

AS 2870 – 2011 A Geotechnical Perspective – Site Classification

Prepared by Laura Papez

The new edition of the AS 2870 has arrived. Although this edition will not be called up to the BCA until 2012, we'd still like to ask the question – what does this mean for us? In part 1 of our look into the newest edition of this standard we explore the effect this will have on the geotechnical community.

This edition places particular emphasis on design for reactive clay sites that are susceptible to significant ground movement due to moisture changes. The Standard takes into account the following:

1. Swelling and shrinkage movements of reactive clay soils due to moisture changes;
2. Settlement of compressible soils or fill;
3. Distribution to the foundation of the applied loads; and
4. Tolerance of the superstructure to movement.

At present the current soil classifications are – A, S, M, and H however within the new code the classifications include the new categories of H1 & H2 thereby eliminating the standard 'H' class. As noted in the table below site classification is based on site reactivity or the expected depth of moisture change on a site.

**TABLE 2.1
CLASSIFICATION BASED ON SITE REACTIVITY**

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
H1	Highly reactive clay sites, which may experience high ground movement from moisture changes
H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes

Sites with deep-seated moisture changes will be classified with the subscript "D" as appropriate.

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For sites with inadequate bearing strength or where ground movement may be significantly affected by factors other than reactive soil movements these shall be classified as class 'P'.

Class 'P' sites include:

- Soft or unstable foundations,
- Soils subject to erosion,
- Reactive sites subject to abnormal moisture conditions and
- Sites that cannot be classified in accordance with the above table.

A characteristic surface movement (y_s) shall be taken into account with each site classification. The changes, noted in the table below, show the site classifications and their corresponding (y_s) value.

TABLE 2.3
CLASSIFICATION BY CHARACTERISTIC
SURFACE MOVEMENT (y_s)

Characteristic surface movement (y_s) mm	Site classification in accordance with Table 2.1
$0 < y_s \leq 20$	S
$20 < y_s \leq 40$	M
$40 < y_s \leq 60$	H1
$60 < y_s \leq 75$	H2
$y_s > 75$	E

The changes within this standard have been applied to ensure a more in-depth look into a site before classification can be determined. Engineers will take into account all aspects of a site and in particular the movement and moisture conditions of every site. As mentioned, the BCA will not call up this edition until 2012, getting familiar with these changes now will ensure a smooth transition for all within the industry.

Within part 2 in our series of exploring this standard we take a look at how these new classifications will affect a residential slab & footing design.