



**workplace
access&safety®**

the fall prevention specialists

AS1657 – changes to Australia's biggest
fall prevention standard.

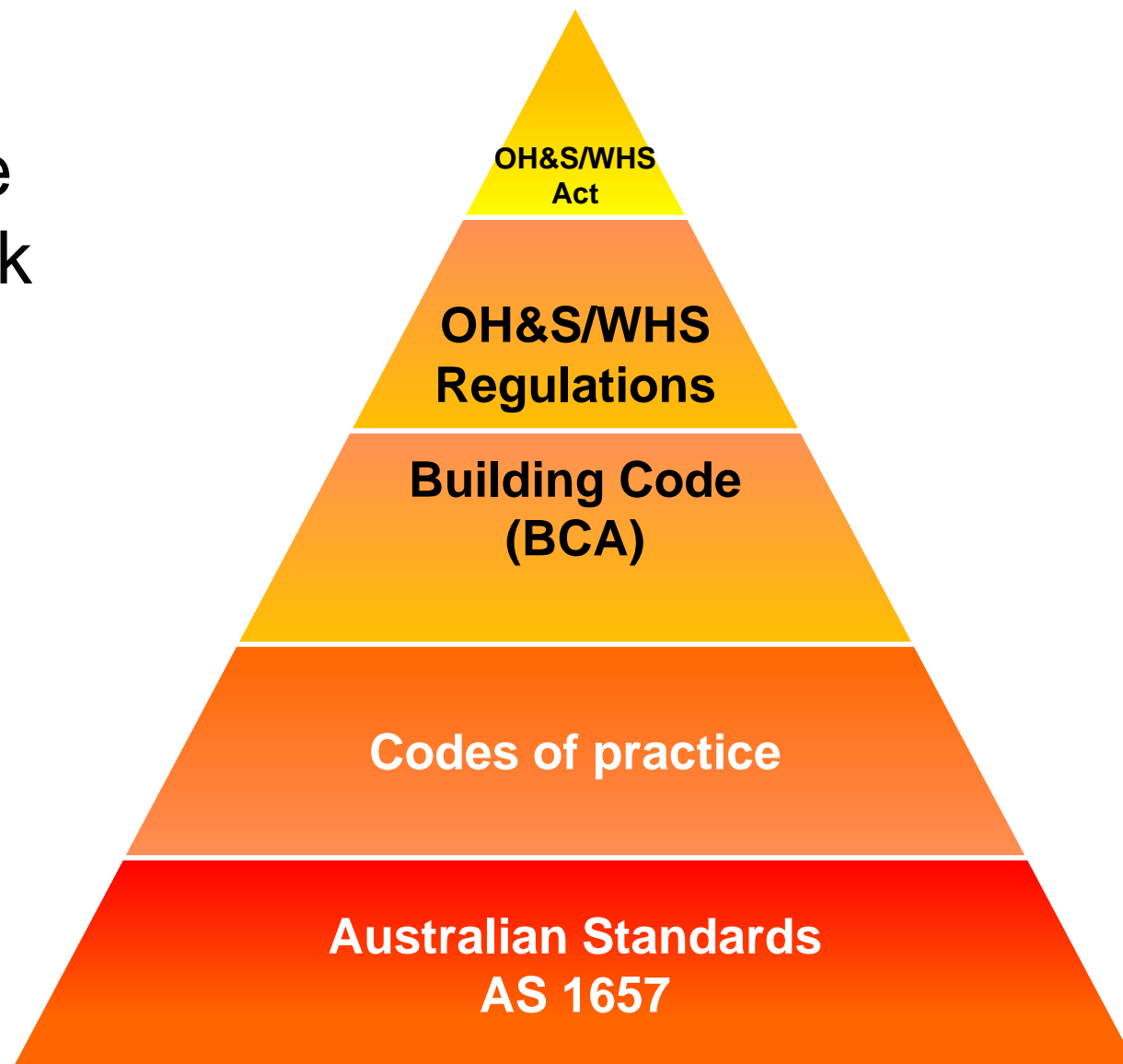
Presenter : Carl Sachs

11th June 2014

Big changes

- A. Design of access/selection
- B. Roof access
- C. Clarification of issues
- D. Testing and engineering
- E. Slip resistance
- F. Safe ladder design
- G. Labelling

Legislative Framework





Michael Tooma, Norton Rose

Standards and legislation.



