



Government of West Bengal  
Irrigation & Waterways Directorate  
Office of the Superintending Engineer: Metropolitan Drainage Circle  
Jalasampad Bhaban (2nd floor) Salt Lake , Kolkata-700091.

**Memo No:4S-1/364(10)**

**Dated, 03rd May, 2021**

**From:** Superintending Engineer,  
Metropolitan Drainage Circle, Irrigation & Waterways Directorate & Member-cum- Convener,  
Departmental Unified Schedule of Rates Revision Committee

- To:**
1. Chief Engineer (South)  
Irrigation & Waterways Directorate
  2. Chief Engineer (West)  
Irrigation & Waterways Directorate
  3. Chief Engineer (South West)  
Irrigation & Waterways Directorate
  4. Chief Engineer (North)  
Irrigation & Waterways Directorate
  5. Chief Engineer (Design & Research)  
Irrigation & Waterways Directorate
  6. Chief Engineer  
Teesta Barrage Project  
Irrigation & Waterways Directorate
  7. Director of Personnel & Ex-officio Chief Engineer  
Irrigation & Waterways Directorate
  8. Chief Engineer (North East)  
Irrigation & Waterways Directorate
  9. Project Director & Ex-officio Chief Engineer  
West Bengal Major Irrigation and Flood Management Project (WBMIFMP)  
Irrigation & Waterways Directorate
  10. Chief Engineer  
Mechanical & Electrical  
Irrigation & Waterways Directorate

**Sub: 6<sup>th</sup> Addenda & Corrigenda to the Unified Schedule of Rates of I & W Department (w.e.f. 03.05.2021)**

Sir,

Please find enclosed herewith the 6<sup>th</sup> Addenda & Corrigenda to the Unified Schedule of Rates of I & W Department (w.e.f 03.05.2019), duly approved by the Irrigation & Waterways Department, for information and necessary disposal.

Yours faithfully


Encl: As stated

Superintending Engineer,  
Metropolitan Drainage Circle,  
Irrigation & Waterways Directorate  
& Member-cum-Convener, Departmental  
Unified Schedule of Rates Revision Committee

Memo No: 4S-1/364(9)/1

Dated, 03<sup>rd</sup> May 2021

Copy with the copy of enclosure submitted for favour of kind information to the Secretary to the Govt. of West Bengal, I & W Department, Chairman, Departmental Unified Schedule of Rates Revision Committee.


  
Superintending Engineer,  
Metropolitan Drainage Circle,  
Irrigation & Waterways Directorate  
& Member-cum-Convener, Departmental  
Unified Schedule of Rates Revision Committee

Memo No. 4S-1 /364 (9) / 1 / 1

Dated, 03<sup>rd</sup> May 2021

Copy with copy of enclosure forwarded to the Executive Engineer, DVC Study Cell & e-Governance Cell Irrigation & Waterways Directorate

He is requested to upload this in the 'Unified Schedule of Rates' link of Departmental website  
[www.wbiwd.gov.in](http://www.wbiwd.gov.in)

  
Superintending Engineer,  
Metropolitan Drainage Circle,  
Irrigation & Waterways Directorate  
& Member-cum-Convener, Departmental  
Unified Schedule of Rates Revision Committee



# 6<sup>th</sup> ADDENDA & CORRIGENDA w.e.f 3<sup>rd</sup> May 2021

to the Unified Schedule of Rates of Irrigation & Waterways Department  
brought out from December 2018

## A: Corrigenda

- I. 3<sup>rd</sup> Addenda & Corrigenda brought out on 9<sup>th</sup> March 2018 is hereby repealed.
- II. 1. "Non alloy steel/" is to be inserted before "MS sheet piles" in the 1st line of the description of items of SI. No.4.12 and SI. No.4.13 in Page C-37.
2. "IS Code" in the 2nd line of the description of items of SI. No.4.12 and SI. No.4.13 in Page C-37 is to be replaced by "IS: 2314-1986 / EN 10248-1 & 2".

## B: Addenda

I. The following provisions are inserted after "2.6 Driving Mild Sheet Piles" in Page B-14 of the Schedule.

"2.6.1 Type, General Specification, and features of Sheet Piles depending on usage.

