Cement plants face a unique set of challenges due to extreme abrasion, high temperatures, and aggressive chemicals. Equipment and structures are subjected to harsh conditions, including:

Severe abrasion and erosion from the movement of raw materials throughout the manufacturing process.

- Corrosion and chemical attack from high temperatures, moisture, and aggressive substances like acids and alkalis.
- Mechanical stress and impact damage from heavy loads, vibration, and rotating equipment.
- Concrete degradation due to chemical attack, freeze-thaw cycles, and impact, leading to structural wear and safety concerns.

Belzona solutions for cement plants provide long-term protection and repair for:

- *Materials handling equipment – Hoppers, chutes, screw conveyors, separators, ducts, and grinding mills.*
- *Rotating and mechanical equipment – Crushers, kilns, rotary valves, shafts, bearings, fans, and gearboxes.*
- *Corrosion protection – Silos, storage tanks, cooling towers, flue gas ducts, and exhaust systems.*
- *Concrete repair – Floors, walkways, foundations, walls, and structural supports.*

Belzona's polymeric solutions extend equipment life, reduce downtime, and enhance plant efficiency.

BELZONA®
Repair • Protect • Improve

Belzona Is a Global Manufacturer of Repair Composite Materials & Industrial Coatings.

Visit us and check out our solutions

For more information, please contact your local Belzona® representative:

US • UK • Canada • China • Thailand
belzona.com

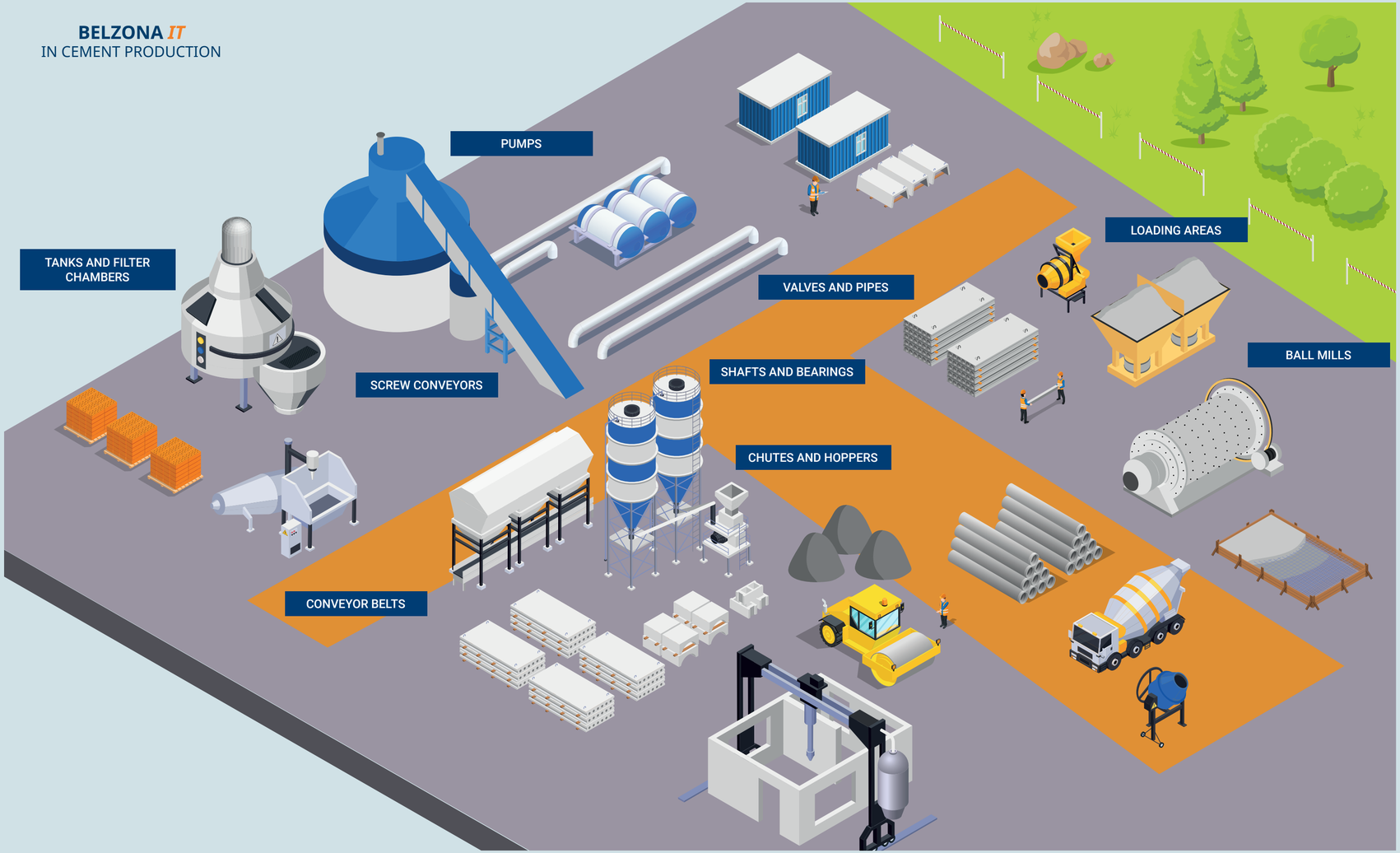
ISO 9001:2008
Q 09335
ISO 14001:2004
EMS 509612

