



Case Study

Potash and Fertiliser Mining - Bucket Elevator Efficiency Improvement & Production Output Increase

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A potash fertiliser elevator was using solid hardox elevator buckets which were expensive and wearing quickly causing loss of production. 4B Braime solved the problem with wear resistant, self-cleaning Atlas AM Nyrim buckets - fitted with a steel wear band for excellent impact resistance.

Challenge



4B wear resistant, self-cleaning Atlas AM Nyrim buckets - fitted with a steel wear band for impact resistance. (Pictures: © 4B Braime)

Deposits of salt based marine evaporate minerals occur naturally throughout the world. The minerals are high in potassium, calcium and magnesium along with other valuable trace elements. Often deep mined, they are used in the

agricultural industry and industrial applications. The mineral is very hard, abrasive and hygroscopic making it difficult to handle efficiently.

Once mined the mineral is crushed graded, blended and stored, often utilising expensive wear resistant steels in the process.

Initially the manufacturer installed solid hardox elevator buckets which were expensive and due to their rigidity and the aggressive hygroscopic nature of the mineral caused loss of production along with frequent and expensive downtime.

Industrial Nylon elevator buckets were trialled and although they improved the discharge of the material from the buckets they wore out in a few months.

Solution



The 4B Atlas AM Nyrin bucket in use.

4B engineers devised a best of both worlds scenario – using the Atlas AM Nyrin elevator bucket. The unique benefits of Nyrin affording better wear resistance due to deformation rather than brittle break on a micro level and self-cleaning properties due to the flexibility of the moulded buckets. This in addition to the steel wearband used and developed in the glass cullet industry giving excellent impact resistance.

Results

- Improved tonnage through the plant
- Improved belt life
- Reduction in downtime
- Reduction in planned maintenance

- Saving on electricity costs
- Improved manual handling
- Health and safety compliance

The ATLAS AM Nyrim Elevator Bucket



Suitable for the very toughest of industrial applications. The Atlas AM bucket is anti-static, fire resistant and almost indestructible even in industrial applications, such as aggregates.

Product Features:

- Antistatic material with excellent surface resistivity dissipating properties, ideal for ATEX applications.
- Non-stick properties are enhanced by smooth surface and open bucket design.
- Ultra heavy duty design and construction: material up to 6 times stronger than other industrial plastic elevator buckets.
- Versatile bucket: suitable for heavy industrial, grain and sticky material applications.