

## PRESS RELEASE

For immediate publication

### **Tough - new materials for wear-resistant pumps**

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**In production and processing plants in the process industry, metallurgy and environmental technology, sophisticated media are often conveyed: extremely corrosive and with a high solids content. For these conditions pumps are required, which do not give in even under the most difficult conditions.**

In the world's largest plant of Vesuvius GmbH in Borken, this subject problem is well known: every day, the company conveys highly abrasive and corrosive media in its production facilities. Vesuvius is the global market leader in the production of foundry accessories. Under the brand name Foseco e.g. riser and filter systems are produced which are used in foundries all over the world. Correspondingly high are the company's demands on the pumps installed.

#### **Wear resistant pumps for the most difficult applications**

A big problem: While conveying aggressive media, the materials in contact are under a very strong, continuous load. In case of wrong material selection, damage to hydraulic or sealing parts are the consequence, it threatens pump leakage. The reparability is correspondingly high, often even the complete pump has to be replaced. The follow-up costs of a pump standstill, from repair costs to loss of income, impinge on economic efficiency and are immense for the company concerned. A pump technology, which Rheinütte Pumpen specially designed for conveying abrasive media, promises help. The internationally experienced expert in this field has more than 150 years of practical experience and a comprehensive material expertise in metal, plastic and ceramics. Customers worldwide benefit from individual solutions for their particular

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conveyance process. Just like Vesuvius, where two free flow pumps of the same size were tested at two different locations –and in two different material versions.

### **New materials: PE1000R and Polymercarbid**

At the first location the centrifugal pump conveys a solid suspension into a tank at a higher level. The procedure is repeated five times per hour. The pumped medium is highly abrasive at the points in contact with the medium. At this position, a free flow pump was installed with components in contact with media made of PE1000R material, a special polyethylene, that offers up to 30% higher resistance than conventional PE1000 material.

At the second location a similar suspension is pumped – with higher solids content and a significantly higher viscosity. This machine switches on every two minutes for about 25 to 60 seconds: More than 150 switching cycles can occur in an 8-hour shift. The pump is always exposed to an increased counter pressure. At the moment of maximum pumping pressure the medium only circulates within the volute casing with all the solids. The metal pump which had been used previously only withstood about 6 months. As an alternative solution, a pump technology with the even more wear-resistant multi-component material Polymercarbid was used here.

### **The gap closer between plastic and ceramics**

Vesuvius decided to test Rheinhütte Pumpen for its unique material expertise. The uniqueness of the pumps is explained as follows: The used materials close the gap between plastic and ceramics and are unique in the market. The solution developed in close collaboration with Nomig GmbH in Reken results from the combination of an extremely hard silicon carbide as wear layer with a vinyl ester resin as binder. The hardened material reaches a Mohs hardness of 9,7 – Only 0.3 Mohs under the hardness of a diamond.

### **Two- to fourfold of previous service life compared to metal solutions**

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The installation of the pumps has counted for Vesuvius GmbH: After several months of trouble-free operation, technicians analyzed the media-bearing parts of the pumps.

The result was more than clear: hardly any appreciable wear was found. Therefore, Vesuvius can expect at least twofold of service life of the pumps.

At the second location, Vesuvius anticipates even more than 24 months instead of the usual six months of service life of metal pumps. An innovation with sustainable advantages for Vesuvius GmbH - from a financial point of view as well as from a production and safety perspective.

### **The Company**

RHEINHÜTTE Pumpen GmbH develops application-specific solutions for the safe and efficient handling of difficult media. With more than 20 different pump types, the company offers an extensive product range on the basis of the three material groups Metal, Plastics and Ceramics.

Comprehensive know-how, intensive development work and customer-oriented implementation form the basis for success in national and international markets.

RHEINHÜTTE Pumpen has been a member of the ALIAXIS Group, which has its headquarters in Brussels, Belgium, since 2003. ALIAXIS is a leading global manufacturer and distributor of plastic piping systems for the building trade, industry and utility companies. The Group is represented by approximately 100 companies in 40 countries worldwide.

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CPRF Impeller made of PE1000R after 7 months



CPRF Impeller made of Polymercarbid after 4 months

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