



4B GROUP

Potash and Fertiliser Mining Efficiency Improvement and Production Output Increase

Challenge



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

4B engineers devised a best of both worlds scenario by using the unique benefits of Nyrim 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

