

€ TRAINING

Advanced Techniques for Solid Material
Conveyance



12 - 16 January 2025
Sharm El-Sheikh (Egypt)



Advanced Techniques for Solid Material Conveyance

REF: E412 DATE: 12 - 16 January 2025 Venue: Sharm El-Sheikh (Egypt) - Fee: 4465 Euro

Introduction:

The conveyance of solid materials is essential for efficient operations in various industries. It involves using specialized systems to transport bulk solids reliably and safely, ensuring smooth and continuous production processes. This training program provides comprehensive instruction on the principles and practices of conveying solid materials using hydraulic and pneumatic systems. Through it, participants will be equipped with the knowledge and skills necessary to optimize solid material transport processes in various industrial settings.

Program Objectives:

At the end of this program, participants will be able to:

- Explore the hydraulic transport systems and slurry preparation.
- Design pipelines, select materials, and calculate pressure losses.
- Implement safe operation practices for hydraulic systems.
- Design and operate pneumatic conveying systems.
- Apply after-treatment techniques and optimize existing systems.

Targeted Audience:

- Maintenance Engineers.
- Process and Mechanical Technicians.
- Design Engineers.
- Supervisors and Operators.
- Mechanical Engineers.

Program Outlines:

Unit 1:

Main Characteristics of Systems for Transport of Solids:

- System for hydraulic transport of solids: main features, elements, and components.
- Basics of the flow of liquids in pipes: velocity and pressure drop of the flow of mixtures.

- Classification of flow characteristics of common slurries.
- Review of main elements of slurry preparation equipment.
- Other vital components of the hydraulic transport.

Unit 2:

Pipeline Design Considerations:

- Selection of pipes, material, and diameter based on maximum fluid velocity.
- Detailed calculation of pressure losses in the pipeline.
- Selection and sizing of pumps for the hydraulic transport system.
- Handling of difficult slurries.
- After-treatment of transported material.

Unit 3:

Practical Aspects of System Safe Operation:

- System design environmental considerations.
- Guidelines for adequate pipeline installation and maintenance.
- Hydraulic system inspection, control, and performance testing.
- Problems with system starting and stopping.
- Methods of pipeline vibration reduction.
- Economic analysis: capital costs and operating costs.

Unit 4:

Characteristics of Different Types of Pneumatic Conveying Systems:

- Systems for pneumatic conveying of solids.
- Basics of the flow of gases in pipes.
- Sizing of blowers and piping connections.
- Review of main elements of material preparation equipment.
- Selection of pipe material and diameter and design of piping systems.

Unit 5:

Survey of Equipment and Methods for After Treatment of Transported Material:

- Material - gas separation.
- After-installation inspection and check-up.
- Receiving and unloading of material, start-up of operation.
- Operational problems and troubleshooting.
- Control and monitoring the system.
- Optimizing and upgrading the existing systems: issue of changing the material.