STANDARDS AUSTRALIA

Amendment No. 2
to
AS 4678—2002
Earth-retaining structures

CORRECTION

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 Clauses 1.5, 5.5.1.6 and Appendices D, G, I, J and K.

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Clause 1.5

Add the following new notation after 'G_4':

g = gravitational constant (9.81 m/s^2)

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Clause 5.5.1.6

Delete first line of 'Equation 5.5(1)' and *replace* with the following:

$$T_d^* = T_u(\Phi_{up})\,(\Phi_{rc}\ \Phi_{ue})\,(\Phi_{ri})\,(\Phi_{rt}\ \Phi_{rs}\ \Phi_{rst}\ \Phi_{ud})\,(\Phi_n) \quad \ldots 5.5(1)$$

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Table D5

First column, second and third rows, *delete* '95 mm' and '236 mm' and *replace* with '9.5 mm' and '2.36 mm'.

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Figure G7

Delete Figure G7 and *replace* with the following:

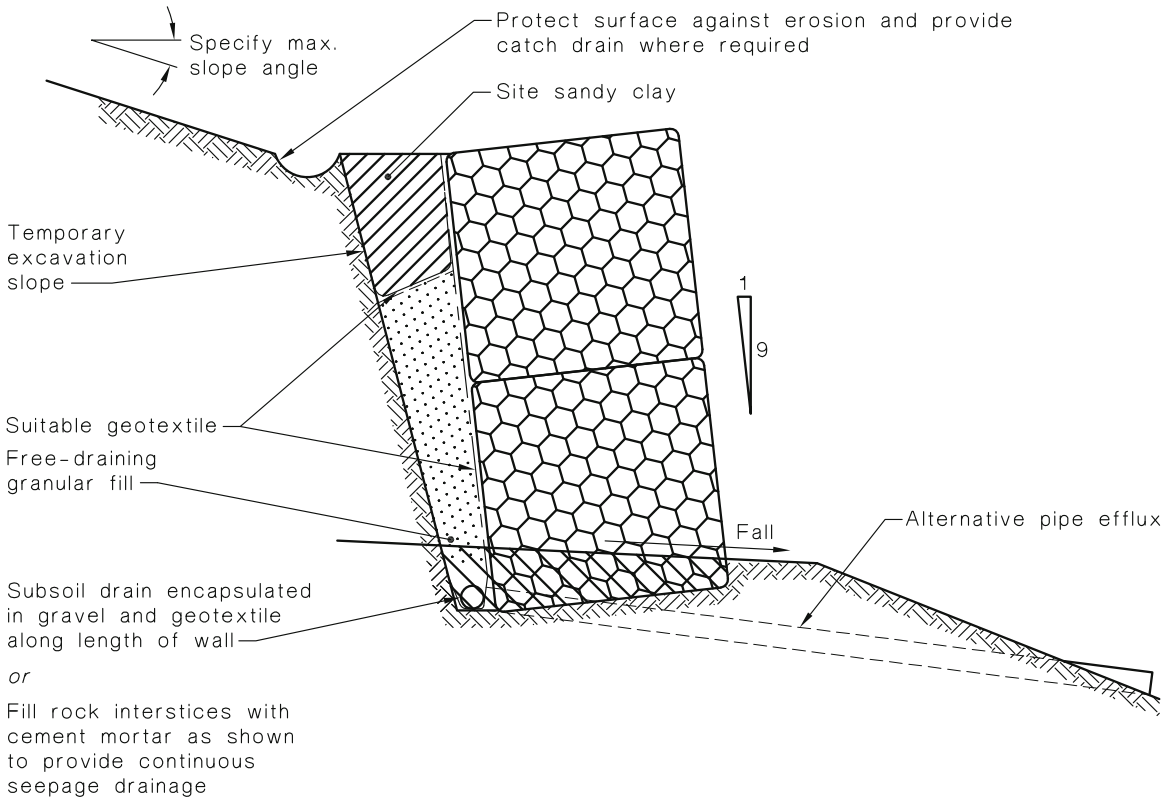

FIGURE G7 TYPICAL SECTION—GABION WALL DRAINAGE

Appendix I

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1 Paragraph I4, line 3 of Note, *delete* 'Table H1' and *replace* with 'Table I1'.

