



BEML LIMITED
BENGALURU
R & D CENTER

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Date	08.05.2020
Rev. No.	-
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RS15 Project
Procurement Technical Specification
of Phenolic Composite Floor Board

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REVISION HISTORY:

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1. Introduction

1.1. General

This Procurement Technical Specification (hereafter PTS) describes the technical requirements for Phenolic Composite Floor Board to be supplied for Delhi Metro Rail Corporation Limited (hereafter DMRC) RS-15 Project.

BEML will carry out all required works and activities as Contractor for DMRC RS-15 project while the supplier shall be responsible for all works required in this PTS with regard to Phenolic composite floor board and shall be responsible for supporting the BEML activities as contractor for DMRC RS-15 Project.

Presently DMRC has 4/6 Car Train set for its Broad Gauge line running at Delhi. To enhance the passenger carrying capacity, DMRC intends to convert the existing 4/6 Car Train set to 6/8 Car train set by adding intermediate M & T Cars.

The configuration of train formation is as follows.


- DT-M-M-DT - (existing)
- DT-M-T-M-M-DT - (existing)
- DT-M-T-M-T-M-M-DT - (proposed)

DT: Driving Trailer Car, M: Motor Car, T: Trailer Car

1.2. Climatic & Environmental Conditions

The car shall operate reliably and safely under the climatic and environmental conditions of Delhi. Accordingly, the floor board shall be designed to operate with satisfactory performance under the following Delhi environmental conditions.

Description	Limiting Values
Maximum ambient temperature (refer note below)	47°C
Minimum temperature	3°C
Humidity	100% saturation during rainy season

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Rainfall	Rain occurs generally from June to September. Average annual rainfall is approximately 650mm. maximum rainfall in any 24hrs period is 50mm.
Atmosphere during hot season	Extremely dusty
Maximum wind load	150 kg/m ²
Vibration & Shocks	The equipment, sub-systems & their mounting arrangements shall be designed to withstand satisfactorily the vibration and shocks encountered in service as specified in IEC 61373
S02 level in atmosphere	80 - 120 mg / m ³
Suspended particulate matter in atmosphere	360 - 540 mg / m ³

Note: The temperature of the metal surfaces of the vehicles when exposed directly to the sun, for long periods of time, may be assumed to rise to 70° C.


2. Definitions

The following definitions and abbreviations are applicable.

- “DMRC” means the Employer for the Mass Rapid Transport System (MRTS).
- “DMRC’s Representative” mean such persons appointed by DMRC to act as Engineer for the purpose of the MRTS.
- “BEML” means the Contractor to procure the Floor Board for DMRC RS15 Project.
- “Supplier” means the Supplier of Floor Board to BEML for DMRC RS15 Project.

3. Qualification Criteria

- Supplier shall be an Original Equipment Manufacturer (OEM) of phenolic composite type Floor Boards for Railway Metro Rolling stock, having experience in design, manufacturing, testing and commissioning for floor board.

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- The supplier shall have manufactured and supplied phenolic composite type floor boards and such supplies should have been in use and have established their satisfactory performance and reliability on Mass Rapid Transit Systems in revenue service over a period of two years or more. Satisfactory Revenue service performance certificates for a period of 2 years or more from end users/ Metro Operators for the above shall be submitted along with the technical offer.
- Along with the technical offer, the supplier shall fill-up vendor approval form for their supplies meeting the above requirements, and submit for DMRC vendor approval. Selection of vendor is subject to DMRC approval.
- The firm should undertake to provide the support during DLP period either by themselves or through sister company or a partner in India. The firm shall submit detailed proposal in this regard along with the technical offer.
- The firm should give an undertaking to supply spares for a minimum period of 10 years from the date of last car supplied by BEML under this contract.


4. Standards

The design, testing and manufacturing of the floor board shall conform to the latest editions of internationally recognized Standards viz., Indian, American, European, Japanese, ISO, etc.

5. Design Criteria

The floor board proposed by the supplier shall comply with the following design criteria.

