

# Appendix D Example 23 – Soil Bearing Load Test

Refer to *Falsework Manual*, Section -8-4, *Soil Load Tests and Soil Bearing Values*. This example demonstrates procedure for determining soil bearing capacity using a static load test.

## Determine the allowable bearing capacity

Contractor's pad size: 10 ft x 10 ft

Area = 100 ft<sup>2</sup>

Perimeter = 40 ft

Contractor's proposed pad settlement: 1/2 in

Use two test pads:

Smaller test pad:

Dimensions: 2 ft x 2 ft

Area = 4 ft<sup>2</sup>

Perimeter = 8 ft

Load = 25,200 lb at 1/2-in settlement

Larger test pad:

Dimensions: 3 ft x 3 ft

Area = 9 ft<sup>2</sup>

Perimeter = 12 ft

Load = 39,700 lb at 1/2-in settlement

Test Summary					
Pad	Pad Area	Pad Perimeter	Total Load	Settlement	Formula
	A	P	W	S	$W = An + Pm$
	(ft <sup>2</sup> )	(ft)	(lb)	(in)	
Smaller	4	8	25,200	0.5	$25,200 = 4n + 8m$
Larger	9	12	39,700	0.5	$39,700 = 9n + 12m$

Solving for (m) and (n) units by dimensional analysis:

$m \approx 2,833 \text{ plf}$   
 $n \approx 633 \text{ psf}$

For the actual footing:

$$x = P/A = 40 \text{ ft} / 100 \text{ ft}^2 = 0.4 / \text{ft}$$

Substitute (m), (n) and (x) into the equation ( $p = mx + n$ )

The allowable soil bearing value (p) for the contractor's pad is:

$$p \approx (2,833 \text{ plf})(0.4 / \text{ft}) + 633 \text{ psf} \approx 1,766 \text{ psf}$$