

1.0 MEASUREMENT OF WORK BY CONTRACTOR IN WORKS CONTRACT: (Applicable for a tender costing more than Rs.5 Crore): Measurement of works executed is to be done by contractor. The following conditions

- 1.1 The tenderer whether sole proprietor, a limited company or a partnership firm if they want to act through agent or individual partner(s) should submit along with the tender or at a later stage, a power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he /they be partner (s) of the firm or any other person specifically authorizing him/them to sign the agreement, receive money, co-ordinate measurements through contractor's authorized engineer, witness measurements, sign measurement books, compromise, settle, relinquish any claim(s) preferred by the firm and sign "No claim certificate" and refer all or any disputes to arbitration.

Note: Contractor's authorized Engineers shall mean a Graduate Engineer or having more than 3 years' experience in the relevant field of Construction work involved in the contract, duly approved by Dy.Chief Engineer.

1.2 MEASUREMENT OF WORKS BY RAILWAY: Shall be as per para 45(i) of IRGCC (April 2022) .

**1.3 Measurement of Works by Contractor's Authorized representative :
Shall be as per para 45(ii) of IRGCC (April 2022) .The detailed procedure shall be as per para No.1316A of IREC, which is appended below for information.**

Measurement recorded by the contractor shall be test checked by Railway within 45 days of submission of measurements.

1.4 On account , final payments shall be made as per para 46, 51 of IRGCC (April 2022)

Addendum & Correction Slip (ACS) No. 50 to Indian Railways Code for Engineering Department for introduction of Measurement and Recording of 'Executed Works' by the Contractor in Railway Construction works

1316A (Applicable for contracts wherein the measurement of work by contractor is permitted): Para 1316 of Engineering Code shall not be applicable for these contracts. For such contracts, contractor shall be responsible for carrying out measurements of work executed and recording of measurements for the release of on account/final payment. In such cases, the detailed procedure for recording of measurements, provisional payment, test check and final payment shall be as follows:

Contractor's Measurement Book:

1. Railway shall arrange contractor's measurement book (CMB), each having sheet No. 1 A to 4A (Form E 1313), followed by 100 machine number pages (Form E 1313, sheet No. 5A). On the top of each sheet of CMB, there shall be provision for recording the name of the work, agreement number, name of contractor and CMB number.
2. CMBs shall be printed in such a way so as to keep a clear margin of 50 mm on the left side of page. Further, the left side shall have pinhole tear line at a distance of 15 mm from edge for ease of taking out sheets from these books. The binding shall be within 15mm of the margin available between edge and pinhole tear line. This shall ensure availability of minimum 35 mm clear margin to re-bind measurement books later on.

Movement and upkeep of Contractor's Measurement Book:

3. Dy Chief Engineer in charge of contract (Dy CE/C) shall hand over required No. of CMBs to Assistant/Executive Engineer in-charge of contract (AEN/XEN) after taking receipt of the same on sheet No. 2A (Form E.1313) for further issuance to contractor time to time as per progress of work.
4. CMB shall be registered with unique No. in the Register of Measurement Books (Form E.1314) maintained in the office of Dy CE/C. Separate accountal of CMBs for each agreement shall be maintained in the office of Dy CE/C and AEN/XEN.
5. In case of change of 'contractor's authorized engineer', fresh approval shall be taken from Dy CE/C before recording of measurement.
6. While issuing the CMB to contractor, AEN/XEN shall take out sheet No. 2A to 4A from the CMB, take receipt of CMB from contractor on sheet No. 3A (Form E 1313), and keep the same in safe custody.
7. Similar system as for CMB, shall be followed for issuing Field Book/ Level Book (E.1317/A) to contractor for recording of levels in the field book/level book.

