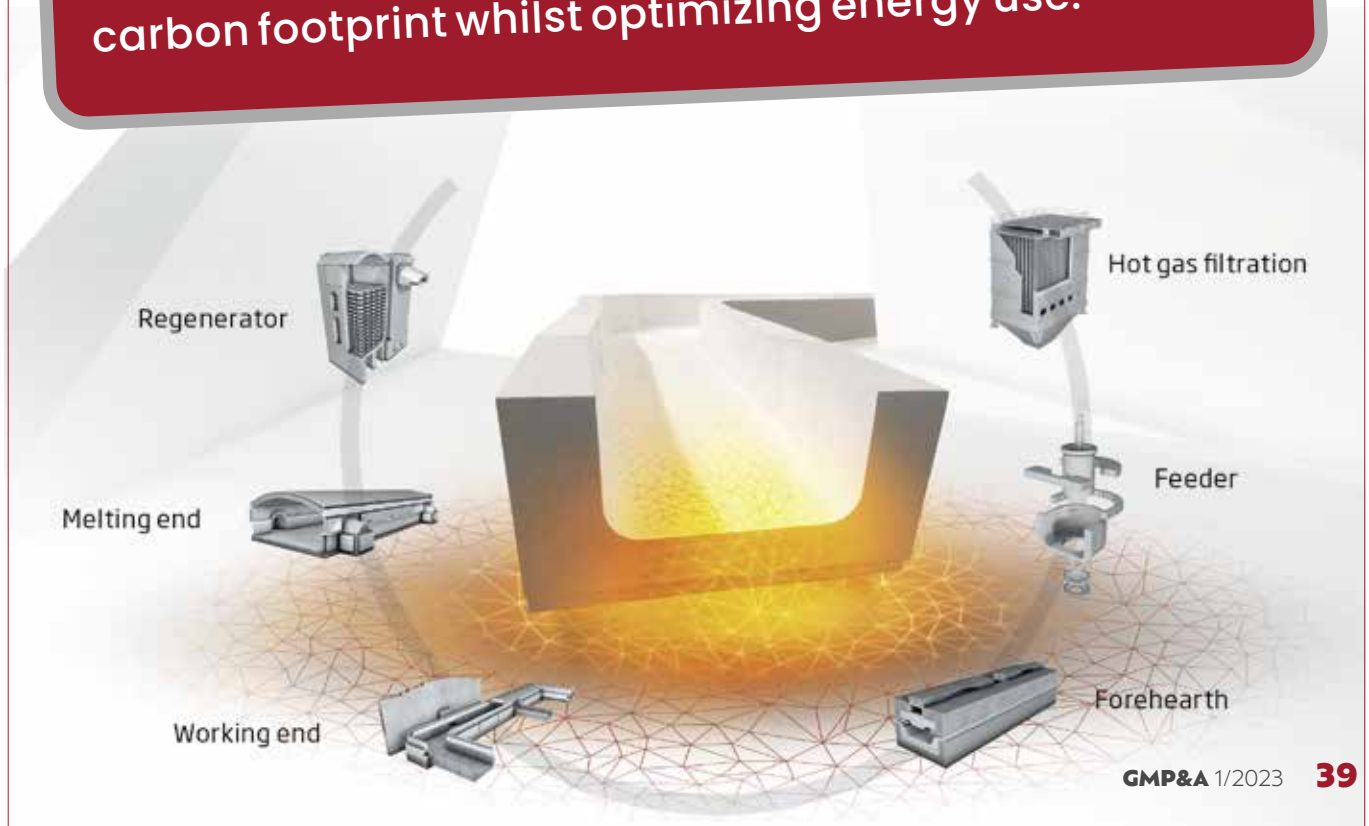
How RATH's cutting edge solutions advance sustainability in glass

The glass industry, like many others, is facing major sustainability challenges. Refractory linings and hot gas elements to filter particle-laden industrial flue gasses are among various innovative products RATH is offering to support its customers as they reduce their carbon footprint whilst optimizing energy use.



