



Forged tyre during manufacturing



Station IV of a rotary kiln with planetary cooler

## High availability, even without maintenance

The weight forces of the rotary kiln are transmitted by means of the kiln tyres, via the bearings, into the foundation. In the case of rotary kilns subjected to very high temperatures, the kiln tyre is connected to the rotary kiln shell by a loose or splined tyre fastening system. Rotary kilns operated at low temperatures, however, can alternatively be fitted with welded-in kiln tyres from polysius®.

### Components and description of functioning

For kilns or drums subjected to very high temperatures, first and foremost, tyre fastening systems that provide a suitable clearance are used, as the radial thermal expansion of the rotary shell is greater than that of the tyre. This clearance is absolutely essential for this kind of operation and must be specifically determined for every application.

In the case of rotary kilns and rotary drums operated at low temperatures, however, it is possible to completely forgo a tyre fastening system. In this application case, the various thermal expansions arising are so low that the kiln tyre can be permanently joined to the kiln shell.

The welded-in tyre consists of a massive forged body with a rectangular cross-section that transitions on both sides into conical flanges. These flanges facilitate the connection to the adjacent kiln shell sections.

A significant advantage is that this type of connection does not require any inspection or maintenance work. The firm material bond between the tyre and the rotary kiln shell results in a low ovality of the rotary kiln shell section in this area. This has a positive effect on the service life of the refractory lining.

### Your service advantages

- Low ovality leads to higher availability and a longer service life
- Lubrication or maintenance of the fastening system is not required
- Cost-effective system
- A forged type has a homogeneous material structure, is free from cavities and shows no defects
- Static re-calculation provided that the required information is available (regardless of the manufacturer)