



NIT No. EE(Pr)-I/Sh.S/TC/2017-18/6

Dated 20.07.17

NOTICE INVITING TENDER

Last Date of Download of tender Document	04.08.17at 3.00PM
Last Date of Bid Preparation and Hash Submission	04.08.17at 3.30PM
Last Date of Close for Bid	04.08.17at 3.00PM to 6.00PM
Last Date of Re-encryption of Online Bid	04.08.17at 6.00PM to 08.08.17at 3.00PM
Last Date for Submission of Technical Bid & Finance Bid	08.08.17at 3.00PM
Opening of Technical Bid	08.08.17at 3.10PM
Opening of Finance Bid (Tentative)	10.08.17at 3.00PM

In the office of SE(Pr) Shah South/EDMC,
3rd Floor, Zonal Office Building, Kakardooma, Delhi-110032.

The Executive Engineer (Pr)-I Shahdara South on behalf of Commissioner EDMC invites online item rate tenders on two bid system for the work in the tender documents, fulfilling the eligibility criteria:

S. No.	Name of work	Head of account	Tender Amount	Earnest Money	Time of Compl.	Rates Hold good for	Cost of Tender	Tender No.
1	"Improvement/Strengthening of roads of 18 Quarter to Ambedkar Park, Ashoka Niketan, Preet vihar, Priya Enclave, Dayanand Vihar & Gagan Vihar in Vishwas Nagar, AC-59 Shahdara South."							
	LA Road	Item rate	Rs. 3,49,900/-	5Months	5 Months	1500/-	287778	

The Eligibility conditions/ criteria

1. The bidder should have successfully completed:-
 - 1.1 One similar work*of value of 80% of the estimated cost of the work for which building in the last Seven years.

OR

Two similar Works* each of values 50% of the estimated cost of the work for which building in the last Seven years.

OR

Three similar Works* each of values 40% of the estimated cost in the last Seven years.
2. The bidder should have the required equipment/machinery. The required document should be attached with technical bids.
3. The responsibility of genuineness of any document/information submitted by the bidder shall rest on the bidder. In case of any discrepancy found, the bid shall be summarily rejected.
4. Contractors / firms should be registered with MCD/CPWD/ Delhi PWD/ DDA/ DSIDC etc as per the class / category for which they are entitled to participate in tender.

For work *Similar works* means "Improvement and Strengthening of roads". The value of the executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion of the last due of receipts of applications of tenders.

Evaluation criteria

- 1 The details submitted by the bidders will be evaluated in the following manner:
- 1.1.1 The initial criteria given in the NIT in respect of experience of similar class of works completed, bidding capacity Performance of work etc. will first be scrutinized to determine the bidder's eligibility for the works.
- 1.1.2 The bidders qualifying the initial criteria by scoring method on the basis of details furnished by them.
- | | | |
|-----------------------------------------------------------------|------------|-------------------|
| (a) Experience in similar nature of work during last five years | (From 'A') | Maximum 40 marks. |
| (b) Performance on works (Form 'C'). Time over run | | Maximum 25 marks. |
| (c) Performance on works (Form 'C'). Quality | | Maximum 15 marks. |
| (d) Plant & Equipment (Form "D") | | Maximum 20 marks |
| Total | | 100 marks |

To become eligibility for short listing the bidder must secure at least fifty percent marks in each and sixty percent marks in aggregate.

The department, however, reserves the right to restrict the list of such qualified contractors to any number deemed suitable by it.

- 1.2 Even though any bidder may satisfy the above requirements, he would be liable to disqualification if he has:
- (A) Made misleading or false representation or deliberately suppressed the qualification in the forms, statements and enclosures required in the eligibility criteria document, Record of poor performance such as abandoning work, not properly completing the contract, or financial failures / weakness etc.

The tender fees (non refundable) and Bid Earnest Money can be submitted in the form of Bank Draft / Pay order of a scheduled Bank in favor of Commissioner, EDMC in the physical form in the office of SE(Pr) Shah South/EDMC, 3rd Floor, Zonal Office Building, Kakardooma, Delhi-110032on or before on the last date of submission of bid documents.

Tender who has downloaded the tender from the websites <http://www.mcdetenders.com> shall not tamper/ modify the tender form including downloaded price bid template in any manner. In case of if the same is found to be tempered/ modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with EDMC.

Intending tenderers are advised to visit again MCD websites <http://www.mcdetenders.com> at least 3 days prior to closing date of submission of tender for any corrigendum/ addendum/ amendment.

The bidder may inspect the site on any working day and may contact for any query or technical clarification to Executive Engineer (Pr)-I Shahdara South.

du
Executive Engineer (Pr)-I
Shahdara South Zone
B-1/1
Delhi-110032



**EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051**

Tender Document

**Name of work: Improvement/ Strengthening of
roads of 18 quarter to Ambedkar
Par, Ashoka Niketan, Preet Vihar,
Priya Enclave, Dayanand Vihar &
Gagan Vihar in Vishwas Nagar, AC-
59 Shahdara South.**



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Index

S No	Description	Page No.



**EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051**

Name of work: - Improvement/ Strengthening of roads of 18 quarter to Ambedkar Par, Ashoka Niketan, Preet Vihar, Priya Enclave, Dayanand Vihar & Gagan Vihar in Vishwas Nagar, AC-59 Shahdara South.

S. No.	Name of work
1.	Improvement/ Strengthening of roads of 18 quarter to Ambedkar Par, Ashoka Niketan, Preet Vihar, Priya Enclave, Dayanand Vihar & Gagan Vihar in Vishwas Nagar, AC-59 Shahdara South

NIT No:Dated Head of Account: LA Road.

TENDER DOCUMENT

Issued to

M/s _____

 on _____

To be received upto P.M on

**EXECUTIVE ENGINEER (PROJECT)-I
SHAHDARA (SOUTH) ZONE
Executive Engineer (Pr)
Shahdara South
E-1/12, Krishna
Delhi-110051**



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

INSTRUCTIONS TO BIDDER

1. The tenderers shall read all instructions, terms & conditions, contract clauses, nomenclature of items, specifications, tender drawings, etc. contained in the tender document, very carefully before quoting the rates.
2. Throughout these bidding documents, the term "bid" and "tender" and their derivatives (bidder/tenderer, bid/tender, bidding/tendering, etc.) are synonymous.
3. Tender should be signed and witnessed on all page including drawings of tender documents indicating full address of witness and the names of signatories.
4. Any person who submits a tender shall fill up format for "Financial Bid" of tender document stating at what item rates, he is willing to execute the work.
5. Tenderers, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other condition of any sort including any condition or a conditional rebate, will be summarily rejected.
6. Rates must be filled both in words and figures. In case of ambiguity between the two rates, those filled up in words shall be accepted.
7. The rate(s) must be quoted in decimal coinage. Amount must be quoted in full rupees by ignoring up to fifty paise and considering more than fifty paise as rupee one.
8. The contractor shall quote his rates keeping in mind the specifications, instructions to bidders, terms and conditions, additional and special conditions, site conditions and nothing shall be payable extra, whatsoever, unless otherwise specified in the tender document.
9. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so such power of attorney should be produced with the tender and it must be disclosed that the firm is duly registered under the Indian Partnership Act 1952.
10. The bidder should designate one person ("Contact Person" and "Authorized representative and Signatory") authorized to represent the bidder in its dealings with East Delhi Municipal Corporation. The "contact person" and Authorized representative and signatory shall sign the Acknowledgement of Receipt of request of proposal document. This designated person should hold the Power of Attorney and be authorized to perform all tasks including but not limited to providing information, responding to enquiries, entering into contractual commitments on behalf of the bidder, tenderer etc. The covering letter submitted by the bidder shall be signed by the Authorized Signatory and shall bear the stamp of the entity thereof. It will be better that the contact person should have Delhi address to avoid delay in communication/response.
11. Value Added Tax, Education cess, Labour Cess or any other tax etc. as applicable on date of submission of tender shall be paid by the contractor himself. The contractor shall quote his rates considering all such Taxes.
12. The bidder shall ensure that he has valid registration for works Tax/VAT.
13. A sum of Rs. 3,49,900/- has to be deposited as Earnest Money. Earnest Money shall be accepted only in the form of Treasury challan/deposited at Call Receipt of a Scheduled Bank guaranteed by the Reserve Bank of India/Banker's Draft of a scheduled Bank/Demand Draft of a Scheduled Bank/Fixed deposit receipt (FDR) of a Scheduled Bank in the favour of Commissioner, EDMC, Payable at Delhi without prejudice to any other right or remedy available in the law, be at liberty to forfeit E.M in case of failure by the contractor to commence work.
14. The tender, which is submitted without earnest money or is not duly signed by authorized signatory or is conditional shall be treated as non-responsive and shall be summarily rejected.
15. The site in parts for the work shall be made available at the time of issue of work order.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

16. Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to ascertain the site condition, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his cost all materials, tools & plants, water, electricity, access facilities for all workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions / local conditions and other factors having a bearing on the execution of the work.
17. The time allowed for carrying out the work shall be 5 months after 10th days from the date of issue of the letter of Acceptance of tender or from the first day of handing over the site, whichever is later, in accordance with Phasing, if any, indicated in the tender documents and inclusive of rainy seasons.
18. The site for the work is available in part and shall be handed over immediately after the award of work, but the work shall be carried out as per construction phasing and diversion scheme approved by Engineer-in-Charge.
19. A number of agencies/departments may be working at the site. The agency shall work in close co-ordination with them and if there is some delay at any location for handing over the site or there is some unforeseen hindrance at any particular location, the agency shall modify their program accordingly and nothing extra shall be payable on this account.
20. The competent authority on behalf of East Delhi Municipal Corporation (herein after referred as EDMC) does not bind him to accept the lowest or any other tender and reserves to him the authority to reject any or all of the tenders received without the assignment of any reason. All tenders in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.
21. Canvassing, whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
22. The tender for the works shall remain open for acceptance for a period of six months from the date of submission of Bid. If any tenderer withdraws his tender before the said period or issue of letter of acceptance, which-ever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the EDMC shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. He will not be entitled to participate again in case of recall of tender for this work.
23. The tenderer is not allowed to make any modifications in the terms and conditions of the tender documents, which are not acceptable to the department, after submission of tender.
24. This Notice Inviting Tender shall form a part of the contract document. The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the issue of letter of acceptance, sign the contract consisting of Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forms the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
25. Technical Bid and Tender Document including Price Bid shall be submitted simultaneously on due date and time. Only Technical Bid shall be opened first. Price Bid shall be kept sealed. The price bid of only those successful tenderers, who will qualify in the technical bid on the basis



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

of their technical proposal and along with other details given in the technical bid. The sealed price bid of unsuccessful bidder in technical bid shall be duly returned unopened.

26. Earnest Money, Technical Bid and Tender Document shall be placed in one sealed envelope clearly marked as **TECHNICAL BID along with name of agency and NIT Number**. Financial Bid shall be placed in separate sealed envelope clearly marked as **FINANCIAL BID along with name of agency and NIT Number**.

Both the sealed envelopes i.e. **Technical Bid** and **Financial Bid** then shall be placed in another one sealed envelope marked as

Name of work: - Improvement/ Strengthening of roads of 18 quarter to Ambedkar Par, Ashoka Niketan, Preet Vihar, Priya Enclave, Dayanand Vihar & Gagan Vihar in Vishwas Nagar, AC-59 Shahdara South.

If it is found that the tender is not submitted in proper manner or contains too many corrections or absurd rates or amount, it would be opened for the EDMC to take suitable action against the tenderer including rejection of tender.


27. The department shall deduct Income Tax and education cess as on the value of work done from each bill of the contractor as per prevailing Government instruction / orders. In lieu, the department shall issue a certificate of deduction of the tax at source to the contractor, in relevant forms. Engineer-in-Charge shall deduct TDS for DVAT as per prevailing Government instructions / orders from the total payment made to contractor in pursuance of this contract. This TDS shall also be deducted on advance payment to be adjusted in future bills and on the amount of cost escalation. The TDS certificate shall be issued by the Engineer-in-Charge to the contractor in form DVAT 43 within 28 days from the end of the month in which tax has been deducted. The department shall deduct building and other construction workers welfare cess @ 1% on the value of work done from each bill of the contractor.
28. In the tender documents the word "EDMC or Department" shall mean East Delhi Municipal Corporation wherever exists.
29. The successful tenderer shall indemnify the East Delhi Municipal Corporation against all losses and claims in respect of death or injury to any person, loss and damage to any property including works arising out of any consequences of the execution by submitting the "Indemnity Bond" on a stamp paper of value Rs.100/-.
30. The Display boards as per requirement of department are to be provided at site and nothing extra shall be payable.
31. All communication and information should be provided in writing and in English will be addressed to Executive Engineer.
32. All statutory Govt. instructions related to the work shall be binding to the contractor. A copy of valid Registration Certificate as contractor with Govt. Department registered in appropriate class shall be produced at the time of sale of tender. In case of firm or partnership a copy of DEED & Power of Attorney will be submitted.
33. Necessary Machinery for dense carpeting work and field Laboratory Test Equipments etc. are required to be in possession of the contractor himself as per specification.
34. Bitumen & all other materials will be arranged by the contractor himself as per terms and conditions of the department.
35. The payment to the contractor for the work shall be made after the satisfactory report received from testing/ inspection agencies. These findings shall be final and binding on the contractor.
36. The bidders shall have to declare that he is not black listed/debarred by any of the Govt. Agency.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

37. The tenderer must produce an Income-Tax clearance certificate in the revised form as modified under Ministry of Finance O.M. No. 67/30/69/ITAL dated 02-07-1970 as amended from time to time.
38. Necessary arrangements for diversion of traffic including deployment of traffic marshals shall be made by the tenderer and nothing extra shall be payable on this account.
39. No work shall be carried out on Sundays & Holidays without the approval of Engineer-in-Charge.
40. IS system of measurements shall be followed.
41. The work shall be subjected to third party testing/checking by the independent agency as per the provisions given in the special condition of the contract. No payment whatsoever shall be made to the contractor without receipt of satisfactory report from the third party agency
42. The third party testing charges shall be borne by the contractor himself and same will be reimbursed as per EDMC policy
43. The financial bid shall be signed by the contractor on each page. The rate and the amount for any particular item shall be quoted in figures & words as well.
49. The Contractor shall be responsible for the maintenance of the roads covered under the aforesaid work at his own cost as per warranty clause except for any damage due to digging.
50. Time is Essence of work.

For & on behalf of the
East Delhi Municipal Corporation


Executive Engineer (Pr)-I
Executive Engineer (Pr)-I
Shah (South Zone)
Shahdara South M.G.D.
E-1/12, Krishna Nagar
Delhi-110051.



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

PROFORMA OF SCHEDULE

SCHEDULE 'A'

Schedule of Quantities Attached

SCHEDULE 'B'

Schedule of materials to be issued to the contractor Not Applicable (Nil)

SCHEDULE 'C'

Tools and Plants to be hired to the contractor Not Applicable (Nil)

SCHEDULE 'D'

Extra schedule for specific requirements/documents for the work, if any. As given in Tender documents

SCHEDULE 'E'

Reference to General Conditions of Contract

Name of Work

Estimated Amount Rs. 1,78,37,300/-
Estimated cost put to tender Rs. 1,74,92,675/-
(i) Earnest Money Rs. 3,49,900/-
(ii) Security Deposit 10% of Bill amount to be deducted from the bill payable to the agency/ contractor.

SCHEDULE 'F'

Reference to General Conditions of Contract

Name of Work

General Rules & Directions

Definitions:

2(v) Engineer-in-Charge Executive Engineer (Pr.)-I, Sh S, EDMC
2(viii) Accepting Authority
2(x) Percentage on cost of materials and labour to cover all overheads and profits 15%
2(xi) Standard Schedule of Rates CPWD Delhi Schedule of Rates (DSR) 2014 and approved items of MCD based on DSR-2014 with up to date Correction slips
2(xii) Department East Delhi Municipal Corporation
9(ii) Modified CPWD contract Form corrected CPWD form 7/8 as modified & applicable upto last date of issue/ download tender document

Clause 2

Authority for fixing compensation under clause 2. As per CPWD Manual 2012 & EDMC rules

Clause 2 A

Whether clause 2A shall be applicable Applicable

Clause 5



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Number of days from the date of issue of letter of acceptance for reckoning date of start. 10th day after the date of written order to commence the work or from the first date of handing over the site, whichever is later

Time allowed for execution of work. 5 months

Authority to decide

(i) Extension of time. As per rule and guidelines of EDMC.