2 Paragraph I14, Equations I14(1), I14(2), I14(3), I14(4), I14(5) and I14(6), *delete* the equations and *replace* with the following:

$$k_h = a_{mh} \quad \ldots \text{I14(1)}$$

$$k_v = a_{mv} \quad \ldots \text{I14(2)}$$

$$k_h = a_h \quad \ldots \text{I14(3)}$$

$$k_v = a_v \quad \ldots \text{I14(4)}$$

$$E_{ac} = (1/2)\,\gamma H^2\,\Delta K_{ac} \quad \ldots \text{I14(5)}$$

where $\Delta K_{ac} = [(1 - k_v)\,K_{ac}] - K_a \quad \ldots \text{I14(6)}$

3 Paragraph I15, *delete* Equation I15(2) and *replace* with the following:

$$E_{ih} = k_h W \quad \ldots \text{I15(2)}$$

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Appendix J, Table J1

Note 2, *delete* and *replace* with the following:

2 Refers to long-term case.

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Appendix J, Paragraph J10.3

Item (b), line 2, *delete* '(Ref. 4)' and *replace* with '(Ref. 6)'.

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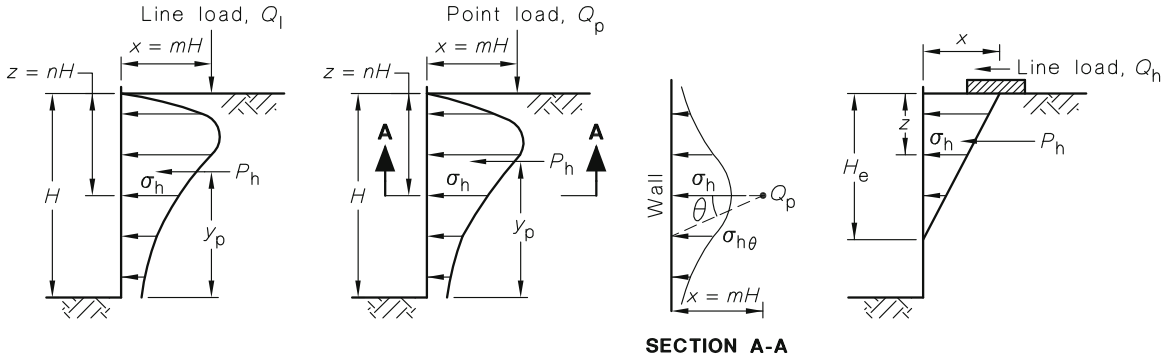
Appendix J, Figure J7

Delete existing Figure J7 and *replace* with the following new figure:



For $m \leqslant 0.4$

$$\sigma_h\left(\frac{H}{Q_l}\right) = \frac{0.20n}{(0.16 + n^2)^2}$$

$$P_h = 0.55\,Q_l$$

For $m > 0.4$

$$\sigma_h\left(\frac{H}{Q_l}\right) = \frac{1.28m^2n}{(m^2 + n^2)^2}$$

$$P_h = \frac{0.64\,Q_l}{(1 + m^2)}$$

(a) Lateral pressure on wall due to vertical line load, Q_l

For $m \leqslant 0.4$

$$\sigma_h\left(\frac{H^2}{Q_p}\right) = \frac{0.28n^2}{(0.16 + n^2)^3}$$

$$P_h = 0.69\,Q_p$$

For $m > 0.4$

$$\sigma_h\left(\frac{H^2}{Q_p}\right) = \frac{1.77m^2n^2}{(m^2 + n^2)^3}$$

$$P_h = 0.48\,Q_p\left[\frac{m(1 - m^2)}{(1 + m^2)^2} + \tan^{-1}\left(\frac{1}{m}\right)\right]$$