2.6.1.1 The specification and type of sheet piles should be selected depending on the areas of use, as shown below in the Table:

Areas of Use		Type	Specification	Remarks
Sl.	Description			
I	(a) All sorts of hydraulic structures, and, (b) below structural flood walls /as cut off walls on top of embankments, constructed to lower the phreatic lines.	Hot Rolled Steel Sheet Piling, Z-Type or U-Type	IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 410 (Fe 540), of IS 2062: 2006 having minimum yield strength of 410 N/mm <sup>2</sup> .	This is the preferred type for these areas of application, subject to availability
		Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type, with Larssen Interlock.	EN 10248-1: 1996 & EN 10248-2:1996, Steel name S430GP, & number 1.0523 (both as per EN-10027), Classification Quality Steel (QS) as per EN 10020, having minimum yield strength of 430 N/mm <sup>2</sup> .	These are imported sheet piles but widely available in the market.
II	All temporary structures, e.g., shoring, coffer dams etc.,	Cold Formed Steel Sheet Piling, Z-Type or U-Type	IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 250 (Fe 410 W), of IS 2062: 2006 having minimum yield strength of 250 N/mm <sup>2</sup> .	These are made in India and widely available in the market.



III	All river training and bank protection works and toe protection works in embankments, all of permanent nature	-Do-	-Do-	-Do-
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2.6.1.2 The salient features, i.e., preferred range of nominal dimensions, mass and geometrical properties of sheet piles, unless otherwise specified by the Design Wing (Central Design Office, Irrigation & Waterways Directorate) should generally be selected from the Table below:

Areas of Use		Type	Nominal Dimensions (excluding tolerance),  ( $t_{min}$ )	Mass per sq.m of the wall (kg/m <sup>2</sup> )  (M)	Elastic modulus of the section (cm <sup>3</sup> )  (E)
Sl.	Description				
I	(a) All sorts of hydraulic structures, and, (b) below structural flood walls /toe walls on top of embankments constructed to lower the phreatic lines	Hot Rolled Steel Sheet Piling, Z-Type or U-Type	As per Table 1 & Table 2 of Amendment No.1 to IS 2314:1986, for Z-Type and U-Type, respectively, subject to the condition that minimum thickness (excluding tolerance) at any portion, should be in between 8.5 to 9.5 mm, i.e., $8.5 \text{ mm} \leq t_{min} \leq 9.5 \text{ mm}$ .	$195.7 \leq M \leq 159.5$	$1481 \leq E \leq 2222$
		Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type, with Larssen Interlock.	As per Manufacturers' Product Catalogue, subject to the condition that thickness of the flange or web, whichever is minimum, should be in between 8.5 to mm, excluding tolerance, i.e., $8.5 \text{ mm} \leq t_{min} \leq 9.5 \text{ mm}$ .	$105.0 \leq M \leq 120.0$	$1600 \leq E \leq 2200$
II	All temporary structures, e.g., shoring, coffer dams etc.,	Cold Formed Steel Sheet Piling, Z-Type or U-Type	As per Table 1 & Table 2 of Amendment No.1 to IS 2314:1986, for Z-Type and U-Type, respectively, subject	$97.3 \leq M \leq 108.6$	$1037 \leq E \leq 1759$



			to the condition that minimum thickness at any part (excluding tolerance) in between 8.0 to 8.5 mm, i.e., $8.0 \text{ mm} \leq t_{\min} \leq 8.5 \text{ mm}$ .		
III	All river training and bank protection works and toe protection works in embankments including retaining walls, all of permanent nature	-Do-	As per Table 1 & Table 2 of Amendment No.1 to IS 2314:1986, for Z-Type and U-Type, respectively, subject to the condition that minimum thickness at any part (excluding tolerance) in between 8.5 to 9.0 mm, i.e., $8.5 \text{ mm} \leq t_{\min} \leq 9.0 \text{ mm}$ .	$104.4 \leq M \leq 116.1$	$1318 \leq E \leq 1894$

Note: 1. All the conditions stated above, shall be satisfied.