A. Design of access/selection

2.2 The Means of Access shall be selected from the following list and considered in the hierarchical order given:

11

AS 1657—2013

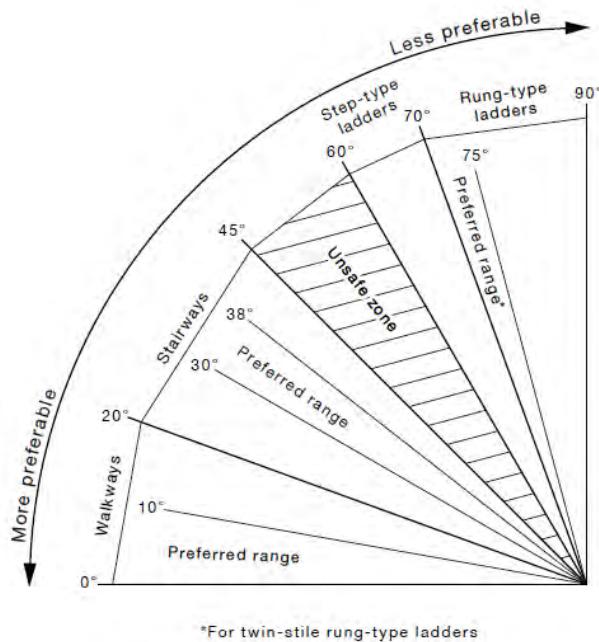
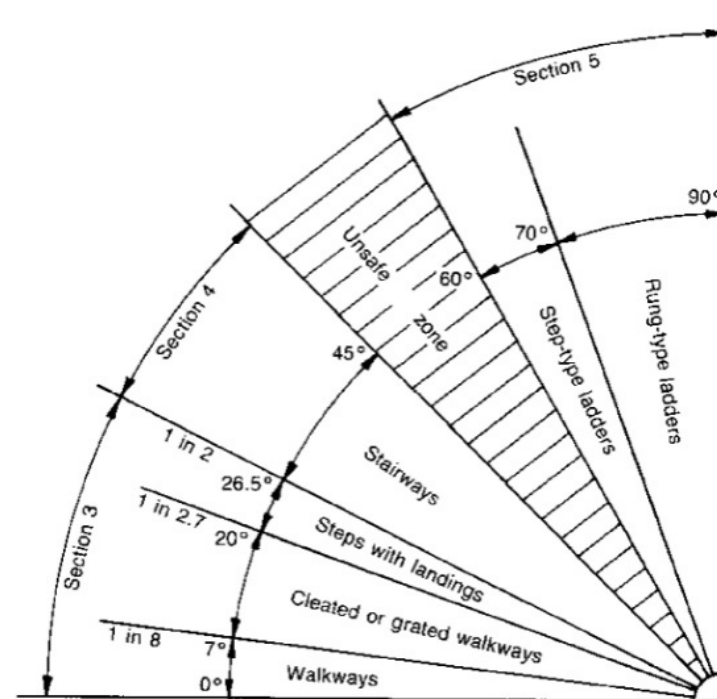


FIGURE 2.1 SELECTION OF ACCESS—LIMITS OF SLOPE





Professor David Caple



A. Design of access/selection

1. 0° - 70° Walkway, or if not practicable levelled walkways.



A. Design of access/selection

2. 7° - 20° Walkway, or if not practicable...



A. Design of access/selection

3. 20° - 45° Stairway, or if not practicable...





