9 Measurement of Piling

Piles (Class P)

Some piling activities are very appropriately covered by method-related charges. For example, the transport of piling plant and equipment to the site and the erection of stagings can be covered by fixed charges and the operation of piling plant by time-related charges.

The rules in Class P aim to obtain a set of prices for each piling operation, which will lead to equitable payment in the event of variations. The bill items relate to groups of piles which are piles of the same type, material and cross-section in a single location. On a small contract all the piles might be regarded as in a single group.

Two or three separate billed items are generated for each group of piles by the classifications in the third division, depending on the type of pile. They embrace the following elements:

1. number of piles in a group to cover the plant and labour costs involved in moving the rig from one pile position to the next, setting up at each position and preparing to drive or bore;
2. length of piles in the group, covering the material cost of the piles; the concreted lengths of cast in place piles shall be measured from the cut-off levels to the toe levels expressly required (rule M3);
3. total depth bored or driven; raked piles shall be identified in the item descriptions and their inclination ratios stated (rule A2). Items for piles are deemed to include disposal of excavated material (rule C1).

The pile materials and section characteristics shall be given in item descriptions; section characteristics being the diameter for cast in place concrete piles, the cross-sectional area for preformed concrete or timber piles, and the mass per metre and cross-sectional dimensions for isolated steel piles.

With interlocking steel piles, the number of piles is not stated. Both the driving and materials items are measured by area, found by
multiplying the mean undeveloped horizontal lengths of pile walls by the depths (rule M7). The additional cost of corner, junction, closure and taper piles is covered in linear items (rule D7).

Rule M1 establishes the 'Commencing Surface' from which piles are driven or bored, as the surface adopted in the Bill of Quantities at which boring or driving is expected to begin. The measurement of cutting off surplus lengths or adding extensions is covered in Class Q.

**Piling Ancillaries (Class Q)**

Work incidental to piling operations, other than backfilling empty bores for cast in place concrete piles, is only measurable when expressly required (rule M1). Hence work undertaken by the Contractor at his own choosing will not be reimbursed unless it is covered in rates for items outside Class Q. Items for piling ancillaries are also deemed to include disposal of surplus materials unless otherwise stated (rule C1).

Work ancillary to piling is classified by pile type and size in a similar manner to Class P, for identification purposes, but ranges are used instead of actual cross-sectional dimensions. Cast in place piles may be concreted through a tremie pipe where water stands in the shaft, but this does not require specific mention.

Where the base of a cast in place pile is to be enlarged, the diameter shall be stated (rule A1), although the price will only cover the cost of the extra material around the shaft previously measured under Class P.

Pile extensions are measured in two items:

1. number of pile extensions, to cover the cost of preparing piles to receive extensions and of making joints
2. length of pile extensions to cover the cost of material in them, subdivided between those which do not exceed 3 m and those exceeding 3 m, and including the material to be used in the item description (rule A6).

The driving of extended piles is covered by Class P. Preparing heads of piles to receive permanent work is enumerated, while cutting off surplus lengths is taken as a linear item.

Removing obstructions (Q7) is priced on an hourly basis for breaking out rock or artificial hard material above the founding stratum of bored piles (rule M11). It is measured only when expressly required, when the Engineer can maintain control and keep records. Extraction of piles is classed as non-standard work, since it is not listed in Class Q, and suitable codes will be Q 3–6 9 *.

Note the pile testing items in Q8 differentiating between loading tests and non-destructive testing.