

# MUMBAI RAILWAY VIKAS CORPORATION LTD.

Procedure Order No. 2008/MRVC/Policy/431/R2

Dated 10.05.2023

**Sub:-** Procedure Order for Recording Measurement, Test Check and Payment for Works Contracts.

This Procedure Order shall supersede Procedure Order No. 2008/MRVC/Policy/431/R1 dated 07.09.2022 or any other instructions issued in this regard till date.

## 1. General

1.1 MRVC projects will be supervised either through Project Management Consultancy (PMC) or departmentally by MRVC officials. In case project supervision is being performed through Project Management Consultancy (PMC), qualified persons of PMC shall perform the functions of Assistant Resident Engineer (ARE), Resident Engineer and the Project Manager. However, in a number of projects works are being supervised departmentally, either by MRVC employees or by Contract employees. A Project Execution In charge shall be nominated for each project by Director, MRVC. The Project Execution In charge shall normally be AGM/Dy. CPM/JAG.

1.2 Functions at different levels shall be performed as under:

**Table – 1**

S. No.	Functions to be performed	Works supervised by PMC	Works Supervised departmentally
i.	Recording of measurements	Assistant Resident Engineer (ARE) in the presence of Contractor or his authorized representative.	By SSE/ SE/ SPE/ PE/ Equivalent ranked Re-employed personnel/ Contract employees of MRVC in the presence of Contractor or his authorized representative.
ii.	Test checks of measurements as per Para 2.2 and 7.0 below	20% test check by Resident Engineer.  25% test check for hidden measurement & Ballast supply, other supply items of all departments like cables, equipment etc. by Resident Engineer.  100% test check for	20% by Assistant Manager/ Manager/ Jr. Scale/ Sr. Scale officer (Equivalent ranked Re-employed or contract officer).  100% test check for hidden measurement & Ballast supply, other supply items of all departments like cables, equipment etc. by Assistant Manager/ Manager/ Jr. Scale/ Sr. Scale officer (Equivalent ranked Re-employed or contract officer).  100% test check for Centre line and

S. No.	Functions to be performed	Works supervised by PMC	Works Supervised departmentally
		Centre line and 20% test check for cross section for initial ground level for earthwork, by Resident Engineer.	20% test check for cross section for initial ground level for earthwork, by Assistant Manager/ Manager/ Jr. Scale/ Sr. Scale officer (Equivalent ranked Re-employed or contract officer).
iii.	Spot Test Check by MRVC employee (regular/ contract/ on deputation)	5 % spot test check not below the rank of Assistant Manager/ Manager/Jr. Scale/Sr. Scale (regular/ on deputation/ Contract/equivalent ranked re-employed)	5% spot checks by AGM/Dy. CPM/ JAG (Regular/ Deputation/ Re-employed).
iv.	Certification for correctness of bill/ Passing of Bill	<b>PMC:</b> Project Manager <b>MRVC:</b> Project Execution in Charge and incharges of other disciplines for their respective bills.	Project Execution in Charge and incharges of other disciplines for their respective bills.

**Note:**

- a) In the absence of any particular official as above, his functions shall stand assigned to the next higher-level official in case of both PMC supervision and departmental supervision.
- b) In case of PMC if Project Manager is not available, duties assigned to Project Manager shall be discharged by Resident Engineer nominated by Director.
- c) The deployment of MRVC personnel for departmentally supervised works for the above activities will be in the following priority:
  - i. MRVC personnel (Regular/on deputation)
  - ii. Re - employed personnel.
  - iii. Contract Employees.
- d) Director should nominate the Project Execution in Charge on receipt of the proposal from CPM/GM/ED/CE/SAG; otherwise, CPM/GM/ED/CE/SAG shall be the Project Execution in Charge. CPM/GM/ED/CE/SAG of the PIU should nominate the other authorities of respective departments for various functions depending upon availability of officer/officials on award of each contract and also subsequently when there is change in deployment of PMC/ departmental personnel in consultation with

CPM/GM/ED/CE/SAG of concerned department while deciding deployment of S&T or Electrical personnel.

