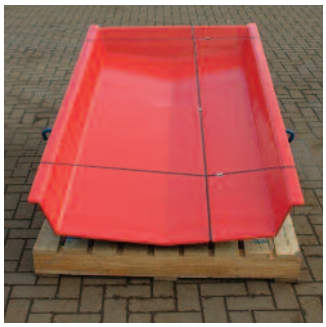
Protecting Industry Worldwide

FACT FILE

# QUARRY & MINERAL PROCESSING

Kingfisher



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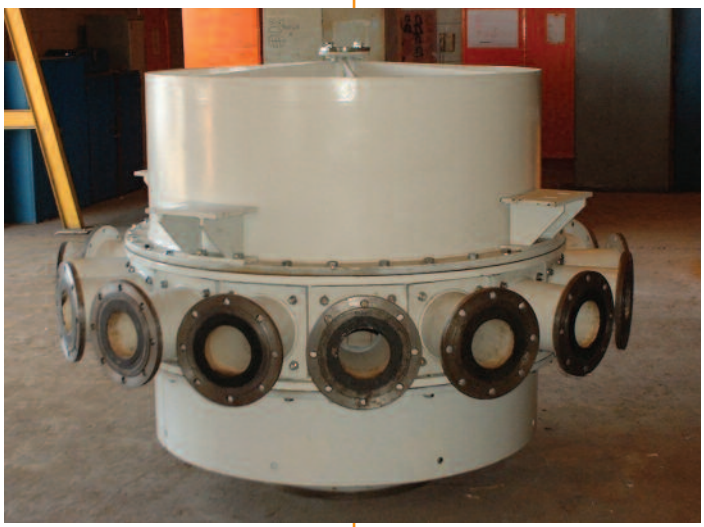
## Understanding the pain

In the competitive world of mineral extraction and processing, **plant efficiency and operational up time** are key to any successful organisation. Handling thousands of tonnes of minerals, rock or aggregates from quarry to truck, or railhead, involves many different processes and generates a host of problems that have to be overcome. During the many stages of operation, the equipment associated with the process of minerals such as sand, gravel, hard and soft rock, silica and various ores suffer from extreme conditions leading to premature failure caused by the abrasive effect of these materials. Equipment such as mobile plant, crushing modules, washing drums and tanks, vibrating screens and material classifiers to mention but a few, are in direct contact with these minerals and all suffer as a consequence.

Dependant on the naturally occurring hardness of these minerals, as rated on the MOHS hardness scale, then the amount of degradation that plant and equipment suffers from will vary. Equipment that is subject to processing harder minerals such as granite will suffer far greater degradation as opposed to similar equipment within an operation handling limestone. Likewise, dependant on mineral size, shape and volume, then the amount of abrasion and erosion that takes place on both mobile and static plant will **significantly reduce its efficiency and service longevity.**



## Offering the gain

Traditionally, metallic materials such as chromium carbide deposit plate or abrasion resistant steel plate have been successfully used to fabricate or protect mobile plant and have proven their worth in terms of maintaining the asset value of expensive extractive equipment. Likewise these materials along with quench tempered and manganese steel plates and castings have been used around the different crushing operations where the product is handled and crushed down to a minus sized aggregate. As further processing is undertaken for sand and small aggregates, polymer type materials such as rubber and polyurethane operating in a hydraulic state have been used with great success.

Recently, the introduction of a range of ceramic materials are proving their worth within the processing and conveying phase of mineral handling and are continually out performing other materials previously used to improve plant reliability. Kingfisher continues to be at the forefront of introducing new material technologies and installation techniques to cater for the improved protection of a whole host of applications that the industry had accepted as the 'spent life-cycle'. However, as with all solutions to problems associated to mineral handling, careful consideration has to be given in identifying what are the unique issues associated with grades and mineral types, **as a 'one size fits all' approach very rarely succeeds.**


## Typical applications of plant protection systems

### 1 Mineral Extraction & Processing:

Truck bodies
Front end loader buckets
Loading hoppers
Crushing equipment
Screens
Screen underpans
Conveyor transfer chutes
Hydrocyclones
Wash tanks
Slurry pipework
Centrifuges
Separators
Vibratory feeders
Material storage bunkers
Loading chutes

### 2 Asphalt Coating Plant:

Mineral feed day bins
Conveyor transfer chutes
Screw conveyors
Screens underpans
Weigh hoppers
Rotary drying drums
Material transfer skips
Asphalt mixing drums
De-dust cyclones
Air filtration systems
De-dust pipework
Rotary valves

### 3 Mineral Grinding Plant:

Mineral feed hoppers
Conveyor transfer chutes
Screw conveyors
Vibratory feeders
Pipework
Mill feed chutes
Mill lining
Mill grinding media
Classification system
Cyclone separator
Storage hoppers
Storage bins & silos

### 4 Concrete Mixing Plant:

Day bins
Transfer chutes
Storage silos
Screw conveyors
Weigh hoppers
Planetary mixers
Discharge chutes
Recycling hoppers
Conveying pipework
Concrete mixer barrels

### In many instances, Kingfisher Industrial offers the full Turnkey package consisting of:

- Design
- Manufacture
- Protective Lining (both in-works & on-site)
- Erection
- Commissioning

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## Industry experts

Kingfisher can call on over 30 years of success in combating the negative effects that minerals have on capital plant and equipment. In utilising our expertise in designing, manufacturing, protecting and installing equipment, we believe our service is unrivalled in the industry in **ensuring a fit for purpose system** is delivered on time, in budget to the correct standards ensuring all HSE compliance is meet without depending on outside resource.

Having worked in the mineral processing industry throughout the world, our understanding of your process and expectations ensures that the necessary return of investment is achieved. In working with you to ensure we cater for all eventualities of processing, we can deliver the complete package with **guaranteed performance built in.**

## The solution providers

In identifying all relevant wear criteria and referencing a huge portfolio of wear protection materials and techniques, Kingfisher is able to make sound recommendations supported by firm performance guarantees. This option reduces the inherent risk of uneconomic investment as the costs of replacement can sometimes outweigh the initial CAPEX cost.
By implementing sound practice at the design and refurbishment stages of plant improvements, we can often match the protection system to plant and operation longevity and prevent the ongoing problems associated with maintenance and repair.

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