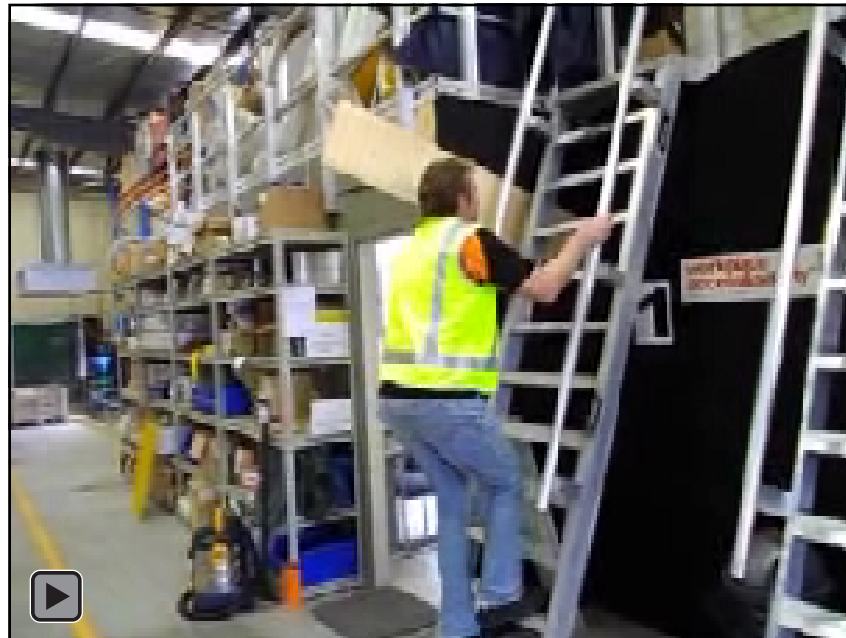
Professor David Caple

Step ladder vs rung ladder



A. Design of access/selection

4. Step ladders, or if not practicable



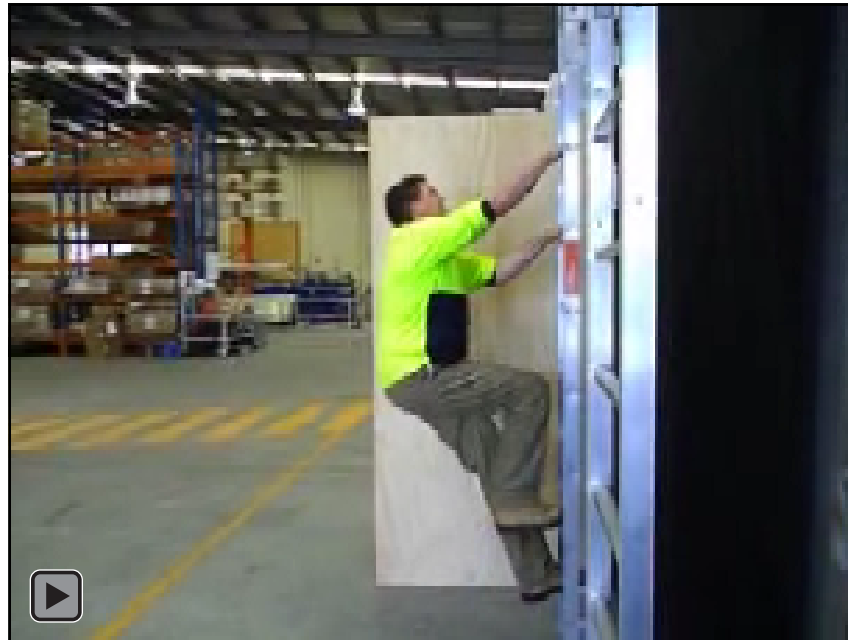
A. Design of access/selection

5. 70-75° Rung ladders Or if not practicable...



A. Design of access/selection

6. Vertical ladders



A. Design of access/selection

6. Platforms and cages, or if not practicable..



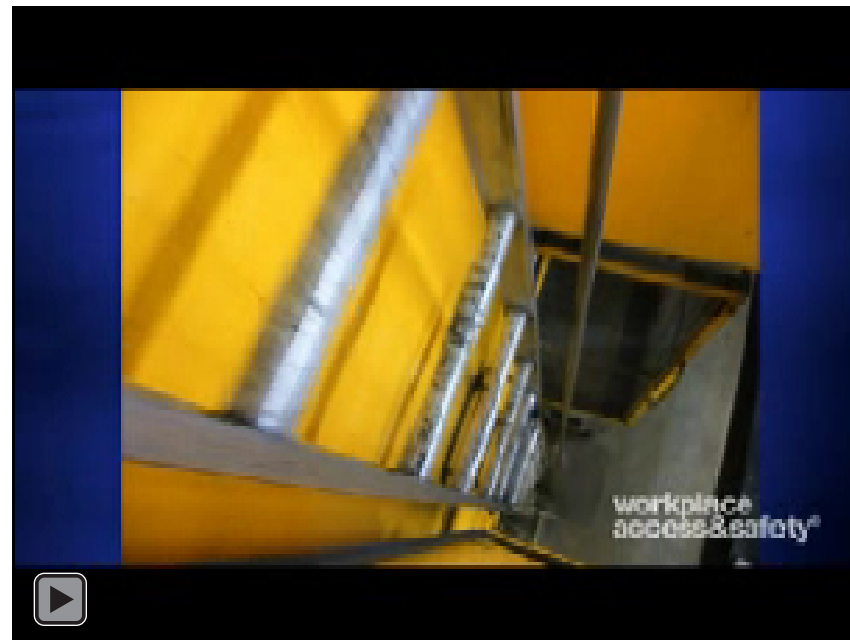
- A. Design of access/selection
- 7. If all else fails, use ladder lines





Professor David Caple

Ladder lines





B. Roof access – Brittle surfaces

- Preference for internal access
- Brittle surfaces/skylights



Access through horizontal openings i.e Hatches

7.4.8.3 Access through horizontal openings

When access is provided through a horizontal opening (e.g. through a roof access hatch)—

- (a) the stiles or handrails shall extend not less than 1000 mm above the opening; or
- (b) handgrips above the level of the opening shall be provided.

NOTE: Where access is provided through an opening that is normally kept closed, the stiles or handrails may be terminated below the opening and handgrips mounted above.

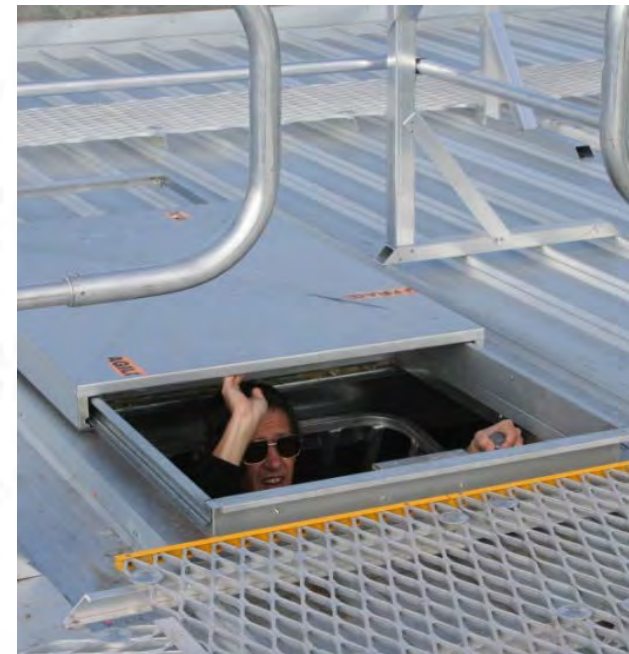
Where it is necessary for a person to open a trapdoor while standing on a ladder, provision shall be made for opening and closing the roof access hatch by remote means, or by the use of one hand.

