

Advantages in Abundance

IKO QUICK® – a product from S&B Research

IKO QUICK® is the innovative speciality in the world of molding sand binders – patented since 1991 (DEP No. 3704726.4/43) and the subject of ongoing further development.

Outstanding properties, compelling benefits:

- Significantly improved bentonite dispersion
- Reduced dryness of the mold surface
- Increased abrasion resistance (erosion resistance) wash
- Outstanding sand/casting separation (avoidance of mold and edge cracks)
- Improved, more uniform mold compaction
- Increased edge stability
- Higher dimensional accuracy
- Good green sand reclamation capabilities as graphite-containing bentonite layers are more readily detached from the sand grains in the recycling process

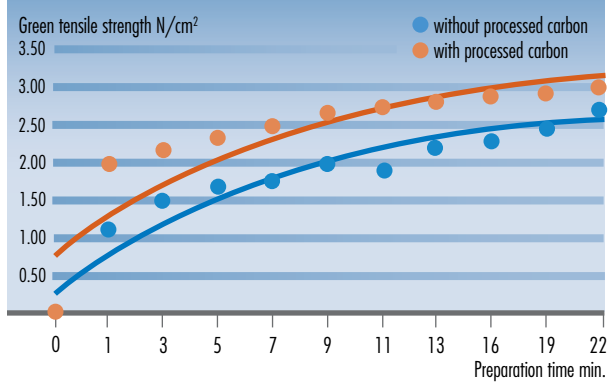
Significantly improved preparation behaviour

IKO QUICK® is conditioned with processed carbon in accordance with a patented technique. As the graph shows, this results in a significant improvement in the dispersibility of a bentonite. When using IKO QUICK®, the sand grains are provided with a uniform layer of binder. During the preparation process, the moisture is absorbed more quickly. The benefits:

- The mold strength increases more rapidly to the values required for an optimum molding result for a given preparation time
- The improved preparation behaviour of the molding material results in more intensive moisture retention
- The moisture demand is reduced because the portion of “free water” in the return sand decreases. The tendency for explosion penetration to occur is reduced.

All basic IKO-BOND binders are also available in a corresponding QUICKBOND variant.

Preparation behaviour of bentonite with and without processed carbon

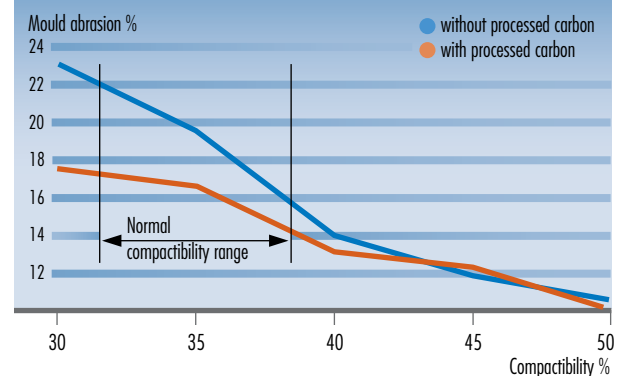


Higher resistance to erosion

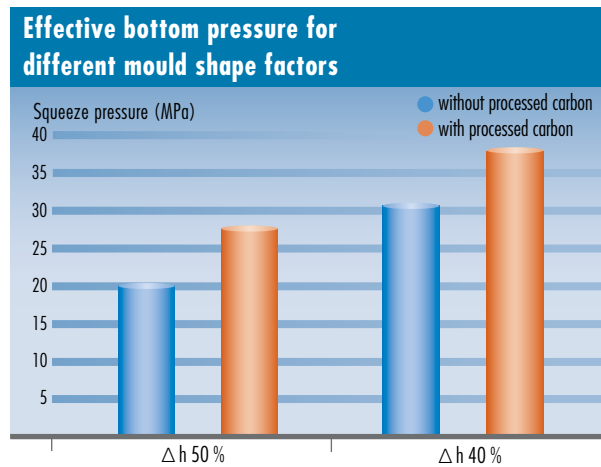
Thanks to the improved dispersibility, the moisture is more intensively absorbed in the intermediate layers of the bentonite. The molding sand dries out less quickly and the improved retention of the moisture imparts a higher level of abrasion resistance to the compacted mold. The graph clearly shows that, particularly in the case of the compactibility level common nowadays, the resistance to erosion is appreciably higher when using combined bentonite/processed carbon systems.

Optimum flow properties

Resistance to erosion as a function of compactibility

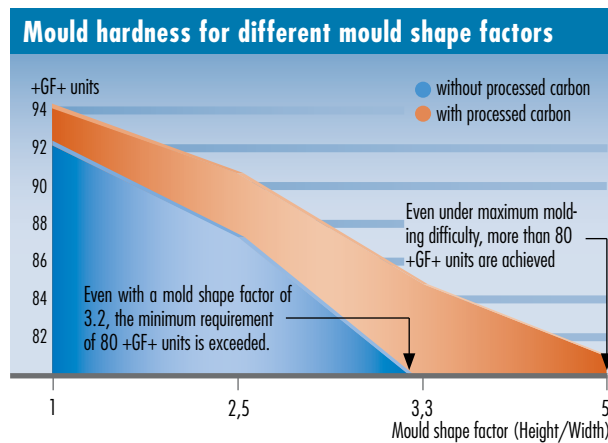


Easy-flowing molding materials are needed for today's advanced compaction techniques. When using IKO QUICK®, the internal friction of the grain aggregate is significantly reduced – so the flowability of the molding material is appreciably increased. Your benefit: Increased effective bottom pressure due to improved transmission of the squeeze pressure applied to the mold back in the direction of the pattern plate. The graph shows the higher effective bottom pressures achieved in the pattern equipment with IKO QUICK®.



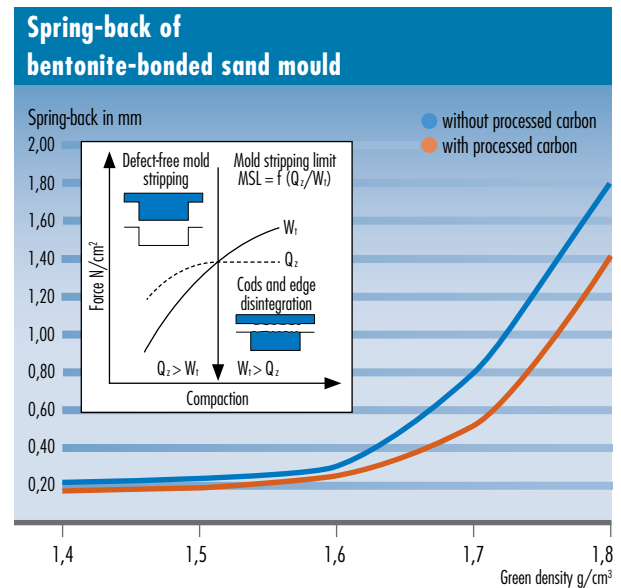
Outstanding mold compaction and shape stability

The packing density and mold strength are kept at a uniformly high level when using QUICKBOND. Even complex contours with high mold shape factors are formed without problem. The risk of a partial occurrence of explosion penetration is reduced as is the tendency for gas defects to form.



Avoidance of spring-back effects

When using QUICKBOND, the spring-back of the mold after compaction is appreciably reduced. Mold defects resulting from spring-back effects are avoided.



Improved dimensional accuracy of the castings

Scientific investigations prove that QUICKBOND improves the compaction properties of molding sand and reduces mold cavity spring-back. The benefit: Higher and more uniform mold strength resulting in increased dimensional accuracy of the castings.

