

STANDARDS AUSTRALIA

Amendment No. 1
to
AS 4678—2002
Earth-retaining structures

REVISED TEXT

The 2002 edition of AS 4678 is amended as follows; the amendment(s) should be inserted in the appropriate place(s).

SUMMARY: This Amendment applies to the Clauses 1.1, 1.2.2, 1.4.1.22 (new), 1.4.1.23 (new), 1.4.1.24 (new), 1.4.1.25 (new), 1.5, 4.1, 4.2, 5.5.1.2, 5.5.1.3, 5.5.1.4, 5.5.1.6, 5.5.2.2, 5.5.3 and 7, Tables 1.1, 2.1, 4.1, 5.1(A), 5.1(B), 5.2, 5.3, 7.1, A1 (new), A2 (new), B1, E1, I3, K3 and K6, Figures 1.2 (new), 3.1(E), A1, E2, J2, J4, J5 and J6, Paragraphs A3 (new), B4.2.4, E2.3, H2, H3, I5, I14, I15, J2, J3, K5.2 and K5.3.

Published on 7 July 2003.

Page 5 Clause 1.1

Add the following after the fifth paragraph:

Facings constructed up to 800 mm high in a Type 3 structure application are not covered by this Standard.

Page 5 Figure 1.2 (new)

Add the following new Figure 1.2 after Figure 1.1:

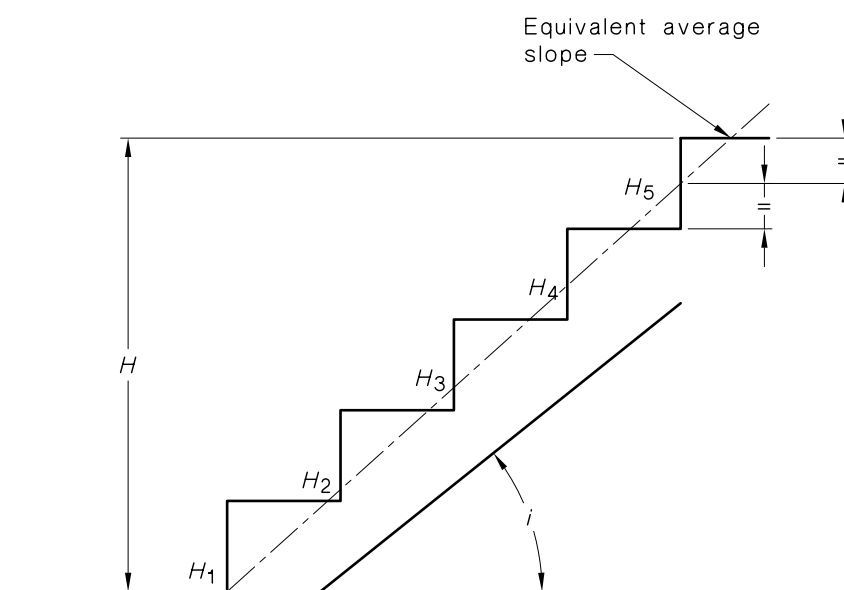


FIGURE 1.2 TERRACED STRUCTURES

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Page 6 Clause 1.2.2

1 *Delete* the Note.

2 *Add* the following sentence after Table 1.1:

Structures where failure would result in minimal damage and loss of access where the wall height (H) is greater than 1.5 m are deemed to be classification B structures.

Page 6 Table 1.1

Delete the Table and *replace* with the following:

TABLE 1.1
STRUCTURE CLASSIFICATION

Classification	Examples of structures
C	Where failure would result in significant damage or risk to life
B	Where failure would result in moderate damage and loss of services
A	Where failure would result in minimal damage and loss of access

NOTES:

- 1 Classification B includes structures not covered by Classifications A or C.
- 2 For more information on structure classification, see Appendix A.

Page 8 Clauses 1.4.1.22, 1.4.1.23, 1.4.1.24 and 1.4.1.25 (new)

Add the following new definitions after Clause 1.4.1.21:

1.4.1.22 *Facing*

Unit for erosion protection or aesthetic purposes constructed in front of an otherwise stable slope.

NOTE: The facing may or may not include drainage consideration.

1.4.1.23 *Stable slope angle (i)*

The angle that the soil, rock or other material would naturally assume in the long term under the expected variety of external (e.g., environmental), and internal (e.g., seepage) conditions.

1.4.1.24 *Wall height*

The overall height between the top and the toe of the wall where the line between the points is sloped equal to or greater than 70 degrees from the horizontal.

1.4.1.25 *Wall height for terraces*

The overall wall height for terraces is the height between the top of the top wall and the bottom of the bottom wall, except where the terraces are spaced sufficiently far apart horizontally so that the equivalent average slope of the terraced wall thus formed is below the stable slope angle, i (see Figure 1.2). In such cases the walls are considered separately.

