

Contract No. RSWC/SPD-176: Refurbishment of Floor in Optional 40 cars (except cab) of RS-1 Trains (Comprising of 4 cars)at Shastri Park Depot, Najafgarh Depot and Yamuna Bank Depot of DMRC Ltd

APPENDIX-I

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DELHI METRO RAIL CORPORATION LIMITED

CONTRACT NO: RSWC/SPD-176

Refurbishment of Optional Floor in 40 cars (except Cab) of RS-1 Trains (Comprising of 4 cars) at Shastri Park Depot, Najafgarh Depot and Yamuna Bank Depot of DMRC Ltd.

EMPLOYER'S REQUIREMENTS

**DELHI METRO RAIL CORPORATION LTD.
5th Floor, C-Wing, Metro Bhawan, Fire Brigade Lane,
Barakhamba Road, New Delhi –110001**

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Employer's requirement

1.0 Objective:

The objective of the contract is "**Refurbishment of Floor in Optional 40 cars (except cab) of RS-1 Trains (Comprising of 4 cars) at Shastri Park Depot, Najafgarh Depot and Yamuna Bank Depot of DMRC Ltd**" as per scope of work mentioned in of Employer's Requirement. In full recognition of this objective and with full acceptance of the obligations, liabilities and risks which may be involved, the Tenderer/contractor/tenderer shall undertake the execution of the works.

2.0 General:

2.1 The tenderer shall execute '**Refurbishment of Floor in Optional 40 cars(except cab) of RS-1 Trains (Comprising of 4 cars) at Shastri Park Depot, Najafgarh Depot and Yamuna Bank Depot of DMRC Ltd**' in accordance with Employer's Requirements, Bill of Quantity and the other requirements of the Contract.

2.2 This contract is for the "**Floor refurbishment of Optional 40 cars (except cab) of RS-1 DMRC Trains (Comprising of 4 cars)**".

3. Eligibility Criterion:-

- a. Supplier should have the knowledge and experience of undertaking major repairs including structural parts, floors, and panels of the train.
- b. Supplier should be able to deploy EN certified welders if need of welding work arises.
- c. Supplier should have past experience of maintenance of complete trains

4. SCOPE OF WORK:-

4.1 The contractor/tenderer shall execute the work i.e. "**Refurbishment of Floor in 40 cars (except cab) of RS-1 Trains (Comprising of 4 cars) of DMRC Ltd**" including all man power, machine, tools, material, consumables, transport etc. This scope of work covers supply of skilled manpower along with safety aprons required for work at their own cost. ***Floor refurbishment in Cab is not included in this work contract.***

4.2 **Floor refurbishment of Optional 40 cars(except cab)**to be carried out at Shastri Park Depot, Najafgarh Depot & Yamuna Bank Depot during general working hours i.e. between 09:30 hrs to 17:30 hrs. The manpower can also be deployed during OFF days / holidays / night hours as per site requirements for which nothing shall be paid extra.

4.3 ***The existing floor structure is constructed as floating floor type in order to achieve high noise reduction and reduce weight. The floor construction comprises of the following parts with total height of 45mm.***

No. Of Layer	Composition Parts	Thickness	Remarks
1	Keystone Plate	13mm	
2	Sound Deadening Paint	2mm	
3	Cushion Rubber	12 mm	FR
4	Insulation (Glass wool)	12 mm	
5	Plywood	15 mm	FR
6	Floor Covering	3 mm	FR

Existing floor structure is to be refurbished with the non-skid floor structure comprising of **Composite floor board** type floating floor with suitable noise, vibration and heat insulation, duly supported on rubber cones or cushion and packing rubbers.

However, prior approval for the design of construction and materials to be used for floor refurbishment to be taken from the competent authority of DMRC.

The material of floor used on the car will be tested and satisfied the limited fire hazard performance according to the BS 6853: 1999 Category 1a.

