

Olivier Charmasson and Stephen Smith, Sfarsteel, describe a recent order delivered to Lafarge Cement's Hope plant.

Introduction

SfarSteel has a history spanning more than 200 years, and in recent years it has developed a significant business as a manufacturer of machined forgings and castings for the cement industry. At its facilities in the Burgundy region of France, the company produces large specialist items such as:

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

Lafarge Cement

order

In July 2006 the company received an order for the supply of four new kiln support rollers from Lafarge Cement's Hope plant. The plant is located against the spectacular background of the Peak District national park in Derbyshire, England. It was established in 1929, and has an output capacity of 1.3 million tpa of cement.

Existing equipment

The two kilns that comprise the heart of the plant are each buttressed by six support rollers. All the original rollers had been of cast steel construction dating from the 1970s. In 2005, the two pairs of existing rollers at pier position 1 on both kilns were replaced with four new support rollers.

Regular monitoring of the remaining rollers subsequently revealed the spread of cracks, and so the decision was taken to replace four more rollers at piers 2 and 3 on both kilns. This prompted the company to issue enquiries to various European suppliers during late 2005.

Physical description of rolls

Each kiln support roller weighs some 21 t, measuring approximately 2.9 m long x 1.8 m dia. Both the shafts

and the tyres are forged from special steels, and the tyres are fitted onto the shafts by heat shrinking.

The chemistry of the steels used, the physical characteristics such as tensile strength and hardness, as well as NDT parameters are all closely defined for rolls of this type by Lafarge Cement's Technical Centre in Lyon, France. SfarSteel is very familiar with the company's specification for these rollers, making the manufacture of this type of product a standard process.

Delivery

SfarSteel believes that the order from Lafarge Cement's Hope plant was won on the basis of an attractive delivery time. European forging and foundry companies are experiencing an unprecedented boom in demand, with different industries rivalling each other for manufacturing capacity. In this context, the delivery date of six months after order placement offered to Lafarge Cement at Hope was competitive.

The rollers, transported on four lorries, arrived at the plant between 10 – 12 January. The first pair were installed on kiln 1 without incident during the following week, and the other pair are scheduled for installation next month.



Figure 1. Preparing to offload the support roller.



Figure 2. During the offload.