Page 10 Clause 1.5

1 *Delete* the symbols, including definitions, a_o and F_{ep} .

2 *Delete* symbol E_i and *replace* with E_i .

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Page 11 Clause 1.5

- 1 *Delete* the symbols, including definitions, F_t , I , O_h , Q_u , R and S_h .
 - 2 *Replace* the definition for symbol i with the following:
 - i = slope angle; or
 - = stable slope angle
-

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Page 12 Clause 1.5

- 1 *Delete* the symbols, including definitions, S_v , T_{cj} and Z_a .
 - 2 *Delete* the symbol, including definition, T_{de}^* and *replace* with the following:
 - T_{cd}^* = design connection strength
 - 3 *Delete* the symbol, including definition, T_{cj}^* and *replace* with the following:
 - T_{cj}^* = design connection force at the j^{th} layer
 - 4 *Delete* the symbol, including definition, T_{ij}^* and *replace* with the following:
 - T_j^* = design maximum tensile force resisted by the j^{th} layer of reinforcement
 - T_{ij}^* = design soil interaction force at the j^{th} layer
 - 5 *Delete* the symbol, including definition, ΔA and *replace* with the following:
 - ΔA = loss of section area
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Page 12 Clause 1.5, definition of δ

Delete the word 'internal' from the definition of δ and *replace* with 'external'.

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Page 13 Clause 1.5

Add the following symbol and definition:

- * = superscript indicates design value (e.g., factored capacity (resistance))
-

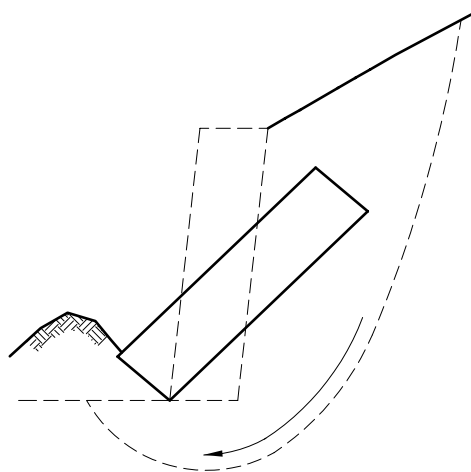
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Page 15 Table 2.1

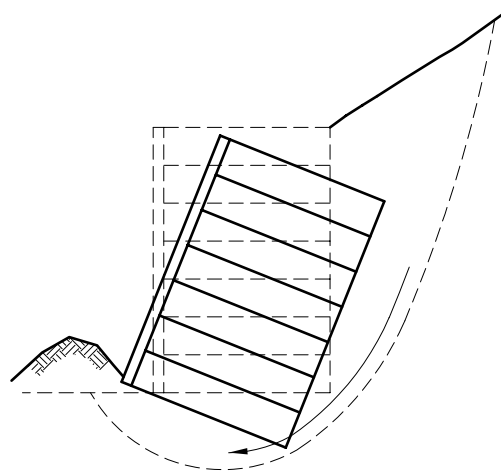
Delete the 'Structure classification' numbers 1, 2 and 3, in the column headings, and *replace* with C, B and A respectively.

Page 22 Figure 3.1(E)

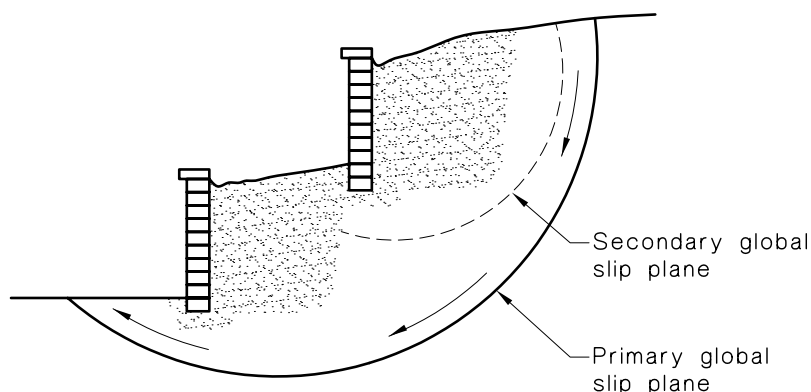
Delete the existing figure and *replace* with the following (new Figure (c) added):



(a) Global failure of gravity wall



(b) Global failure of reinforced soil wall



(c) Global failure of gravity block wall

Page 29 Clause 4.1

- 1 Delete Item (a)(i) and *replace* with the following:
 - (i) 'all structures shall be designed for the live loads resulting from the intended use of the structure but not less than the values given in Table 4.1;'
- 2 Insert new Table 4.1 at the end of Clause 4.1.

TABLE 4.1
LIVE LOAD kPa

Classification	Backfill slope (horizontal/vertical)	
	Steeper than 4:1	4:1 or flatter
B, C	2.5	5
A	1.5	2.5