Belzona products are manufactured under an ISO 9001 Registered Quality Management System

BELZONA®
Repair • Protect • Improve

ASSET INTEGRITY AND HIGH PERFORMANCE IN CEMENT PRODUCTION FACILITIES

BELZONA *IT*
IN CEMENT PRODUCTION



BALL MILLS

TYPICAL PROBLEMS: Wedge liners can become misaligned resulting in the damage to the shell underneath. Trunnions and other mechanical parts can be damaged by abrasion and dust.

POTENTIAL SOLUTIONS: Belzona 1000 or 4000 series materials can repair damage to the shell and secure the wedge liners. Belzona 1000 series materials are used to repair trunnion's lost metal and protect from further deterioration.

CHUTES, HOPPERS, SCREW CONVEYORS

TYPICAL PROBLEMS: Abrasion damage by dry or wet solids. Conventional repairs can be time consuming or replacement may be necessary, resulting in lengthy downtime.

POTENTIAL SOLUTIONS: Belzona 1300 and 1800 series materials for repair and protection from sliding abrasion and impact. Belzona 9811 alumina tiles can be bonded in place in areas of severe abrasion.

VALVES AND PIPES

TYPICAL PROBLEMS: Abrasion, erosion-corrosion and chemical attack leading to damage, deterioration and leaks.

POTENTIAL SOLUTIONS: Belzona 1000 series 100% solids paste- and fluid-grade materials can be used for metal rebuilding and corrosion protection.
Belzona SuperWrap II composite repair system restores the strength of corroded, weakened and holed pipes, whilst eliminating the need for hot-work. Available to be applied as a pipe wrap, composite patch or a wear pad.

SHAFTS AND BEARINGS

TYPICAL PROBLEMS: Shafts, bearing housings, keyways and other components are susceptible to erosion and abrasion damage, resulting in the loss of metal.

POTENTIAL SOLUTIONS: Belzona 1000 series fluid- and paste-grade materials can be used to restore lost profiles and prevent further deterioration. Using forming or machining techniques, these 100% solids materials offer a reliable long-lasting solution.

LOADING AREAS

TYPICAL PROBLEMS: Damage and deterioration to concrete including areas such as: floor areas, expansion joints, spalling concrete, stair treads, channels, dry joints and gratings.

POTENTIAL SOLUTIONS: Belzona 1000, 2000, 4000 and 5000 series paste- and fluid-grade materials offer concrete restoration and levelling, expansion joint repairs, bund repairs and protection, floor slip resistance and safety markings.

TANKS AND FILTER CHAMBERS

TYPICAL PROBLEMS: The tire of the mining truck suffers from cracks and cuts due to the impact of objects such as stones.

TYPICAL PROBLEMS: Tank base corrosion, interior linings affected by abrasion, erosion and chemical attack.

POTENTIAL SOLUTIONS: Belzona 1000, 2000, 3000, 5000 and 6000 series paste- and fluid-grade materials offer cold-applied repair solutions, long-term protection both internally and externally resisting to a wide range of chemicals and environmental damage.

CONVEYOR BELTS AND DRIVE ROLLERS

TYPICAL PROBLEMS: Rips, tears and damage to the rubber conveyor belts and cleats.

POTENTIAL SOLUTIONS: Belzona 2000 series elastomers can be used for repairing, bonding and patching damaged conveyor belts in situ.

PUMPS AND HEAT EXCHANGERS

TYPICAL PROBLEMS: Prolonged exposure to erosion, corrosion, chemical attack, wear and cavitation, reducing the performance of the pump or leading to deterioration.

POTENTIAL SOLUTIONS: Belzona 1000, 2000 and 4000 series paste- and fluid-grade materials can be used for the rebuilding of surfaces, long-term corrosion and erosion protection and the increase of pump efficiency.

This process flow chart of a typical cement facility is designed based on data retrieved from various sources. It is to be used as general guidance only. It describes the most common repair and maintenance problems found in cement plants and Belzona solutions that could help mitigate such problems. It does not aim to supersede any drafted process flow charts in use at these plants. It is strongly recommended that each user of this guide contact the local Belzona representative to discuss the specific needs and operation conditions of their cement facility.