- e) If the distribution of duties for measurement involves deployment of re- employed officials or Contract employees, approval of the Director of the respective department should be obtained.
- f) In case work is being supervised by PMC, and regular or officials on deputation of Manager or higher rank are not available for Spot test check, then re-employed officials in the rank of Asst Manager/Manager/Jr scale officer or above may be empowered with the approval of Director of concerned Department to conduct Spot test check till such time regular/deputationist officials of Asst Manager/Manager/Jr scale officer or above is available.

In case, regular/deputationist/ re-employed officials in the rank of Asst Manager/ Manager/ Jr scale officer or above are not available for Spot test check, SSE/SE/Sr. Project Engineer (SPE)/ Project Engineer (PE) may be authorized to carry out spot checks duly certifying the competence of SSE/SE/SPE/PE as per Para 6.0 & 7.0 of this procedure order with the approval of Director.

- g) MRVC/ PMC officials should strictly specify the location/ specific item, where they have conducted test check of the items including hidden work. The test check/ spot test check carried out should be distinguished by ticking the individual entries in the Measurement Book and checked entries are to be side bracketed and signed by the test checking officials.

The test check carried out and marked above must satisfy the requirement of % test check prescribed in above table for the respective officials of MRVC/PMC and onus to ensure will be on the test checking officials. The details of test check may be submitted in tabular form given in Annexure 2 along with bill to the bill passing authority.

- h) In case of PMC supervision, measurements are largely verified by GC/PMC and a minimal test-check of 5% at Jr/Sr Scale officers' level has been kept. However, MRVC field officers (Jr/Sr Scale to AGM/SG level) are responsible to ensure that PMC/GC is discharging their supervisory obligations as per prescribed norms. In case of any systemic quality issues, systemic unsafe working condition, or systemic wrong measurement recorded at a future date, the MRVC officers cannot be absolved of their responsibility citing lack of test check prescription in the measurement policy. The Jr Scale to DyCPM/AGM/SG level officers are expected to frequently visit the worksites and ensure that quality/safety/measurements are being carried out systematically by PMC/GC. In case of any irregularity, the matter is expected to be taken up with PMC/GC in writing and action taken against PMC/GC as per prescribed condition of contract.

## **2. Measurements**

2.1 Record of measurements shall be made in printed Measurement Books and Level

Books which will be duly machined numbered. The stock of these books will be maintained in the office of Project Execution in Charge. These will be issued to the Project Manager of PMC, or to concerned MRVC official, if supervised by MRVC officials as per requirement.

2.2 The complete procedure for recording, test check and technical check of the measurements shall be as under: -

### **2.2.1 If recorded by PMC**

- 2.2.1.1 Assistant Resident Engineer (ARE) will record measurements of the works in the presence of Contractor's representative in the measurement book of MRVC. The Contractor's representative will countersign the recorded measurements as token of their acceptance.
- 2.2.1.2 Measurements as recorded in Para 2.2.1.1 shall be test checked by Resident Engineer (RE) as per table 1 above. In case Resident Engineer records measurements, the same level of test check of measurements shall be done by the Project Manager. If there is any ambiguity/dispute, whether a particular item requires 100% test check or not, CPM/GM/ED/CE/SAG rank official of concerned Civil, Electrical or S&T department associated with the project will decide and his decision will be final.
- 2.2.1.3 After recording of measurements and test check as per Para 2.2.1.1 and 2.2.1.2 above, the RE will submit the Measurement Book along with certificates of quality test, as prescribed above, to the Project Manager (PM).
- 2.2.1.4 The measurements, as recorded in the Measurement Book and other supporting documents submitted by the Resident Engineer, will be technically checked with the drawings, specifications, test certificates and quantities as per contract agreement including approved variations, if any, in PM's office.
- 2.2.1.5 Measurement in respect of supply items shall be supported by copy of original inspection certificate marked "FOR PAYMENT", invoice of the supplier and certificate of ARE/RE of the goods having been received at site in good condition.
- 2.2.1.6 The Project Manager will make necessary corrections or delete the items, which in his opinion do not conform to the specifications or quality as per the technical check.
- 2.2.1.7 Variation of quantities - The Project Manager shall allow variation of quantities in the contract schedule only to the extent authorized under the contract. In all other cases he shall obtain approval of CPM/GM/ED/CE/SAG prior to including the variations for payment.
- 2.2.1.8 The proposal for sanction of variations, by the competent authority should be initiated by the Project Execution in Charge and processed by

CPM/GM/ED/CE/SAG thereafter.

