



Principles of Thermoplastic Fabrication and Materials – SP0187/07-17 NQF Level 2

Duration: 3-5 days
One process = 3 days
Two processes = 4 days
Three processes = 5 days
Target: Thermoplastics Welders / candidates competent in NQF Level 1
Prerequisite: NQF Level 1
Qualification: National Certificate in Thermoplastic Fabrication
NQF Level 2
Credits: 13
Certification: MERSETA accredited
PFSA Certification / competence

Unit Standards:

- Identify thermoplastics and related materials and relate their properties to their application [14686, 8 credits]
- Weld thermoplastics with heated-tool equipment [14694, 5 credits], and/or
- Weld thermoplastics with hot gas equipment [14696, 5 credits], and/or
- Weld thermoplastics with extrusion equipment [14697, 5 credits], and/or
- Weld thermoplastics with electro-fusion equipment [14684, 5 credits]

Course Objective:

To know the basic make-up of plastics materials; common types of plastics materials; key properties which influence storage, transport, processing and the end-product.
To know the important parts of thermoplastics welding equipment.
Procedure to follow when performing welding.

Outcomes: At the end of the learning programme, the learners will be able to:

- Explain the basic chemistry of plastics materials, identify the materials and list their properties
- Explain the welding principles, workplace safety and perform a heated-tool butt weld, and/or hot gas weld, and/or extrusion weld, and/or socket fusion weld and/or electro-fusion weld.

Contents:

- Basic chemistry of plastics materials
- Good and bad things about plastics
- Difference between thermoplastics and thermosets and between amorphous and crystalline
- Types of molecular orientation
- Causes of degradation
- Classification of plastics materials
- Measurement of properties
- Workplace safety [welding procedure, welding temperatures and welding preparations]
 - Assignments to be submitted within training duration
 - Theoretical test to be written at the end of training
 - Practical sample will be tested by accredited laboratory in accordance with SANS.
 - A PFSA Certificate of Competence is issued to successful candidates.
 - Minimum requirements for competence: successful weld plus 70% on all theory and 80% on practical. Where 50% - 69% on theoretical raw materials component (unit standard 14686), the learner may weld under supervision only.
 - Certificates of Competence are valid for one year only and should be renewed annually – see welding cycle
- Relevant credits may be awarded to successful learners upon MERSETA due approval process

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