Clause 6, 6A

Clause applicable – (6 or 6A) Clause 6

Clause 7

Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment. Monthly running bills shall be prepared and paid as per policy of EDMC.

Clause 10A

List of testing equipment to be provided by the contractor at site lab. As per requirement of the CPWD specifications 2009 amendment till date of submitting tender documents (till date) and Works Manual 2014 with amendment till date of submitting of tender documents.

Clause 10 B (ii)

Whether clause 10 B (ii) shall be applicable **Applicable**

Clause 10 C **Applicable**

Clause 10 CA **Applicable**

Material covered under this clause Nearest Material (other than cement, reinforcement bars and structural steel) for which all India Wholesale Price Index to be followed. Base Price of all the Materials covered under Clause 10CA*

1. Cement

a) OPC Rs.5700/- Per metric tonne

b) PPC Rs.5500/- Per metric tonne

2. (a) TMT Bar (Reinforcement Bar) Primary Rs.37300/- Per metric tonne

3. Bitumen VG-30 (Grade 60/70) Rs.30465/- Per metric tonne

4. P.O.L. (Diesel) Rs. 50.27/- Per Ltr

~~**Clause 10 CC**~~

~~Payment due to increase/decrease in price/wages (excluding materials covered under Clause 10CA) after receipt of tender for works.~~

~~Clause 10CC to be applicable in contracts 18 months.~~

~~with stipulated period of completion exceeding the period shown in next column~~

~~Schedule of component of other materials, Labour, POL etc. for price escalation~~

~~Component of civil (except material covered under Clause 10CA & 10CB) / X = — %~~

~~Electrical construction Material express as — Nil~~

~~percent of total value of work~~

~~Component of Labour Y = — %~~

~~Expressed as percent of total value of work -~~



OFFICE OF THE EXECUTIVE ENGINEER (R/S)
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Component of PQL Z = — %
 Expressed as percent of total value of work

Clause 11

Specifications to be followed for the execution of work CPWD Specification 2009 with upto date correction slips and amendment thereto issued upto the last date of issue of tender.

Clause 16

Competent Authority for deciding the reduced rates. Superintending Engineer, EDMC

Clause 36 (i)

Requirement of Technical Representative (s) and recovery rate.

S. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience in years	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						In Figure	In word
1	Graduate Engineer	Civil	Principal technical representative	5 years		Rs. 25000/- PM per person	Twenty Five Thousand per month per person
2.	Graduate Engineer or Diploma Engineer	Civil	Project planning / site / billing engineer	Minimum 2 year experience for Graduate Engineer or Minimum 5 year experience required for Diploma Engineer		Rs. 15000/- PM per person	Fifteen Thousand per month per person

The recover shall be applicable on pro-rate basis

Clause 42

- (i) (a) Schedule / statement for determining theoretical quantity of cement & bitumen on basis of Delhi schedule of Rates-2014 Printed by CPWD
- (ii) Variations permissible on theoretical quantities.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- (a) Cement 2% plus/minus
For works with estimated cost put to tender more than Rs. 5 lakhs.
- (b) Bitumen All works. 2.5% plus only & Nil on minus side.
- (c) Steel Reinforcement and structural steel sections 2% plus/minus
for each diameter, section and category.
- (d) All other materials. Nil

List of Important Circulars and Office order shall be the part of Agreement.

S. No.	Circular/ Office Order No.	Date	Description
1	MWB&Acctt/1072	2.8.1989	Regarding Acceptance of ALR tenders
2	EO to EinC/98/792	5.2.1998	Regarding Action for Non Commencement of work with in stipulated time.
3	Dir[T]/131	8.5.2003	Regarding Third Party Quality Assurance/ Audit [Corp. Resolution 573/13.2.03]
4	PSC/581/2003	7.05.2003	Regarding Action for not starting the work after award & more than 6 months have passed.
5	EE[P]-III/250	15.7.2003	Regarding Additional Conditions for Dense Carpet Works.
6	EE[P]-III/471	22.2.2006	Regarding Levy of Labour Welfare Cess & Collection.
7	EE[P]-III/27	19.5.2006	Regarding Amendment to General Condition of Contract.
8	EE[P]-III/467	9.10.2006	Regarding Modification to Additional Conditions for Dense Carpet Works in continuation to EE[P]-III/250 dated 15.7.03
9	SE[QC]/1571	25.10.2006	Regarding Third Party Quality Assurance/ Audit [Corp. Resolution 639/21.2.2005]
10	EE[P]-III/167	11.12.2006	Regarding Deletion of Arbitration Clause 25 from General Condition of Contract.
11	SE[QC]/2816	20.2.2007	Regarding Third Party Quality Assurance/ Audit in continuation to SE[QC]/1571 Dated 25.10.2006
12	SE[QC]/2817	20.2.2007	Regarding Third Party Quality Assurance/ Audit in continuation to SE[QC]/1571 Dated 25.10.2006
13.	D/289/EE(P)-III/ 2011	11.04.11	Regarding procurement of Cement and Steel by the contractor
14.	D/E-in-C/EDMC/14-15/192	06.08.14	Regarding reimbursement third party charges. Third party testing charges not added in JOR

*Note:

- (a) Regarding procurement of cement and steel by the contractor. The guidelines and conditions given in Section 27 of CPWD Manual 2012 will be followed



OFFICE OF THE EXECUTIVE ENGINEER (TN)-1
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Subject: - Guidelines with regard to the payment of the contractor's bill in EDMC.

- (i) The Contractor shall be responsible for due compliance, with all statutory provisions including those relating to Employees Provident Fund and miscellaneous Provision Act, 1952, Employees State Insurance Act, 1948, Minimum Wages Act, 1948, etc. and all other laws and rules applicable to it in respect of the persons engaged by it either independently or by reasons of their working in the premises. The Contractor shall provide the code number of registration allotted to it by the Regional Provident Fund Commissioner and the Regional Director of Employees State Insurance for purposes of Provident Fund deduction and ESI benefits. Copies of such certificate and the names of employees engaged from time to time shall be furnished by the Contractor to the EDMC promptly. Challans for payment of statutory dues under the dues under the various enactments other than income tax and sales tax shall be produced in original, within three days of payment for the perusal and satisfaction of the party of the EDMC together with a copy of the same for it record. No claim relating to any person (s) employed/engaged by the Contractor shall be entertained or lie against the EDMC. If there is any claim against the EDMC which it is bound to meet and discharge by reason of any statutory obligation or dictates of law due to the fact of the concerned employee (s) working in the premises of the EDMC, the contractor shall be responsible to fully reimburse and compensate the party of the EDMC and on failure to do so be bound to face proceeding on that account.
- (ii) The Contractor shall ensure that the payment of wages to the workforce engaged by him is made to them keeping in view of statutory provisions with reference to the payment of wages (including provisions of minimum rates of wages fixed by the State Government for each category) on or before the 5th Day of every following calendar month through ECS individually without waiting the payments from the Board or in case of employments is less than one month then within three days of the work completion or termination of the labour.
- (iii) That the contractor shall furnish the affidavit duly sworn before the Notary Public/ First Class Magistrate wherein the fact of full compliance of all statutory provisions including those relating to Employees Provident Fund and miscellaneous Provision Act, 1948, Minimum Wages Act, 1948, etc. and all other laws and rules applicable it to shall be made, failing to furnish the same, the EDMC shall not responsible to clear the dues or bills of the contractors.
- (iv) The Contractor shall pay its employees / persons engaged by it the wage which shall not be less the minimum wages fixed by the Government and as revised from time to time by the Govt. It shall also give such give such persons all benefits provided for under any law for the time being in force. The declaration of full compliance to this effect shall be made to each month and wherein it has also declared that if it is found that the Contractor concern has failed to comply any labour, industrial or other laws applicable to it, the contractor alone shall be responsible for the consequences including the prosecution if any, and the EDMC shall have nothing to do with it. The EDMC shall forfeit the security amount as well as withheld the Bill amount completely and it has also liberty rescind contract and apart from this, contractor concern shall be blacklisted and he shall not be eligible for taking part of any bid process of the corporation in future.
- (v) That within three days of the commencement of this Agreement the Contractor shall provide on its uniforms, name plates, shoes, socks etc. to it employees / persons engaged by it for performing maintenance and housekeeping jobs in the establishment of the EDMC. It shall be the responsibility of the Contractor to ensure that while on duty such persons are always smartly attired in their uniforms.
- (vi) The persons engaged by the Contractor for fulfillment of its obligations under this Agreement shall in no case be entitled to any benefit, monetary or otherwise which may be permissible to the employees of the EDMC nor would they be entitled to raise any dispute, demand or claim in this regard or otherwise against the EDMC.
- (vii) The Contractor shall give leave/ holidays to his workforce as per the provisions of labour laws and as declared by the appropriate government.
- (viii) The Contractor must obtain a valid license issued by the competent designated statutory authority; under the Contract Labour (R&A), Act and the Rules framed there under. The contractor shall ensure that the workforce engaged by him carry with them proper identity cards to be issued by him during the working hours.