## **2.2.2 If recorded by MRVC officials**

- 2.2.2.1 Measurements will be recorded by MRVC officials as defined in table 1 above.
- 2.2.2.2 Measurements as recorded in Para 2.2.2.1 shall be test checked by MRVC official as per table 1 above. If there is some ambiguity/dispute, whether a particular item requires 100% test check or not, CPM/GM/ED/CE/SAG rank official of concerned Civil, Electrical and S&T department will decide and his decision will be final.
- 2.2.2.3 After recording of measurements and test check as per Para 2.2.2.1 and 2.2.2.2 above, the Assistant Manager/ Manager/ Jr. Scale/ Sr. Scale officer (Equivalent ranked Re-employed or contract officer) will submit the Measurement Book along with certificates of quality test, as prescribed above, to the Project Execution in Charge.
- 2.2.2.4 The measurements, as recorded in the Measurement Book and other supporting documents submitted, will be technically checked with the drawings, specifications, test certificates and quantities as per contract agreement including approved variations, if any, in Project Execution in Charge's office.
- 2.2.2.5 Measurement in respect of supply items shall be supported by copy of original inspection certificate marked "FOR PAYMENT", invoice of the supplier and certificate of Assistant Manager/ Manager/ Jr. Scale/ Sr. Scale officer (Equivalent ranked Re-employed or contract officer) of the goods having been received at site in good condition.
- 2.2.2.6 The Project Execution in Charge will make necessary corrections or delete the items, which in his opinion do not conform to the specifications or quality as per the technical check.
- 2.2.2.7 Variation of quantities - The Project Execution in Charge shall allow variation of quantities in the contract schedule only to the extent authorized under the contract. In all other cases he shall obtain approval of CPM/GM/ED/CE/SAG prior to including the variations for payment.
- 2.2.2.8 The proposal for sanction of variations, by the competent authority should be initiated by the Project Execution in Charge and processed by CPM/GM/ED/CE/SAG thereafter.

## **3. Preparation of Bills (Certificate of Payment)**

- 3.1 Contractor will have following 2 options for receiving the payment of bills as per their choice out of which one option shall be selected and advised to PMC/MRVC.
  - 3.1.1 **1<sup>st</sup> option- Payment in 2 stages** – Ad-Hoc payment of 75% bill amount in

7/10 working days & balance 25% bill payment within 15/20 working days. The period shall be reckoned from the date of completion of recording of measurement for bill.

Ad-hoc payments of 75% of eligible running account bill/ due stage payment shall be made within 7 working days (in case of single department involved) and 10 working days (in case of multi department involved) of the submission of the bill. This period of 7/10 days is for completion of all processes after recording of MB to making payment. The remaining 25% bill payment is to be made after final checking of the bill within 15/20 working days. In case the 75% bill payment has not been released within 7/10 working days as prescribed above, it shall be made as soon as possible, and after payment a written explanation for the delay shall be submitted to the next higher authority within three working days. Time Schedule for release of payment is given in **Annexure-3**.

**3.1.2 2<sup>nd</sup> option- Payment in single stage within 10/15 working days**

Contractor may opt for single stage payment of 100% bill amount within 10/15 working days (10 working days in case of single department involved and 15 working days in case of multi department involved). In case the payment has not been released within 10/15 working days, it shall be made as soon as possible, and after payment a written explanation for the delay shall be submitted to the next higher authority within three working days. Time Schedule for release of payment is given in **Annexure-3**.

3.1.3 All recoveries such as Advance payment, retention money, income tax etc. will be as per payment amount at each stage i.e. for 75% ad-hoc payment stage all these recoveries shall be considering 75% payment amount and not 100% payment amount.

3.2 Upon measurements, the Project Manager's office (Project Execution in Charge's office in case of Measurements by MRVC officials) shall prepare certificate of payment in triplicate as per approved format, which will be signed and accepted by the contractor, for the works executed up to the current measurements in a tabulated form. The statement shall include the following items.

