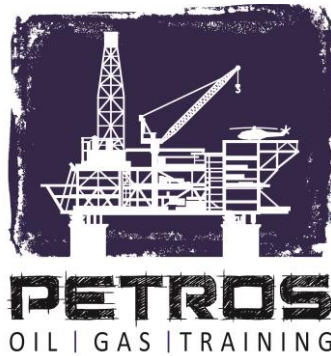


Certificate No : 2022-PTR-EC-PVD-021  
Date : December 10<sup>th</sup> , 2022



## CERTIFICATE OF ACCOMPLISHMENT

This is to certify that  
**TAUFAN HIDAYAT, S.T**  
ID NUMBER : PTR-EC-PVD-021

has completed 32 total hours & finished the Final Project of our E-course

**PRESSURE VESSEL DESIGN  
AS PER ASME VIII DIV.1  
(MANUAL CALCULATION)**

**TRAINER :**  
**Tito Febrianto, S.T - Senior Mechanical Static Engineer**

Held by **PETROS Oil Gas Training** covering the subjects as listed on the back page



Certificate Validation

A handwritten signature in black ink, appearing to read "Heru Prasadja".

**Heru Prasadja, ST**  
Director

# PRESSURE VESSEL DESIGN AS PER ASME VIII DIV.1 (MANUAL CALCULATION) E-COURSE

## Pressure Vessels Introduction

- Definition, Application
- Standard Reference, and tools
- Scope of design
- Outline E-Course

## Material Selection and Material Properties Data

- ASME reference
- Required data
- Material Properties and Specification
- Commonly used Material
- Tensile strength and Yield strength
- Allowable stress
- Dimension tolerances

## Type of pressure

- Design Pressure
- Static Pressure
- Maximum Allowable Working Pressure (MAWP)
- Maximum Allowable Pressure (MAP)
- Test Pressure
- Others Pressure

## Important Assumptions in Designing and Calculation

- Corrosion Allowances
- Joint Efficiency
- Tolerance

## Shell Design and Calculation

- References and Equation
- Symbol and Definition
- Minimum Required Data
- Simple Study Case
- Actual Study Case

## Head Design Calculation

- References and Equation
- Types of head
- Symbol and Definition
- Study Case

## Nozzle Design Calculation

- References and Equation
- Type of nozzles
- Symbol and Definition
- Nozzle for access opening
- Study Case for Access Opening Nozzles
- Nozzle for others
- Study Case for Other Nozzles

## Nozzle Reinforcements Design and Calculation

- References and Equation
- Limit of Reinforcement
- Reinforcement Area
- Symbol and Definition
- Simple Study Case
- Actual Study Case

## Flanges Design and Selection

- References
- Type of flanges
- Pressure-Temperature Rating
- Study Case Rating Selection
- Study Case Dimension Selection
- Bolt and Nut Selection

## Heat Treatment Evaluation

- References and Equation
- Heat Treatment After Forming Evaluation
- Post Weld Heat Treatment Evaluation

## Impact Test Evaluation

- References
- Impact Test Requirements
- Material Classification, Governing Thickness, and MDMT Calculation
- MDMT Reduction
- Study Case

## Weld Size Evaluation

- Shell and Head
- Nozzle to Shell or Head (without pad)
- Nozzle to Shell or Head (with pad)
- Nozzle to Flanges

## MAWP Evaluation and Test Pressure Selection

- Summary MAWP
- Lowest Stress Ratio Calculation
- Test Pressure Selection

## Summary Design and Calculation

FINAL PROJECT : **COMPLETED**