ARBITRATION CLAUSE

In case any dispute/s or different/s arises between the Parties in connection with any matter relating to this agreement including termination there of then at the option of the EDMC, the same shall be referred for the ad justification of such disputes by a Sole the Arbitrator appointed by the Commissioner of EDMC and Commissioner, EDMC shall have power to appoint any person including employee of the EDMC as he deems fit and proper. The decision of the Commissioner for appointment of sole arbitrator shall be final and binding on the parties. The provisions of the Arbitration and Conciliation Act, 1996 and amendments, if any, there to shall be applicable to such arbitration. The place shall be at Delhi.

INSTRUCTION TO CONTRACTOR FOR STATUTORY COMPLIANCES UNDER THE LABOUR LAWS FOR JOB/WORK /LABOUR CONTRACT

Statutory registrations and Mandatory clearances:-

Contractor shall require following premises from the competent authority under law for prior to carrying out the contractual works:-

- (i) Contract Labour License.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- (ii) Provident fund code no.
- (iii) ESI registration code no.
- (iv) Registration no.
- (v) Notice of commencement in Form 6- A & Maintain Register of workers

Forms-13

Contractor shall ensure following while performing the contractual obligation.

- (i) Employment card as contract labour (Regulation & Abolition) rules.
- (ii) Appointment letter to his employees.
- (iii) Annual leave with wages including EL, CL, National Holidays & Festival holiday.
- (iv) Leave record register.
- (v) Shall engage only adult workers who have attained the age of 18.
- (vi) Work to be done on second/third shift, overtime, Sundays or on other declared holidays with written permission.
- (vii) Obtain insurance cover for his employees/equipments, tools etc & third party insurance coverage at his own cost.
- (viii) Remit Provident fund contributions in prescribed 3A & 6A form 2.9) ESI contributions in Form 6.
- (ix) Submit challans of PF & ESI contributions every month.
- (x) Provide personal protective equipments for his employees.
- (xi) Distribute wage slip each month to his employees.
- (xii) Ensure payment as per provisions of Minimum Wages Act, 1948 in presence of authorized officials of EDMC.
- (xiii) Preferably Uniform to works.
- (xiv) Submit employee and employer contribution in terms of the statutory requirement.
- (xv) Appointment letter of workers at the inducting the worker by contractor. Contractor shall make appointment of his Employees only for specific period and same shall be recorded in employment card or Appointment letter should clearly state that the services shall stand terminated on expiry of contract period or completion of the work and they shall not be entitle to any claims whatsoever from corporation. Contractor shall have the sole discretion to decide on employing, rewarding or terminating the services etc. of his employees. However, his employees must possess such qualifications, experience, age requirement and medical and physical standards as required for the work awarded to the contractor in terms of the guidelines and instructions of corporation.
- (xvi) In case of termination of services of any employees of contractor, the contractor will ensure that wage payment and other dues to his employee is made within 48 hours of termination of services of such employee under the intimation of the corporation. While termination of the services of any of his employee, the contractor will discharge all formalities as per the industrial Dispute Act such as payment of retrenchment compensation and gratuity as due and admissible and the contractor shall file declaration to this effect he has clear all statutory dues admissible to workman and nothing is due towards the workman.
- (xvii) Contractor shall register allow Annual leave with wages.
- (xviii) Contractor shall maintain leave record register.
- (xix) Contractor has to provide attendance card to his employee who will obtain endorsement of time of arrival at the work place and time of leaving the work place. The contractor shall maintain Attendance card which will be retained by his employee and will be handed over to the contractor after the end of each wage month.
- (xx) Contractor shall provide to each of his employee an identification card which shall have his photograph verified by contractor, his name, place of work and name of the contractor.
- (xxi) Contractor shall engage only adult workers who have attained the age of 18 years and female workers shall not be employed between 7 PM to 6 AM on all days including Sundays and Holidays.
- (xxii) Contractor shall observe local laws. As far as possible unskilled workers shall be engaged from the local areas only in which work is being executed.
- (xxiii) Contractor shall observe Provisions of the Factories Act in respect of working hours, holidays, rest intervals, leave and overtime to his employee. No work shall be done on second/ third shift, overtime, Sundays or on other declared holidays without written permission.
- (xxiv) In case a contractor employs women as his employee, he will discharge his obligation under law in respect of such women workers such as his prohibition of engaging them during night-hours prohibition of employing them for more than 9 hours per day, provision of crèche facility, grant of maternity leave as per rules etc.
- (xxv) Payment of bonus under the Payment of Bonus Act, Payment of gratuity under the payment of Gratuity Act, will be the sole responsibility of the contractor.
- (xxvi) PF & ESI Contribution & Returns.
- (xxvii) Contractor shall remit Provident fund contribution of employee's together with Employer's within 15 days from the date of disbursement of wages to his employee.



OFFICE OF THE EXECUTIVE ENGINEER (T) &
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- (xxviii) Contractor shall remit ESI contributions of employee's together with employer's within 21 days of the last day of the calendar month in which the contribution falls due and shall send a return of contribution.
- (xxix) Contractor shall submit a copy of latest PF & ESI returns and inspection reports from statutory authorities alongwith a copy of challans for having deposited PF & ESI contribution every month.
- (xxx) Contractor shall file the undertaking cum affidavit for each month for each contract separately.
"It is stated on oath that EPF/PF/ESI challans of the amount ----- pertains to workers employed by me has been duly deposited with the competent authority under the act competent authority under the act and whose names are appearing in the wage sheet of the month ----- and these workers are engaged in ----- (type of work) against work order no. ----- in ----- List of the employees their contribution and membership number issued by EPF/ESI/organization is attached herewith.

Signature of Contractor

- (xxxii) Contractor shall file the undertaking cum affidavit for each month for paying the remuneration to his worker under the provisions of Minimum wages act under the each contract separately.
"It is stated on oath that I have paid the monthly wages for month of ----- to workers deployed by the deponent whose name appearing in the wage sheet in full adherence of minimum wages and in compliance of minimum wages prescribed by the appropriate government and these workers are engaged in ----- (type of work) against work order no. ----- in -----.

Signature of Contractor

- (xxxiii) Contractor shall fully comply all other formalities as per the PF & ESI statutory provisions and submit a copy of the same for replying to statutory authorities in case of any complaints.
- (xxxiiii) It is the responsibility of contractor to undertake necessary care and make arrangement for transportation and the treatment of his employee at ESI Hospital.
- (xxxv) Contractor should Endeavour and guide his employees for claiming lawful benefits from ESI.
- (xxxvi) Contractor shall distribute wage slip to his employee.
- (xxxvii) Contractor shall ensure that his employee does not indulge in any unsafe or hazardous practices and also provide all the safety equipments and measures.
- (xxxviii) Contractor shall fully indemnify the corporation against any claim for damages for injury to person or property resulting from such accidents.
- (xxxix) Contractor to ensure that employee deployed in the premises is physically and mentally fit and do not have any criminal record.
- (xl) Contractor will be responsible for good conduct his employees.
Contractor shall act in full adherence of following enactments and other enactments as applicable for such contracts.
- Contract Labour (R&A) Act 1970 and rules made there under.
 - Payment of Wages Act and rules made there under.
 - Minimum wages act 1948, rules made there under.
 - Employees State Insurance Act 1948, Rules and Regulations 1950.
 - Employees Provident Fund Act 1952 and Pension Scheme 1955.
 - Workmen's Compensation Act 1923.
 - Factory Act 1948.
 - Maternity Benefit Act 1961.
 - Equal Emolument Act 1976.
 - Payment of Bonus Act 1963.
 - Payment of Gratuity Act 1971.

CLAUSE 10 CA

Payment due to variation in prices of materials after receipt of tender

If after submission of the tender, the price of materials specified in Schedule F increases/ decreases beyond the price(s) prevailing at the time of the last stipulated date for receipt of tenders (including extensions, if any) for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of Clause 5 of the Contract without any action under Clause 2.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of stipulated date of completion or as prevailing for the period under consideration, whichever is less.

