first. Through collaborations with strategic partners – including BASF, Bosch Rexroth, Etihad Airways, and Deutsche Bahn – BigRep continues to develop complete additive manufacturing solutions comprising of industrial 3D printers, software, and advanced materials. Founded in 2014, BigRep is headquartered in Berlin with offices and technical centers in Boston and Singapore.

About BASF 3D Printing Solutions

BASF 3D Printing Solutions GmbH, headquartered in Heidelberg, Germany, is a 100% subsidiary of BASF New Business GmbH. It focuses on establishing and expanding the business under the Forward AM brand with advanced materials, system solutions, components and services in the field of 3D printing. BASF 3D Printing Solutions is organized into startup-like structures to serve customers in the dynamic 3D printing market. It cooperates closely with the global research platforms and application technologies of various departments at BASF and with research institutes, universities, startups and industrial partners. Potential customers are primarily companies that intend to use 3D printing for industrial manufacturing. Typical industries include automotive, aerospace and consumer goods. For further information please visit: www.forward-am.com.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 110,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €59 billion in 2020. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at www.basf.com



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