Fire Property Standard	Flammability	Smoke	Toxic
Criteria (Category 1a)	BS 476 Pt. 7	BS 6853 Annex. D	BS 6853 Annex B
	Class 2	A ₀ <220	R<5

4.4 No disturbance to electrical panels in any of the cars including the Cab. Any electrical connection needs not be removed during work.

4.5 The detailed break up of activities and sub-activities with proposed distribution of responsibilities between DMRC and contractor/tenderer will be as under:

Sl. No.	Description	Responsibility
01.	Planning of train for Floor refurbishment work.	DMRC
02.	The job card for a work is to be executed by contractor and shall be issued to concerned DMRC's supervisor under whom contractor staffs work. However, contractor/tenderer's supervisor shall also counter-sign the job card to attest the start of time of job in the respective depot. Time of start of work will be used for calculation of delay in work at the end. DMRC decision on calculation of delay time will be final.	DMRC & Contractor/tenderer

03	Planning and placement of train at appropriate location.	DMRC
04	All cubicles, seats, side walls, grab poles, door panels etc. to be removed for carrying out Floor refurbishment work. No Disturbance to electrical panels in any of the cars including the Cab. DMRC shall provide the floor removal procedure along with Stanchions, Seats & other interfaces.	Contractor/tenderer
05	Stripping off the floor covering sheet from the complete train.	Contractor/tenderer
06	Complete wooden floor board to be removed after unscrewing the screw	Contractor/tenderer
07	All other materials like, glass wool, cushion rubbers, packing rubbers etc to be removed and complete area to be cleaned.	Contractor/tenderer
08	Prior approval to be taken for design and material to be used in Composite floor board type floating floor. Materials used should be having FR properties.	Contractor/tenderer
09	Fresh Cushion Rubbers, Packing rubbers, Glass wools, etc. to be laid.	Contractor/tenderer
10	Composite floor board of required size to be placed over the laid material.	Contractor/tenderer
11	Floor covering (Make: NORA) shall be 3 mm thick halogen free homogeneous rubber. The floor covering shall be slip-resistant, even when it is wet, according to the requirements of EN and ASTM rail standards. The materials used for floor covering shall fulfill the requirements established into the Flammability, Smoke Emission and Toxicity Requirements Specification acc. EN 45545 (HL2/HL3) and / or BS 6853 cat 1A.	Contractor/tenderer
12	Floor covering sheet matching with adjacent cars to be pasted with the help of Adisilex G-12 Compound A and B or equivalent.	Contractor/tenderer
13	Put sufficient weight over the pasted sheet and leave it for 08-10 hours depending upon the condition.	Contractor/tenderer
14	Remove the weight and check for the proper pasting of floor covering sheet.	Contractor/tenderer
15	Joint inspect the condition of flooring	DMRC and

	sheet after pasting for any air bubble, lump etc.	Contractor/tenderer
16	If any air bubble or lump is noticed the remedial action to be taken.	Contractor/tenderer
17	After remedial action, again jointly inspect the condition of flooring sheet after pasting for any air bubble, lump etc.	DMRC and Contractor/tenderer
18	After completion of floor refurbishment work, removed cubicles, seats, grab poles, door panels etc. to be re-installed.	Contractor/tenderer
19	Removal and re-installation of door panels, if required.	Contractor/tenderer
20	If Door panels are required to removed and re-installed then complete door function check to be jointly carried out after installations of door leaves and panels.	DMRC and Contractor/tenderer
21	Proper Sealant to be provided nearby joints, gangways, door threshold plates, grab poles etc, in complete cars	Contractor/tenderer.
22	All used consumables i.e. cloth, masking tape, containers etc. to be disposed properly by contractor/tenderer at a suitable place as advised by DMRC representative.	Contractor/tenderer
23	Final Joint Inspection will be carried out after completion of work in all respect.	DMRC and Contractor/tenderer

4.6 Present locations of RS-1 Metro Trains are as given below:

Name of DMRC Depot	No. of Optional RS-1 Cars	Remarks
Shastri Park Depot	12	Qty. of Cars may vary among Najafgarh Depot & Yamuna bank Depot. However, Total quantity of cars will remain same.
Najafgarh Depot	04	
Yamuna bank Depot	24	
Total	40	

4.7 Contactor shall make survey of sites before start of work in any depot & shall assess the requirements for the modification, in consultation to DMRC. Requirement assessed shall be brought to knowledge of DMRC. All arrangements of the assessed requirements will be done by

contractor/tenderer, on his own expense, prior to start of job on train. However, DMRC shall provide source of electricity, if required.