The increase/decrease in prices of cement, steel reinforcement and structural steel shall be determined by the Price indices issued by the Director General (Works), CPWD. For other items provided in the Schedule 'F', this shall be determined by the All India Wholesale Price Indices of materials as published by Economic Advisor to Government of India, Ministry of Commerce and Industry and base price for cement, steel reinforcement and structural steel as issued under the authority of Director General (Works) CPWD applicable for Delhi including Noida, Gurgaon, Faridabad & Ghaziabad and for other places as issued under the authority of Zonal Chief Engineer, CPWD and base price of other materials issued by concerned Zonal chief Engineer as indicated in Schedule 'F' as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration. In case, price index of a particular material is not issued by Ministry of Commerce and Industry, then the price index of nearest similar material as indicated in Schedule 'F' shall be followed.

The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given below for individual material:-

Adjustment for component of individual material

$$V = P \times Q \times \frac{CI - Clo}{Clo}$$

V = Variation in material cost i.e. increase or decrease in the amount of rupees to be paid or recovered.

P = Base Price of material as issued under authority of DG(W), CPWD or concerned Zonal Chief Engineer as indicated in Schedule "F" valid at the time of the last stipulated date of receipt of tender including extensions, if any.

Q = Quantity of material brought at site for bonafide use in the works since previous bill.

Clo = Price index for cement, steel reinforcement bars and structural steel as issued by the DG(W), CPWD as valid on the last stipulated date of receipt of tenders including extensions, if any. For other items, if any, provided in Schedule 'F', All India Wholesale Price Index for the material as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce as valid on the last stipulated date of receipt of tenders including extensions, if any.

CI = Price index for cement, steel reinforcement bars and structural steel as issued under the authority of DG(W), CPWD for period under consideration. For other items, if any, provided in Schedule 'F', All India Wholesale Price Index for the material for period under consideration as published by Economic Advisor to Government of India, Ministry of Industry and Commerce.

Note:

(i) In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.

Provided always that provisions of the preceding Clause 10 C shall not be applicable in respect of Materials covered in this Clause.

(ii) If during progress of work or at the time of completion of work, it is noticed that any material brought at site is in excess of requirement, then amount of escalation if paid earlier on such excess quantity of material shall be recovered on the basis of cost indices as applied at the time of payment of escalation or as prevailing at the time of effecting recovery, whichever is higher.

CLAUSE 10 CB



Adjustment due to increase / decrease in price of Bitumen after receipt of tender

If after submission of the tender, the price of Bitumen incorporated in the works (not being a material supplied from the MCD Store) beyond the price(s) prevailing at the time of the last stipulated date for receipt of tender for the work, then the amount of contract shall accordingly be varied and provided further that any such increase shall not be payable if such increase has become operative after the stipulated date of completion of work (including extension, if any) in question.

In the event, the prices of bitumen required for execution of work ceceases, the MCD shall in respect of the quantity of bitumen incorporated in the work be entitled to deduct from the dues of the contractor, such amount as shall be equaling to the amount worked out in case of increase in prices and in this regard, the formula wherein below stated under this clause shall apply mutatismutants.

The increase / decrease shall be determined by the ex-refinery price of the bitumen (basic cost + excise duty + Sales Tax) prevailing as on the last stipulated date of receipt of tender and for the period under consideration.

The amount of the contract shall be varied for bitumen and will be worked out as per formula given below:

Adjustment for component of bitumen

$$VB = QB \times (B1 - BO)$$

Where:

VB = Variation in cost of bitumen i.e. Increase or decrease in the amount in rupees to be paid or recovered.

QB = Quantity of bitumen used in the work done for the period under consideration Worked out on the basis of percentage specified in the job mix formula.

BO = Ex-refinery price of bitumen (basic cost + excise duty + sales tax) prevailing as on the last stipulated date of submission of tender.

B1 = Ex-refinery price of bitumen (basic cost + excise duty + sales tax) for the period under consideration.

The component for adjustment shall be worked out at quarterly intervals and shall be with respect to the quantum of work done as per the bills during the three calendar months of the said quarter. The first such payment shall be made at the end of three months after the month (excluding) in which the bitumen price is revised by the refinery and thereafter at every three months interval.

The contractor shall, for the purpose of this condition, keep such books of account and other documents as are necessary to show the amount of any increase claimed or reduction available and shall allow inspection of the same by a duly authorized representative of the MCD and further shall, at the request of the Engineer-in-Charge may require any documents so kept and such other information as the Engineer-in-Charge may require.

The contractor shall within a reasonable time of his becoming aware of any alteration in the price of any such material(s) and / or wages of labour give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereof which he may be in position to supply.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Condition for procurement of Cement and Steel which will not supply by department (to be arranged by contractor).

(a) Special conditions for cement

(1) The contractor shall procure 43 grade (conforming to IS 8112) ordinary Portland cement, as required in the work, from reputed manufacturers of cement having a production capacity not less than one million tonnes or more per annum, such as ACC, UltraTech, J.P.Rewa, Vikram, Shri Cement, Birla Jute & Cement Corporation of India etc., as approved by the Ministry of Industry, Government of India, and holding license to use ISI certification mark for their product. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially.

The supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer- in-charge to do so.

(2) The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer- in- charge.

The cement godown of the capacity to store a minimum of 2000 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made.

(3) Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the keys of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.

(4) The cement shall be got tested by the Engineer-in-charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor/Department in the manner indicated below:

- (a) By the contractor, if the results show that the cement does not conform to relevant BIS codes.
- (b) By the Department, if the results show that the cement conforms to relevant BIS codes.

(5) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to made.

(6) The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-charge.



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

(7) The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

Chief Engineers may change the brand of Cement depending upon availability in local market, if needed. Instructions in this respect can be issued by them at regular intervals. The name of manufacturers should be finalized after taking into consideration the suggestions of contractors during pre bid meeting, if any.

Similar conditions for cement of other types like slag cement etc. may be incorporated wherever required by the NIT approving authority by providing for relevant BIS Codes, suitable brands of cement and technical circulars issued by the department.

(b) Special conditions for steel

(1) The contractor shall procure TMT bars of Fe415/ Fe500/ Fe550 grade (the grade to be procured is to be specified) from primary producers such as SAIL or TISCO or RINL as approved by Ministry of Steel. In case of non-availability of steel from primary producers the NIT approving authority may permit use of TMT reinforcement bars procured from secondary producers. In such cases following conditions are to be stipulated in the NIT by NIT approving authority:

(a) The grade of the steel such as Fe415/Fe500/Fe 550 or other grade to be procured is to be specified as per BIS 1786-2008.

(b) The secondary producers must have valid BIS license to produce HSD bars conforming to IS 1786: 2008. In addition to BIS license, the secondary producer must have valid license from either of the firms Tempcore, Thermex, Evcon Turbo & Turbo Quench to produce TMT Bars.

(c) The TMT bars procured from primary producers shall conform to manufacture's specifications.

(d) The TMT bars procured from secondary producers shall conform to the specifications as laid by Tempcore, Thermex, Evcon Turbo & Turbo Quench as the case may be.

(e) TMT bars procured either from primary producers or secondary producers, the specifications shall meet the provisions of IS 1786 : 2008 pertaining to Fe 415D or Fe 500D or Fe 550D grade of steel as specified in the tender (while preparing NIT the grade of the steel to be specified) . **(Modified as per OM/MAN/168)**

(2) The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

(3) Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined under para (1)(d) & (1)(e) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so. **(Modified as per OM/MAN/168)**

(4) The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.

(5) The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

4



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

(6) For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of Bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10 mm dia bars	One sample for each 25 tonnes of part thereof	One sample for each 40 tonnes or part thereof
10 mm to 16 mm	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes dia bars or part thereof
Over 16 mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

(7) The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor/Department in the manner indicated below:

- (a) By the contractor, if the results show that the steel does not conform to relevant BIS codes.
- (b) By the Department, if the results show that the steel conforms to relevant BIS codes.

(8) The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.

(9) The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

(10) In case contractor is permitted to use TMT reinforcement bars procured from secondary producers then:

- (1) The base price of TMT reinforcement bars as stipulated under schedule 'F' shall be reduced by Rs. 8000/- per MT.
- (2) The rate of providing & laying TMT reinforcement bars as quoted by the contractor in the tender shall also be reduced by 9.20% per kg. (The rate of reduction shall be same as 10.1 above converted to per kg plus Contractor's Profit and Over Heads as applicable) (Currently 15%).

