

Training - Column Internals



INCOL-EN-P



Face-to-face only



2 days

This course provides a thorough and practical understanding of the working principles and use of trays and packing installed in many columns for distillation, absorption, stripping, washing, etc. It covers as well the main design issues

Level

Expert

Public

Engineers and supervisory staff in the refining, petrochemical and chemical industry, involved in the design, selection or operation of the internals in distillation columns or their equivalent

Objectives

Attendees will be able to implement the following skills:

- List the different types of equipment, their strengths, limitations and areas of application
- Identify the basic elements needed for their sizing

Pedagogical & technical resources

- Active participation of trainees with exercises using an equipment sizing software
- Parts of or the whole session customizable to a virtual remote classroom

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

TECHNOLOGY & FUNCTIONING OF TRAYS

1 day

Basics of mass transfer between liquid and vapor: importance of the interface area, viscosity and relative volatility.

Definition of some working parameters: efficiency, capacity, flexibility, pressure drop, etc.

Different types of trays: with or without downcomers.

Different types of contacting systems for the active area: bubble caps, fixed or mobile valves.

Hydraulic working and pressure drops.

Troubles such as flooding, weeping, fouling, etc.

Main parameters to take into account in the design of internals.

Specific features for multi-pass trays.

Equipment for transition zones as flash zone, changing of pass number, etc.

Aim of high performance trays and working principles. Advantages and fields of use.

New technology trays and implementation in the near future.

Example:

- Simulation of tray design; representation of trays in operation (video).
- Implementation of HP trays and feedback information.

TECHNOLOGY & FUNCTIONING OF PACKED BEDS

0.75 day

Random packing, structured packing, grids.

Technology of a packed bed in operation.

Operating range and pressure drop.

Recent evolution of packing.

Liquid or vapor distributors, collectors and redistributors.

Impact on the working and performance of packed beds.

Example:

- Representation of packing in operation (video); implementation of packing and evaluation of performances.
- Presentation of tests in the manufacturer's workshop.

COMPARISON & TROUBLESHOOTING OF BEDS & PACKINGS

0.25 day

Advantages and drawbacks of trays and packed beds, costs.

Respective technical performances: capacity, pressure drops, flexibility, implementation.

Detection of disturbances in the field and data analysis.

Potential solutions and efficiency.

Gammametry: method and examples of diagrams.

Example:

- Revamping an existing column.
- Case study of disturbed equipment, diagnosis and remedy.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.

Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com