- 3.2.1 Quantity and value of the items of works executed up to the payment of last interim Bill;
- 3.2.2 Quantity and value of items of works executed up to the current measurements;
- 3.2.3 Quantity and value of items of work which are payable now, i.e., difference of 3.1.1 and 3.1.2 above;
- 3.2.4 Any credit or debit in respect of materials and plants, which is due from the current payment;

- 3.2.5 Recovery of retention money/ Security Deposit;
  - 3.2.6 Any other recovery, which are due as repayment of advance, with or without interest under provisions of the Contract;
  - 3.2.7 Deductions on account of penalties, Delay/ Liquidated Damage, etc.; and
  - 3.2.8 Additions/ Deductions on accounts of all taxes, which are due as per contract conditions and the laws of the country.
- 3.3 Thereafter, in case of measurements by PMC, the Project Manager shall submit the Certificate of Payment, along with measurements and the bill statement in duplicate to the office of Project Execution in Charge.
4. Upon receipt of the Bill in the Project Execution in Charge's office, Project Execution in Charge shall satisfy himself that the Project Manager & RE (or MRVC officials in case of measurement by MRVC official) have followed due procedure for making measurements and their test checks, if any, and that technical checks and quality checks are as per the guidelines issued/ approved by the MRVC. In the case of Projects supervised and managed through PMC, the Project Execution in Charge shall also arrange prescribed spot test checks by MRVC officials not below the level of Manager/Assistant Manager/Jr Scale/Sr Scale officer to satisfy himself about the correctness of the measurements and work quality as per relevant specifications. He will also ensure spot test checks by DyCPM/DyCE/JAG/AGM as prescribed in Table 1 in case of works supervised departmentally. Spot test check carried out should be mentioned in the Measurement Book specifying the item & location of checks. Having done so, the Project Execution in Charge will sign the Certificate of Payment and will make arrangement for payment to the Contractor expeditiously. Test checks and spot test checks will be done as per Table 1 under para 1.2 and the value of spot test checks in both the cases should not be less than 5% of the gross value of Interim Payment Certificate.

In case of bills for works of different departments, the Project Execution in Charge will sign the bill after the same is signed by the officials nominated as per note (d) of Table 1 to conduct the checks.

- 5. Upon receiving the Certificate of Payment duly signed by the Project Execution in Charge, the Accounts department of MRVC will arrange payment to the contractor as per extant procedure.
- 6. SPE/PE (contract employees) will be imparted onsite training for recording of measurements for seven days by Asst Manager/ Manager/ Jr scale/ Sr scale officer and finally certified by Project Execution in Charge after taking approval of CPM/GM/ED/CE/SAG concerned before they are deployed for recording the measurement. The SPE/ PE should have minimum work experience as given in Para 7 below.
- 7. SPE/PE shall have at least six months field experience in MRVC to be eligible to



exercise the powers of test checks and recording of measurements. Period of experience may be increased or decreased by Project In charge (CPM/GM/ED/CE/SAG) based on the performance of the individual.

8. Affidavit enclosed as Annexure-I shall be obtained from the personnel such as SPE/PE/Re-employed if engaged for supervision, test check/spot check, recording of measurements.

#### 9. Maintenance of Register of Measurement Book

As per Para 1314 of Indian Railway Engineering Code, records of movement of measurement books shall be maintained in the format given in **Annexure 4**.

- a) The measurement books/Level Book is very important and mandatory record.
  - b) All the measurement books/Level Books shall be machine numbered serially.
  - c) A register in the format given in Annexure 4 shall be maintained in the Rate section/Works section of concerned department for movement of MBs. Measurement Books no longer in use should be withdrawn promptly even though not completely written up.
  - d) MBs shall be carefully preserved for ten years.
10. CPM/GM/ED/CE/SAG of MRVC will ensure systems for maintaining quality standards, measurements and payments as per above procedure order.

This is issued with the approval of CMD.

**VILAS  
SOPAN  
WADEKAR**

Digitally signed by  
VILAS SOPAN  
WADEKAR  
Date: 2023.05.10  
16:02:43 +05'30'  
**Vilas Wadekar**  
**ED/Civil, MRVC**

CC: All ED/SAG/JAG officers of project division including accounts.