2. Lower range values should be selected, subject to availability and satisfying design criteria, if required.

#### 2.6.1.3 Guidelines for inspection /testing are as follows:

- a) Hot Rolled Steel Sheet Piling, Z-Type or U-Type as per IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 410 (Fe 540), of IS 2062: 2006 having minimum yield strength of  $410 \text{ N/mm}^2$ .
  - i. No materials shall be accepted without Manufacturer's /Mill Test Certificates (MTC).
  - ii. The MTC shall, inter alia, contain dimensional checks (100%), mechanical property tests including, tensile strength, yield stress, percentage elongation etc., and chemical analysis, and the Cast No. /Heat No. of the sheets from which the sample products are selected for testing, as specified in IS 2062.
  - iii. The Manufacturer shall also certify /provide undertaking that products delivered at sites conforms to the MTC.
  - iv. Dimensional checking for allowable tolerances should be made at site as per IS 2314.
  - v. The Engineer in Charge may perform tests on mechanical properties on samples (2 Nos. per cast), either from the Departmental Quality Control laboratories or from any other NABL accredited laboratories, in case all the tests cannot be performed in the Departmental Quality Control laboratories.



b) Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type, with Larssen Interlock as per EN 10248-1: 1996 & EN 10248-2:1996, Steel name S430GP, & number 1.0523 (both as per EN-10027), Classification Quality Steel (QS) as per EN 10020, having minimum yield strength of 430 N/mm<sup>2</sup>.

i. Various EN Standards for testing of sheet piles are;

- ☐ BS EN 10248-1: 1996 Hot rolled sheet piles on non-alloy steel (Technical Delivery Conditions).
- ☐ BS EN 10248-2: 1996 (Tolerance on Shape & Dimension).
- ☐ EN 10204: 2004 (Metallic products- Type of inspection documents).
- ☐ EN 10021: 2006 (General technical delivery conditions for metallic products).

ii. No materials shall be accepted without Manufacturer's Test Certificates (MTC).

iii. The MTC shall, inter alia, contain dimensional checks (100%), mechanical property tests including, tensile strength, yield stress, percentage elongation etc., and chemical analysis, and the Cast No. /Heat No. of the sheets from which the sample products are selected for testing, as per the relevant EN Standards.

iv. Mechanical properties of the steel sheet piles shall be as per Table-2 of EN 10248-1.

v. Inspection and testing shall generally be as per provisions of Clause 8 of EN 10248-1, along with sub-clauses thereunder, subject to the following stipulations:

1) Clause 8.1.2 (a)-Type of inspection and testing: "Specific" (As per clause 3.10 of EN 10021).

2) Clause 8.1.2 (b)-Type of inspection document: "Type 3.2" (As per clause 4.2 of EN 10204). The requirement of attending the inspection by the Purchaser's (i.e., contractor's) representative may be done away with for all orders less than 1000 MT.

3) Product analysis (i.e., chemical analysis) need not be carried out as a part of "Specific inspection".

vi. Contractor should make prior purchase agreement with the manufacturer to ensure that an internationally acclaimed External Inspector (to be jointly agreed by the contractor and the manufacturer) would be engaged by the contractor at his own cost, for undertaking the 3<sup>rd</sup> Party Testing, both for the Contractor as well as the Client (Contract Signing Authority in the I & W Directorate), before shipment of the sheet piles. Inspection reports bearing the name of the Client as the "Principal Customer" should be directly endorsed to the Client by the External Inspector and no payment shall be released to the contractor on account of supply of sheet



piles, before receipt of these reports, as well as the MTC from the manufacturer.

- vii. Other than dimensional checking for allowable tolerances, no further checking needs to be done at site by the Engineer in Charge, after delivery of the materials.
- c) Cold Formed Steel Sheet Piling, Z-Type or U-Type as per IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 250 (Fe 410 W), of IS 2062: 2006 having minimum yield strength of 250 N/mm<sup>2</sup>.
- i. No materials shall be accepted without Manufacturer's Test Certificates (MTC).
  - ii. The MTC shall, inter alia, contain dimensional checks (100%), mechanical property tests including, tensile strength, yield stress, percentage elongation etc., and chemical analysis, and the Cast No. of the coils from which the sample products are selected for testing, as specified in IS 2062.
  - iii. The Manufacturer shall also certify /provide undertaking that products delivered at sites conforms to the MTC.
  - iv. Dimensional checking for allowable tolerances should be made at site as per IS 2314.
  - v. The Engineer in Charge may perform tests on mechanical properties on samples (2 Nos. per cast) in case the total supply quantity exceeds 5 MT, either from the Departmental Quality Control laboratories or from any other NABL accredited laboratories, in case all the tests cannot be performed in the Departmental Quality Control laboratories.
- (d) All charges of inspection, other than that stated under Para 2.6.1.3 (b).v for Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type as per EN 10248-1: 1996 & EN 10248-2:1996, should be borne by the Engineer-in Charge from the 3% contingency fund included within the administratively approved amount of the work.