Where it is necessary for a person to extend the stiles or handrails while standing on a ladder, provision shall be made for performing this task by remote means, or by the use of one hand.

Alternatively, a platform may be provided to enable the opening of the trapdoor and extension of stiles.

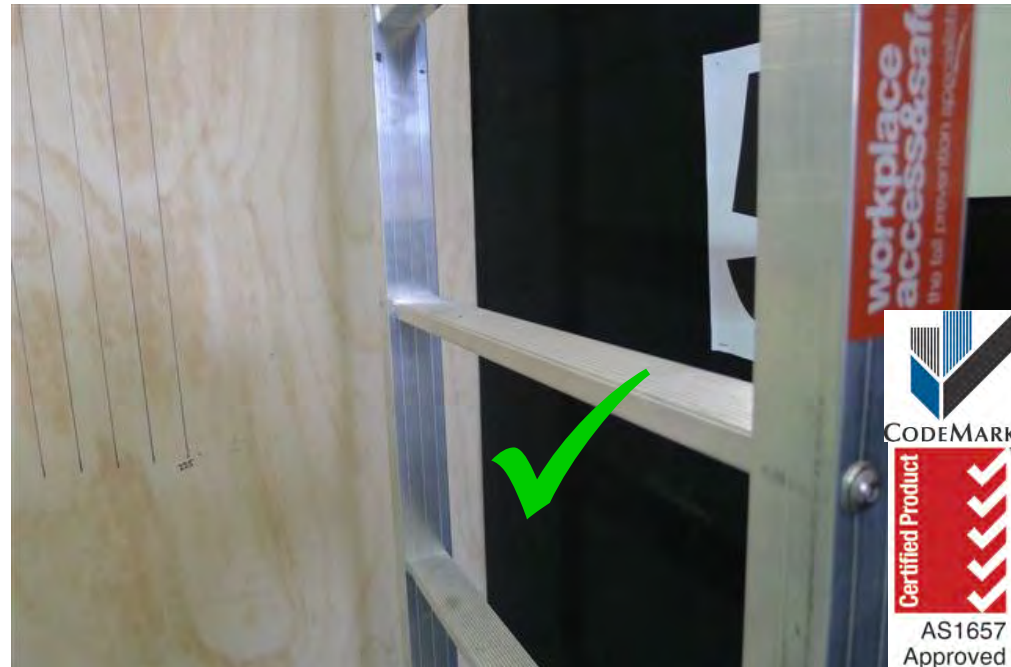
Handrails mounted on stile extensions and projecting towards the user shall not be used (see Note 1).

- 1 This requirement is to discourage users from moving their centre of gravity further away from the rungs by gripping the handrails.



F. Safe ladder design

3. Rung/tread shapes





C. Clarification of issues

1. Rung shapes



C. Clarification of issues

2. Lowest rung to landing

7.4.3.4 Variation of bottom rung/tread spacing

The distance between the bottom rung/tread and the bottom landing shall be not less than 90% and not greater than 100% of the rung/tread spacing (see Figure 7.5).

NOTES:

- 1 This distance should be measured at the ladder centre-line where the landing has a cross-slope (see Figure 7.5).
- 2 Where possible, the distance between the landing and the first rung/tread should be equal to the rung/tread spacing.