- 4.8 Required portable/hand held tools and material for execution of above work to be arranged by contractor/tenderer at his own cost including transportation. Personal Protective Equipments to be used during the work shall be arranged by the contractor/tenderer on his own cost for every individual deployed for the work in DMRC premises (i.e. hand gloves, face mask, safety shoes & any other PPE as per the requirement of the work etc.).
- 4.9 For any change in material specification, Contractor/tenderer has to take prior approval from DMRC official. DMRC decision in this regard will be final.
- 4.10 Suitable light arrangements like hand-held bulbs or tubes for artificial lightning will be under scope of the contractor/tenderer. Contractor/tenderer shall not use any naked connections to receive electrical supply from sockets.
- 4.11 Existing procedures to bring the outside material inside DMRC premises is to be followed by the contractor/tenderer for bringing any material, tool, equipment etc.
- 4.12 Any damage to electrical equipment due to sudden tripping of electric supply will not be DMRC responsibility.
- 4.13 The entire work will have to be completed in all respect within contract period.
- 4.14 Trained staff to be deployed for execution of the work. Experienced certificate duly attested by the firm has to be submitted to DMRC before start of the work for every individual deployed in DMRC premises. Contractor/tenderer will be solely responsible for safety & security of engaged staff, material, machine, equipments, tools etc at site. Contractor/tenderer has to submit the Indemnity Form available in depots for the manpower used to DMRC mentioning the responsibility of personal safety of his staff on the firm itself.
- 4.15 Contractor/tenderer shall submit One (1) good quality passport size photograph along with the valid identity card to DMRC for all the manpower deployed for the work. Entry/exit of manpower inside DMRC premises will be strictly as per the existing procedures of entry/exit of manpower applied to external firms/contractor/tenderer. Un-authorized person will not be allowed to enter or work during entire contract period.
- 4.16 DMRC shall nowhere be held responsible for the theft/damage of the contractor/tenderer's equipments. However, DMRC will provide the space to keep the equipments when not in use by the staff.
- 4.17 Contractor/tenderer shall take extreme care while doing the job on the train. Any damage to DMRC train/property by contractor/tenderer/contractor/tenderer's staff shall be liable for penalty

equivalent to the cost of damage to the property/equipment, failing to which contractor/tenderer is liable to be prosecuted under rules.

4.18 After completion of contract, the left-over material will be handed over to DMRC as per agreed rates finalised in the work contract.

5.0 Completion Time:

- a. *Floor refurbishment of the first car (of the 1st train) to be completed in 60 days from the starting date of issuance of job card.*
- b. *The floor replacement of the subsequent 3 cars (of the 1st train) shall commence within 3 months of the completion of the floor replacement of the 1st Car and be completed in 4 weeks thereafter.*
- c. *The floor replacement of the balance 9 trains (4 cars each) shall be completed in 4 weeks per train (4 cars) from the starting date of issuance of job card.*

6.0 Inspection cum Work Completion Certificate:

After successful completion of the work of each train (4 cars), an inspection cum work completion certificate will be issued by DMRC authorized representative. Joint Final Inspection of work will be done as per the check sheet made by DMRC authorized person.

7.0 Liquidated Damages:

7.1 If the Tenderer/contractor fails to provide satisfactory services as per terms and conditions of the contract, except for reasons outside the control of the contract or (Force majeure), the Employer shall have the right to impose penalty on his discretion and recover/adjust the penalty money from the dues payable to the Agency/Tenderer/contractor.

