



Australian Government

Department of Education, Employment and Workplace Relations

ICTTC009D Place, secure and terminate structured cabling and certify installation

Release: 1

ICTTC009D Place, secure and terminate structured cabling and certify installation

Modification History

Not applicable.

Unit Descriptor

This unit applies to all contexts for indoor and outdoor installation within a customer premises and applies to both customer premises cabling and customer premises equipment.

This unit applies to all communications applications whether digital or analogue including telephony, data, video including digital broadcasting, computer networks including LANs and WANs, and multi media.

This unit applies to all metallic conductor cable types such as Category 5 or higher like Category 6, 6A, 7 or 7A cabling.

This unit may be applied to domestic, commercial or industrial installations.

Assessment by a TITAB registered assessor is recommended.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

This unit applies to all contexts for indoor and outdoor installation within a customer premises and applies to both customer premises cabling and customer premises equipment.

This unit applies to all communications applications whether digital or analogue including telephony, data, video including digital broadcasting, computer networks including LANs and WANs, and multi media.

This unit applies to all metallic conductor cable types such as Category 5 or higher like Category 6, 6A, 7 or 7A cabling.

This unit may be applied to domestic, commercial or industrial installations.

Assessment by a TITAB registered assessor is recommended.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Nil

Nil

Employability Skills Information

This unit contains employability skills.

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where **bold italicised** text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where **bold italicised** text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Place structured cable	1.1 Cable and services separations are maintained in runs and cross overs to meet manufactures and industry standards 1.2 Installed structured cable is free from damage to ensure twist ratio in cable is maintained to optimise performance 1.3 Twist ratio defects are minimised to avoid accumulation effect on structured cable performance 1.4 Correct structured cable type is installed to meet intended installation environment and customer requirements 1.5 Maximum structured cable runs lengths are not exceeded to maintain system performance level 1.6 Environment conditions are assessed to meet manufactures specifications prior to installation 1.7 Structured cable is placed in methodical manner taking due care to maintain manufactures

- performance specifications
- 1.8 Bending ratios are maintained to manufacturers and industry standard requirements to ensure system performance at rated level
- 2 Secure structured cable**
- 2.1 Securing method avoids damage to cable and/or sheath
- 2.2 Cable anchors maintain pair alignment and do not compress cable sheath
- 2.3 Cable is free from tension
- 2.4 Bending ratios are maintained to manufacturers and AS/ACIF or ACMA standard requirements to ensure system performance and ratio speed level
- 2.5 Over voltage protection devices are fitted to all cables and metallic component where required
- 3 Terminate structured cable**
- 3.1 Twist ratio is maintained to manufacturers specifications and as close as possible to termination point to optimise system performance at rated level
- 3.2 All termination hardware used is rated as structured cable to ensure integrity and performance of termination and terminated using appropriate termination tool
- 3.3 Cable shield is earthed to manufacturers specifications and relevant industry standards if applicable
- 3.4 Cable sheath removal is minimised in accordance with manufactures instructions
- 4 Certify system performance to required level**
- 4.1 Certification requirements are identified to ensure tests and recording of results are relevant
- 4.2 Tests of performance are accurate and valid and are conducted impartially
- 4.3 System performance is recorded promptly and verified where required
- 4.4 Appropriate documentation is authorised and issued to certify system performance

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Select from the following list to suit the learning and assessment context

Codes refer to the Skills and Knowledge Register in Volume 3 of this Training Package that has detailed content guidelines for each code outlined.

CA250 Cable Types: Structured Cable

CA251 Installation Methods and Terminations: Structured Cable

CA252 Cabling Products: Structured Cable

CA253 Cable Installation Testing: Structured Cable

OH211 Safe Work Practices: Structured Cable

PS214 Plan Reading, Specifications and Records: Structured Cable

RE220 ACMA Standards and Regulations: Structured Cable

TO211 Hand and Power Tools and Equipment: Structured Cable

Required knowledge

The relevant required knowledge is articulated in the above guidelines contained in the Skills and Knowledge Register included in this Training Package.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:
placing, securing and terminating cable types to include: solid conductor, stranded conductor (short links only), shielded, non-shielded, twisted pair
work practices which avoid cable damage: crushing, burning, kinks, cuts, sheath twist, bending radius

installation of termination hardware to include: connectors, frames, blocks, sockets, patch panels
application of all related OHS requirements and work practices associated with structured metallic cable installation (i.e. segregation and securing)
ability to read and interpret drawings related to cable layouts, outlet location, cable coding system and identifiers, frame locations
conduct and interpret test results, complete relevant documentation, determine compliance from manufacturer's certification, warranty and other related documentation requirements
correct interpretation and application of regulations and standards related to the installation of structured metallic cable
interpersonal skills related to work associates, supervisors, team members

Context of and specific resources for assessment

Assessment must ensure:
A workplace conducting the operations covered by this competency unit, equipment and resources relevant to the context of the work (See Range Statement) and support from a competent supervisor or mentor.
OR
A simulated environment with similar provisions which conforms to the Assessment Guidelines.

Guidance information for assessment

Access must be provided to appropriate learning and assessment support when required.
Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess underpinning knowledge.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Bold italicised** wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Structured metallic cable

Includes: solid conductor, stranded conductor (short links only), shielded, non-shielded, twisted pair

Physical damage to structured metallic cable	Includes: crushing, burning, kinks, cuts, sheath twist, stretching, bending over maximum radius
Termination hardware	May include: connectors, frames, blocks, sockets
Certification:	May be installer based or independent and include manufacturers certificate, installers warranty, formal and documented testing procedures and results
'Industry standards'	May include regulated or industry codes of practice and include appropriate ACMA and AS/ACIF technical standards
All cable used	Must be compliant with appropriate ACMA and AS/ACIF technical standard requirements (eg. for underground, aerial, structured metallic, UTP etc)
All cabling products other than cable	Must be ACMA approved
Over voltage protection	Includes ACMA standards and may include manufacturers, enterprise or local environmental hazard requirements
Where applicable, cable installation	Should conform to applicable security standards

Relevant legislation, codes, regulations and standards

Include:
Technical Standards AS/ACIF S008:2006,
AS/ACIF S009:2006
AS Communications Cabling Manual (CCM)
Volume 1
ACIF Standards and Codes
AS/NZS 3000:2007
AS/NZS 3080:2003
AS/NZS 3084:2003
AS/NZS 3085.1:2004
AS/NZS ISO/IEC 15018:2005
AS/NZS ISO/IEC 24702:2007
AS/NZS IEC 61935.1:2006
ISO Draft 11801 (International)
Relevant IEEE standards
Cabling security codes and regulations
Occupational Health and Safety

Unit Sector(s)

Not applicable.