

GENTLE CONVEYING AND ELEVATING OF LUMP PRODUCT Steep Wall (Side Wall) Belt Conveyors

PROJECT SCOPE

Project:	Iron Ore Project, Western Australia
Material:	Lump Iron Ore
Equipment:	Steep Wall (Side Wall) Belt Conveyor
Capacity:	100 TPH (24m horizontal / 22m lift)
Scope:	Design and manufacture
Aim:	To gently convey and elevate iron ore lump with minimal degradation to the sample station feed point

As an experienced, heavy duty conveyor designer and manufacturer, Bulk Handling Technologies (BHT) was engaged to design and supply a Steep Wall Belt Conveyor to meet the layout constraints of a new iron ore project.

Steep Wall Conveyors (also known as Side Wall Conveyors) incorporate flexible side 'walls' which are hot vulcanised to a specially designed, cross-stabilised, conveying belt. Transverse cleats are then fitted at regular intervals, with a shape and spacing to suit the application and duty.



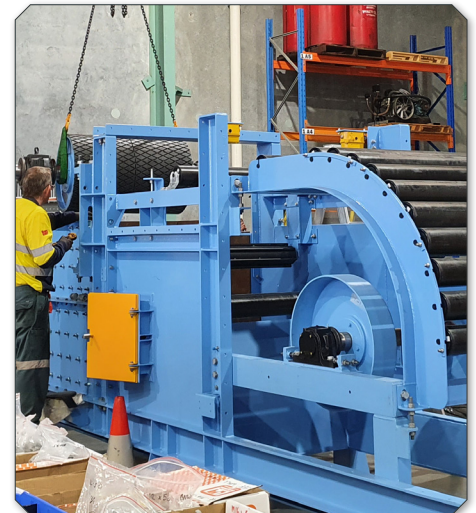
DESIGN CHALLENGES AND CONSIDERATIONS

A challenge when handling product with a high percentage of lumps is how to elevate the product within limited space without damaging or degrading the material. This often rules out conventional bucket elevator options.

For these applications, Steep Wall Belt Conveyors provide the following key advantages:

- No transfer points** - The belt is capable of turning through any angle up to vertical and then back to horizontal – eliminating multiple drives and avoiding product degradation, dust and spillage at transfer points.
- No spillage with steep angles (including vertical conveying)** - Product is efficiently contained within the belt as it transitions smoothly around bends.
- Maximum utilisation of space** - The ability to convey at 90 degrees means significantly smaller footprints than inclined conveyors and a more compact, efficient plant layout.

Using a Steep Wall Belt Conveyor, the product sample will not be degraded and can be gently lifted to the sample station to be screened and assessed for fines content, ensuring it is representative of the product in the main conveying stream.



THE FINAL SOLUTION

The final design incorporated the following key features to meet the specific requirements of the application:

Drive:	SEW KA127 c/w 18.5KW Toshiba Motor
Belt Grade:	XE500/3+2
Horizontal Centres:	24.736m
Vertical Centres:	22.736m (lift)
Incline Angle:	87 Degrees from Horizontal

Following successful workshop testing, the Steep Wall conveyors was transported to site and successfully installed and commissioned.



For more information on this project, or any other enquiries, contact us + 61 (0)8 9332 3454 or sales@bhtgroup.com.au