The great importance Rath attaches to continuous research and development recently saw the company develop its new, advanced feeder expendables series - which stands for even greater product quality and longer service life. With more than 130 years of experience, the company is now regarded as a competence leader within the refractory sector.

Customers benefit from a wide range of products and services currently available on the market - all coupled with extensive, industry-specific expertise - which also applies to the glass industry.

Specialists at Rath are equipped with the requisite, in-depth industry knowledge as well as a keen understanding of the specifics of glass processing. The company's precision-crafted refractory products are designed for a wide range of applications - including container glass, float glass, C-glass, E-glass, crucibles for Art Glass and tableware. Besides its original Emhart Glass designed feeder systems, Rath offers a complete range of high quality refractory materials for the entire glass manufacturing process. Raw materials of most excellent quality are used for all the company's refractories - designed to achieve predictable density as well as resistance to both erosion and corrosion.

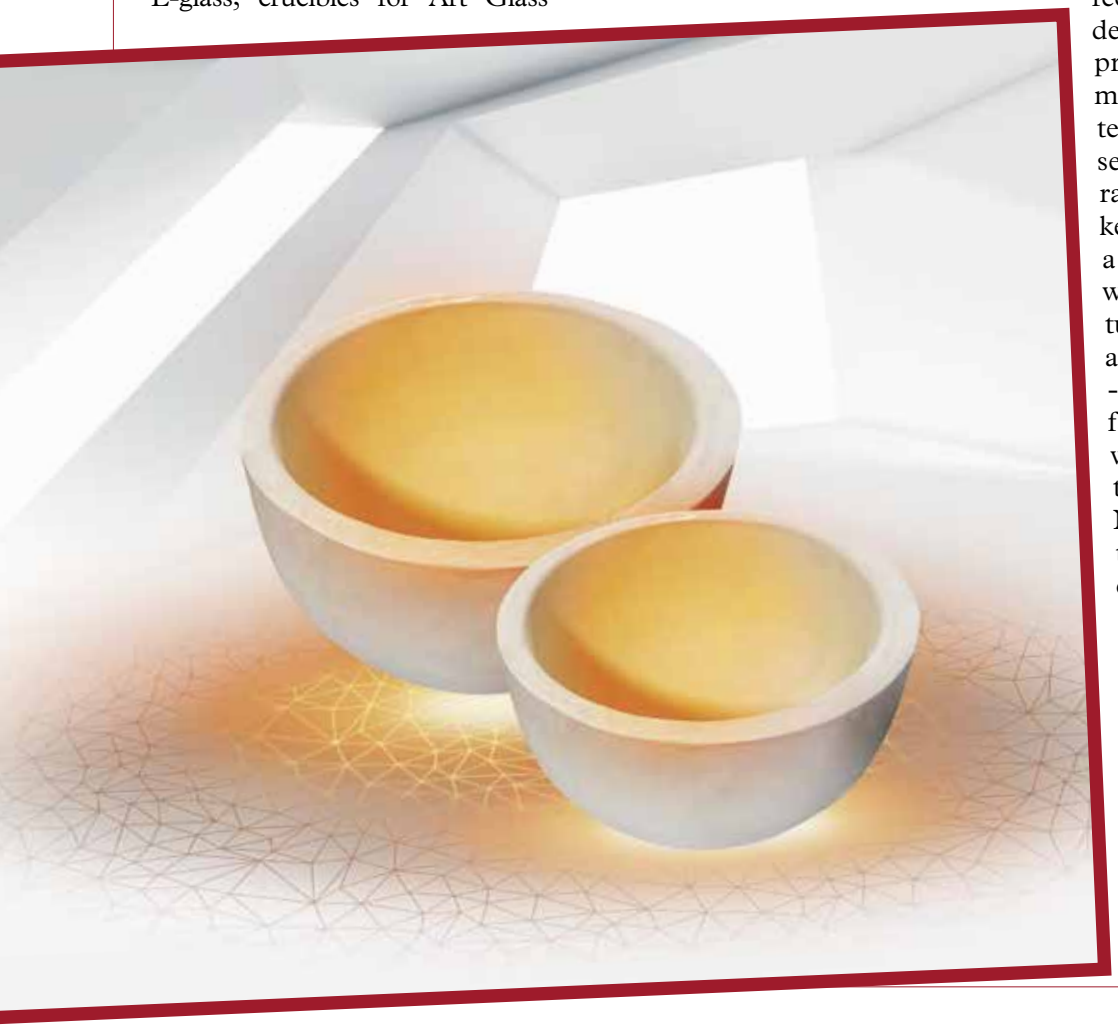
NEW, OPTIMIZED FEEDER EXPENDABLE SERIES

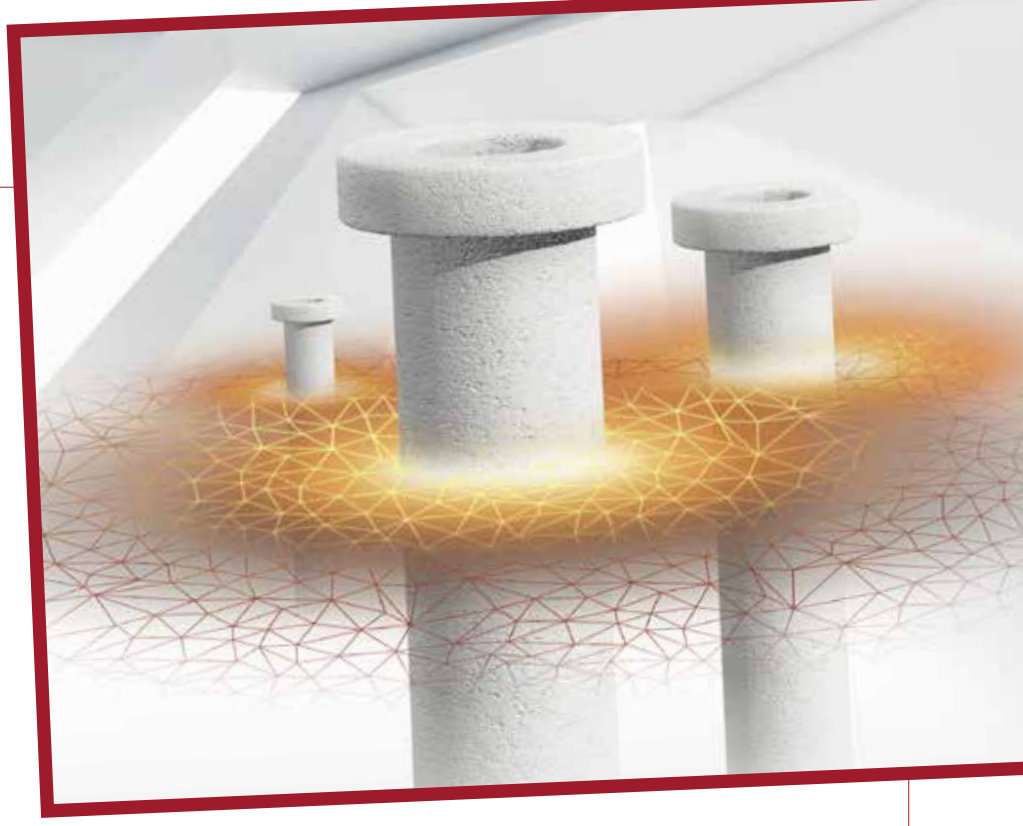
Further development of refractory compositions is a challenge that Rath is taking on with great commitment, as is well-attested by its new product series - presented just recently after an intensive, five-year-long research and development process. "The new FOURATH 4xx feeder expendable series is based upon an optimized formulation which has been exclusively developed and produced by Rath," says Robert Nusszer, Managing Director of the Sales Unit Glass at Rath. "Having been put through its paces in the Rath laboratories the product has now successfully passed the first glass factory trials over the last 1.5 to 2 years."

