IS 9401 (Part 18) : 2000

भारतीय मानक

नदी घाटी परियोजनाओं में कार्य मापन की पद्धतियाँ (बाँध और संरचनाएँ)

भाग 18 चादर पाइलिंग

Indian Standard

METHOD OF MEASUREMENT OF WORK IN RIVER VALLEY PROJECTS (DAMS AND APPURTENANT STRUCTURES)

PART 18 SHEET PILING

ICS 93.160

BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

August 2000

Price Group 1

FOREWORD

This Indian Standard (Part 18) was adopted by the Bureau of Indian Standards, after the draft finalized by the Measurement of Works of River Valley Projects Sectional Committee had been approved by the Water Resource Division Council.

In measurement of works relating to river valley projects, a large diversity of methods exist according to local practices. The lack of conformity creates complications regarding measurements and payments. This standard is therefore being formulated in different parts, covering each type of work separately. This part is intended to provide a uniform basis for measuring the work done in respect of sheet piling works in river valley projects.

There is no ISO Standard on the subject. This standard has been prepared based on indigenous manufacturer's data/practices prevalent in the field in India.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

METHOD OF MEASUREMENT OF WORK IN RIVER VALLEY PROJECTS (DAMS AND APPURTENANT STRUCTURES)

PART 18 SHEET PILING

1 SCOPE

This standard (Part 18) covers the method of measurement of sheet piling work in river valley projects (dams and appurtenant structures).

2 REFERENCE

The following standard contains provisions which through reference in this text, constitutes provisions of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

IS No.	*Title*
9401 (Part 2) : 1982	Method of measurement of work in river valley projects (dams and appurtenant structures): Part 2 Dewatering

3 GENERAL RULES

3.1 Clubbing of Items

Items may be clubbed together if the break up of the clubbed items conforms to the description of the individual items stated in this standard.

3.2 Recording of Dimensions

In recording dimensions, the order shall be consistant and generally in the sequence of length, width and depth or thickness.

3.3 Description of Items and Methodology of Construction

The description of each item shall unless otherwise stated, include shape, type, size, thickness and weight per square metre where applicable. It shall also include where necessary, conveyance and delivery, handling, loading, unloading, storing, fabrication, hoisting, all formwork and scaffolding, all tools, equipment and labour for finishing to required shape and size, setting, fitting and fixing in position, cutting and return of unused materials, dismantling of the equipment and taking it back, etc.

The sheet piles shall be driven true to plumb and along the line as indicated in relevant drawings. In case it is not possible to follow the line, or cut-off, as indicated in the drawings due to any unavoidable circumstances, the sheet pile line may be diverted at right angles, again turned at 90^0 and taken parallel to the original line and then joined at right angles as per the drawings. As the effectiveness of the cut-off depends upon the verticality and consequent interlocking of sheet piles, special care should be taken to drive piles vertically and no deviations from the true plumb should be allowed. In case any pile goes out of plumb the same has to be pulled out and another pile driven in its place after making sure that the preceding piles are not disturbed from their verticality. No separate measurement will be made for such withdrawal and re-driving of the sheet piles.

3.4 Units of Measurement

All work shall be measured net in decimal system as fixed in its place subject to the following limitations, unless otherwise stated:

a) Linear dimensions to the nearest 0.01 m; and

b) Weight to the nearest 0.1 kg.

3.5 Work to be Measured Separately

3.5.1 Work executed in the following conditions shall be measured separately :

a) Work in under-water/wet and dry land,

b) Work in liquid mud/marshy land, and

c) Work under tides.

3.5.2 The level of high and low weather tides and ground water table, where occurring shall be stated.

3.5.3 Wherever springs or special situations are encountered and dewatering is resorted to, it shall be measured in accordance with IS 9401(Part 2).

4 BILL OF QUANTITIES

4.1 The bill of quantities shall fully describe the materials and workmanship and accurately represent the work to be executed.

4.2 A general description of the nature of the site shall be stated. For works near river banks, reservoirs or sea

front, the maximum and minimum water levels shall be stated.

4.3 Information on ground water conditions shall be stated.

4.4 The available information as to the strata through which sheet piling is to be carried out shall be stated or reference records of bores shall be provided.

4.5 If sheet piles are to be provided from any level other than ground level, it shall be stated.

4.6 The cut-off level of the top of the sheet piles be clearly specified. The level and location of the reference bench marks shall also be provided.

4.7 The item shall include any extra excavation filling and/or ramming required at the time of construction for the movement of cranes and other equipment at the site.

4.8 Bringing plant to the site and erecting it, dismantling and taking it back, shall be measured separately as lump sum items or shall be deemed to be included in the items pertaining to the sheet piling work.

4.9 Shifting of plant and equipment at site of work shall be included in the item of sheet piles.

4.10 Special anchors, structural steel ties, braces, and supports, coffer dams dewatering and any other temporary work to be carried out for the purpose of sheet piling shall be deemed to have been measured and paid under sheet piling unless these are expressly identified, and measured under separate items.

5 METHOD OF MEASUREMENT OF STEEL SHEET PILES

5.1 Supply of sheet piles shall be measured either by weight or area in square metres. The description of the item shall include the cross-sectional shape, size, type, unit weight, sectional modulus and composition of material. It shall also include details of fabrication of junction pile, tapered piles, such as lengthening by means of welding, riveting, drilling, or cutting holes, joining or fixing of structural rolled steel sections, handling and transportation to the site and the like. Piles exceeding 12 m in length shall be described separately stating the lengths in further stages of 3 m.

5.2 All struts, ground anchors (anchor bolts, anchor plates, turn buckles, etc) walings, tie rods and piling ancillaries, etc, shall be measured separately by weight in accordance with relevant Indian Standards.

5.3 When sheet piles are to be painted prior to driving, such painting shall be measured in square metres obtained by multiplying the length by the perimeter of the fabricated sheet pile measured along the profile (as enlarged flat surface) for specified number of coats and thickness in microns. Description of items shall include the method of preparation of surface, number of coats (that is thickness), mode of painting, and the like.

5.4 Lifting, handling, pitching, engaging through interlocks or clutches of adjacent sheet shall not be measured separately.

5.5 Pile driving shall be measured in square metres obtained by multiplying the length of the pile in soil, or up to cut-off level, whichever is specified, and the nominal width of pile from center-to-center of clutches, or by weight as the case may be.

5.6 Wherever sheet piles are to be driven under/in water necessitating use of special hammers and/or loader frames such piles shall be described and measured separately.

5.7 In case of defective driving and installation of piles necessitating extraction of piles already driven, and re-driving, no separate measurement shall be taken.

5.8 No separate measurement shall be made for driving piles through varying strata.

5.9 Driving corner piles and junction piles shall be measured separately.

5.10 Cutting or drilling through steel sheet piles shall not be measured. The disposal of cut length shall be described.

5.11 Extraction of piles other than described in **5.7** shall be measured separately including operations such as lifting, handling and removing from site.

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Amendments Issued Since Publication

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