The HAVER CPA 2-1 Is the Ideal Solution for an Abrasive Blasting Media Manufacturer

ABRASIVE BLASTING uses many different compositions and particle sizes of abrasive for a wide variety of applications. Examples include cleaning, rust removal, matting, and surface hardening. Users do not only distinguish between the size and shape of the particle, from cubic to almost spherically round, they also analyze the abrasive blasting material's compliance to the normative quality requirements or how much it exceeds them.

As a manufacturer of abrasive blasting media, VULKAN INOX GmbH has to meet these requirements. The company, founded in 1985, is in Hattingen, Germany. It produces and markets cast stainless steel abrasive blasting and special granules based on iron-carbon alloys and it is certified to EN ISO 9001:2000. The production of abrasive blasting media for the surface treatment of screws is just one example of the application-related products developed by the company. This application requires a uniform surface that provides conditions suitable for an anti-corrosion coating. In order to achieve the defined roughness of the screw surface, the abrasive blasting agent Chronital S10 with a grain size of 90 µm to 200 µm is used (Fig. 1). The special feature of this premium value stainless steel abrasive blasting agent is that the maximum size of 200 µm is not exceeded. Together with a good circularity of at least 95% of the particles, this fulfils the most essential requirements for optimum processing of the screws. In addition to the size distribution, precise shape accuracy is essential in the analysis. These specifications were previously checked using traditional sieve analysis and a visual examination of a small amount of material.

Because the results of this shape analysis are considered to be more subjective and thus vary from person to person, VULKAN INOX GmbH purchased a HAVER CPA 2-1. The

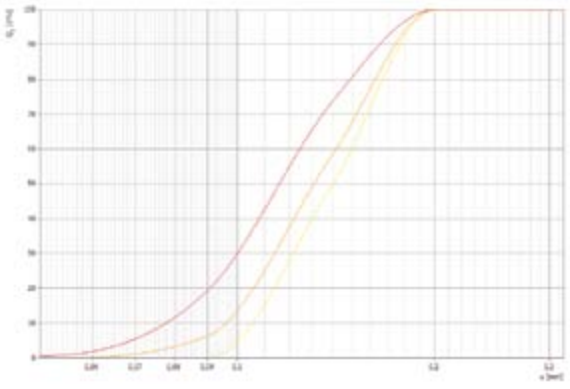

Fig. 2. The result of three analyses of the abrasive blasting agent Chronital S10 using the HAVER CPA 2-1. The throughput distribution (Q3[V-%]) clearly shows that the main part of the abrasive blasting media is made up of particles with a size between 90 and 200 µm. Also for very narrow distribution ranges, the smallest differences and deviations are clearly shown by the various depiction possibilities that are offered by the HAVER CpaServ.

