

Special Provision to Item 404

Driving Piling



Item 404, "Driving Piling" of the Standard Specification is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 3.5., "Hammers Formula Method of Bearing Evaluation." is voided and replaced by the following:

Hammer Formula Method of Bearing Evaluation. Determine the nominal driving resistance of the piling by one of the hammer formulas in this Section unless otherwise shown on the plans. If the Engineer has determined a K factor based on test piling, test-loaded piling, or other methods, the computed nominal driving resistance will be the driving resistance determined based on the appropriate formula multiplied by the K factor. The computed nominal driving resistance should be greater than or equal to the nominal driving resistance shown on the plans. Pile driving formulas are only to be used for end of drive conditions.

Section 3.5.1., "Single-Acting Power Hammers." is voided and replaced by the following:

Single-Acting Power Hammers. Use the following formula:

$$R_{ndr} = \frac{1}{2} \times (1.75\sqrt{WH} \times \log_{10}\left(\frac{10}{S}\right) - 100)$$

where:

R_{ndr} = nominal driving resistance, dynamically evaluated (tons)

W = weight of ram in pounds

H = height of fall of ram in feet (field-measured)

S = average penetration in inches per blow for the last 20 blows (inch/blow)

Determine H by an approved electronic stroke indicator and blow count logging device provided by the Contractor. Pending approval, H can be determined by visual observation of the ram against a calibrated rod mounted on the hammer, or by the following formula.

$$H = 16.1 \times \left(\frac{30}{B}\right)^2 - 0.3$$

where:

B = blows per minute

Section 3.5.2., "Double-Acting Power Hammers." is voided and replaced by the following:

Double-Acting Power Hammers. Use the following formula.

$$R_{ndr} = \frac{1}{2} \times (1.75\sqrt{E} \times \log_{10}\left(\frac{10}{S}\right) - 100)$$

where:

R_{ndr} = nominal driving resistance, dynamically evaluated (tons)

E = manufacturer's rated energy in foot-pounds (for double-acting power hammers), or the equivalent energy in foot-pounds determined by a calibrated gauge attached to the hammer and taken when the average penetration in inches per blow is determined (for enclosed ram diesel hammer)

S = average penetration in inches per blow for the last 20 blows (inch/blow)