- i. The non-skid floor structure shall be designed to minimize the life cycle cost of the floor over 35 years.
- ii. The floor and its mounting structure shall be designed to withstand any loads that may be applied over 35 years in normal operation of the consist.
- iii. The floor structure shall provide a high resistance barrier to fire and to noise generated beneath the vehicle. At all door openings, the floor shall make a weather-tight connection. No opening in the sub-floor is permitted.
- iv. The floor covering shall be anti-slip, waterproofed and sealed, non-skid, resistant to wear and staining, shall not trap dust, and shall be easily cleaned using conventional floor cleaning machines/methods and media.
- v. The floor design shall allow the floor covering to be removed without damage to the floor sub-structure.
- vi. The total floor structure shall provide an effective fire barrier for a minimum of 30 minutes as per BS 6853 / EN 45545. The supplier shall provide, as an

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option an increase of this period to 45 minutes, highlighting any implications this may have. Fire resistance characteristics shall conform to international standards.

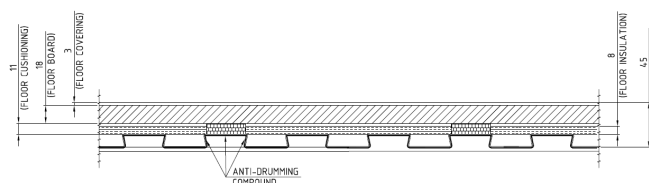
- vii. The sub-floor shall be insulated for anti-drumming and noise suppression.
- viii. The supplier shall demonstrate through design that no floor board swelling or undulation shall occur during the design life.

6. Technical Requirements

6.1. General

The floor structure is constructed as floating floor type in order to achieve high noise attenuation and fire barrier.

The floor construction total thickness is 45mm. Below shown the cross section of the floor structure.



45mm Thickness Floor Structure


The proposed floor board shall perform satisfactorily without deterioration in the specified environmental conditions of Delhi and shall withstand the loads that may be applied over 35 years in normal operation of the consist. The floor board shall be impermeable to water. The floor board shall meet the requirements of EN45545 HL-3 in respect of fire, smoke and toxicity.

The floor board supplied shall comply with the environmental conditions and design criteria specified at clause 1.2 and 4 respectively and the following technical requirements.

6.2. Floor Board

The supplier shall submit technical proposal for Phenolic composite type of Floor Boards.

The supplier shall be an OEM for phenolic composite type of board.

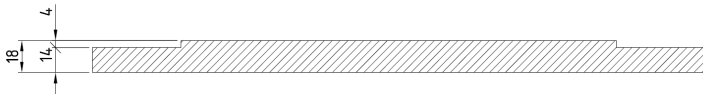
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The proposed phenolic composite design of the board shall be a proven one having satisfactory performance for a minimum period of 2 years in any of the Metro projects. Supporting satisfactory performance report from end users / Metro corporations shall be submitted.

For the proposed phenolic composite type of board, the supplier shall submit complete details, with following as a minimum, along with the technical offer.

1. Complete construction details with technical specification of the constituents.
2. The water impermeability measures.
3. Adhesive specifications & gluing procedures.
4. Proven manufacturing process details for the proposed boards.
5. Repair procedures.
6. Guaranteed life of the proposed boards.
7. Life cycle costing of the proposed boards.

The phenolic composite board composition shall generally be as under.

Thickness	18 mm
Construction	Bi-axial fibreglass skins impregnated with phenolic thermosetting resin and dense, fibre filled phenolic composite edge treatment.
Typical Cross Section for phenolic board	

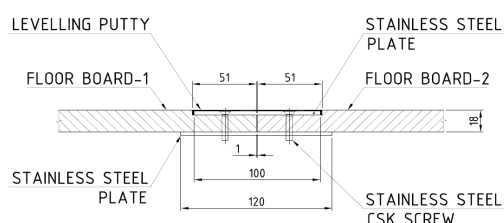
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Fixing backing plate	<p>Stainless steel Backing plate will be assembled to the floor board at desired location for joining floor board and for fixing the grab pole & other interior fittings to the floor board. The backing plate will be assembled to the floor board using M4 stainless steel CSK screw. The material grade of screw is ISO 3506-1, Gr. A2-70. The CSK hole locations are provided in the drawing.</p> <p>The supplier should ensure that when the screw is tightened to assemble the backing plate,</p> <ul style="list-style-type: none"> • The screw should not wobble / penetrate into the CSK holes. • The screw CSK head shall get tightened rigidly to board CSK hole and while tightening the screw, the CSK head in the board shall not get deformed.
Core	If used, shall be a proven one with non-wood solution.
Edge treatment (for complete periphery of floor board, cutouts and CSK holes)	Dense, glass fibre filled phenolic composite with high hardness suitable for end usage / assembly conditions.