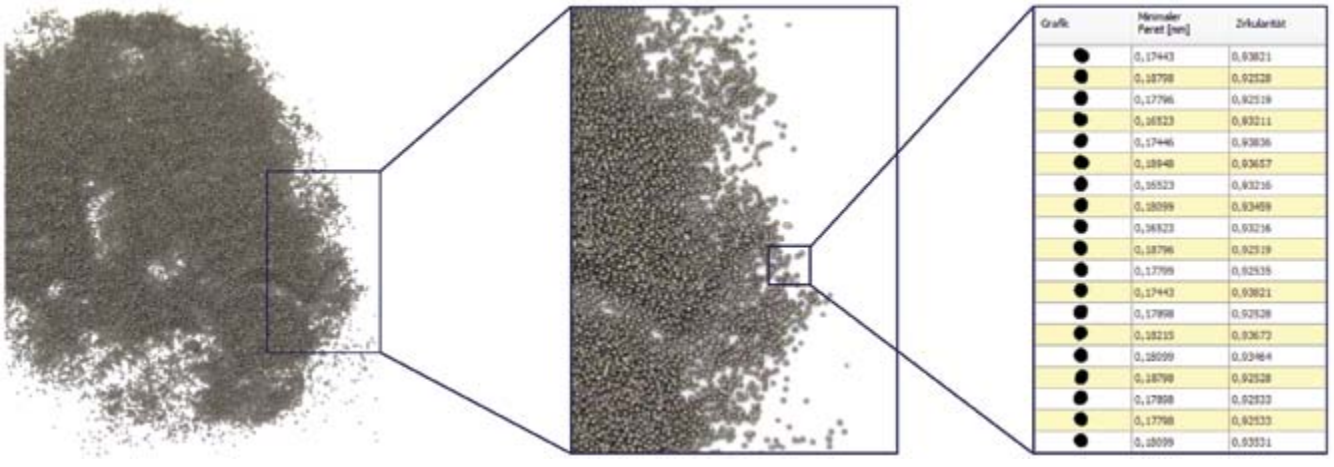

Fig. 1. Abrasive blasting material Chronital S10 with shape values over the normative standard is used for the surface treatment of screws. The standard assures short blasting times in addition to long lifetimes. The figure shows the macroscopic and microscopic imaging of the Chronital material with an example excerpt from the particle list from the HAVER CpaServ software.

precision and reproducibility of results is excellent for this dynamic image analysis. Also, the speed at which the HAVER CPA analyses large abrasive blasting materials is impressive due to its wide channel and high-resolution camera. HAVER CPA technology enables all particles to be measured and evaluated in real time. Even the finest differences are measurable. The HAVER CpaServ software performs the check and assessment of the shape and size using a variety of possible size and shape definitions (Figs. 2 and 3). The results provided by the HAVER CPA unit contribute to optimising production control. Whilst the S10 particle size can be regulated by the application of pressure during spraying in the production process, granulation and circularity are highly dependent on the melting process. Over the option of the particle list, the results of the abrasive blasting media analysis and a graphic display of each article can be carried out, checked over, and proven.

Additionally, VULKAN INOX GmbH can analyze the abrasive blasting media online. Like all HAVER CPA systems, the HAVER CPA 2-1 is prepared for online measurements and can be utilised for automatic checking of production. The HAVER CPA 2-1 ONLINE, which is continuously ready for measurement, is connected with a sample taker that continuously extracts abrasive blasting material during the running process. The sample taker and the CPA unit may be activated either by a memory-programmable controller or manually. The sample can returned directly into the process after measurement.

Precise results from the HAVER CPA, with just a short measurement time, allow VULKAN INOX GmbH to continue to offer an assured level of abrasive blasting material quality despite increased requirements by the users. It allows production to benefit from optimisation and the optional connection in an inline and online application.

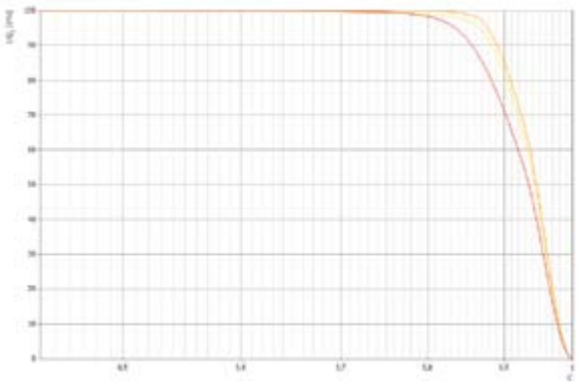

Fig. 3. The result of three samples of the abrasive blasting agent Chronital S10 using the HAVER CPA 2-1. The residue distribution (1-Q3[V-%]) clearly shows that with good samples (yellow and orange) over 95% of the abrasive blasting media is made up of particles with a circularity of over 0.86. The deviation clearly shown here cannot be detected using a manual optical check.

For the size and shape analysis of abrasive blasting material, the HAVER CPA 2-1 with a measurement range starting at 0.034 mm and a channel width of 65 mm is suitable for rapid and reliable analysis.

The HAVER CPA 2-1 ONLINE (with maintenance and control unit and a notebook housing) can be used for the automatic check of abrasive blasting material production.

About HAVER & BOECKER

HAVER & BOECKER is a traditional family-managed, midsize company with headquarters in Oelde, Westphalia, Germany. The Wire Weaving and Machinery Divisions are under the umbrella of HAVER & BOECKER OHG. Together with over 50 subsidiary companies on all five continents, they make up the HAVER Group which has more than 2,898 employees and 150 representatives. In 2014 the HAVER Group posted a sales turnover of 428 million euros.