

Germany

HÄNDLE: Innovative Extrusion Technology to Minimize the CO₂ Footprint



Fig. 1 Hans-Jörg Walter – Director of International Business Development

At a successful inhouse exhibition on 5.–6.10.2022, HÄNDLE/DE presented technical innovations for processing ceramic raw materials and bodies. More than 200 representatives of customers and business partners from 28 countries had taken up the invitation and made the trip to Mühlacker. One focus was the further improvement of energy efficiency of the extrusion process as well as of upstream and downstream equipment. In recent years, the company has also worked intensively to transfer the superb know-how of the Steele Group of companies in this segment to other applications. We spoke about this with the Director of International Business Development Hans-Jörg Walter (HJW).

cfi: HÄNDLE has been a company in the Steele Group/US since 2000. How does the company profit from this international network?

HJW: The experience of the individual companies within the group forms the basis

for our process know-how and is certainly unique for extrusion with more than 280 years of background knowledge. HÄNDLE has been working in heavy clay ceramics for 152 years and, in the meantime, the company has effectively integrated the expertise of

ZMB BRAUN (die engineering) and AUGUST KAMPEN. STEELE has been working in the field of stiff extrusion and dry processing in various industries for 132 years. This know-how has been complemented for more than 13 years with the expertise of Direxa Engineering/US, which works on installations for the production of construction materials and carries out turnkey projects and the modernization of existing plants. Here, linking know-how from the different locations is the key to success.

cfi: When you joined HÄNDLE, the focus was shifted to applications outside the core business of heavy clay ceramics. What was the motivation there?

HJW: Large parts of the industry are working on CO₂ savings. Our motivation is to help companies to reduce their CO₂ footprint with the introduction of new processes. The focus here is on sustainability.

Important for our long-lasting machines is that we support our customers over a machine's entire lifetime and, if the customers want, that we develop and design the processes in collaboration with them.

Our DNA is the construction materials industry with the emphasis on ceramics. Mounting challenges not only change our daily lives, but also the type of bonding systems in the construction materials sector. Besides classic ceramic bonding systems,



Fig. 2 Presentation of the new generation of the HÄNDLE FUTURA II extruder with energy-efficient planetary gear synchronous motor



Fig. 3 Optimization of the geometric properties of the replacement and wear parts and individual adjustment to the material handled has a considerable influence on the energy efficiency of the extruder



Fig. 4-5 Over 200 attendees from 28 countries found out about the HÄNDLE products and innovations on over 800 m² exhibition area

these also included cement or systems bonded with synthetic resin.

Wherever a modification of the starting raw materials is needed, with regard to density, morphology, or porosity, we can demonstrate/prove a crucial advantage with our centres of expertise around the world.

cfi: *What potential applications are you currently addressing?*

HJW: One important aspect at present is the substitution of fossil carbon in metallurgy. But the transformation of secondary raw materials in the metallurgical process to new sources of raw materials presents interesting challenges for preparation and shaping.

As many customers in this sector are very innovative, the existing processes must be adapted very quickly. The processing industry is changing – we can contribute our processing know-how in combination with our expertise in material properties and help to devise new industrial-scale solutions.

cfi: *What role do the demands for “greener” production technology play in these sectors?*

HJW: The necessity of reducing the CO₂ footprint is triggering such innovations in many industry segments as completely new approaches have to be taken. We support our customers in adapting their processes. We do this in our worldwide technology centres based on feasibility analyses and studies.

cfi: *How do you proceed with the development of these new technologies?*

HJW: After we have verified the industrial/economic feasibility of the projects, we realize the project solutions in the laboratory (technology centres) on our pilot-scale plants, which are used both as stationary and mobile pilot-scale plants worldwide. This ensures maximum process reliability.

During scaling up of the machines, we profit from the extrusion know-how we have amassed over many years. We can operate our mobile plants temporarily at the customer's premises if required.

cfi: *What importance do the internal, established laboratory and external project partners have with regard to the increased research requirements?*

HJW: Developments take their time. For this reason, we endeavour to identify and steward megatrends as early as possible based on networking in our international alliance of companies.

Here, of course, our own expert teams play just as much of a role as our customers' R&D teams.

cfi: *Improving energy efficiency was the theme of the in-house trade exhibition. Please give us some details on these new concepts?*

HJW: At the in-house trade fair, the focus was on the new generation of the HÄNDLE shaping machines and their clever design details. We have presented our new energy-efficient drive concept (savings of 15–25 %) and new application-optimized

solutions for wear protection (application-specific variations, simpler installation, longer service lifetimes, etc.).

cfi: *How do you plan to strategically differentiate yourselves from your market partners in these new areas?*

HJW: In these strategic areas which are new for us, we see ourselves as a system supplier rather than a machine engineer. Besides our classical processes such as preparation and shaping, we also have drying and thermal treatment (and packaging) in our group portfolio. Worldwide development laboratories plus expert teams.

The perfect interplay of all “instruments” is just as important for our customers' manufacturing processes as for a symphony. Like a good conductor, we always keep our eye on the entire process.

We can arrange the timing, rhythm and composition by deploying state-of-the-art machine technology in alternating “form and line-up” so that this results in a symphony of sustainable innovation and efficient services. What would you like us to play for you?

cfi: *Thank you for talking to us.*

KS



Fig. 6 At the exhibition, visitors were able to gather many new ideas and impressions of the HÄNDLE inhouse production, the laboratory and the replacement part storage facility