Joining of plastics materials in industrial applications (DVS 2281, 2282)
Joining of geomembranes (DVS 2283)
Joining of gas and water pipeline systems (DVGW GW 330)
Welding supervisor in gas and water pipeline systems (DVGW GW 331)
Overview
The participant will gain knowledge and proficiency in welding of polymeric sheets and plastic pipes for tank building and industrial applications. The plastic welding examination part I will be according to DVS 2212-1 guidelines.

Who will benefit?
Professionals from companies dealing in industrial apparatus construction, plant engineering and pipeline construction, metal processing as well as processing of semi-finished products.

max. 12 participants

Contents

▶ Theory:

Material technology of plastics
• Synthesis processes of thermoplastics, definition, structure, characteristics, processing ranges, general properties
• Especially HDPE, PP, PVC-U and PVDF

Welding of thermoplastics
• Fundamental principles of welding
• Different welding techniques
  – Hot gas fan welding (WF)
  – Hot gas string bead welding (WZ)
  – Heated tool butt welding (HS)
  – Heated tool sleeve welding (HD)
  – Electro fusion welding (HM)
• Design and symbols of welding joints
• Work safety aspects
• Testing of welded joints

Written Examination with Multiple Choice Test

▶ Practical training:

Hands on training and exercises of welding machines for hot gas welding as well as heat element welding machines:

Hot gas fan welding (WF) and hot gas string bead welding (WZ)
• Welding exercises on plastic sheets and pipes made of HDPE, PP and PVC-U
• Overlay welding, V-seams, X-seams
• Determination and monitoring of welding parameters
• Testing of welded joints due to technological bending

Heated tool butt welding (HS), heated tool sleeve welding (HD) and electro fusion welding (HM)
• Welding exercises on plastic pipes made of HDPE and PP with welding machine variation
• Determination and monitoring of welding parameters
• Testing of welded joints due to technological bending test and torsion shear test

Also available as an In-house training course!
All our training courses can be individually company-specific designed. Feel free to contact us for further information.
Overview
The participant will gain knowledge and proficiency in welding of polymeric sheets and plastic pipes for tank building and industrial applications. The plastic welding examination part II will be according to DVS 2212-1 guidelines.

Contents
- Theory:
  - Material technology of plastics
    - Synthesis processes of thermoplastics, definition, structure, characteristics, processing ranges, general properties
    - Especially HDPE, PP, PVC-U and PVDF
  - Welding of thermoplastics
    - Fundamental principles of welding
    - Principles of hot gas extrusion welding (WE)
      - Processing instructions
      - Continuous and discontinuous welding process
      - Requirements for Extrusion Welding Machines, application areas
    - Design and symbols of welding joints
    - Designs of welding shoes
    - Work safety aspects
    - Testing of welded joints

Written Examination with Multiple Choice Test

Who will benefit?
Professionals from companies dealing in industrial apparatus construction, plant engineering and pipeline construction, metal processing as well as processing of semifinished products.

max. 12 participants

Practical training:
Hands on training and exercises of welding machines for hot gas welding as well as heat element welding machines:

Hot gas welding
- Welding exercises on plastic sheets and pipes made of HDPE and PP
- Determination and monitoring of welding parameters
- Testing of welded joints due to technological bending

Hot gas extrusion welding (WE)
- Welding exercises (butt- and T-joints)
- Determination and monitoring of welding parameters
- Testing of welded joints with technological bending test and torsion shear test

Regular monitoring according to DVS 2212 is available!
It is also possible to take the examination for regular monitoring according to DVS 2212. Please feel free to contact us for further information!
Overview
The participant will gain knowledge and proficiency in liners for earthwork and hydraulic engineering, welding of thermoplastic liner sheets and will undertake the plastic welding examination part III according to DVS 2212-3 guidelines.

Who will benefit?
Professionals from companies dealing in welding of liners for earthwork, tunneling, lake lining as well as roofing with polymeric liner materials.

max. 12 participants

Contents

 ► Theory:

Material technology of plastics
• Synthesis processes of thermoplastics, definition, structure, characteristics processing ranges, general properties
• Especially HDPE, PVC-P and ECP

Welding of thermoplastics
• Fundamental principles of welding
• Different welding techniques
  – Hot gas fan welding (WF)
  – Hot gas string bead welding (WZ)
  – Hot gas extrusion welding (WE)
  – Hot gas lap welding (WU)
  – Hot gas wedge welding (HH)
• Design and symbols of welding joints
• Welding under construction site conditions
• Work safety aspects
• Testing of welded joints

Written Examination with Multiple Choice Test

 ► Practical training:

Hands on training and exercises of welding machines for hot gas welding as well as heat element welding machines:

Hot gas fan welding (WF) and hot gas string bead welding (WZ)
• Welding exercises on plastic sheets and pipes made of HDPE, PP and PVC-U.
• Build-up welding, V-seams, X-seams
• Determination and monitoring of welding parameters
• Testing of welded joints due to technological bending

Heated tool butt welding (HS), heated tool sleeve welding (HD) and electro fusion welding (HM)
• Welding exercises on plastic pipes made of HDPE and PP with welding machine variation
• Determination and monitoring of welding parameters
• Testing of welded joints due to technological bending test and torsion shear test
Overview
The participants will gain the knowledge and proficiency required to weld and lay pipeline systems made of PE-80, PE-100 and PE-X, with the aim of successfully gaining the qualification of certified PE welder for gas and water-supply lines.

Who will benefit?
Specialists from companies undertaking welding tasks on pipeline constructions.

max. 12 participants

Contents
➤ Theory:
- Pipes and pipeline components made of polyethylene
- Fundamental principles of welding
- Heated tool butt welding (HS)
- Electro fusion welding
- Laying techniques for gas and water lines
- Blocking PE-HD lines
- Pressure test
- Testing of welded joints, technological bending test and torsion test
- Theoretical examination

➤ Practical training:
- Heated tool butt welding (HS) of pipes and fittings made of PE-HD
- Electro fusion welding of sleeves and tapping saddles
- Tapping the fittings
- Testing of welded seams
- Practical examination

Regular monitoring according to GW 330 is available!
It is also possible to take the examination for regular monitoring according to GW 330. Please feel free to contact us for further information!
Overview
The participants will gain the knowledge and proficiency required to supervise and check welding operations on PE-HD pipeline systems. He gets the qualification to gain successfully the qualification of a certified PE welding supervisor for gas- and water-supply pipelines.

Who will benefit?
Managing and supervising specialists from companies undertaking welding tasks on underground pipeline constructions.

max. 12 participants

Contents

Theory:
- The material PE-HD
- Supply forms of PE-HD pipes
- Fundamental principles of welding thermoplastics
- Heated tool butt welding (HS) according to DVS 2207-1
- Electro fusion welding (HM) according to DVS 2207-1
- Testing of welded joints
- Non-destructive tests
- Destructive tests
- Theoretical examination

Practical training:
- Welding equipment (requirements)
- Heated tool butt welding (HS) and electro fusion welding (HM)
- Welding of pipes and pipelines made from PE-HD
- Non-destructive tests
- Destructive tests
- Practical examination

Regular monitoring according to GW 330 is available! It is also possible to take the examination for regular monitoring according to GW 330. Please feel free to contact us for further information!

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