

TSUBAKI

LAMBDA LUBE-FREE CHAIN

Maintenance-Free Roller Chain for Heavy Dust & Abrasion



ZERO RE-LUBRICATION

ORBIC

ENGINEERING SOLUTIONS

OES205

OVERVIEW

A long-established UK clay brick manufacturer operates a high-volume production facility running close to continuously, six days a week. Roller-chain-driven conveyor systems move product through every stage of the works — from extrusion and wire cutting, through the drying chambers, to kiln setting, de-hacking, and final dispatch.

The plant environment is heavily contaminated with fine airborne clay dust and abrasive grit, with elevated temperatures around the drying and kiln zones — some of the most demanding operating conditions a power-transmission chain can be asked to survive.

THE CHALLENGE

Repeated conveyor chain failures were causing unplanned stoppages and rising maintenance costs. The root cause was the environment itself:

- Conventionally lubricated chain was being used in a dust-laden environment. Applied oil and grease attracted fine clay dust, forming an abrasive grinding paste that drove rapid wear at the pin and bush interface.
- Chains elongated quickly under this accelerated wear, riding high on the sprockets and jumping teeth — leading to mistracking, jams, and ultimately chain breakage.
- Manual re-lubrication was labour-intensive, awkward to access on guarded conveyor runs, and largely ineffective — the lubricant was contaminated almost as soon as it was applied.
- Elevated ambient temperatures near the drying and kiln zones degraded conventional lubricants further, shortening re-lubrication intervals and chain life.
- Each failure meant an emergency line stoppage, lost production, and an out-of-hours callout — a recurring and escalating cost to the business.

THE SOLUTION

Orbic surveyed the affected conveyor drives and specified Tsubaki Lambda lube-free chain as a direct replacement for the conventional lubricated chain.

Lambda was the industry's first chain to use a special oil-impregnated sintered bush, launched in 1988. The bush holds lubricant internally and feeds it to the bearing area for the working life of the chain — so there is no external oil or grease for clay dust to cling to. The abrasive grinding paste that destroyed the previous chains simply cannot form, and the drive runs clean.

The 6th-generation Lambda bush is impregnated as standard with NSF-H1 food-grade lubricant, and the chain is rated for continuous operation up to 150°C — comfortably covering the warmer conveyor runs near the drying and kiln zones.

Tsubaki's patented Ring Coining process gives the connecting link 100% of the base chain's transmission capacity, removing the weak point where conventional chains typically fail. BS Lambda is fully interchangeable with standard BS roller chain, so it was fitted as a straight swap on the existing sprockets, with hardened-tooth sprockets recommended to match the chain's extended service life.

As an authorised Tsubaki distributor, Orbic provided the chain selection, technical data sheets, and on-site support to embed Lambda into the site's maintenance programme.

OUTCOME

- ✓ Conveyor Chain Failures Eliminated
- ✓ Chain Service Life Significantly Extended
- ✓ Manual Re-Lubrication Removed from the Schedule
- ✓ No More Abrasive Dust-and-Grease Paste Build-Up
- ✓ Unplanned Downtime and Out-of-Hours Callouts Reduced
- ✓ Lower Total Cost of Ownership