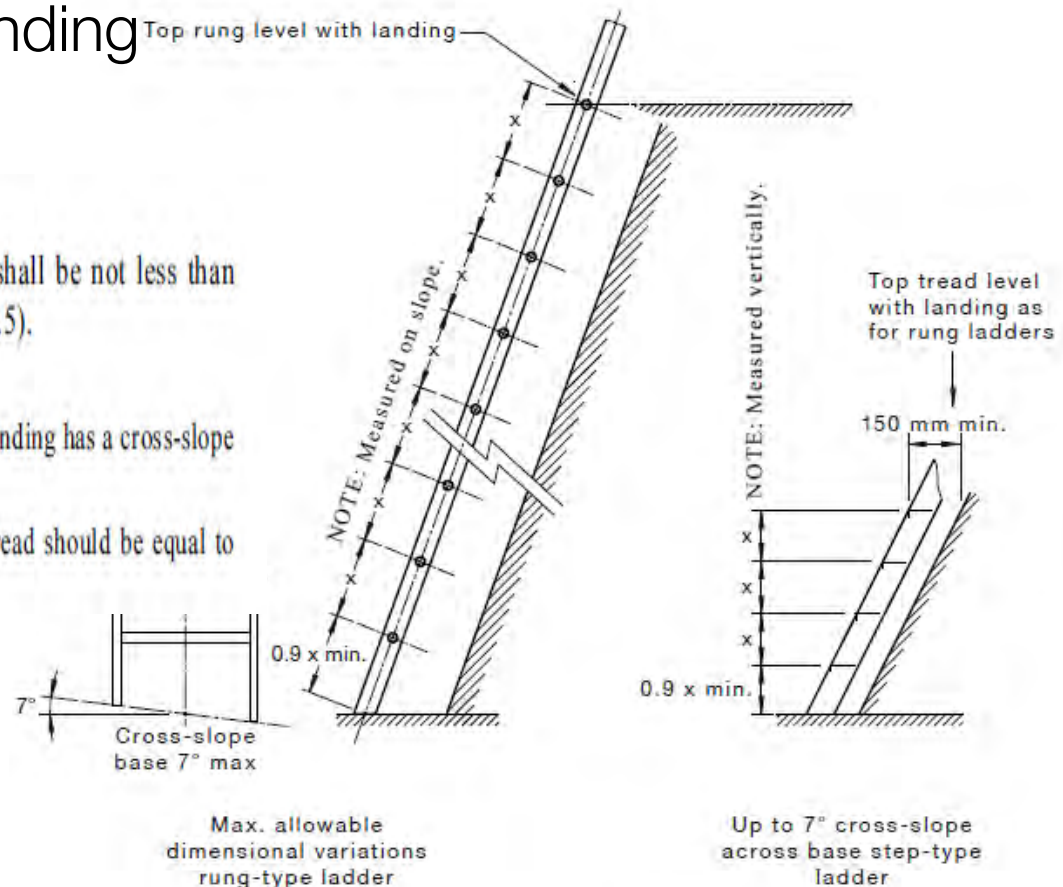
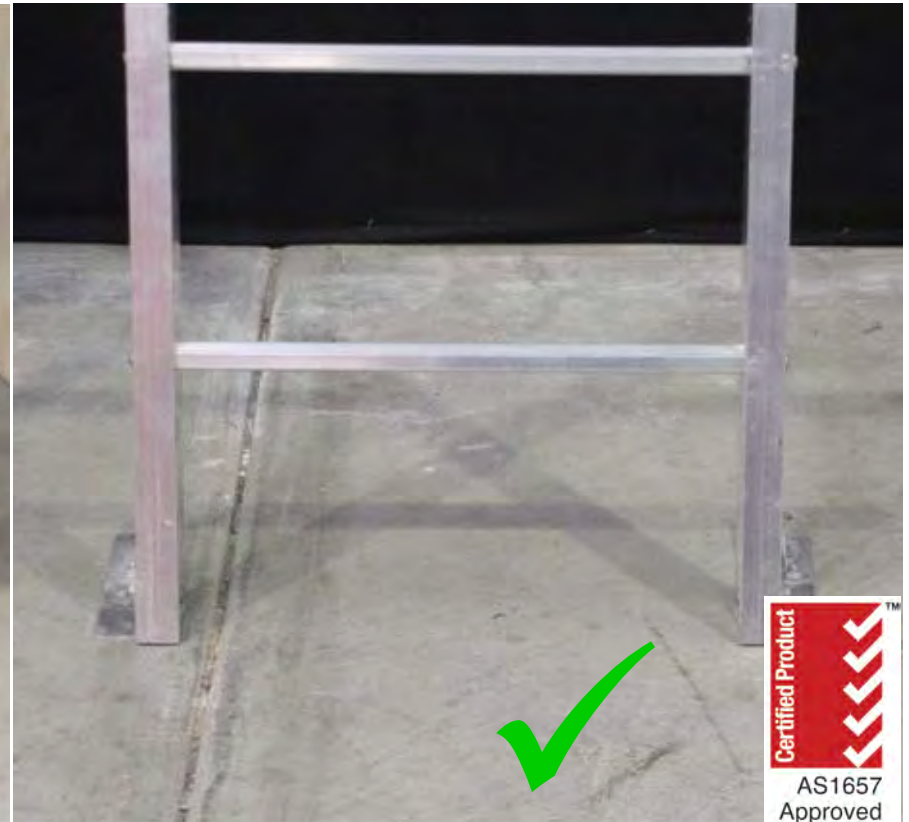


FIGURE 7.5 VARIATION OF RUNG/TREAD SPACING



C. Clarification of issues

2. Lowest rung to landing





C. Clarification of issues

3. Midway landing platforms – rest platforms



C. Clarification of issues

5. Edges – Highlighting and marking

Where unprotected edges of platforms and landings are not clear because of poor lighting or excessive lighting (e.g. a dark factory, sun on aluminium products, etc.) such that a person may be caused to walk off the edge, the edge shall be clearly identified by highlighting.





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Compliance and meeting standards



