



Australian Government

Department of Education, Employment and Workplace Relations

CPPACC5003A Apply anthropometric principles to accessible building design and fitout

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit specifies the competency required to use knowledge of human anatomy and the skills required to determine human body size and shape and apply this information to the design of the environment in which people live and work.

The unit covers the application of basic data on the spread of body measurements of the human population, and requires the use of basic statistical techniques in analysing and interpreting this data. It includes the measurement of the components of body size and shape of individual persons, and the application of this data to the design of an accessible environment required by the individual.

Application of the Unit

Application of the unit

This unit of competency supports a number of access consulting services associated with the design and fitout of accessible buildings and the accessibility of the built environment.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

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

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1 Determine the spread of body dimensions within a defined population.</p>	<p>1.1 Key <i>anatomical features</i> of the human body are identified accurately.</p> <p>1.2 Appropriate methodology for measuring key anatomical features is selected.</p> <p>1.3 <i>Anthropometric data</i> is recorded in a recognised format appropriate for retrieval and statistical analysis in accordance with <i>organisational requirements</i>.</p>
<p>2 Analyse anthropometric data from a defined population and determine the statistical variations involved.</p>	<p>2.1 Basic statistical analysis of data is applied to determine population variance.</p> <p>2.2 Statistical parameters derived by appropriate analysis are reported in accordance with organisational requirements.</p> <p>2.3 The analysis of findings is documented and reported using recognised statistical formats in accordance with organisational requirements.</p>
<p>3 Compare anthropometric data used in published architectural design documents with anthropometric data derived through measurement of a defined population.</p>	<p>3.1 <i>Published architectural design data</i> is compared and verified against recent anthropometric data derived through measurement of a defined population.</p> <p>3.2 Anthropometric data that proves different to published architectural design data is analysed to assess the extent of difference, possible causes for the difference and likely consequences of altering published architectural design data.</p>
<p>4 Identify the critical anthropometric features impacting on the ability of a person with a disability to work and function.</p>	<p>4.1 The level of functioning of the person with a disability is determined in consultation with the client.</p> <p>4.2 Anthropometric features relevant to the ability of the person with a disability to work and function independently are identified in consultation with the client using anthropometric methodology in accordance with organisational requirements.</p> <p>4.3 Situations requiring specialist advice are identified and assistance is sought as required in accordance with organisational requirements.</p> <p>4.4 Appropriate strategies for maximising the ability of the person with a disability to work and function independently are identified.</p> <p>4.5 Identified strategies are communicated to the appropriate people for the design, construction and fitout of the client's premises.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required knowledge and understanding include:

- anatomical terminology
- anthropometric and ergonomic principles
- building terminology, definitions and hazard identification
- commonwealth, state and territory anti-discrimination legislation and regulations
- design, structural and construction principles of buildings
- disability awareness
- human anatomy
- industry codes of practice and ethics
- international codes, standards, regulations and practices
- limitations of work role, responsibility and professional abilities
- nature of building materials and effect of performance
- normal population variance
- occupational health and safety (OHS) legislation and procedures
- processes for interpreting reports, working drawings and specifications
- processes for interpreting medical reports and terminology
- relevant commonwealth, state and territory building legislation, local government regulations and Australian standards
- research methodologies and analytical processes
- role, responsibilities and powers of building certifiers

statistical parameters of a normally distributed population.

Required skills and attributes include:

- analytical skills to:
 - analyse, evaluate and apply legislative requirements pertaining to disability access
 - analyse and evaluate the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
 - analyse and evaluate how environmental barriers impact on people with disabilities
- application skills to:
 - apply relevant anti-discrimination and building legislation
 - apply relevant industry codes of practice and ethics, and other legislative requirements to work processes
 - apply disability awareness to work processes
 - apply current Australian and international building codes, standards, regulations and practices
- communication skills to:

