

New kiln tyre capacity

by **Stephen Smith, SfarSteel, France**

A kiln tyre is the biggest unitary piece employed in a cement plant. In most cases three of these tyres function as bearings supporting all the weight of the cement kiln, and so material specifications, casting procedures and machine shop practices must all be carefully controlled to ensure a perfect product which will last for many years.

Existing large foundries

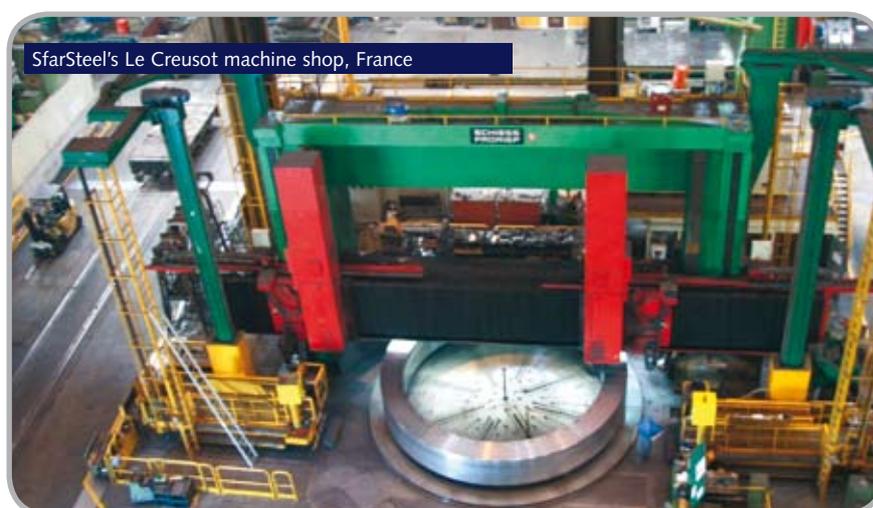
The present problem confronting the cement industry is a bottleneck in the supply of the largest tyres. The surging demand for cement plant is causing lead times for cast and forged products to lengthen considerably. Looking specifically at kiln tyres larger than 100 tonnes in weight, there are very few foundries worldwide with the capability to manufacture such large pieces, and some of these are fully occupied on other product lines.

New foundry capacity for 150t tyres

During the last 24 months this strong worldwide demand for large kiln tyres and other large cast pieces has meant that all foundry capacity at SfarSteel has been fully reserved.

However, in light of requests from a number of key customers, SfarSteel has made a substantial investment in a new foundry pit. This new asset will allow SfarSteel to provide an increased number of large tyres to the world market, with first deliveries being achievable in mid-

The last three years have witnessed an unprecedented expansion in worldwide capacity for cement manufacture. Some of this new capacity has been installed in China, the Middle-East and in India to meet rising cement demand, whilst in other countries enhanced factory efficiency requirements have motivated investment in new facilities. This increased requirement for new plant has inflated the demand for forgings and castings, which has been in normal years at levels necessary for the exchange of worn tyres and rollers during maintenance shutdowns.



2008. The maximum weight available will be around 150t finished cast weight for a single piece.

Machine tool capability

Once a large kiln tyre has been poured in the foundry, it is then necessary to move the casting for machining and final inspection. Once again, SfarSteel is one of relatively few global companies which can transport and machine such big pieces. Within its very large machine shops in Le Creusot, SfarSteel has 22 vertical lathes. The largest of these lathes has the capacity below, allowing even the biggest kiln tyre to be readily machined.

Previous supply history

Sfar has had a long history of supplying

large kiln tyres to customers not only in Europe but throughout the world.

The SfarSteel facility

SfarSteel is a company located in the Burgundy region of France, with a history going back more than 200 years. In recent years SfarSteel has developed a significant business as a manufacturer of cement plant, offering machined forgings and castings. SfarSteel's very large facility favours the manufacture of large specialist items, such as:

- Forged steel kiln support rollers up to 100 tonnes in weight
- Roller press rolls up to 3m in diameter, weights up to 60t.
- Roller grinder assemblies for vertical mills.

Table 1: SfarSteel machine tool capability

Type of machine tool	Max outside diameter of kiln tyre (mm)	Max weight of kiln tyre (mm)
Vertical lathe	8000	150