

## Piping: Pharma Design TC-204

Design of Pharmaceutical Piping Installations according to EN13480 Industrial Piping for e.g.,

- HPW & WFI loops
- CIP-system
- Clean Steam
- Buffers
- Process Installations
- Other Clean utilities

Design of Piping for Pharmaceutical installations have many considerations, but mainly the ability to keep inside of installation clean:

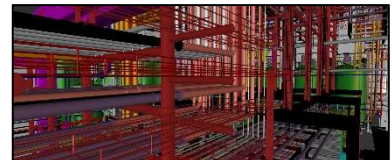
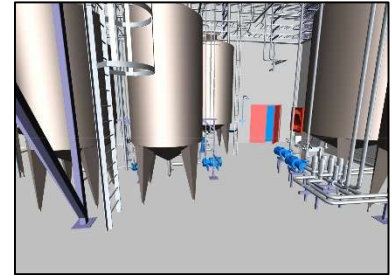
- Dead-Leg
- Drain ability
  - Piping General
  - Membrane Valves
- Bending Radiuses
- Instrument built-in – especially analyzing instruments like pH and Conductivity probes.

Manufacturing and filling with Protective gas does also need to be considered.

Trainees will get a general introduction into design demands for clean system design and the rules and regulations that applies to this area. Course will also show possibilities for creating automated design review.

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*Pictures from various pharmaceutical and API projects.*