

PRACTICAL BELT CONVEYING PART I

COURSE OUTLINE

The following information outlines the topics covered on each day of the engineering course. While some people may feel that they already have adequate understanding of these topics, the real value of this course comes from the fact that it is packed with practical information that is not available in other texts.

Day 1

- Introduction, including brief history of belt conveying.
- Material properties.
- Conveyor surcharge angle and burden edge distance selection, including the influence of loading area design and belt velocity on surcharge angles.
- Idler geometry, including troughing angle and centre roll length considerations.
- Belt width and velocity selection.
- Flooded belt considerations including determining the length of flooded belt resulting from overlapping stopping times and the approximate force required to extract material from a blocked chute.

Day 2

- Conveyor power demand calculation.
- How conveyor design packages work, including basic information on rigid body acceleration and deceleration calculations.
- Differences between rigid body and flexible body dynamic analysis.
- Belt sag requirements.
- Drive traction calculations, including what actually happens at a drive pulley.
- Rubber v ceramic lagging.
- Outline of drive types.
- Determination of holdback requirements.

Day 3

- Conveyor layouts including features to avoid.
- Uneven wear problems on pulleys.
- Shuttle conveyors.
- Travelling trippers, including the design of tripper belt profiles.
- Take-up systems.
- Skirt systems.
- Vertical curves.
- Transitions.
- Trajectory calculations.
- Conveyor belting.

Day 4

- Belt safety factor selection, a new method of assessing safety factors.
- Minimum pulley diameter determination.
- Pulleys.
- Idlers.
- Conveyor alignment and belt tracking.
- Some general info on the design and construction of the Channar 20 km conveying system.