The supplier shall submit the technical description and technical data sheet of the floor board meeting the above requirement.

6.3. Floor Board Joining

The floor boards are butt jointed as shown in the below image.




After joining all the boards to achieve leveling at the joints putty will be applied and through sander operation smooth leveled floor will be achieved. The floor board shall be strong enough so that floor board doesn't get abraded.


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6.4. Technical Parameters

Technical Data	Test Method	Requirement
Visual Inspection	-	Free from visual defects (voids, cracks, edge delamination, waviness, pores, discolouration, blister, resin ridges, wrinkles, fibre glass image, core imaging, bubbles and other visual defects)
Dimensional Inspection	-	As per drawing dimensions
Thickness	-	18 mm
Tolerance	-	Thickness: +1 -0 mm. Diagonal: ± 1 mm. Flatness: < 1mm/m. Edge Linearity: < 0.5mm/m
Density	ASTM C 271	< 500 kg/m ³
Temperature & Humidity Cyclic test	ISO 9142 Cyclic D3	No visible change in colour
Biological Durability	EN 355	UC 2
Edge Treatment (for complete periphery of floor board, cutouts and CSK holes)	-	Dense, glass fibre filled phenolic composite with high hardness suitable for end usage / assembly conditions. Also, Proven & suitable for the Delhi environmental condition and to ensure 35 years durability against water ingress.
Static Load	9500 N/m ²	No puncture, no delamination, no core fracture and no deformation
Indentation Load	350 N on a surface of 25 mm ²	No puncture, no delamination, no core fracture and no deformation
Flexural Strength (Facing Bending Stress)	ASTM C 393	> 110 MPa

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Flatwise Tensile Strength	ASTM C 297	>0.5 MPa
Flatwise Compressive Strength at 10% strain	ASTM C 365	>2 MPa
Water Resistance	<ul style="list-style-type: none"> 100 hours with the machined area exposed to water at 82 °. 8±4 hours at -18 °C. 24 to 48 hrs 23 °C ± 2°C and 50% ± 10% RH to cut and to test sample for flexural strength as per ASTM C393 	The flexural strength shall be > 110 MPa on the test sample.
Rolling Load	Resistant to rolling load, such as those from trolleys, floor cleaning machine and heavy roller used for installing floor covering.	No puncture, no surface damage, no core fracture and no delamination.
Large Object Impact Load	The impact load shall be approximately 65kg, dropping height shall be approximately 300mm and impact area shall be approximately 200mm ²	No puncture and no delamination
Small Object impact Load	The impact load shall be approximately 7kg and dropping height shall be approximately 1500mm and impact area shall be approximately 200mm ²	No puncture, no surface damage and no delamination
Fatigue Load	90kg on an area 0.01m ² for 10,00,000 cycles at the rate of 1 cycle per 3 seconds	No puncture, no core fracture and no delamination

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Thermal Conductivity	ASTM C 177	< 0.25 W/mK
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6.5. Service Life

The supplier shall ensure a guaranteed revenue service life of 35 years for the proposed type of floor board.

6.6. Fire Safety

The floor board shall be selected to reduce to the maximum extent practical, the heat load, rate of heat release, propensity to ignite, rate of flame spread, smoke, emission and toxicity of combustion gases.

The floor board shall confirm to fire safety requirements of EN 45545, Category 4-A (HL3) R10 requirements.

The fire performance deliverables shall be provided in accordance with following table.


Sl. No.	Deliverables	Remarks
1	Fire safety plan	As per EN45545 HL3
2	Fire safety Test Reports including heat release rate.	As per EN45545 HL3
3	Heat Release Rate	ISO 5660-1: 25 kW/m ² MARHE < 50 kW/m ²

Fire safety test reports as per EN 45545 of floor board supplied to previous projects shall be submitted for reference.