#### 2.6.1.4 Deriving the supply rates:

Supply cost of sheet piles, either domestic or international fluctuates quite frequently, from time to time as well as from manufacturer to manufacture. Accordingly, no specific rate is provided in the Unified Schedule of Rates. Executive Engineer of the Construction Wing would collect the market rate in the form of budgetary quotes from the suppliers for delivery Ex-Yards and would add cost of loading, unloading and transportation as per SoR of PWD /PW (Roads). Steps to be followed are shown below seriatim.

- (i) Select the type of sheet piles required for the works from the Table below Paragraph 2.6.1.1.



- (ii) Assess the area of sheet piling (straight length of wall line X total depth of the pile) in Sqm.
- (iii) Prepare a Schedule of works comprising 4 (four) columns, i.e., (1) Description of item, (2) Total area in Sqm (calculated as per (ii) above), (3) Rate per sqm Ex-yards, excluding GST, to be filled up by the Supplier /Manufacturer), and (4) Total amount (in Rs), also to be filled up by the Supplier /Manufacturer.
- (iv) Description should be strictly as per following nomenclature:

“Supplying H-Type or U-Type sheet piles, Hot Rolled conforming to IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 410 (Fe 540), of IS 2062: 2006 having minimum yield strength of 410 N/mm<sup>2</sup> / Hot Rolled conforming to EN 10248-1: 1996 & EN 10248-2:1996, Steel name S430GP, & number 1.0523 (both as per EN-10027), Classification Quality Steel (QS) as per EN 10020, having minimum yield strength of 430 N/mm<sup>2</sup> / Cold Formed Steel pile as per IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 250 (Fe 410 W), of IS 2062: 2006 having minimum yield strength of 250 N/mm<sup>2</sup> (select any among the above three options) , as per dimensional parameters, sectional properties and testing requirements given below, for the (name of the work) at Ex-stackyards of the Supplier /Ex-Port in West Bengal /Ex- Railway Yard in West Bengal (Bidder should mention the Location Mouza /Municipal ward & District of the stackyard of the Company or name of Port or name of the railway yard) including all taxes, charges but excluding GST. For Ex-port delivery, custom clearance formalities and charges would have to be borne by the Supplier.

Type	Range of minimum thickness (excluding tolerance) at any part in mm (t <sub>min</sub> )	Range of Mass (Kg /sq.m) (M)	Range of Elastic Modulus (cm <sup>3</sup> ) (E)
Hot Rolled Z-Type or U-Type as per IS 2314	$8.5 \leq t_{min} \leq 9.5$	$195.7 \leq M \leq 159.5$	$1481 \leq E \leq 2222$
Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type, with Larsen Interlock as per EN 10248-1: 1996 & EN 10248-2:1996	$8.5 \leq t_{min} \leq 9.5$	$105.0 \leq M \leq 120.0$	$1600 \leq E \leq 2200$
Cold Formed Z-Type or U-Type as per IS 2314	$8.0 \leq t_{min} \leq 8.5$	$97.3 \leq M \leq 108.6$	$1037 \leq E \leq 1759$
Cold Formed Z-Type or U-Type as per IS 2314	$8.5 \leq t_{min} \leq 9.0$	$104.4 \leq M \leq 116.1$	$1318 \leq E \leq 1894$

(Select the appropriate option).



N.B: Inspection of the sheet pile should be as per Cl. 2.6.1.3 (a) /(b)/(c) of the 6<sup>th</sup> Addenda & Corrigenda issued on 3<sup>rd</sup> May, 2021, to the Unified Schedule of Rates of Irrigation & Waterways Department brought out from December 2018, as reproduced below:

(select the appropriate one and reproduce here)

