

HIGH PERFORMANCE CORE BINDERS

ECOLOTEC*

WATER BASED RESOLE CO₂ PROCESS

Low VOC emissions

Prevention of sand expansion defects

Excellent casting finish

Suitable for all sands

Alternative to PUCB



ECOLOTEC

Water based resole CO₂ process

The ECOLOTEC process is based on the use of a water-soluble phenolic resin, condensed under alkaline conditions. The resin is the only binder component that has to be mixed with the sand. The resin does not contain any nitrogen, phosphorus or sulphur. All sand types (e.g. silica, chromite or chamotte) can be used successfully. To harden the mixed sand CO₂ has to be gassed into the corebox. CO₂ acts as a reaction partner with the resin, not as a catalyst.

Productivity

Core production cycle times with the ECOLOTEC process are relatively short and comparable to Polyurethane Coldbox processes. Cores made in ECOLOTEC resin offer high as-gassed strengths, and due to the high reactivity of the binder system, gassing times are short. ECOLOTEC binder resin-bonded cores do not need an extra purging cycle after gassing because carbon dioxide is non-hazardous. Due to the ECOLOTEC binder chemistry, there is no need for the use of core coatings in many applications.

Environmental aspects

The ECOLOTEC process is the most environmentally friendly gas cured organic binder process available in the market and offers significant environmental benefits compared to other core manufacturing processes:

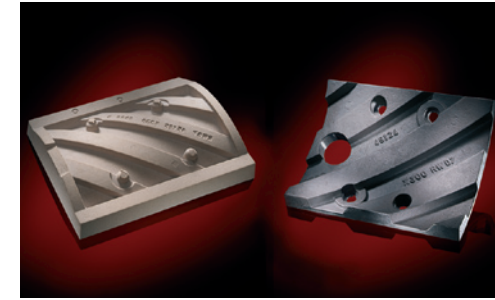
- Non-flammable
- Very low free phenol and formaldehyde
- No isocyanates, peroxides, amines or sulphur-based compounds
- No noxious fumes during mixing and core-making

Casting performance

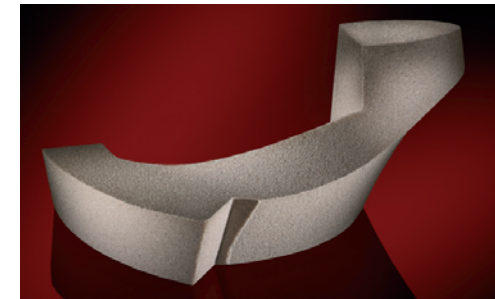
Binder bridges in the ECOLOTEC process are more elastic than in many other core-making processes. Hence casting defects related to sand expansion, such as veining, are significantly suppressed or eliminated and anti-veining additives are usually not required to obtain sound castings.



Impeller for high-efficiency centrifugal pumps



Wear plates



Segment for an impeller for a sea water desalination plant

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