6.7. Noise Attenuation

The weighted sound reduction index R_w of the floor board without floor covering, measured as per ISO 10140-2, shall be ≥ 24 dB

The 1/3 octave band sound reduction indices R from 100Hz to 3150Hz shall be presented in both table and graph formats.

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6.8. Compatibility to Floor Covering and Adhesive

The floor covering will be rubber material and pasted to the floor board using adhesive. The floor board surface shall be suitable for spreading the floor covering adhesive. The supplier shall submit the details of the floor board surface.

6.9. Floor Covering Removal

If any floor covering repair work to be carried out, the floor covering removal shall not damage the floor board. The supplier shall submit the detailed floor covering removal procedure along with the technical offer.

6.10. Workmanship and Finish

The supplier shall ensure that the floor board shall be free from surface defects such as voids, cracks, edge delamination, waviness, discolouration, bubbles and other visual defects that would impair usability of the floor board.

7. Quality Assurance Program

The supplier shall hold ISO 9001/ IRIS certification and shall manufacture the product accordingly. The supplier shall submit a copy of ISO 9001 / IRIS certification along with the offer. The supplier shall monitor and control the Quality systems as per ISO 9001/IRIS guidelines. BEML and/or DMRC's representative may periodically conduct compliance audits of the Supplier's Quality management system.

The supplier shall submit Quality Assurance Plan (QAP) based on ISO 9001 / IRIS guidelines.


8. Scope of Supply

The supplier shall be responsible for the scope of supply of the floor board, which shall comprise, unless specifically excluded, the design, manufacture, testing, commissioning and rectification of defects during the Defect Liability Period and required tools for the proper installation of the floor board, as a minimum.

The supplier shall have responsibility for suitability of the proposed floor board and their performance at the environmental conditions specified at Clause 1.2

8.1. Floor Board

The floor board shall be supplied as per the drawing dimensions and confirming to this PTS requirement, as a minimum.

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8.2. Tools

The supplier shall supply two complete sets of tools required for installation of the floor board, along with the first supplies of the floor board. The list of tools shall be submitted along with the technical offer.

8.3. Training

The supplier shall impart training to BEML personnel on proper installation of the floor board in the first 4 cars.

8.4. Submission of Samples

The supplier shall submit 1 no. each floor board to drawing no. 909-16165 and 909-16177, meeting the technical requirements of this PTS and obtain BEML approval, before taking up production.

8.5. Packinga

The Supplier shall pack properly in order that in transit and after supply of the floor board to the place allocated by BEML, no damage to the floor board shall occur.


9. Type Tests & Routine Tests

The floor board shall be type and routine tested in accordance with relevant standards and specifications. All such tests shall be carried out at the supplier's cost, wherever performed, in the presence of and to the satisfaction of BEML and DMRC, who reserves the right to witness any or all of the tests and to require submission of any or all test specifications and reports.


BEML and DMRC reserve the right to reasonably call for additional tests, if necessary.

The supplier shall carryout the following type tests and routine tests, as a minimum.

Sl. No.	Kind of Test	Test Method	Type Test	Routine Test
1	Visual inspection	-	O	O
2	Dimensional inspection	As per drawing dimensions	O	O
3	Material	As per approved sample	O	O
4	Density	ASTM D 271	O	-
5	Temperature & Humidity Cyclic test	ISO 9142 Cyclic D3	O	-

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6	Biological Durability	EN 355	O	-
7	Static load	9500 N/m ²	O	-
8	Indentation load	350 N on a surface of 25 mm ²	O	-
9	Flexural Strength (Facing Bending Stress)	ASTM C 393	O	-
10	Flatwise Tensile Strength	ASTM C 297	O	-
11	Flatwise Compressive Strength at 10 % strain	ASTM C 365	O	-
12	Water Resistance	<ul style="list-style-type: none"> • 100hours with the machined area exposed to water at 82 °C. • 8±4 hours at -18 °C. • 24 to 48 hrs 23 °C ± 2°C and 50% ± 10% RH to cut and to test sample for flexural strength as per ASTM C393. 	O	-
13	Rolling load	Resistant to rolling load, such as those from trolleys, floor cleaning machine and heavy roller used for installing floor covering	O	-