D. Testing and engineering

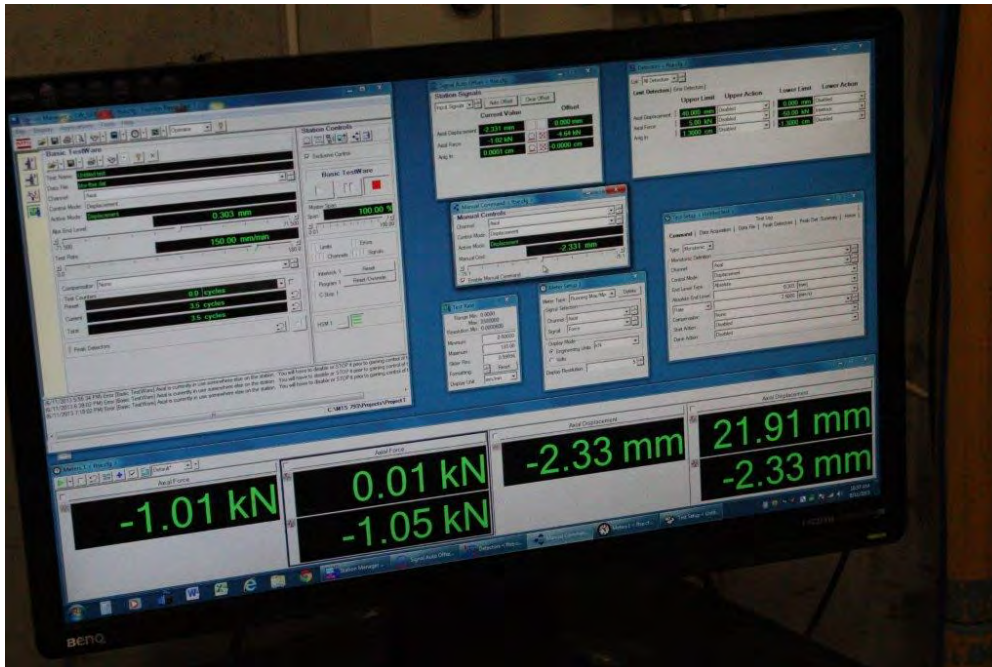
Key points

- Applies to guard-railing, ladders, staircases
- For resold items, testing and engineering required
- For “one offs”, engineering/deemed to comply acceptable or testing.
- Report formats
- NATA accredited laboratories





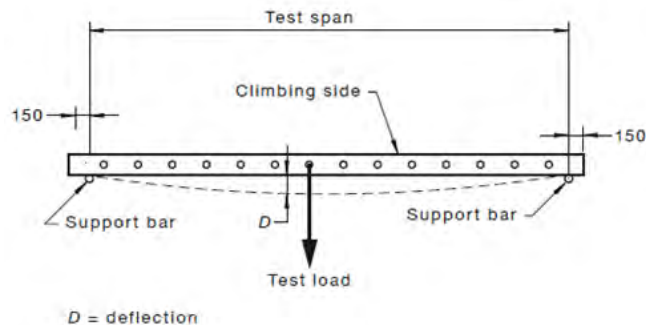
D. Testing and engineering





D. Testing and engineering

2. Testing of ladders - Appendix



DIMENSIONS IN MILLIMETRES

FIGURE F3 LADDER STILE DEFLECTION

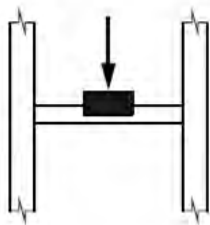


FIGURE F1 RUNG OR TREAD STRENGTH TEST



E. Slip resistance

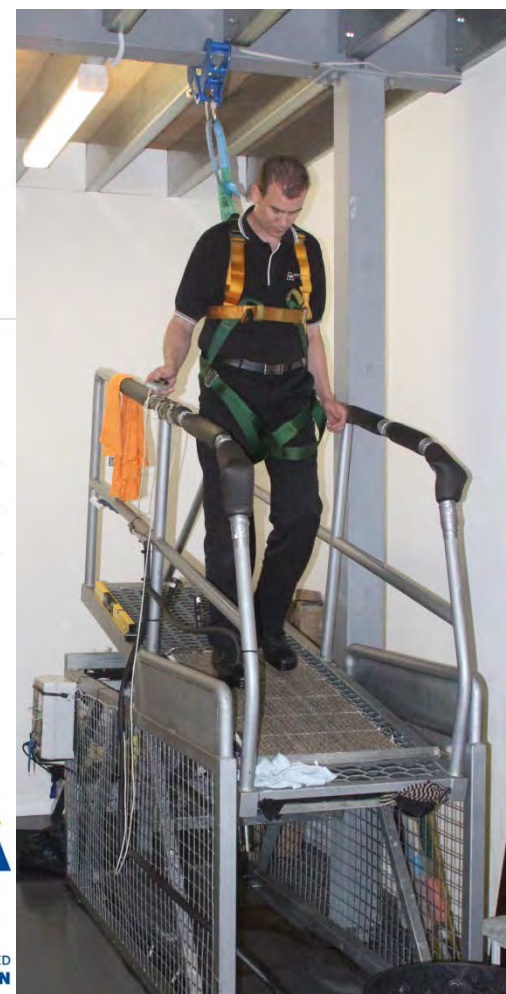
5.3.2 Slip resistance

Slip resistance shall comply with Clause 3.1.3.

Where the angle of slope of the walking surface is between 10° and 20°, the surface shall have cleats fitted across the full width of the walking surface at 90° to the direction of travel.

TABLE 3
PEDESTRIAN FLOORING SELECTION GUIDE – MINIMUM PENDULUM OR RAMP
RECOMMENDATIONS FOR SPECIFIC LOCATIONS

Location	Pendulum	Ramp
External colonnade, walkways and pedestrian crossing	W	R10



F. Safe ladder design

1. Top and bottom ladder landings

Installing a ladder directly onto an uneven surface such as a roof sheet may introduce a slip and trip hazard at the top and bottom of a ladder. This hazard should be eliminated by providing a level landing surface.