7.2 The Employer shall have the right to terminate the contract after the execution of the floor replacement activity for the first car, in case the work is found to unsatisfactory.

No penalty shall be levied on the contractor in this case. The payment for the work shall not be made in this case.

7.3 Liquidated Damages per car @Rs.15,000/- (Rs. Fifteen Thousand only)/ week will be imposed, if the delivery of floor repaired car is delayed beyond 30 days from the date of issue of Job card. The maximum amount of liquidated damages under this contract shall be of 10% of the contract value per car. The contract shall be determinable at the option of the customer after the cap on liquidated damages has reached.

The Liquidated Damages shall not be applicable for the *first car (of the 1st train only.*

7.4 If contractor damages any kind of DMRC property, then its repair will be done by contractor free of cost.

7.5 Force majeure shall comprise the occurrence beyond the control of the Contractor. This will include, but not limited to, the events such as explosion, flood, fire, major power failure, accident, breaches, act of God, act of public enemy, wars, riots, sabotage or any law of state or Ordinance or the order or regulation of Govt. or local public authority, any act or omission of DMRC or its other sub-contractors. In such situation, the Contractor shall within 28 days notify the other party in writing for such event with evidence of happening, where possible. The liquidated damages and penalties shall not be applicable during this period. If the Force Majeure event continues for a continuous period of 120 Days then either party shall have the right to terminate the contract by giving notice of 14 days.

In such case of termination, the Contractor must be paid for the following:

- All the work repair work done and accepted by the Customer.
- All the work in progress for which the Contractor has incurred obligation from its suppliers
- Cost of demobilization of employees and material from the site.

8 Warranty Period:

Warranty period of floor **refurbishment is 24 months from** the date of issue of 'Inspection cum work completion certificate' **of the modified train** by engineer in-charge of respective depot.

The warranty shall be limited to the material & workmanship involved in the "Floor replacement" activity and shall not be extended to any related or unrelated systems.

The standard of **Floor refurbishment** should be such that it should not deteriorate with regular cleaning activities performed inside the trains, as per the existing procedures. If floor gets deteriorate during the warranty period, the contractor/tenderer is bound to rework the same on his own cost, including transportation involved, if any. Fresh inspection cum work completion certificate will issued for the reworked floor after re- inspection. Warranty period of the reworked *train* will be RESTARTED from the date of issuing of fresh Inspection Certificate for the reworked train. DMRC decision for the deteriorated work during *warranty period* will be considered final.

9.0 Location of Work place: Location and contract person details of places, where floor refurbishment works to be carried out are as given below:

9.1 Shastri Park Depot:

Address: Shastri Park Train Depot, Eastern Approach Road, Shastri Park, Delhi-110053.

Contact person: Sh. Anupam Yadav, DGM/RS/SPD, Mob.No.9650297913.

9.2 Najafgarh Depot:

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Address: Najafgarh Train Depot (Opp. Sai Baba Mandir), Najafgarh, New Delhi-110043,

Contact person: Sh. Vijendra Chaudhary, Sr. DGM/RS/NJFD, Mob.No.9871378096

9.3 Yamuna Bank Depot:

Address: Yamuna Bank Train Depot, Yamuna Bank, Delhi-110092,

Contact person : Sh. Dev Prakash, DGM/RS/YBD, Mob.No.+91- 9650099359.

10 SAFETY DO'S AND DON'T'S

The premises are having High Voltage Over Head Electric Lines, High Voltage Equipments on Train and Depot, the movement of Trains in the depot, Rail Track, Sophisticated Equipments etc which can cause major injury, electrocution, and death to the personnel and thus requirements for safety observance are very high.