- (v) EoI may be invited with newspaper advertisement using e-tender platform in two parts, i.e., Technical and Financial and processed online. In the technical part, the supplier would, inter alia, suggest any one designation available in the market having properties within the range specified above, either as per IS 2314 (up to Amendment No.1 June 2018 for national products (hot rolled or cold formed) or as per Catalogue /Tailor Made Solution, if possible, for imported products (only hot rolled). The supplier should also specifically mention the dimensional parameters, mass in kg/sq.m and Elastic Modulus The supplier should quote the budgetary rate exclusive of GST in the Priced Schedule of the financial part. Any product suggested beyond the rate shall be discarded. In case, the estimated cost of supply of sheet pile is less than Rs 1.00 lakh, offline quotation may be invited and processed in lieu of EOI.
- (vi) Upon finalization of the rate and acceptance by the Superintending Engineer concerned, (GST to be deducted if the rate is inclusive of GST), the Executive Engineer of the Construction Wing should finalize the specific item, for inclusion in the DPR following the steps narrated below:
- 1) Use the nomenclature and specification from among the Item Nos. 4.15 /4.16 /incorporated in the USOR.
  - 2) Finalize the rate of the item by
    - (I) Considering the L1 rate of the EoI or Quotation and adding 8% overhead and then 10% contractor's profit to arrive at the base rate. Taking the value of the mass in kg per sq.m offered by the supplier, find out the rate per MT.
    - (II) Adding loading, transportation and unloading charges to (I) above, as applicable on tonnage basis from the SoR of PWD /PW (Roads), for carrying the materials at worksite from the place of delivery.
    - (III) Finally adding (I) & (II) to derive the supply rate at site (Rs per MT) and get the derived rate signed by the concerned Superintending Engineer".





II. Insert the following Items with Sl. 4.15, 4.16 and 4.17, after the item at Sl. 4.14 at page C-37.

Sl. No.	Description of Item	Unit	Rate (Rs)												
			Zone I	Zone II	Zone III	Zone IV									
4.15	<p>Supplying a) Hot Rolled Steel Sheet Piling, Z-Type or U-Type as per IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 410 (Fe 540), of IS 2062: 2006 having minimum yield strength of 410 N/mm<sup>2</sup>, at worksite including all statutory taxes, duties and incidental charges, for use in (a)All sorts of hydraulic structures, including bridges and, (b) below structural flood walls /as cut off walls on top of embankments, constructed to lower the phreatic lines, having minimum thickness, mass and elastic modulus within the permissible range as shown below;</p> <table><tr><td>Range of minimum thickness (excluding tolerance) at any part in mm</td><td>Range of Mass (Kg /sq.m)</td><td>Range of Elastic Modulus (cm<sup>3</sup>)</td></tr><tr><td></td><td>(M)</td><td>(E)</td></tr><tr><td><math>0.5 \leq t_{min} \leq 9.5</math></td><td><math>195.7 \leq M \leq 159.5</math></td><td><math>1481 \leq E \leq 2222</math></td></tr></table> <p>N.B: Inspection of Sheet piles should be as per Cl. 2.6.1.3 (a) of the 6<sup>th</sup> Addenda &amp; Corrigenda issued on 3<sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation &amp; Waterways Department brought out from December 2018.</p>	Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )		(M)	(E)	$0.5 \leq t_{min} \leq 9.5$	$195.7 \leq M \leq 159.5$	$1481 \leq E \leq 2222$	MT	Construction Wing has to derive rate (irrespective of the zoning) as per methodology stated in Cl. 2.6.1.4 of the 6 <sup>th</sup> Addenda & Corrigenda issued on 3 <sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation & Waterways Department brought out from December 2018.			
Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )													
	(M)	(E)													
$0.5 \leq t_{min} \leq 9.5$	$195.7 \leq M \leq 159.5$	$1481 \leq E \leq 2222$													
4.16	<p>Supplying a) Hot Rolled Non-Alloy Steel Sheet Piling, Z-Type or U-Type, with Larssen Interlock as per EN 10248-1: 1996 &amp; EN 10248-2:1996, Steel name S430GP, &amp; number 1.0523 (both as per EN-10027), Classification Quality Steel (QS) as per EN 10020, having minimum yield strength of 430 N/mm<sup>2</sup>, at worksite including all statutory taxes, duties and</p>	MT	Construction Wing has to derive rate (irrespective of the zoning) as per methodology stated in Cl. 2.6.1.4 of the 6 <sup>th</sup> Addenda & Corrigenda issued on 3 <sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation & Waterways Department brought out from December 2018.												


