Carbon comes into play when something has to be extremely lightweight and highly stable. In Grenchen, Switzerland, automated manufacturing is used with the help of BINDER technology to produce carbon frames for racing bikes for the first time ever. In 2011, Australian Cadel Evans won the Tour de France on a BMC racing bike thanks to the enthusiastic support of his team members, who contested the world’s most difficult stage race on carbon racing bikes.

They call it „Stargate“ and what comes out of it almost seems to come from another planet. A wheel with a diameter larger than a person with outstretched arms produces one of the strongest and lightest materials known to man today: finely woven carbon – the wonder material of racing bike frames. Strictly speaking, „Stargate“ is a high-tech braiding machine and part of a complex automation system. The racing bike manufacture BMC headquartered in Grenchen, Switzerland, manufactures the world’s first carbon frames using a completely automated process. 100 percent automation is synonymous with 100 percent consistently high quality. With perfection in series production, its BMC designers have called it „the impeccable bike“ or „impec“ for short.

Seamless tube
Where carbon frames had to be painstakingly laminated, shaped and glued by hand from individual layers until now, production at BMC runs cleanly and efficiently. Carbon – also known as the wonder material of racing bike frames – is woven under perfect conditions, producing a material that is both strong and lightweight.

Tasks and objectives
• Drying and curing of formed carbon tubes
• Drying and curing varnishes, overprints and assembly adhesives
• Constant drying climate
• Constant atmospheric humidity
• Low energy consumption
• Low heat dissipation
• Easy operation

BINDER solutions
• FED heating chamber with forced convection
• Homogenous temperature conditions
• Uniform air circulation with digitally adjustable fan
• Large temperature range of approx. 5 °C above ambient temperature to 300 °C
• Short heating up times
• Low heat dissipation due to 60 mm insulation
• Advanced timing functions

The BMC Racing Team
The “Stargate” is a high-tech radial braider and forms part of a complex automation system. Using it, BMC is the first organization in the world to manufacture complete carbon frames in an automated process.

**Advantages**

- Fast, even drying
- Wide temperature range
- Comprehensive standard equipment
- Additional product lines with humidity, light, CO2 or vacuum
- “Made in Germany” quality

**Areas of application**

- Electronics / semiconductor industry
- Basic research / research institutes
- Plastics industry

**Fleet-footed success**

The high quality products from BINDER seamlessly integrate into the world’s first automated production process of carbon frames. In just four years, BMC developers have got the pioneering facility up and running. It has been worth it: An impec carbon frame from BMC only weighs about 1 kg on average. How successful the overall concept would be in practice in just a short period of time may have even surprised BMC a little. The Swiss BMC racing team around the world champion Cadel Evans was able to compete at the Tour de France on an impec for the first time ever in 2010.

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