$$\sigma_{h\theta} = \sigma_h \cos^2(1.1\theta)$$

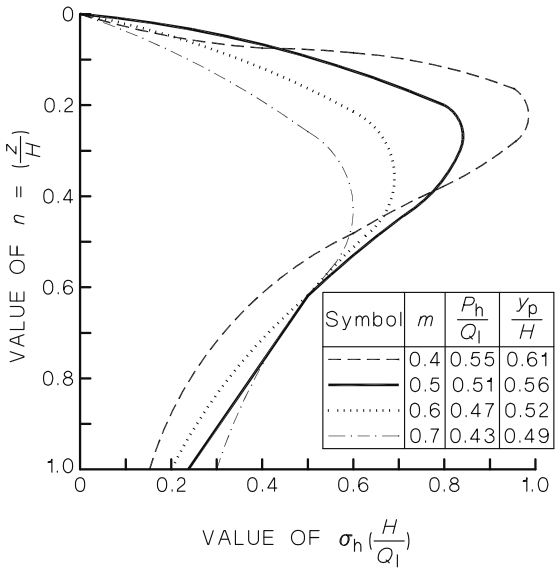
(b) Lateral pressure on wall due to vertical point load, Q_p

$$H_e = x \tan\left(45° + \frac{\phi}{2}\right)$$

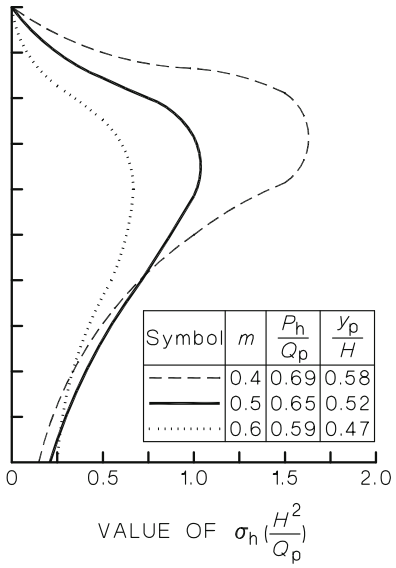
$$\sigma_h\left(\frac{H_e}{Q_h}\right) = 2\left(1 - \frac{z}{H_e}\right)$$

Resultant $P_h = Q_h$

(c) Lateral pressure on wall due to horizontal line load, Q_h



(d) Pressure distribution due to vertical line load, Q_l



(e) Pressure distribution due to vertical point load, Q_p

FIGURE J7 CALCULATION OF LATERAL PRESSURE ON A VERTICAL RETAINING WALL DUE TO VERTICAL AND HORIZONTAL LOADS

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Appendix J, Paragraph J12, REFERENCES

Add the following new reference to the end of the list:

6 TERZAGHI, K., *Anchored Bulkheads*. Transactions of the American Society of Civil Engineers, Vol. 119. pp 1243–1324, (1953).

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Appendix K, Paragraph K5.3

Delete Equation K5(3) and *replace* with the following:

$$\Phi_{rt}\,\Phi_{rs} = 1 - K(1 - \Phi_{rt}) \qquad \ldots \text{K5(3)}$$

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Appendix K, Table K5 (title and header rows)

Delete title and header rows and *replace* with the following:

TABLE K5

COMBINED REDUCTION FACTOR ($\Phi_{rt}\,\Phi_{rs}$)
FOR FLAT STEEL STRIP

Original thickness (mm)	$\Phi_{rt}\,\Phi_{rs}$			
	Corrosion allowance (mm)			
	0.5	1.0	1.5	2.0

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Appendix K, Table K6 (title and header rows)

Delete title and header rows and *replace* with the following

TABLE K6

COMBINED REDUCTION FACTOR ($\Phi_{rt}\,\Phi_{rs}$)
FOR ROUND STEEL BAR

Original diameter (mm)	$\Phi_{rt}\,\Phi_{rs}$			
	Corrosion allowance (mm)			
	0.5	1.0	1.5	2.0

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