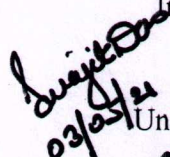


	<p>incidental charges, for use in (a) all sorts of hydraulic structures, and, (b) below structural flood walls / as cut off walls on top of embankments, constructed to lower the phreatic lines, having minimum thickness, mass and elastic modulus within the permissible range as shown below;</p> <table> <tr> <th>Range of minimum thickness (excluding tolerance) at any part in mm</th><th>Range of Mass (Kg /sq.m)</th><th>Range of Elastic Modulus (cm<sup>3</sup>)</th></tr> <tr> <td><math>6.5 \leq t_{\min} \leq 9.5</math></td><td><math>105.0 \leq M \leq 120.0</math></td><td><math>1600 \leq E \leq 2200</math></td></tr> <tr> <td></td><td>0</td><td>0</td></tr> </table> <p>N.B: Inspection of Sheet piles should be as per Cl. 2.6.1.3 (b) of the 6<sup>th</sup> Addenda &amp; Corrigenda issued on 3<sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation &amp; Waterways Department brought out from December 2018.</p>	Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )	$6.5 \leq t_{\min} \leq 9.5$	$105.0 \leq M \leq 120.0$	$1600 \leq E \leq 2200$		0	0	
Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )									
$6.5 \leq t_{\min} \leq 9.5$	$105.0 \leq M \leq 120.0$	$1600 \leq E \leq 2200$									
	0	0									
4.17	<p>Supplying Cold Formed Steel Sheet Piling, Z-Type or U-Type as per IS: 2314-1986, up to Amendment No.1 June 2018, structural steel material conforming to Grade Designation E 250 (Fe 410 W), of IS 2062: 2006 having minimum yield strength of 250 N/mm<sup>2</sup>, at worksite including all statutory taxes, duties and incidental charges, having minimum thickness, mass and elastic modulus within the permissible range as shown below;</p> <p>(a) for use in all temporary structures, e.g., shoring, coffer dams etc.,</p> <table> <tr> <th>Range of minimum thickness (excluding tolerance) at any part in mm</th><th>Range of Mass (Kg /sq.m)</th><th>Range of Elastic Modulus (cm<sup>3</sup>)</th></tr> <tr> <td><math>6.0 \leq t_{\min} \leq 8.5</math></td><td><math>97.3 \leq M \leq 108.0</math></td><td><math>1037 \leq E \leq 1759</math></td></tr> <tr> <td></td><td>6</td><td>9</td></tr> </table>	Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )	$6.0 \leq t_{\min} \leq 8.5$	$97.3 \leq M \leq 108.0$	$1037 \leq E \leq 1759$		6	9	<p>MT Construction Wing has to derive rate (irrespective of the zoning) as per methodology stated in Cl. 2.6.1.4 of the 6<sup>th</sup> Addenda &amp; Corrigenda issued on 3<sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation &amp; Waterways Department brought out from December 2018.</p>
Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )									
$6.0 \leq t_{\min} \leq 8.5$	$97.3 \leq M \leq 108.0$	$1037 \leq E \leq 1759$									
	6	9									

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3/5/21



<p>b) for use in all river training and bank protection works and toe protection works in embankments including retaining walls, all of permanent nature.</p> <table border="1"> <thead> <tr> <th>Range of minimum thickness (excluding tolerance) at any part in mm</th> <th>Range of Mass (Kg /sq.m)</th> <th>Range of Elastic Modulus (cm<sup>3</sup>)</th> </tr> </thead> <tbody> <tr> <td><math>6.5 \leq t_{min} \leq 9.0</math></td> <td><math>104.4 \leq M \leq 116</math></td> <td><math>1318 \leq E \leq 189</math></td> </tr> <tr> <td></td> <td>1</td> <td>4</td> </tr> </tbody> </table> <p>N.B: Inspection of Sheet piles should be as per Cl. 2.6.1.3 (c) of the 6<sup>th</sup> Addenda &amp; Corrigenda issued on 3<sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation &amp; Waterways Department brought out from December 2018.</p>	Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )	$6.5 \leq t_{min} \leq 9.0$	$104.4 \leq M \leq 116$	$1318 \leq E \leq 189$		1	4	MT	<p>Construction Wing has to derive rate (irrespective of the zoning) as per methodology stated in Cl. 2.6.1.4 of the 6<sup>th</sup> Addenda &amp; Corrigenda issued on 3<sup>rd</sup> May 2021, to the Unified Schedule of Rates of Irrigation &amp; Waterways Department brought out from December 2018.</p>
Range of minimum thickness (excluding tolerance) at any part in mm	Range of Mass (Kg /sq.m)	Range of Elastic Modulus (cm <sup>3</sup> )									
$6.5 \leq t_{min} \leq 9.0$	$104.4 \leq M \leq 116$	$1318 \leq E \leq 189$									
	1	4									

  
 Superintending Engineer  
 Metropolitan Drainage Circle  
 Irrigation & Waterways Directorate  
 &  
 Member cum Convenor  
 Unified Schedule of Rates Committee  
  
 T.A. S.S.E/mec