3. The rates under 10.1 & 10.2 shall be specified by NIT approving authority at the time of issue of NIT. *(Modified as per OM/MAN/168)*



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

Additional Conditions

- 1) The RMC is to be procured only from the RMC plants of cement manufacturing companies like ACC, Ultratech, L&T etc.
- 2) The contractor shall have to mention the details of batch mix plant from where he intends to bring the design mix concrete. The plant including all material to be used in batch mix shall be open to inspection by Engineer-in-Charge or his representative, whenever required.
- 3) Nothing extra shall be paid for cartage of concrete to the site of work.
- 4) The design mix shall be got designed by the contractor as per direction of Engineer-in-Charge from CRR, NCCBM etc. and its cost shall be borne by the contractor.
- 5) The RMC is to be laid by paver and nothing extra shall be paid for the same

4



**EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051**

Additional Conditions for Dense Carpet Works

- 1) The tenderers shall have to produce necessary affidavit in evidence to the effect that they own hot mix plant (Computerized) fitted with centralized control panel and electronic load sensor along, with necessary equipment. It should be preferable of batch mix type and it shall be capable of yielding a mix of proper and uniform quality with thoroughly coated aggregate as per job mix formula before the tender documents is sold to them.
- 2) The contractors shall have to necessarily deploy paver finisher fitted with electronic sensing device for automatic leveling and profile control within the specified tolerance and other required machinery including vibratory roller pneumatic roller/tandem roller/ static wheeled roller etc. as per Ministry of Road Transport and Highways (MORT&H) specification for roads and Bridges Works 4th revision and in IRC Manual for const. and supervision of Bituminous Works 2001, published by IRC.
- 3) The contractor shall have to mention the details of hot mix plant from where he intends to bring the bituminous mix. The plant including all material to be used in bituminous mix shall be open to inspection by Engineer-in-Charge or his representative, whenever required.
- 4) Nothing extra shall be paid for cartage of bitumen to the site of work
- 5) Rolling shall be done as per clause 501.6,501.7,504.3.6 and 507.4.9 (MORT&H) Specification for Road and Bridge works fourth revision 2001 by using roller as specified therein.
- 6) The paver finisher shall have the following essential features.
 - a) Loading hoppers and suitable distribution mechanism.
 - b) The machine shall have a hydraulically extendable screed pair appropriate with requirement.
 - c) The screed shall have tamping and vibrating arrangement from initial compaction to the layer. It shall have adjustable amplitude and variable frequency.
 - d) It shall be equipped with necessary control mechanism so as to ensure that the finisher surface is free from surface blemishes.
 - e) The screed shall have initial beating arrangement.
- 7) The job mix shall be got designed by the contractor from Mpl. Lab or as per direction of Engineer-in-Charge from CRRI etc. and its cost shall be borne by the contractor,. The mix shall be designed in such a proportion that minimum laboratory density of 2.2 Tonne/cum for BM and 2.3 Tonne/cum for AC is achieved. The contractor shall follow the instruction contained in clause 507.3.3 and 507.3.4 (MORT&H) Specification for Road and Bridge Works. Fourth Revision 2001 strictly and provide all necessary details as specified therein
- 8) Materials:-
 - a) Stone aggregate: Shall consist of crushed quartzite stone to be obtained from quarries as approved by Engineer-in-Charge. They shall be clean, strong durable or fairly cubical shape and free from disintegrated piece.
 - b) Stone dust: This should be obtained from crushed hard blue quartzite stone
- 9) Bitumen : Bitumen/CRMB-60 binder shall conform to grade and quality as specified in nomenclature of item. Bitumen required for the work shall be purchased/brought at site/plant by the contractor from approved manufacturer and stored properly. The contractor shall be required to submit the following documents
 - i) Photocopy of the invoice in duplicate from the manufacturer as a proof of procurement of fresh bitumen.



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- ii) The name of work shall be written by the contractor on the photocopy of invoice. This photocopy will be self attested by the contractor certifying that this is true copy of original invoice. This will be done by the contractor in the presence of Engineer-in-Charge or Divisional Accountant.
- iii) One photocopy of the invoice, self attested by the contractor will be given to Engineering-Charge of site and other to divisional accountant

Bitumen/CRMB-60 Contents :- For the purpose of tendering, the contractor shall give his rates only on assumption that the bitumen/CRMB-60 contents of BM&AC will be 3.25% and 5% by weight of mix respectively. If the actual quantity of bitumen required to be used, as per job mix formula is different from the assumed above, necessary adjustment in the cost of bitumen/CRMB-60 used shall be recovered at the rate of (prevailing market rates) per MT of bitumen. However in case the variation of the bitumen/CRMB-60 is on the higher side, payment for extra bitumen/CRMB-60 will be restricted to the extent of the job mix formula only at the rate of...../MT (prevailing market rates). No extra payment will be made for the bitumen/CRMB-60 used beyond extent of job mix formula.

- 10) The bitumen/CRMB-60 content in bituminous mix shall be checked by conducting the bitumen extraction test confirming to IRC:Sp-II at regular interval on the completion of work. The actual consumption of bitumen/CRMB-60 shall be worked out based on such result and M.A.S. Account. The theoretical consumption shall be worked out based on designed mix formula. The bituminous/CRMB-60 work of B.M. & A.C. will be acceptable with in variation of +_0.3% of the bitumen/CRMB-60 required as per job mix formula. Recovery for less use of bitumen/CRMB-60 up to 0.3% than the theoretical consumption shall be made at the prevailing market rates. The work found executed with bituminous/CRMB-60 mix having bitumen/CRMB-60 contents lesser than permissible variation of (-) 0.3% shall be considered as sub-standard and will be dealt accordingly. However, nothing extra shall be paid if the actual consumption so worked out is higher than the theoretical consumption. This is without prejudice to action under other relevant clauses of the agreement.

11) Filler :-

Filler shall be hydrated lime confirming to specification and grade as specified in clause 507.2.4 of MORT&H specification for road and bridge work. Fourth Revision 2001 Filler shall be used 50KG/MT of mix. If the actual quantity of lime filler required to be used is different from assumed above, necessary, adjustment in cost of extra/less lime filler used shall be made @Rs.....MT (prevailing market rates) of lime filler without being effected by clause 10C & 10CC of the contract agreement.

- 12) The temperature of binder, aggregate and mix at the time of mixing, laying & Rolling shall be as per table 500-5 (Manufacturing & Rolling Temperatures) of MORT & H specification for road and the bridge works 2001 IVth Revision.

- 13) **Measurement :-** Before applying the tack coat, the existing levels of the road surface shall be taken jointly by the Engineer-in-Charge or his representative and contractor at 3 metre intervals both ways or closer as directed by the Engineer-in-Charge. These levels shall be recorded in the level book as well as on the plan and the record shall be signed by the contractor. Level of the consolidated bituminous coarse shall again be taken and recorded in the level book as well as on plan. The unit for measurement shall be cube metre for asphaltic concrete, and bituminous macadam mix and consolidated quantity shall be computed on the basis of daily tonnage laid and the field density as well as levels and payment shall be restricted to the lower of the two quantity. The necessary arrangement for taking levels will be made by the contractor at his own cost.

- 14) The department has the option to cut out cores to determine the density of carpet laid necessary arrangement will be made by the contractor at his own including making good the same.

