

Field Engineering and Technology

Review, revision and rollover, and change of standard-setting responsibility of *Engineering and Technology* unit standards

Reviewed unit standards

Subfield	Domain	ID
Civil Works and Services	Civil Infrastructure Health, Safety, and Environment	20869
Infrastructure Works	Generic Infrastructure Works	6479
Water Industry	Water Reticulation	19209-19215, 22097-22114, 24918, 24919, 24921-24923, 24926, 27330

Revised and rolled-over unit standard

Subfield	Domain	ID
Water Industry	Wastewater Treatment	25124

The Infrastructure Industry Training Organisation has completed the review, revision and rollover of the unit standards listed above.

Date new versions published

March 2017

Planned review date (reviewed standards)

December 2021

Planned review date (revised standard)

December 2018

Summary

Gazetted coverage of the Water Industry, including Water Reticulation, was transferred to Infrastructure ITO in May 2015. Review of the unit standards had been due, but this and the transfer of responsibility was delayed due to the Targeted Review of Qualifications (TRoQ). Two further Infrastructure Works and Civil Works and Services unit standards had been identified by industry as relevant for inclusion in this review.

In 2016, a Water Reticulation/Infrastructure Working Group comprised of industry experts and tertiary providers met to review the structure, levels, credits, and content of the unit standards to update and align with current industry practice. The draft unit standards were then circulated to wider industry including industry peak bodies, wastewater treatment plant staff, providers, and district and regional councils for further consultation and feedback.

Some unit standards in *Water Reticulation* had been marked as a priority for review due to age or their inclusion in programmes under development, and were reviewed earlier in 2016. This review includes the remainder of Water Reticulation unit standards, and one Wastewater Treatment unit standard which had been missed from a previous revision.

Main changes

- Titles, purpose statements, explanatory notes, outcome statements and evidence

requirements were updated to reflect current industry practice and to remove overly-prescriptive range statements or assessment requirements where possible.

- Levels and credits were adjusted to accurately reflect content.
- Four new standards were developed to address emerging skills and identified gaps within the current suite.
- One standard was designated expiring and replaced by three new standards to more accurately reflect demarcation of roles within the industry.
- One standard was moved from the subfield/domain *Civil Works and Services > Civil Infrastructure Health, Safety, and Environment* to *Infrastructure Works > Infrastructure Works Health, Safety, and Environment*.
- One *Wastewater Treatment* standard was revised and rolled over to update legislation until a full review can be conducted in 2018.
- A last date for assessment of superseded versions of the Category B reviewed standards and the revised and rolled-over standard was specified. Results will not be accepted where the assessment date is after the last date for assessment of the superseded version of the standard.

The Category C unit standard will expire at the end of December 2018

The last date for assessment of superseded versions of Category B unit standards and the rolled-over and revised standard is December 2018

Impact on existing organisations with consent to assess

Current consent for			Consent extended to		
Nature of consent	Classification or ID	Level	Nature of consent	Classification or ID	Level
Subfield	Civil Works and Services	3-7	Standard	20869	3
Domain	Civil Infrastructure Health, Safety, and Environment	3 or 4			

Impact on Consent and Moderation Requirements (CMR)

Reviewed standards from the *Water Industry* subfield were transferred from CMR 0179 to CMR 0101, meaning that all standards in this report are now covered by CMR 0101.

Detailed list of unit standards – classification, title, level, and credits

Reviewed unit standards

All changes are in **bold**.

Key to review category	
A	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
B	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new ID
D	Standard will expire and not be replaced

Engineering and Technology > Civil Works and Services > Civil Infrastructure Health, Safety, and Environment

Engineering and Technology > **Infrastructure Works > Infrastructure Works Health, Safety, and Environment**

ID	Title	Level	Credit	Review Category
20869	Demonstrate knowledge of notifiable works and permits in the civil infrastructure industry	3	2 3	B

Engineering and Technology > Infrastructure Works > Generic Infrastructure Works

ID	Title	Level	Credit	Review Category
6479	Locate and identify services for infrastructure works	3	5	B

