



Press release

Cross-platform core shooting simulation

ASK Chemicals presents the next generation of Arena-flow® software for casting process simulation exclusively for Windows users

Hilden, 11.06.2015 – ASK Chemicals, one of the world's largest suppliers of foundry consumables, also specializes in casting simulation services for optimized casting results. ASK Chemicals engineers specifically use Arena-flow® software for core shooting simulation. This one-of-a-kind technology utilizes computational particle fluid dynamics (CPFD) to accurately depict the flow of sand and air during core blowing. Historically, though, this proven application has been limited to Linux-based operating systems – until now. At GIFA 2015, ASK Chemicals will be featuring the newest Windows-based release of Arena-flow® with live simulations at their exhibition booth (Hall 12, A22). This latest software version is sure to impress patrons long awaiting a more compatible offering.

Core shooting simulation is primarily comprised of two distinct steps: the core-box filling process and the gassing stage (i.e. the through-flow of a core box cavity). No other software beyond Arena-flow® can more accurately simulate these specific steps. Its accuracy is derived from CPFD and allows for far-reaching potential in terms of simulation accuracy.

Comparable software applications use simplified methods for modeling the behavior of sand. Specifically, they portray sand as a fluid, rather than a particle. Here, Arena-flow® shows its strength, as it provides a realistic representation of the actual interaction between sand grains and the air-flow within the tooling. The resulting difference between the systems has serious implications for foundries seeking a more stable and robust process. Arena-flow® provides the necessary assurance to guarantee – via simulation – an advanced stable process, in terms of quality cores for production.

An additional benefit of Arena-Flow® software is its ability to provide compaction models (Fig. 1). In this example, one can visualize whether or not the core is completely filled and the compaction is uniform. Other valuable simulation models are also available through Arena-flow®: mold material distribution, geometrical pressure, flow conditions (i.e. of the geometries), tool wear, gassing and the overall observation of the filling dynamics in definable sequential steps. Finally, Arena-flow® also provides a unique feature in the use of exact core fractions – both with mono sand systems and mixtures involving special sands/additives.

“When it comes to optimizing core making, ASK Chemicals has principally used Arena-flow® to great success,” Christof Nowaczyk, Productmanager Design Services Europe & Asia, says. “We have been involved in developing the software from the beginning and are delighted that the new generation allows us to offer this tool on license to Windows users.”

The Windows version of the software can be experienced in use at the foundry supplier's exhibition booth at GIFA in Hall 12, A22. Here, live simulations using the Arena-flow® simulation software for core shooting are presented regularly.



Graphic material for the press release



Fig.1: Arena-flow[®] result display: compaction model



About ASK Chemicals

ASK Chemicals is one of the world's largest suppliers of foundry chemicals, with a comprehensive product and service portfolio of binders, coatings, feeders, filters and release agents, as well as metallurgical products including inoculants, Mg-treatment and inoculation wires and master alloys for iron casting. Core production and prototype development as well as a wide range of simulation services round off what the company has to offer.

ASK Chemicals is represented in 25 countries and employs approx. 1,400 people worldwide. With research and development in Europe, America and Asia, ASK Chemicals sees itself as the driving force behind industry-specific innovations and is committed to offering customers a consistently high level of quality. Flexibility, quickness, quality and environmental friendliness, as well as cost-effective products and services are of key importance.

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