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14	Large object impact load	The impact load shall be approximately 65kg, dropping height shall be approximately 300mm and impact area shall be approximately 200mm ²	O	-
15	Small object impact load	The impact load shall be approximately 7kg and dropping height shall be approximately 1500mm and impact area shall be approximately 200mm ²	O	-
16	Fatigue load	90kg on an area 0.01m ² for 10,00,000 cycles at the rate of 1 cycle per 3 seconds	O	-
17	Floor cover removal	-	O	-
18	Thermal conductivity	ASTM C 177	O	-
19	Noise Attenuation	ISO 10140-2	O	-
20	Fire Safety including Heat Release Rate	EN 45545 HL-3	O	-

The type test procedure document shall be prepared by the supplier and BEML/DMRC approval shall be obtained before conducting the tests.

The routine test reports shall be submitted along with every batch of supplies.

9.1. First Article Inspection (FAI)

The supplier shall offer the floor board for First Article Inspection by BEML/ DMRC in accordance with the BEML/DMRC approved FAI plan prior to serial production in order to confirm that the item produced fully complies with the approved technical specifications, System design and manufacturing process.

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The Supplier shall ensure that the produced floor board is compliant to all requirements prior to inviting for testing and FAI. The pre-test result prior to official testing/FAI shall be submitted with the invitation letter to request BEML/ DMRC witness.

At the FAI, the supplier shall make available all pertinent design and manufacturing process documentation, test records, material certifications, etc.

During FAI, if any inspections or tests indicate that specific hardware or documentation does not meet the specified requirements, the appropriate items shall be repaired, replaced, upgraded, or added by the Supplier at their own cost, as necessary to correct the noted deficiencies. After correction of deficiency, all tests necessary to verify the effectiveness of the corrective action shall be repeated.

If FAI has to be repeated due to non-compliances / deficiencies noticed, the cost towards the same and the cost towards BEML/DMRC visit to supplier's place for witness of re-FAI shall be to supplier's responsibility.

Upon acceptance of the FAI by BEML/DMRC, the supplier can proceed to manufacture all pertinent hardware. The hardware must meet or exceed the quality standards set at the FAI, and must incorporate any comments made by BEML/DMRC at the FAI.

Supplier shall note that BEML/DMRC FAI clearance will not relieve the supplier's responsibility towards design, development, testing, manufacture and supply during the revenue service.

At any point of time, during the execution of the contract, if BEML/DMRC has any concerns about the quality of the product supplied, BEML/DMRC reserves the right to randomly draw samples from any of the supply lots and the supplier shall carryout the type tests at accredited outside labs and shall submit the reports.

10. Appendices

- Vendor approval form.
- Technical offer Submittals Check List.

11. Submittals with Technical Offer

The Supplier shall provide as a minimum, the following along with the technical offer.

1. Complete Technical Offer for floor board including technical description.
2. Complete Technical details as per Clause 6.
3. Fire safety test report copies of earlier similar projects.

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4. Duly filled vendor approval form along with supporting documents including QAP & ITP for RS15 project, company profile with infrastructure facilities, product range etc., and satisfactory revenue service performance certificate from end user/Metro corporations for the floor board.
5. Clause wise comments against PTS Document No. GR/TD/5022.

Date:

Proforma No: RS15/BEML/V.NNO/CAT- __/_____/M/____

CHECKSHEET FOR SUBMISSION OF DOCUMENTS FOR NOTICE OF NO OBJECTION FOR SUB-CONTRACTOR/VENDOR FROM DMRC			
ITEMS:			
Category	A	Items manufactured outside India and proposed to be used in all RS15 trains.	<input type="checkbox"/>
	B	Items manufactured outside India and proposed to be used in all RS15 trains but likely to be localised after some part quantity from OEM (shall be declared by BEML).	<input type="checkbox"/> Equivalent Localisation Quantity : __ Trainsets
	C	Locally manufactured items proposed to be used in all RS15 trains.	<input type="checkbox"/>
1	Proforma for Submission of documents		<input type="checkbox"/> YES <input type="checkbox"/> NO
2	Vendor Details	Annexure-I	<input type="checkbox"/> YES <input type="checkbox"/> NO
3	Sub-Vendor Detail	Annexure-I	<input type="checkbox"/> YES <input type="checkbox"/> NO
4	Certificate from BEML	Annexure-II	<input type="checkbox"/> YES <input type="checkbox"/> NO
5	Copy of technical purchase specification of BEML		<input type="checkbox"/> YES <input type="checkbox"/> NO
6	Inspection and Test Plan		<input type="checkbox"/> YES <input type="checkbox"/> NO
Note:	1	Incomplete documents will not be reviewed by DMRC.	
	2	Items used in DMRC's existing rolling stock do not automatically qualify for use unless specifically approved by DMRC for this project.	
<div style="display: flex; justify-content: space-between;"> (BEML Limited) _____ (Proposed Vendor) </div>			