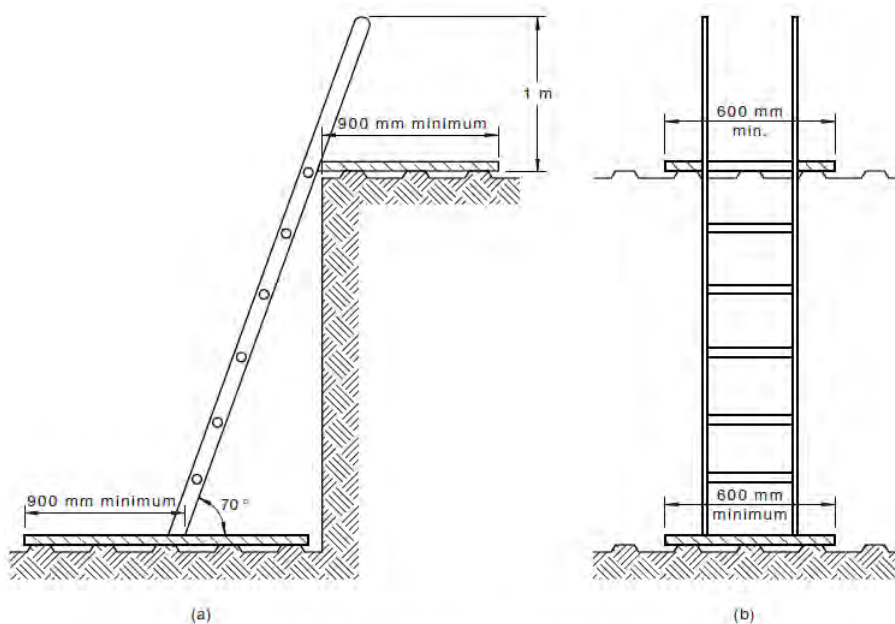


FIGURE 15 TYPICAL LANDING DETAILS FOR ROOF ACCESS LADDERS

Fixed level



F. Safe ladder design

2. Transition to top landing

Inclined rung ladders should not have additional handrails built into the front of the ladder. These would serve to move the body's centre of gravity backward and may lead to a fall (see Figure 14).

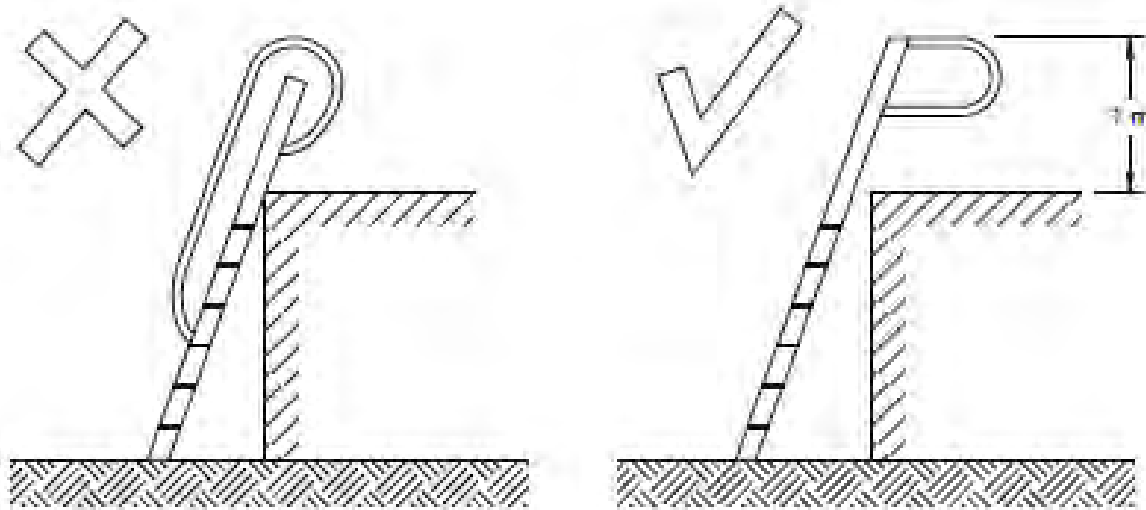
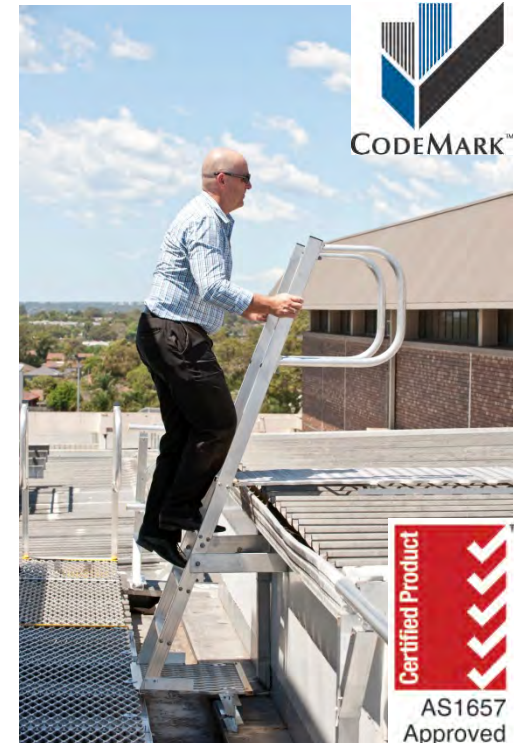
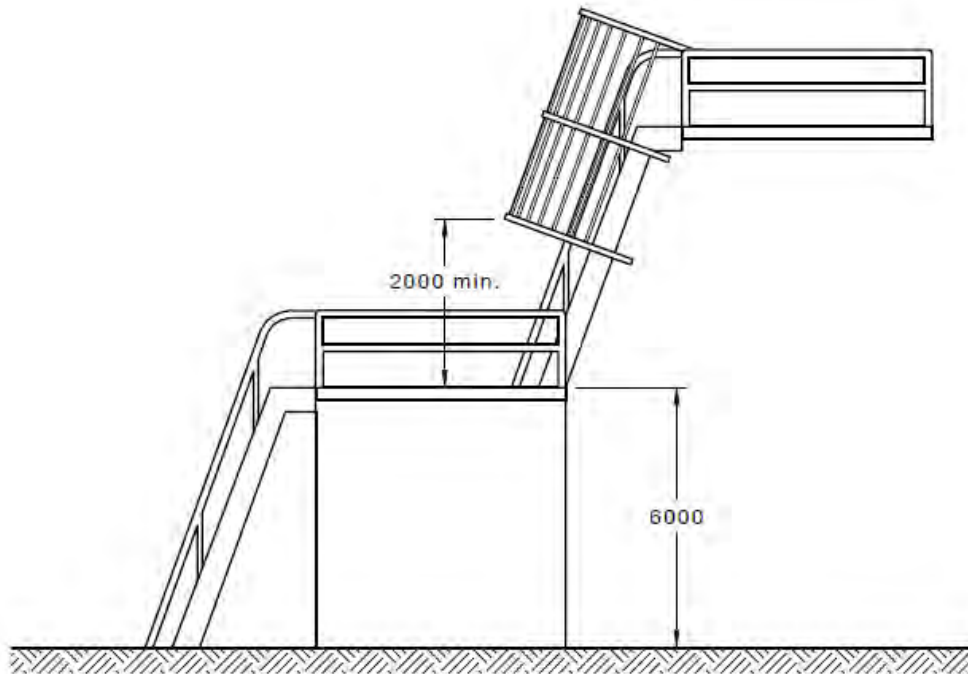