CC: DP, DF, DT for kind information.

CC: CMD for kind information.



**Annexure-1**

(To be executed on Non-judicial stamp paper worth Rs. 100/- duly notarized.)

**AFFIDAVIT**

I ..... (Name of employee) S/o or D/o Shri ....., Resident of ..... holding the post of ..... do here by affirm that in the event of any misconduct/malpractice or malafide action committed/adopted by me during the course of my duties, the following action may be taken against me.

1. Removal from employment,
2. Non-issue of experience certificate,
3. Debarring from further employment in MRVC and Project Management Consultant/ General Consultant of MRVC.
4. Intimation to Railway PSUs and Indian Railways of the misconduct,
5. Initiation of criminal proceeding, in case of serious misconduct as decided by the administration.

Dated:

Signature.....

(Name of the employee)

Witness

1 .....

2 .....

**Annexure-2**

**A. Hidden Measurements and Items of Supply**

Date of check	MB No. & Page No. on which check carried out	BOQ item No.	Unit	Quantity checked	Rate	Value of check
Total value of Measurement Test Checked (A)						
Total Bill Amount for Hidden items & items of supply (B)						
Test check done as percentage of the bill amount (A x 100/B)						

**B. Measurements other than Table A above**

Date of check	MB No. & Page No. on which check carried out	BOQ item No.	Unit	Quantity checked	Rate	Value of check
Total value of Measurement Test Checked (A)						
Total Bill Amount for items other than hidden items & items of supply (B)						
Test check done as percentage of the bill amount (A x 100/B)						

## 1 TIME SCHEDULE FOR PROCESSING BILL FOR RELEASE OF PAYMENT

**OPTION I - Payment in 2 stages (75% and 25%)**

S. No.	Department	Works supervised by PMC		Works Supervised departmentally	
		Single Department	Multi Department	Single Department	Multi Department
I	<b>Stage I – 75% Payment</b>				
1	PMC	2 Working days	3 Working days	-	-
2	Incharges of other disciplines for their respective bills.	-	2 Working Days (Simultaneously for each department)	-	3 Working Days (Simultaneously for each department)
3	Project Execution in Charge Deptt.	2 Working Days	2 Working Days	4 Working Days	4 Working Days
4.	Account Department	3 Working Days	3 Working Days	3 Working Days	3 Working Days
	Total	7 Working Days	10 Working Days	7 Working Days	10 Working Days
II	<b>Stage II – 25% Payment</b>				
1.	PMC	5 Working Days	7 Working Days	-	-
2.	Incharges of other disciplines for their respective bills.	-	3 Working Days (Simultaneously for each department)	-	5 Working Days (Simultaneously for each department)
3.	Project Execution in Charge Deptt.	5 Working Days	5 Working Days	10 Working Days	10 Working Days
4.	Account Department	5 Working Days	5 Working Days	5 Working Days	5 Working Days
	Total	15 working Days	20 working Days	15 working Days	20 working Days

**OPTION II - Payment in Single stage (100% payment)**

S. No.	Department	Works supervised by PMC		Works Supervised departmentally	
		Single Department	Multi Department	Single Department	Multi Department
1.	PMC	4 Working Days	5 Working Days	-	-
2.	Incharges of other disciplines for their respective bills.	-	3 Working Days (Simultaneously for each department)	-	4 Working Days (Simultaneously for each department)
3.	Project Execution in Charge	3 Working Days	3 Working Days	7 Working Days	7 Working Days
4.	Account Department	3 Working Days	4 Working Days	3 Working Days	4 Working Days
	Total	10 working Days	15 working Days	10 working Days	15 working Days

REGISTER OF MEASUREMENT BOOKS

Department ..... Project .....

Sr. No.	Serial No. of the measurement book	Date of Receipt	Name & Designation of the person to whom issued	Date of issue	Name & Designation of the person to whom transfer	Date of transfer	Date of return of completed book	Remarks

All concern shall maintain account and record of Movement of Measurement Books in the above format. Respective HODs of the concern department shall nominate the official working in HQ for the same.

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