Engineering and Technology > Infrastructure Works > Infrastructure Works Utilities

ID	Title	Level	Credit	Review Category
30097	Carry out pipe installation using a soil displacement hammer	4	6	New
30098	Demonstrate knowledge of pipe installation using a soil displacement hammer	3	3	New
30099	Carry out pipe bursting	4	6	New
30100	Demonstrate knowledge of pipe bursting	3	6	New

Engineering and Technology > Water Industry > Water Reticulation

ID	Title	Level	Credit	Review Category
19209	Demonstrate knowledge of water reticulation systems cleaning and disinfection	3	4 5	B
19210	Service, clean, disinfect, and restore reservoirs or reticulation mains	3	4	B
19211	Describe water supply mains materials and fittings, and causes and prevention of pipe failure	3	6	B
19212	Demonstrate knowledge of wastewater collection and treatment systems	3	10	B
19213	Demonstrate knowledge of blockage clearance and wastewater maintenance Demonstrate knowledge of blockage clearance and wastewater system maintenance	2	3	B
19214	Carry out wastewater pipe unblocking and access chamber maintenance	3	3 4	B
19215	Describe wastewater systems and materials, and causes and prevention of pipe failure	3	6	B
22097	Demonstrate knowledge of rehabilitation and replacement of existing water pipe lines	3	3	B
22098	Demonstrate knowledge of rehabilitation and replacement of existing wastewater pipe lines	3	3	B
22099	Demonstrate knowledge of water consumption and water conservation	3	3	B

ID	Title	Level	Credit	Review Category
22100	Demonstrate knowledge of leak detection and leak detection programmes	3	4	B
22101	Demonstrate knowledge of water meters and reading techniques, and identify faults in meters	3	3	B
22102	Demonstrate knowledge of pressure zones and backflow prevention in water reticulation	4	4	B
22103	Describe trenching and demonstrate trench set-out requirements for water reticulation	4	4	B
22104	Demonstrate knowledge of pipe jointing systems for water reticulation	4	4	B
22105	Maintain water quality in water supply reticulation systems	4	4 5	B
22106	Describe water quality monitoring and preventative measures in water supply reticulation systems	4	5	B
22107	Prepare for and set up CCTV, and describe procedures for CCTV survey of water reticulation assets	4	4	C
30094	Demonstrate knowledge of CCTV inspection of non-pressure water services assets	3	4	
30095	Carry out CCTV inspection of non-pressure water services assets	4	6	
30096	Report on pipe condition for a CCTV inspection of non-pressure water services assets	4	4	
22108	Demonstrate knowledge of water reticulation asset management	4	3	B
22109	Demonstrate knowledge of pumps used in water reticulation	4	5	B
22110	Describe water reticulation asset risk, and asset maintenance for water, wastewater and stormwater	4	4	B
22111	Demonstrate knowledge of sewer cleaning, blockage removal, overflow management and clean-up	3	3	B
22112	Demonstrate knowledge of wastewater composition, corrosion in sewers, odours, and odour control	4	4	B
22113	Demonstrate knowledge of flows in wastewater and flow measurement techniques	4	4	B
22114	Demonstrate knowledge of stormwater systems and their maintenance, management and treatment options	4	5	B
24918	Describe open cut trench excavation, and the physical implications of dewatering	3	3	B
24919	Describe trenchless pipe installation, and pipe refurbishment or maintenance	3	3	B
24921	Select, use, and maintain tools and equipment in water reticulation	2	7	B
24922	Demonstrate knowledge of water supply and reticulation systems	3	10	B
24923	Demonstrate knowledge of stormwater and drainage systems and their components	3	6	B

ID	Title	Level	Credit	Review Category
24926	Refurbish or replace hydrants and valves for water reticulation	4	4	B
27330	Install a thrust, anti-scour or anchor block for water reticulation	3	3 4	B

Revised and rolled-over unit standard

Engineering and Technology > Water Industry > Wastewater Treatment

ID	Title	Level	Credit
25124	Demonstrate knowledge of domestic wastewater treatment processes	4	15