The following rules /guidelines must be followed to ensure personal safety as well as depot safety:

10 While moving in the Depot

- Do not cross the track, always use the walkway provided adjacent to the track for accessing the Stabling Lines
- Do not cross in front of energized train (when its head light is glowing)
- Do not put your leg or other body part in between of any points
- Do not move idle on track
- Do not move under high tension line with long bar and rods
- Be careful of high tension overhead line
- Be careful of movement of points while crossing the track near point machine
- Be careful of uneven way due to spreading of ballast
- Always response to horn (whenever heard of horn just check around)

10.2 While working in the train

- Do not board/jump off moving train (doesn't matter how slow it is)
- Do not go under the train (when it is energized)
- Do not touch any part or equipment mounted under the train
- Do not touch or disturb any set up or equipment in any open boxes/cubicle
- Do not direct water jet towards high tension overhead line
- Do not clamp safety belt with overhead line (while working on the roof)
- Do not run on slippery area or wet floor
- Do not try to access any of the roof platform other than the designated gate/door
- Do not try to access the roof platform without any prior permission
- Do not jump from the train in inspection bay line (use ladder with proper clearance from the train) as train floor is very high at inspection bay
- Do not put ladder or other working platform beyond yellow line (marked on the floor of Inspection Bay Line)
- During working of train at IBL, OHE line of the track on which train is and of adjacent line must be isolated
- Always wear safety belt while working on the roof and belt must be properly secure (not with OHE)
- Before accessing the roof, isolation of overhead line must be ensured by checking status of discharged rod hanging

- Be careful while working on roof (for slippery roof & sharp edges)
- Be careful of other activities happening around
- Report any damage caused (to train or other property) or any other suspicious object to PPIO In charge or INSPECTION Supervisor

11 Guidelines for tenderer/contractor staff to work inside Depot

(Other than train cleaning tenderer/contractor):

- a. DMRC's supervisor/Section in charge who is supervising the tenderer/contractor works, hereby called as DMRC supervisor, will be preliminary responsible for safe completion of work.
- b. Tenderer/contractor is solely responsible for timely completion of work.
- c. The job card for a work to be executed by tenderer/contractor shall be issued by PPIO to concern DMRC's supervisor under whom tenderer/contractor staff is to work.
- d. The job card shall be closed by DMRC's supervisor after completing the job by tenderer/contractor. In case of job requiring more than one day, incomplete job card with progress on date shall be submitted to PPIO by DMRC's supervisors for monitoring.
- e. Tenderer/contractor shall submit after discussion with DMRC, a detailed procedure for working on site/method statement (format enclosed) for clear understanding of specific work. DMRC's supervisor shall give relevant information on specific works which are very technical / train related to tenderer/contractor for preparing method statement.
- f. The method statement shall be reviewed by DMRC's supervisor and its implication especially from safety point shall be brought forward. In case of safety hazard of higher degree e.g. working near OHE, working at very huge height/confined space, review at AM's / higher-level officer shall also be done.
- g. Briefing by DMRC's supervisor to tenderer/contractor staff regarding safe working/work execution etc shall be done prior to starting of work.
- h. Declaration for understanding safety implementation / Indemnity to be taken from tenderer/contractor (format enclosed) by DMRC's supervisor who is supervising the tenderer/contractor works.
- i. Prior information to concerned department (e.g. OHE/DCC/OCC/PPIO etc) for execution of work shall be planned by DMRC's supervisors.
- j. Vehicle /Lorry movement, if required, vehicle entry and movement from one location to another location shall be discussed in advances by tenderer/contractor supervisor and DMRC's supervisors. For vehicle/crane movement near OHE,

Form –“I”

INDEMNITY

(To be filled by Contractor/contractor staff individually)

I hereby agree and undertake that I have understood all the safety rules and procedures and I will abide by all safety rules and procedure. I declare that I will be responsible for any safety violations/ accident etc. DMRC will not be responsible in case of any accident / incident and will not compensate financially or otherwise.

Name of Indemnifier

Signature of Indemnifier

Name of Tenderer/contractor

Signature of Tenderer/contractor