15) Laboratory :-



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- a) That the contractor shall provide at or near the plant a laboratory fully equipped for carrying out the specified test on the material and on the finished products. A competent staff for carrying out the tests shall be provided by the contractor and the results of the tests shall be submitted on completion to the Engineer-in-Charge. The cost of all testing enumerated above shall be borne by the contractor and no extra claim on this account shall be entertained. The department also reserves the right to get the bituminous mix and other mix and other materials used in the work tested from Municipal Laboratory or any other laboratory as decided by the Engineer-in-Charge. The result of such tests will be binding on the contractor.
 - b) The contractor shall be responsible for getting at least one sample for every 1000 metric tones of bituminous mix tested from the laboratory of Delhi Municipal Corporation or as required by the Engineer-in-Charge of the work and results of the same would be binding on the contractor.
 - c) Other materials like bitumen stone grit etc. will be got tested from Mpl. Laboratory or CRRI by the contractor as and when required by the Engineer-in-Charge of the work and the results of the tests will be binding on the contractor.
- 16) The cost of all testing shall be borne by the contractor and no extra claim on this account shall be entertained, except in the case when materials are got tested from Mpl. Laboratory in which in which case the cost of material and the cartage only shall be borne by the contractor.
- 17) The contractor shall be responsible to see that the sub grade is properly consolidated so as to give uniform and adequate support to the bituminous course for the period of its useful life. If where the base is water bound macadam otherwise the concrete base should swept clean.
- 18) It will be binding on the contractor to maintain free of cost those roads for a period of 5 yrs., where the binder of penetration 60/70 grade and for 7 yrs., where CRMB-60 binder has been used from the last day of the month in which a particular road is completed and he will also be responsible for rectification of defects if these occur any during the said period.
- 19) Prior to the commencement of the work the Engineer-in-Charge and the contractor shall carry out a joint inspection of the existing surface to locate any areas, where defective foundation or improperly consolidation, branches may have contributed to such failure during the progress of the regarding work, further checked of the adequacy of the foundation by load test or trial hole plates bearing tests etc. shall be made and any defects noted shall be pointed out to the Engineer-in-Charge, who will issue instructions for the necessary remedial action to be taken to ensure that a satisfactory foundation is available through out the areas to be resurfaced.
- 20) Weigh Bridge :-
The contractor shall make arrangement of weight bridge at plant site for weighing the various mixes and will produce the copy of a certificate for accuracy of weigh bridges from weight and measure department before start of the work, at his own cost. He will also at his own cost get the weight bridge checked from above deptt. from time to time as per direction of Engineer-in-Charge. In addition Engineer-in-Charge will be free to get the weight of any tipper rechecked at work site and contractor will not raise any objection in this regard and cost of the weighting charges will be born by the contractor.
- 21) The field density of leveling course, wearing course shall not be less than 95% of the laboratory density for leveling course and 98% for the wearing course respectively.
- 22) Quality Control:-
The test and their requirements for different type of bituminous construction works shall be as per IRC specifications Section No. 900. (Quality Control for road works) published by MORT & H specification for Road & Bridge Works 4th revision 2001. One sample of the bituminous mix shall be got tested from Municipal Laboratory for the quantity of binder content required, for each 1000 M.T. or part there of, of the mix.
- 23) The contractor will quote item rates on the basis of units mentioned in the schedule.



SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

- 24) The quantities mentioned in the tender schedule of each item can vary to the extent of 10% on either side at the time of execution of work within the contractual amount with the prior approval of Engineer-in-Charge with technical reasons.
- 25) For issue of tender contractor will come along with the qualified consultant for technical discussion to establish his competence.
- 26) The contractor will have to work as per programme drawn by the Engineer-in-Charge No claim what so ever be entertained in this account.
- 27) The contractor shall take all precautions to avoid all accidents by erecting necessary caution boards, red flags, red lights and providing barriers as directed by the Engineer-in-Charge. He shall be responsible to all damages and accidents caused due to negligence on his part. No hindrance shall be caused to the traffic during the execution of work.
- 28) No payment will be made to the contractor for damage caused due to rains or other natural calamities during the execution of work. No claim on this account will be entertained.
- 29) The contractor rate shall include the cost of labour material and inclusive of all carriage etc. had inputs involved in the execution or work.
- 30) It may be ensured that intending contractors should have the requisite machinery and also the technical expertise for execution of work.
- 31) Unless otherwise required to withhold under the provision of agreement the security deposit deducted shall be refunded after completion of dense carpet work on submission of bank guarantee (as per provision under section 22 of CPWD manual Vol.-II regarding security deposit) the requisite amount shall valid for full period of 5/7 years of maintenance as the case may be in accordance with Para 18 above.
- 32) The contractor shall be responsible for correctness genuineness of all the documents whatsoever submitted by the contractor.
- 33) For the roads laid with bituminous concrete / asphaltic concrete / mix seal surfacing with use of Crumb Rubber Modified Bitumen (CRMB-60). It will be binding on the contractors to rectify free of cost any defect for a period of 7 years form the last date of the month in which a particular road has been dense carpeted with above said bituminous concrete / asphaltic concrete / mix seal surfacing.
- 34) For the roads laid, with bituminous concrete / asphaltic concrete / mix seal surfacing with use of Crumb Rubber Modified Bitumen (CRMB-60), unless otherwise required to with hold under the provision of agreement, the security deposit deducted shall be refunded after completion of dense carpet work on submission of bank guarantee (as per provision under Section 22. Of CPWD Manual-II regarding security deposit) the requisite amount / bank guarantee shall be valid for full period.

****Note: An affidavit of owning Hot Mix Plant installed in NCR is required with technical bid and it is essential.***

✓



**EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051**

Specification for Bitumen Mastics

Physical properties of bitumens used shall conform bitumen used to those specified in table 1, when tested in accordance with the methods specified therein.

TABLE - 1

Physical Properties of Bitumen

Characteristic	Requirement	Method of test (Ref. of Indian Standards)
	3.	4.
Softening point (Ring and Ball Method)	50°C to 90°C	IS: 1205-1978
Penetration at 25°C (mm/100cm)	10 to 40	IS: 1205-1978
Ductility at 27°C, Min. in cm	3	IS: 1206-1978
Loss on heating, Percent.	Max 1	IS: 1212-1978
Stability in Carbon Disulphide (percent min.)	99	IS: 1216-1978

Industrial bitumen of the grade 85/25 conforming to IS:702-1964, 'Specification for Industrial bitumen (revised)' is typical example of binder which will satisfy the requirement of this table.

- 1. Selection of softening point, (first revision) ✓
- 2. Limitation of penetration, (first revision) ✓
- 3. Limitation of ductility (first revision) ✓
- 4. Limitation of loss on heating, (first revision) ✓
- 5. Limitation of solubility in carbon disulphide (first revision) ✓

NOTE: The filler shall be fine stone power passing 75 micron IS sieve and have 2% calcium carbonate content, the method specified in Appendix B of IS: 1205-1978. (Specification for bitumen mastic for flooring (second revision) not less than 80% by weight when determined in accordance with the procedure).

AGGREGATES: The aggregates shall be of the following types :-

- a) Fine aggregate, and
- b) Coarse aggregate.

1.3.1. FINE AGGREGATE: Fine aggregate shall consist of naturally occurring and duly cleaned as required or crushed lime stone or crushed hard-rock. The grading of the fine aggregate inclusive of the filler is given in Table 2 for guidance.

**TABLE - 2
GRADING OF FINE AGGREGATE**

S.No.	Passing IS sieve	Retained on IS sieve	Percentage by weight	
			Min	Max
1.	75 micron	-	30	50
2.	212 micron	75 micron	10	20
3.	600 micron	212 micron	5	35
4.	2.36 mm	600 micron	0	25

1.3.2. COARSE AGGREGATE: The coarse aggregate shall consist of hard durable crushed stones, (Blue Quartzites from quarry approved by Engineer-in-Charge) shall be clean strong free of dis-integrated pieces, organic & other deleterious matter & adherent coatings. The shall be hydrophobic and of low permeability & shall satisfy the following physical requirements, when tested as per the procedure laid down in IS:2386 and IS:6241 (latest editions).

TEST	AGGREGATE IMPACT VALUE	PERCENT
1.	Aggregate impact value	30 Max.
	AND	
	Loss angles Abrasion value:	35 max.

.....2.....



OFFICE OF THE EXECUTIVE ENGINEER (R/R)
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

MASTIC

1 2 1

- 2. Flakiness Index 25 max.
- 3. Stripping Value 25 max.
- 4. Water Absorption 100 max.
- 5. Soundness
 - i) Loss with sodium sulphate 5 cycles 12
 - ii) Loss with magnesium sulphate 5 cycles 18

The percentage & grading of the coarse aggregate to be incorporated in the bitumen mastic depending upon the thickness of the finished course shall be

TABLE-3

TABLE-3 GRADING & PERCENTAGE OF COARSE AGGREGATE			
Type of work	Thickness of course (mm)	Percentage of coarse aggregate by weight to total weight of final mixture	Grading of coarse aggregate Passing IS sieve Percentage
1. Working (a)	25mm	a) 30-40	12.5 mm 100 10.0 mm 88-96 2.36mm 0-5

1.4 MIX DESIGN

1.4.1 HARDNESS NUMBER

1.4.1.1 The bitumen mastic before the addition of coarse aggregate, shall have hardness number 90 to 30 at 25 degree Celsius.