Measurements

8. The contractor's authorized engineer shall record the measurements in CMB neatly in his own handwriting, without any use of eraser/overwriting, without use of any typing fluid or any such thing. All cuttings shall be initialed. No page shall be damaged/destroyed. No page shall be kept blank in between the measurements.
9. The Contractor shall communicate the date of measurement to AEN/XEN in sufficient advance to witness any measurement. Witnessing of measurement by railways is not compulsory except for initial levels in case of earthwork and hidden measurements. Initial levels of earthwork and hidden measurements are to be recorded in the presence of railway officials and test checked as prescribed.
10. In on account contract certificate, measurement shall be recorded for the items and quantities to be paid in the concerned on account contract certificate.
11. However, in every 4th on account contract certificate and final contract certificate, the recording of measurement for works executed shall include all the items and their quantity included in previous on account contract certificates, irrespective of whether to be paid or not in the current On Account Contract Certificate/ Final Contract Certificate.
12. No payment shall be processed on Lump sum measurement taken by contractor's authorized engineer except for earthwork. For earthwork, every 4th bill shall be based on actual levels taken and detailed calculations carried out for the work done.
13. The contractor shall take out carefully from CMB the used pages of CMB with one extra blank page for processing the bill; staple them for submission to AEN/XEN along with bill, duly signing the measurements. The contractor shall keep a photocopy of the measurements with him for future reference.
14. At the time of submission of final bill, the contractor shall submit all the remaining CMBs (unused as well as partially used) with him along with bill to AEN/XEN.

15. The contractor shall submit required copies of invoice and on account contract certificate / final contract certificate (similar to form E.1337 and Form E.1338) to the AEN/XEN duly marking them - original or duplicate copy. Original shall be used for release of payment whereas duplicate copies shall be used for record purpose in different offices.
16. In case contractor requires provisional payment of on-account bill, the contractor shall submit his invoice and provisional on account contract certificate for 75% of amount of work done (before deduction of taxes). The contractor shall write 'For Provisional Payment' on top of such on- account contract certificate.
17. AEN/XEN while issuing receipt of stapled sheets of CMB to contractor shall clearly record the same in sheet 4 (E.1314) of concerned CMB, kept in the office of AEN/XEN.

Release of Provisional Payment

18. Senior Section Engineer / 'Junior Engineer with 5 year experience' (SSE/JE) and AEN/XEN shall sign & record a certificate on the original provisional 'on account contract certificate' as under: *"Certified that the payment being made is less than the amount due for the quantities of works executed by the contractor"*.

In case of payment of earthwork items in any contract, calculation of quantity of such items along with field book / level book must be enclosed. This shall be cross checked, as considered appropriate by SSE/JE & AEN/XEN, to ensure that no excess payment is being made.

At this stage no test check of measurements by railway is required.

19. AEN/XEN shall keep a copy of contractor's invoice & provisional on account contract certificate in his office, and submit original invoice & original provisional on account contract certificate along with required number of duplicate copies, and used sheets of CMB to the Dy CE/C unit for passing the bill and release of payment.
20. The provisional on account contract certificate shall be passed by Dy CE/C and payment shall be released by associate finance based on above certification of SSE/JE and AEN/XEN. After release of payment, blank sheet of CMB (if any) shall be crossed by Dy CE/C before sending the measurement sheets back to AEN/XEN for carrying out required test checks. At this stage measurements shall not be crossed.
21. No provisional payment shall be allowed in final contract certificate. Further, once provisional payment has been released in any on-account contract certificate, the next on account contract certificate can be raised by contractor only when accounts of previous on account certificate (Provisional as well as remaining payment) has been finalised.

Test Check

22. Necessary test checks shall be carried out by the SSE/JE and AEN/XEN for the works done before full payment of on-account contract certificate/final contract certificate. SSE/JE and AEN/XEN shall communicate the date of test checks to contractor in advance. The contractor can accompany during test check. The contractor shall provide support staff and all required tools & plants to facilitate test check by railway official

23. The stipulated test checks for AEN/XEN and SSE/JE Level is tabulated as under:

S. No.	Description of Works	Test Check in terms of % of value by	
		SSE / JE	AEN/XEN
(a)	Measurement of Ballast, pitching stone, Earth work and hidden items	100%	100%
(b)	Measurement of all other items	100%	20%
(c)	Initial and Final levels along centre line for earthwork in embankment and cutting	100%	100%
(d)	Intermittent levels along centre line for earth work in embankment and cutting	100%	20%
(e)	Initial, intermittent and final levels except centre line for earth work in embankment	100%	20%

Note: The check regarding levels of earthwork invariably shall be carried out in cross sections having heavy cross slopes.

