
BEST PRACTICE DESIGN, MAINTENANCE AND TROUBLESHOOTING OF CONVEYORS AND CHUTES



YOU WILL LEARN:

- Maintenance practice
 - The fundamentals of belt conveyor design
 - Troubleshooting conveyer problems
 - Splicing techniques
 - Safety management
 - Design and installation
 - Capacity, sizing and power of equipment
- A practical emphasis ensures that the above concepts are put into practice.

WHO SHOULD ATTEND:

- Maintenance engineers, technicians and staff
- Plant engineers
- Operation, maintenance, inspection and repair managers, supervisors and engineers
- Mechanical engineers and technicians
- Design engineers
- Electrical engineers and technicians
- Consulting engineers

The Workshop

The workshop will cover basic conveyors, selection, safety, legal obligations, terminology and background.

This workshop is designed for engineers and technicians from a wide range of abilities and backgrounds and will provide an excellent introduction to troubleshooting and maintenance of conveyors and chutes. It is intended to cover the fundamentals of belt conveying and would be useful for those with little experience in this area.

Before commencing a detailed course on conveyers it is important to have a solid practical knowledge of the material to be conveyed. A basic knowledge is provided of the bulk materials characteristics and properties.

Numerous tips throughout the course make it practical and topical. Belt conveyers frequently provide the most satisfactory and economical method of transporting materials such as mine ores, earth, sand, crushed stone, cement and concrete. The high and continuous speed of operation of the belt makes for a high capacity of transport of materials.

Throughout the course, you will engage in problem solving and case studies to absorb the materials as quickly and effectively as possible.

Pre-requisites

Fundamental knowledge of basic mechanical plant and operation thereof.

Practical Sessions

This is a practical, hands on workshop enabling you to work through practical exercises which reinforce the concepts discussed.

To gain full value from this workshop, please bring your laptop/notebook computer..

The Program

INTRODUCTION

- Fundamentals of bulk materials handling
- Nature of bulk solids
- Characteristics of generally used bulk materials
- Conveyors and chutes overview

Practical Exercise

BELT CONVEYING

- Introduction
- Layout
- Basic configuration
- Components of a standard conveyer
- Capacity of belt conveyors and selection of belt width
- Selection of other components (belt, idlers, pulleys, takeups etc...)
- Simple calculation of belt tension
- Selection of drive
- Troubleshooting tips
- Take-ups
- Operation and maintenance of belts
- Tips for cost savings

Practical Exercise

SAFETY OF CONVEYORS

- Conveyor safety standard
- General background on AS 4024.1 (RA and hazard recognition)
- Hazard recognition
- History of accidents
- Key conveyor safety issues
- Demonstration of unsafe conveyors
- AS 1755 conveyors
- Chute doors hazards and controls

Case Study

Practical Exercise

MAINTENANCE AND TROUBLESHOOTING OF CONVEYORS

- Troubleshooting conveyor problems
- Types of joints
- Splice failures, inspections and repairs
- Typical problems
- Root cause process
- Systematic approach for tracking
- Site specific problems

Case Study

Practical Exercise

CHUTE MAINTENANCE AND TROUBLESHOOTING

- Transfer chutes theory
- Laser scanning applications
- Best practice design
- Boosting flow
- Troubleshooting chutes
- Spillage and build-up
- The awkward marriage of conveyer and chutes

Practical Exercise

FEEDERS MAINTENANCE AND TROUBLESHOOTING

- Belt, apron, screw and other feeders
- Optimum draw down
- Troubleshooting typical problems

Practical Exercise

STORAGE AND FLOW

- Flow properties of materials
- Funnel-flow and expanded flow
- Flow rate analysis
- Gravity reclaim
- Bin wall pressures

Practical Exercise

SUMMARY, OPEN FORUM AND CLOSING

