

Industry:

Water

Plant:

Sewage sludge waste plant

Lining System:

K-BAS Lining system

K-BAS LINED SILO CONES

Key Benefits

- Improved wear resistance
- Maintain blending capacity
- Prevention of material build-up
- Cheaper than replacing
- Internal liner can be repaired in position
- Out performs traditional liners by a factor of 6 to 8 times

Problem: The sewage treatment works, situated to the North West of Al Gharrafa in Qatar, operates 24hrs/365 days a year

under very demanding environmental conditions. The silo cones have to cope with environmental impacts, such as maximum wind speeds up to 42m/s, relative humidity's up 100% and ambient building temperatures of 40 deg C; with higher temperatures still in direct sunlight. A further problem is the considerable amount of salt contained in the surrounding atmosphere. This, together with the relatively high ambient humidity, can cause severe corrosion problems for unprotected equipment. In addition to the external environmental problems, wear protection is necessary on the silo cones due to the fact that sewage sludge is highly abrasive. On its passage through sewers, sewage becomes contaminated with debris, sand, grit, deposits from environmental structures, residue from the land mass, plus metallics, and plastics. Sand and grit, in particular, are a major problem, due to their high silica content. They are highly abrasive, causing problems of wear and erosion with the equipment used to treat and process the sludge into dried sewage pellets – the culmination of the process.

Solution: The mild steel silo cones are divided into intermediate sections 4M dia. x 3M high; and lower sections 1.2m dia x 750mm high. They are all lined with Kingfisher's K-BAS cast basalt lining system. K-BAS is an extremely hard and smooth material that is resistant to most acids and alkalis, and can be used at elevated temperatures. In view of these conditions, Kingfisher has provided a 20-year design life on silo cones lined with its K-Bas material, and a warranty of 400-days.

Benefit: An inexpensive form of wear protection, K-BAS is characterized by its excellent resistance to sliding abrasion and corrosion. This quality is key, because once the silos are empty, they are filled from the top, so the basalt lining not only has to cope with sliding friction abrasion while the silo discharges, but also from initial direct impact for a short period of time while they are re-filled. In addition to its wear life, K-Bas was also chosen because the Basalt lining was robust enough to cope with being multi-handled, stored and shipped - open- deck, transported via land through the desert to its final destination, and then installed and craned into position without any detrimental effects



Protecting Industry Worldwide

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