



Australian Government

Assessment Requirements for AHCIRG410 Select and manage pumping systems for irrigation

Release: 1

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Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting.

The candidate must provide evidence that they can:

- identify irrigation system requirements from the irrigation design
- select pump according to type, installation, range of flow rates, operating head and delivery distance
- supervise installation of pumps
- develop maintenance procedures for the pumping system
- monitor the performance of pumps, valves and filters
- carry out troubleshooting on pumping systems
- calculate pumping requirements and pressure loss due to irrigation components
- identify adverse environmental impacts of irrigation pumping activities and take appropriate remedial action

Knowledge Evidence

The candidate must demonstrate knowledge of:

- advantages and disadvantages of each pump type
- application of mechanical, hydraulic and electrical principles
- automatic pump switches including:
 - flow switches
 - irrigation controllers
 - pressure switches
 - timers
- cavitation - cause and effect
- discharge and flow rates
- environmental procedures for installing and maintaining irrigation pumping systems
- installation factors including:
 - adequate space, head room, ventilation and lighting

- correct alignment procedures of pump and motor shafts with direct coupled units
- provision for adjustment and ease of dismantling
- levelling and alignment processes
- overhaul or repair operations
- properties of water including pressure and flow rates
- pump components and their principles of operation
- pump efficiency, performance and pressure testing
- pump positioning (driver alignment and suction length)
- routine preventative maintenance
- selection factors for pumps including:
 - source of water and lift
 - the required pumping flow rate and pressure
 - the total dynamic head
 - the total suction head
- sources of information and the processes for the calculation of material requirements and flow rates
- statutory and authority requirements related to the installation of commissioning of irrigation pumping systems
- types of impellers and their use
- types of pumps and application in irrigation including:
 - centrifugal
 - propeller
 - submersible
 - vertical turbine
- types of pumps suitable as booster and floating pumps
- types of valves
- work health and safety legislation

Assessment Conditions

Assessors must satisfy current standards for RTOs.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>