castable concrete refractories. If the ladle shell isn't sized for a castable concrete refractory but is still sized on a firebrick lining you could find that the working capacity of the ladle is significantly reduced and that the freeboard is compromised.

There are also a number of details that can be added to a ladle design, usually with very little additional cost, that can make the wrecking out and relining of ladles much quicker and easier for your maintenance crew. Detachable bottom sections or push out base plates can greatly reduce the time it takes to remove a heavy-duty castable concrete lining, avoiding the need for prolonged use of power hammers, freeing up personnel and quickly recouping the additional cost of the ladle.

It also helps if you have the time to let the ladle cool down before wrecking out the lining. It is not uncommon to see ladles with patched or distorted shells where the hammer has either punctured through a shell or has created a bulge that then acts as a lining anchor making the refractory removal harder. In extreme cases the ladle shell can become so deformed that new lining cannot be safely fitted.

One other point to be aware of with regard to ladle linings is if you send the ladle off to your refractory company to have a new lining fully dried in an oven, then the ladle gearbox and sidearm assemblies should be first removed. Soaking a complete ladle at temperatures of 120°C (248°F) and above for an extended period during the drying cycle will damage the bearings in the gearbox rendering the gearbox inoperable.

Initial checks with a new ladle

Before a new ladle is brought into service, check that all the lubrication points are properly greased and that the gearbox has the correct amount of oil in it. The ladle handbook will show all the grease points and give information on the correct type of lubrication to use. Check that everything is working mechanically, especially the safety catches. Suspend the ladle and fully rotate it. This will also help to distribute the lubrication around the moving parts.

Follow your refractory company's instructions for installing a new lining.

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