1.4.1.2 After the addition of the coarse aggregate of bitumen mastic composition shall have hardness number between 10 & 20 at 25 degree Celsius.

X- If the aggregate brought to site does not have sufficient pieces of coarse aggregate to conduct test for stripping value in accordance with IS 6241, this test be dispensed with during execution.

1.4.1.3 The hardness number shall be determined in accordance with the method specified in Appendix D of IS : 1195-1975.

1.4.2 The binder contents shall be so fixed as to achieve the requirement of mix not to be in clause 1.4.1 above and shall be in the range of 14 to 17 percent by weight of total weight of bituminous mastic without coarse aggregate (i.e. weight of bitumen fine aggregate and filler).

1.4.3 Soon after receiving the work order and letest by 20 days of award of the work the contractor shall submit in writing to the E-in-Charge, job-mix formula proposed to be used by him for bitumen mastic work, giving the following data to the E-in-Charge on the basis of tests specified in various clauses/table incorporated herein:

- 1) Sources and results of tests of different materials, viz. binders, coarse aggregates, fine aggregates etc.
- 2) Grading of individual aggregates, filler etc.
- 3) Proportions in which the various materials would be mixed to achieve the specified gradir and
- 4) The grading actually achieved indicating single definite percentage passing each sieve for the mixed aggregates.

1.4.3.1 While forwarding the job-mix formula the contractor shall certify that it is based on truly representative samples of materials that he would actually use for the work and that the mix and its different ingredients satisfy physical and strength requirements specified.

1.4.3.2 Approval to the job-mix formula by the E-in-Charge shall be based on independent testing by E-in-Charge at any approved laboratory for which samples of all ingredients of the mix shall be furnished by the contractor as required by the E-in-Charge without any extra charge.

The job mix formula, as approved by the E-in-Charge shall have to be adhered to by the contractor. It should be the responsibility of the contractor to produce an uniform mix conforming to the approved job mix formula.



EAST DELHI MUNICIPAL CORPORATION
OFFICE OF THE EXECUTIVE ENGINEER (PR)-I
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

MANUFACTURE & COMPOSITION OF BITUMEN MASTIC

2.1 The manufacture of bitumen mastic consists of different stages. Initially the filler alone shall be heated to a temperature of 170° to 200°C in mechanically agitated mastic cooker and half the required quantity of bitumen, heated at 170° to this shall be added. They shall be mixed, unmechanically agitated and cooked for one hour. After that the fine aggregate and the balance bitumen (at 170°C to 175°C) added to the cooker and heated upto 170°C to 175°C and further mixed for another one hour more. The final stage is to add the coarse aggregate & heating and mixing for another one hour. Thus a total period of minimum three hours will be required to prepare the mastic. During mixing and cooking, care should be taken to ensure that the contents in the cooker are at no time heated to a temperature exceeding 105°C.

2.2 The bitumen mastic of pre-final stage i.e. without coarse aggregate shall show on analysis, a composition within the limits set in Table-4. The analysis of the bitumen mastic shall be done in accordance with the method specified in Appendix-C of IS 1195: 1970.

2.2 The actual percentage of the coarse aggregate to be added in the final stage shall be specified according to design requirement.

T A B L E - 4

COMPOSITION OF BITUMEN MASTIC (WITHOUT COARSE AGGREGATE)
(Clause 2.2)

Requirement	Percentage by weight of mastic without coarse aggregate	
	Min.	Max.
Bitumen	14	17
Fading 75 micron IS sieve	25	35
Fading 212 micron IS sieve and retained on 75 micron IS sieve	3	13
Fading 600 micron IS sieve and retained on 212 micron IS sieve	4	30
Fading 2.36mm IS sieve and retained on 600 micron IS sieve	0	22

5. SPREADING BITUMEN MASTIC

5.1 The bitumen mastic shall be discharged into containers provided with line duct or line wash to assist the discharge faster as higher spreading rate is used on such works. The bitumen mastic shall be deposited directly on the base, prepared as per para 4.1 above immediately in front of the spreader, where it is spread uniformly by means of wooden float to the required thickness. The mix shall be laid in approximately one meter width confined between wooden templates/angle iron, of sizes suitable to retain the required thickness. The temperature of the mix at the time of laying shall be 170° to 200° C. In case blowing takes place while laying the bitumen mastic the bubbles shall be punctured while it is hot and surface treated well.

The bitumen mastic layer under this tender shall be laid on the bridge deck (over asphaltic concrete layer laid on RCC slab) excluding the width of the expansion joints.

5.2 **JOINTS:** It shall be ensured that all construction joints are articulated and are properly and truly made. These joints shall be made by wearing the existing bitumen mastic by application of excess quantity of hot bitumen mastic mix which afterwards shall be trimmed off to make it flush with the surface on either side, so that the junction line would not be visible and the whole surface would appear as a single string on the deck.

6.0 SETTING OUT OF WORKS:

The contractor shall be responsible for the true and perfect setting out of the work and for the correctness of the position, levels, dimensions and alignments of all parts of the work. If at any time during the progress of work any errors shall appear or arise in the position, levels, dimensions or alignment of any part of the work, the contractor, on being required to do so by the E-in-Charge or his authorized representative, shall at his own expenses rectify such error to the satisfaction of the E-in-Charge. Any setting out line, level that may have been



OFFICE OF THE EXECUTIVE ENGINEER (I/R)
SHAHDARA SOUTH ZONE
E-1/12, KRISHNA NAGAR, DELHI-110051

given or checked by the E-in-Charge or his representative, shall not in any way relieve the contractor of his responsibility for the correctness thereof.

7.0. TEMPORARY SUSPENSION OF WORKS:

1) The contractor shall on the written order of the E-in-Charge delay or suspend the progress of the work or any part thereof for such time or time and in such manner as the E-in-Charge may consider necessary and shall during such delay or suspension properly protect and secure the work so far as is necessary in the opinion of the E-in-Charge. No extra payment or compensation will be allowed to the contractor of the E-in-Charge under this clause. Time for completion of the work shall be extended in the proportion of the period of the suspension at the direction of the E-in-Charge, which shall be final.

8. OPENING TO TRAFFIC:

The traffic may be allowed after completion of the work when the bitumen mastic has cooled down to the surrounding temperature.

9. QUALITY CONTROL:

9.1 All materials and workmanship shall be of the respective kinds described in the contract and shall be subject from time to time to such tests as the E-in-Charge may direct at the specified laboratories.

9.2. Tests to be done:

1. Bitumen Grady B5/25
 - a) Softening point.
 - b) Penetration at 25° C.
 - c) Ductility at 27° C.
 - d) Loss on heating.
 - e) Solubility in calcium bisulphide.
- IV. FILLER/LIME STONE POWDER**
1. Calcium carbonate content.

Frequency of Test

- One test for 30 MT of Bitumen.
- One test for 30 MT of bitumen.
- One test for 30 MT of bitumen.
- One test for 30 MT of bitumen.
- One test for 30 MT of bitumen.
- One test for every 12.50 Tonnes of material.

9.3. Thickness/Density of compacted layers:

One test for every 1000 square metres.
 It is however clarified that thickness of 25mm to be provided by the contractor shall be the average of measured thickness at intervals decided by E-in-Charge. However, the tolerance for individual location shall be 5mm, which shall not be exceeded.

9.4 The surfaces of the bitumen mastic tested with a 4.5 mtr. long straight edge parallel to the central line of the carriageway should not have any depression greater than 4mm. The same limit shall apply in case of transverse profile when tested with a timber template and arranged for testing in presence of the E-in-Charge or his authorized representative and/or at the site. The contractor shall provide such assistance, instruments, apparatus, reagents, machines, labour and materials as the E-in-Charge may require for excavation, measuring and testing the works, and the quality, weight or quantity of the materials used and shall supply samples for testing as may be selected and required by the E-in-Charge.

9.2. TESTING OF MATERIALS:

The contractor shall set up at site of works suitable laboratory equipped with all facilities, apparatus, reagents & machines etc. required for carrying out various tests described in this particular specification for materials & workmanship. The contractor shall also arrange for all the tests in presence of the E-in-Charge or his authorized representative, as per his instruction.

The contractor may however be allowed at the sole discretion of the E-in-Charge, to get the following tests for aggregates fillers and bitumen performed at any testing laboratory as may be approved by the Engineer-in-Charge.