- explain clearly the findings of anthropometric data analysis and the relevance of the findings to ensuring appropriate access
- explain clearly information on issues and legislation relating to the provision of access
- consult effectively with clients and colleagues
- impart knowledge and ideas through oral, written and visual means
- use workplace equipment and communication methods
- literacy and numeracy skills to:
 - assess and use workplace information
 - measure anatomical features and record data
 - read and interpret statistical data
- organisational skills to:
 - coordinate data collection of defined populations
 - prepare and manage documentation of data
 - collect, store and retrieve data for analysis and reporting
 - develop and implement organisational policies and procedures
- interpersonal skills to:
 - relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
 - consult and provide advice in a sensitive and appropriate manner
 - facilitate change for greater awareness of disability access
 - analyse own work practices and process outcomes critically
 - engage colleagues and share disability access knowledge
 - adapt to new workplace situations
- research and evaluation skills to:
 - source, analyse and evaluate published architectural design data
 - source, analyse and evaluate legislative requirements for the provision of access
- technical skills to:
 - determine the normality of population variance
 - measure the range of human movement and reach.

Evidence Guide

EVIDENCE GUIDE

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

Overview of assessment

- This unit of competency could be assessed on its own or as part of an integrated assessment activity involving other competencies relevant to the job

function.

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

- A person who demonstrates competency in this unit must be able to provide evidence of:
 - recognising the needs and desires of people with disabilities to engage fully in all aspects of society, and their right to do so
 - interpreting accurately the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
 - interpreting accurately how the full range of environmental barriers impacts on any of the impairments that people with disabilities might have
 - measuring anatomical features and recording anthropometric data accurately in preparation for analysis
 - analysing anthropometric data using appropriate statistical methodologies
 - conducting comparative analysis between anthropometric data derived from a defined population and published architectural design data
 - identifying accurately anthropometric features that impact on the ability of a person with disabilities to work and function independently
 - applying organisational management policies and procedures, including quality assurance requirements.

Context of and specific resources for assessment

- Resource implications for assessment include:
 - a registered provider of assessment services
 - competency standards
 - assessment materials and tools
 - suitable assessment venue/equipment
 - workplace documentation
 - candidate special requirements
 - cost and time considerations.
- Validity and sufficiency of evidence requires that:
 - competency will need to be demonstrated over a period of time reflecting the scope of the role
 - where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision of

competence only taken at the point when the assessor has complete confidence in the person's competence

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

Range Statement

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 in the performance criteria is detailed below. Add any 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.

Anatomical features may include:

- stature
- sitting and standing eye height
- sitting and standing shoulder height
- sitting and standing elbow height
- hip height
- knuckle height
- fingertip height
- sitting height
- thigh thickness
- buttock-knee length
- buttock-popliteal length
- knee height
- popliteal height
- shoulder breadth
- hip breadth
- chest depth
- abdominal depth
- shoulder-elbow length
- elbow-fingertip length
- upper limb length
- shoulder-grip length
- head length and breadth
- hand length and breadth
- foot length and breadth
- fingertip-fingertip span
- vertical grip reach
- forward grip reach
- body weight.

Anthropometric data applies to:

- the data derived from the measurement of anatomical features.

Organisational requirements may be outlined and reflected in:

- access and equity policy, principles and practices
- business and performance plans
- client service policies, procedures and standards
- codes of conduct and codes of practice
- communication channels and reporting procedures
- communication of services offered
- complaint and dispute resolution procedures
- compliance with legislation, codes and workplace standards
- continuous improvement processes and standards
- defined resource parameters
- duty of care
- employer and employee rights and responsibilities
- ethical standards
- legal policies and guidelines
- OHS policies, procedures and programs
- organisational mission statement, goals, objectives, plans, systems and processes
- policies and procedures relating to the setting of fees and the negotiation and management of contracts
- policies and procedures relating to own role, responsibilities and delegation
- privacy and confidentiality policies and procedures
- quality assurance and procedures manuals
- records and information management systems and processes

style guides and other guides used to prepare documents.

Published architectural design data may be included in:

- Australian and international standards
- Building Code of Australia
- professional journals and manuscripts.

Unit Sector(s)

Unit sector

Access consulting