

# Ingenieurbüro Andreas Holl

Conceptual Design - Engineering Services - Training - Consulting

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## Hydrogen Training

### Description

#### Hydrogen Basics

- Characteristics of hydrogen
- Gas purity

#### Fluid System Components in Hydrogen Plants

- Hydrogen generation and storage
- Hydrogen in fuel cells, hydrogen as a reducing agent in the chemical industry, steel production, desulfurization in the petrochemical industry, food industry, mobile sector, and many other applications

#### Tubing, Flanges, Threads, and Fittings in Hydrogen Plants

- Material requirements
- Corrosion - Hydrogen embrittlement
- Cleaning requirements
- General requirements for tubes (steel - stainless steel)
- Fittings, threads, and flanges
- Tube cutting and bending in hydrogen systems
- Dimensioning of tubes - Permitted flow velocities

#### Valves and Pressure Regulators in Hydrogen Systems

- Requirements for valves and pressure regulators in hydrogen systems
- Material, lubricant, and cleaning requirements
- Design considerations for valves
- Sizing and calculation of valves and pressure regulators
- Hydrogen and Hydrogen/Natural Gas Mixtures

#### Other Fluid System Components:

- Check valves - Deflagration safety devices
- Filters - Pressure transducers - Sensors
- Control valves - Coaxial valves - Butterfly valves - Safety valves - Solenoids

#### Technically Permanently Leak-Proof Fluid System Components

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USt-IdNr.: DE320024306  
Finanzamt Karlsruhe-Durlach