FROM IMPROVED CRACK AND THERMAL SHOCK RESISTANCE TO LONGER SERVICE LIFE

Whereas previous 3xx mixes (such as 333, 315, 301, 338, 345, etc.) were produced using the slipcasting technique, the new FOURATH 4xx mixes are produced using a so-called hybrid technology. Here Rath uses the same mould park, but with a special vibrocasting technology.

Says Robert Nusszer: "This brings some significant advantages. For example, the new feeder expendable series is a definite win for its improved product quality, owing to a more compact mix and better surface quality. Here we selected the highest quality raw materials in order to keep the impurity level to a minimum. Furthermore, with the new manufacturing technology we can avoid additional grinding - of the tube's outer surface, for instance. In this way we're able to increase the service life of the tube. Not only. We've been able to significantly reduce the drying time of the refractory, which gives us better flexibility in terms of lead times. The thermal shock resistance has improved significantly as well, so that the risk of cracking is lower than ever," adds Nusszer. "Our customers can switch to the new product series immediately: the same number





of parts is used as before. Only the last three digits will change."

GLASSTEC

At Glasstec Düsseldorf last year the following products were exhibited: the well-tested and already released 420 (a complementary mix of 333, 315) - tubes, plungers, orifice rings and stirrers, as well as the new 473 zirconia inserted spouts. For the latter, Rath is still looking for candidates for operational testing in glass factories. The new fused silica mixes, the draincast 457 and the slip-cast 458 were also introduced at Glasstec. These mixes are used in the highest quality glass production, e.g. in melting crucibles. The 458 is available too, for instance, for crown repair of glass melting tanks, as well as suspension brick in the doghouse. "What marks a very important step ahead is that we recently resumed the manufacturing of forehearth 333 channel blocks at our facility in Owensville - all while producing the first front channel blocks for trial purposes in mix 420 - all of which responds to some serious market demand," said Nusszer.

MEIßEN PRODUCTION AND TECHNOLOGY CENTER FOR HOT GAS FILTRATION

Whether it's fine dust, sulfur dioxide emissions or nitrogen emissions caused by high melting temperatures - all contribute to poor air quality. As a result, the glass industry, like many others, faces a big challenge - namely to filter and remove dust from flue gasses and pollutants as efficiently as possible and to reduce emissions. Rath is rising to this challenge. After all, as a company with extensive experience in refractory technology, it's only logical that it specializes in hot gas filtration as well. For many years, the company has been developing innovative ceramic hot gas filter elements that facilitate filtering of particle-laden industrial flue gasses at temperatures of up to 1000 °C whilst reducing nitrogen oxide emissions.

Since 2016, all resources, capabilities and expertise in hot gas filtration have been pooled at Meißen, Germany. This research and production site of the company is now home to cutting-edge facilities for the manufacture of Rath`s FILTRATH® non-catalytic and FILTRATH®CAT catalytic filter elements. The latter were developed for pollutant emission control. These rigid, yet highly-porous and catalytically-coated ceramic filter elements are used for multiple pollutant control of (fine) dust, acid gasses, dioxins and nitrogen oxides in hot gas flows (at temperatures of between 250° and 420°C) and can easily replace conventional textile filters. Rath also offers tailor-made solutions in terms of hot gas filter cartridge length by using a unique, specially-developed 'screw & glue' connection. Filter cartridges of up to six metres in length can be produced from several segments which are then assembled into a long filter element when filter cartridges are installed on-site.

A second production line was put into operation at the Meißen plant in October 2022. Filtration is among the business lines that has seen significant growth within the Rath Group. "It has great potential, since the glass industry must drastically reduce its footprint on environmental pollution and the greenhouse effect at large. Rath is committed to advancing environmental protection and helping its customers in the glass industry to achieve their ambitious environmental goals. Here's why the company continually develops and invests in this technology," concluded Nusszer. ■

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