24. Contractor's recorded measurement sheets shall be checked for any corrections/over writing during test check. All the corrections/over writing shall be initialed by SSE/JE.
25. The discrepancy noted (if any) during test check of recorded measurement shall be communicated by AEN/XEN to the contractor.
26. In case of discrepancy noticed during test check, the contractor shall submit original and required copies of fresh invoice of amount corrected for discrepancy, and in case provisional payment has been released earlier, the required copies of fresh invoice of remaining amount corrected for discrepancy (if any), along with on account/final contract certificate to AEN/XEN.
Full payment of On Account Contract Certificate/Final Contract Certificate;
27. AEN/XEN shall submit original copy of invoice and on account contract certificate of remaining amount/ Final Contract Certificate, along with required number of duplicate copies and used sheets of CMB (all used/blank CMBs in case of final contract certificate), duly signed by SSE/JE and AEN/XEN to the Dy CE/C for passing the bill and release of payment.
28. Once the payment is released, Dy CE/C shall return back the used sheets of CMB to AEN/XEN for safe custody, duly crossing of measurements by finance officer.
29. Once all used sheets of a particular CMB is received back by AEN/XEN from Dy CE/C, the AEN/XEN shall re-bind all 100 pages of CMB along with sheet No. 1 A to 4A for submission of CMB to Dy CE/C office. Dy CE/C office shall record the receipt of same in sheet No. 2A of CMB and Register of Measurement Books (Form E1314).
30. The final contract certificate shall be passed by Dy CE/C only after receipt of all CMBs (used/blank) from AEN/XEN.
31. The provisions of this para 1316A shall be applicable to all the departments of Indian railways and to be executed through equivalent authorities of respective departments.

COVER

E.1313
(Sheet 1A)

Railway.....

CMB No.....

CONTRACTOR'S MEASUREMENT BOOK

Department

Division/Construction Unit.....

Name of Work

Agreement No

Name of Agency.....

Name to Whom Issued

Designation

Date of issue

Date of return

(Title page)

E.1313
(Sheet 2A)

Railway.....

CMB No.....

CONTRACTOR'S MEASUREMENT BOOK

Department

Division/Construction Unit.....

Name of Work

Agreement No

Name of Agency.....

Issued to.....

(Name & designation)

on

(station)

(date)

Received by.....

(Signature)

(Designation)

(Station)

on.....

(date)

Date of first entry.....

Date of last entry.....

Date received back in Division/Const.Unit office after
completion of book

Certified that this Measurement Book contains 100 machine numbered pages from
.....to (both pages inclusive) which have been counted by me and
are correct.

Signature

DateDesignation

Initial C.)Bilding Space

Initial C.)Bilding Space

E.1313

(Sheet 3A)

Railway

CMB No.

CONTRACTOR'S MEASUREMENT BOOK

Name of Work

Agreement No.

Name of Agency.....

Issued to

(Contractor's name)

on

(station)

(date)

Certified that this Measurement Book contains 100 machine numbered pages fromto.....(both pages inclusive) which have been counted by me and are correct. No sheet is torn.

I understand that the measurement book is very important document and hence **1** shall ensure its proper upkeep and safe custody.

Received by.....

(Signature of contractor)

(Name)

(Station)

(Date)

Date of first entry

Date of last entry

Certified that this Contractor's Measurement Book pages returned by contractor have been counted by me and are correct. The details of pages received by me is as under:

S. No,	On Account Bill No.	Page No. From.....To	No. of Pages	Date of receipt in AEN/XEN office	Sign & Designation Of Railway official
1					
2					
3					
4					
5					
6					
7					

CMB No.

Name of Work

Agreement No

Name of Agency

[illegible]

(Sheet 5A)

Railway
CMB No.
Divisional/Construction unit
.....

**Space for Machine numbering
with six digits unique number**

CONTRACTOR'S MEASUREMENT BOOK

Name of Work

Agreement No

Name of Agency

.....

INDEX OF M.B

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