FIGURE 14 HANDRAIL DETAIL AT TOP OF INCLINED LADDER



F. Safe ladder design



DIMENSIONS IN MILLIMETRES

FIGURE 16 LADDER CAGE DETAIL AT INTERMEDIATE LANDING

G. Labelling and documentation

- Ladders, platforms, guardrail, stairs
- Installation requirements

8.1 GENERAL

This Section sets requirements for labelling and documentation that an installer shall provide to the purchaser of the platform, walkway, stairway, guardrailing or ladder (the system).

8.2 LABELLING OF INSTALLATION

The system installation shall bear a permanent label in a readily visible position that indicates—

- the name of the manufacturer of the platform, walkway, stairway, guardrail or ladder;
- the name of its installer;
- the name of the certifier of the system (if any);
- the date of installation;
- a statement of the system's compliance with this Standard and its installation in accordance with its manufacturer's instructions;
- where regular inspection/testing of the installation is required, the date of inspection or the current 'until' date; and
- the label shall be of a size that is clearly legible for the expected life of the installation, and shall be durable and suitable for the environment in which it is to be located, with an expected minimum life of 7 y.

Where the installation does not comply with this Standard, a statement detailing the area of non-compliance shall be included on the installation certificate.

Where non-compliance exists, it shall be accompanied by an additional label stating the non-compliance.

8.3 DOCUMENTATION TO BE SUPPLIED

The manufacturer/installer shall supply documentation to the purchaser for each system installation, setting out the following:

- Compliance statement setting out level of compliance to this and other relevant Standards.
- Listing of any unique component serial numbers.
- Listing of any special provisions for use (e.g. training, additional equipment, higher than normal levels of supervision, rescue provisions, etc.).
- The required frequency of inspection, testing and servicing for all equipment.
- Additional information as relevant (e.g. load ratings where limitations apply, provisions for fall-arrest attachments and loadings).

Manufactured by www.defender.com.au

DEFENDER
LADDERS

Registered design, patent pending

Certified by

Installed by
workplace access&safety 1300 889 894

Inspection next due date:

Do not use if damaged

Job No.

When is this effective?

- WHS and OH&S referenced docs – October 2013.
- BCA/Building Code – 1st May 2014

Action plan (PCBU's, facility managers, property managers, OH&S representatives, and anyone else in control of a workplace)

1. Testing verification and certification (NATA, ISO17025).
2. Engineering certification and computations.
3. Equipment compliance. (AS1657).
4. Installation compliance (BCA)
5. Final inspection (NATA, ISO17020).
6. Labelling and traceability.
7. Maintenance and user instructions (This is plant!)



How do you know it complies?



AS1657
Approved

- Independent 3rd party certification of product.



- Product and installation certified to BCA (National Construction Code).



Q&A