BULK HANDLING
TECHNOLOGIES

category

FEEDING OF GRAPHITE FILTERCAKE

PROJECT SCOPE

Material: Graphite Filter Cake
Equipment: 3 off Twin Screw Feeders with ribbon flights manufactured from speciality steels
Problem: Even and controlled feed of filter cake without build-up

As with most filter cakes, graphite filter cake is a damp, sticky material and requires careful consideration to ensure reliable, controlled discharge from storage.

In addition handling of the material, careful review of the mechanical design of the scr w feeder is required due to the feeder head load as well as the high n bility of the graphite and how it reacts to the feeder.

PROBLEM SOLVING METHOD

Specialist material testing of a representative sample was conducted on a representative sample determine the range of potenti l flow properties. Bulk Handling Technologies' scope for this project included he development of a design specificati n for the mass flow discharge hoppers based on the results of material testing. Once the critical hopper diimensions were determined, the outlet size and head load conditions for the s rew feeder design were established whi h required the use of a twin screw feeder.

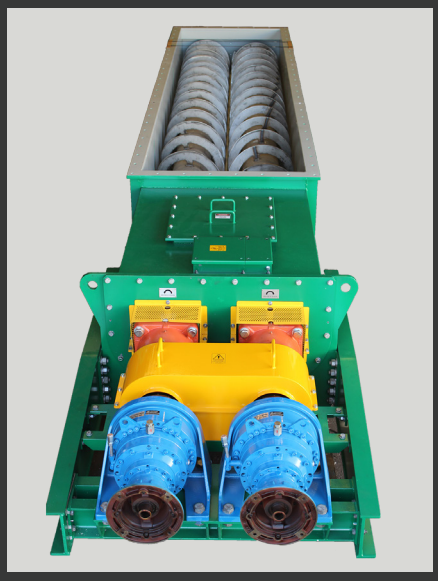
Additionally scale testing of the h pper and screw confirme that standard flights did quickly suffer uild-up and ignificantly r duce feeding capacity. Further testing with the pro osed ribbon flight geometry consistentl demonstrated reliable performance wi h the ribbon design.

The ext emely high specialty steels and obility of graphite, the design incorporated special surface treatments to reduce the potential for galvanic corrosion.

FINAL SOLUTION

With a span between bearings of over 7m, a d the need to cater for first fill head loads and impact due to hopper loading, careful selection f the heavy duty flight shafts was determined along with correct bearing sel ction. Furthermore the selection of 11kW installed power per shaft was determine to overcome this loads.

Proprietary ribbon design flights had been selected to handle the raphite filter cake cleanly and efficiently.



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For more information on this project or make an enquiry, contact:

Three twin screw feeders were manufactured, assembled and test d by BulkHandling Technologies in Perth, Western Australia.

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