

Process Piping Design Solutions

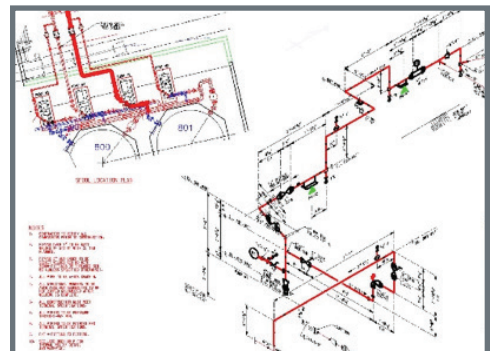
EN Engineering offers a broad range of start-to-finish piping system design services for the chemical and petroleum industries. From surveying, 3D scanning, and pipe stress analyses to hydraulic calculations and modeling, we start from the ground up to design a system that truly suits our clients' needs. Our services encompass a wide range of key design activities including the development of conceptual flow diagrams, the creation of highly-detailed isometric drawings, and the creation of as-built documentation.

Our highly-experienced and dedicated team members come from diverse chemical and petroleum industry backgrounds. Our knowledge and skills have prepared our team to offer comprehensive piping services for refining, processing, storage, and transportation facilities.

EN Engineering's team of expert engineers, designers, and support staff understand the complex concerns and challenges clients face, and we work closely with our clients to meet project objectives, budgets, and deadlines. Our foremost goal is to provide clients the custom designs they rely on to meet their unique piping system design needs.

Piping Design

- Coordinate and develop process design basis
- Create process flow diagrams (PFD)
- Create, review, revise, and finalize piping and instrumentation diagrams (P&ID)
- Smart P&ID development and modifications
- Identify and specify necessary equipment
- Specify normal and maximum operating conditions for equipment and vessels
- Complete equipment and instrumentation data sheets
- Calculate and specify initial piping and equipment requirements
- Line size: pipe size and schedule, flow velocities, pressure drops
- Pumps: GPM, TDH, HP
- Exchangers: duty and LMTD
- Vessels: D and L, internals
- Size and specify PSVs and PRs
- Size and specify control valves
- Develop process simulation models (ASPEN Plus, HYSYS, etc.)
- Piping system hydraulic calculations and modeling



- Complete line list – including all process and utility streams
- Equipment/instrumentation selection and procurement
- Pipe support/rack design (STAAD)
- Bill of Material (BOM) development
- Specify basic process controls required
- Level, temperature, pressure, flow
- Complete environmental permitting
- Cost estimating and economic analysis
- Perform energy optimization studies
- Design process pilot plants
- Collaborate with other engineering disciplines throughout project design

Engineering Tools & Software

- ASPEN
- COMPRESS
- STAAD
- WinSim DESIGN II
- CAESAR II
- AutoPlant 3D
- CADWorx
- PipeFlow
- Inventor
- ANSYS

