



Australian Government

Assessment Requirements for PMBTECH603E Design structural or mechanical polymer components

Release: 1

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Modification History

Release 1. Unit code and title changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBTECH603 Design structural/mechanical polymer components.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to meet job specifications to:

- design at least one polymer component to meet structural or mechanical requirements and product end-use specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- all main processes and polymer materials
- impact of different polymer materials, their additives and the rheological, heat and other effects of processing on design of a new mechanical or structural component
- influence of component design on the operability of the process and the properties of the product
- factors affecting structural and mechanical properties of new component
- options for compounding changes to modify properties, including:
 - stress or strain data of polymeric materials
 - material creep or viscoelasticity, rheometric properties
 - material strength
 - environmental resistance (e.g. temperature, chemicals, ultraviolet and other radiation)
- options for changes to component shape and size to modify properties, including:
 - stiffness or rigidity, deflection
 - strength
- component trialling and testing procedures
- principles of operation of all relevant equipment and processes
- differentiating features of main processes, polymer materials and materials of construction of structural or mechanical components
- organisational procedures relevant to the work environment or job role
- hazards that may arise in the job or work environment and:
 - their possible causes
 - potential consequences

- appropriate risk controls.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet –

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>