**PROFORMA FOR SUBMISSION OF DOCUMENTS FOR NOTICE OF NO OBJECTION FOR SUB-CONTRACTOR/VENDOR
FROM DMRC**

1	Item description				
2	Vendor particulars along with proposed manufacturing unit submitted in Annexure-I	<input type="checkbox"/> YES <input type="checkbox"/> NO			
3	Technical Specification & Inspection Plan	—			
3.1	Enclosed copy of Technical Purchase Specification of BEML	<input type="checkbox"/> YES <input type="checkbox"/> NO			
4	Details of experience/ satisfactory performance to establish compliance with ERTS 3.2.2.				
The Information shall be submitted in following format:					
	Mass Rapid Transit System where proposed sub-system/equipment/component has been used	Country	Quantity Used	Period in satisfactory Revenue Service [from/to] (Min 2 yrs in each MRTS)	Manufacturing Unit
	1	2	3	4	5
1	1				
	2				
	3				
2	1				
	2				
	3				
3	1				
	2				
	3				
4	1				
	2				
	3				
4.1	Based on above, is the proposed item compliant with ERTS 3.2.2				<input type="checkbox"/> YES <input type="checkbox"/> NO
4.2	Is the proposed manufacturing unit compliant with ERTS 3.2.2				<input type="checkbox"/> YES <input type="checkbox"/> NO
4.3	Confirmation that the subsystems used in RS15, as proposed herein, shall have NO CHANGE in source, manufacturing unit, components, specification, material etc. from those approved unless got specifically approved from DMRC.				<input type="checkbox"/> CONFIRMED <input type="checkbox"/> NOT CONFIRMED
4.4	Information submitted herein as above is certified as correct, strictly in accordance with the RS13 contract conditions and has been verified by BEML. In case any information is found to be factually incorrect or at variance with contract conditions at any stage, BEML commits to replace the concerned 'sub-system' in complete fleet as per the instructions of engineer, which shall be final and binding. In such case, BEML shall not be eligible either for seeking any claim whatsoever or for seeking extension of contract delivery period.				<input type="checkbox"/> CONFIRMED <input type="checkbox"/> NOT CONFIRMED
4.5	Confirmation that DMRC may depute a team of Engineers (around six) at Sub-contractor/vendor's office for requisite duration with a view to expedite finalization of designs in accordance with contract 'RS15' conditions ERGS 5.11.3.				<input type="checkbox"/> CONFIRMED <input type="checkbox"/> NOT CONFIRMED
5	Notwithstanding the vendor approval communicated by DMRC on the proposal of BEML, responsibility for manufacture, testing, supply, commissioning and quality control shall continue to rest solely with BEML and BEML will be solely responsible for meeting all contractual requirements.				<input type="checkbox"/> CONFIRMED <input type="checkbox"/> NOT CONFIRMED
<div style="display: flex; justify-content: space-between;"> (BEML Limited) _____ (Proposed Vendor) </div>					

Date:

Proforma No: RS15/BEML/V.NNO/CAT- ___ / ___ /P2/ ___

6	Category B - Sourcing from facilities in India after supply of agreed quantity from approved manufacturing unit.	
6.1	In case OEM wants to use manufacturing facilities in India (other than his own) for items for which the OEM has been approved, it shall enter into an agreement with such selected Indian equipment manufacturer and obtain prior approval from DMRC. No change in composition, rating, type, model no., manufacturing process, quality standards, design, etc. and make of the components used in assemblies/sub-assemblies of such equipment as manufactured by the approved parent vendor shall be made without specific prior approval of the Engineer.	
6.2	In case the vendor uses his own facilities for indigenization after part supply of equipment from the approved manufacturing unit, no change in design, component type/make, quality standards, manufacture procedure, sourcing of materials etc. shall be made without specific prior approval of the Engineer.	
6.3	In case OEM wishes to change/make/type specifications, etc. of any sub-components for supplies to be sourced from Indian facility, specific prior approval of the Engineer shall be obtained for changes made, model, specification, etc. Responsibility for obtaining such prior approval shall rest solely with the contractor.	
6.4	In case of local manufacturing of carbody or any other item(s) manufactured by BEML/OEM and used in initial trains, BEML shall be exclusively responsible for all quality assurance and inspection and their implementation and also ensure provision of physical partition as per the ERGS 1.1.7	
7	Category C- Locally Manufactured Items	
7.1	Does the manufacturing unit satisfy ERTS 3.2.2	<input type="checkbox"/> YES <input type="checkbox"/> NO
7.2	If not, basis/justification for proposal to be submitted for DMRC review	<input type="checkbox"/> YES <input type="checkbox"/> NO
8	BEML confirms that in terms of ERTS 3.2.2, they would seek Notice of No Objection for Sub-Contractor/Vendor from DMRC notwithstanding the item(s) being used in DMRC's existing rolling stock.	<input type="checkbox"/> YES <input type="checkbox"/> NO
9	BEML shall submit Certificate as per enclosed Annexure-II confirming:	
9.1	Compliance with Clause 6.6 of ERGS and GCC Clause 5.8 regarding supply of software tools/documents/materials etc.	
9.2	Compliance with Clause 8.12 of ERGS regarding supply of all drawings, specifications, patterns etc. in case the manufacture of these items is discontinued by the proposed vendor.	
10	Commitment from the vendor that in case of any future procurement action by DMRC, he shall quote directly to DMRC.	
12	BEML commits that the vendor shall be complying with all relevant contract clauses.	
<div style="display: flex; justify-content: space-between; align-items: flex-end; padding-top: 20px;"> <div>(BEML Limited)</div> <div>_____ (Proposed Vendor)</div> </div>		

Date:

Proforma No: RS15/BEML/V.NNO/CAT- ___ / ___ /A1/ ___

Annexure-I**SUB-Contractor/VENDOR/SUB-SUPPLIER DETAILS**

1	Vendor/Sub-supplier OEM Name	
2	Details of item proposed to be sourced	
3	Sourcing by:	(a) BEML <input type="checkbox"/> (b) Proposed Main vendor <input type="checkbox"/>
4	Marketing Office/Head Office	
4.1	Complete address (including website)	
4.2	Contact person details in Head Office	
	• Name	
	• Designation	
	• Telephone	
	• Fax	
	• Mobile	
	• Email	
5	Details of proposed compliant plant/manufacturing unit from where item is proposed to be sourced	
5.1	Complete address (including website)	
5.2	Contact person details	
	• Name	
	• Designation	
	• Telephone	
	• Fax	
	• Mobile	
	• Email	
5.3	Supply details of the manufacturing unit for the proposed item or item with similar design.	
5.4	It is confirmed that the proposed manufacturing unit and the vendor are fully compliant with ERTS 3.2.2	
5.5	We commit that in case of any future procurement action by DMRC, the proposed vendor shall quote directly to DMRC without any involvement of BEML.	
5.6	We have carefully gone through all relevant clauses of the RS15 Contract and shall fully abide by the contract conditions and decisions communicated by DMRC during contract execution without exception.	
(BEML Limited) _____ (Proposed Vendor)		

Date:

Proforma No: RS15/BEML/V.NNO/CAT- ____/_____/A2/____

Annexure-II

**Certificate for compliance with Contract conditions regarding
Software requirements.**

This is certified that in the contract between BEML and _____ (proposed vendor) for supply of _____, specific conditions for confirming total compliance with the following contract condition/clauses have been included and agreed to between BEML and _____ (proposed vendor):

(a) Clause 6.6 of ERGS and GCC 5.8

It is certified that we shall provide full access of application software(s) and any other software /hardware tools to DMRC which they may specifically require for the intended purpose specified in this specification. For all commercial software BEML shall provide all available documentation for the application and maintenance of that software.

Complete documentation along with the software to be supplied by BEML and its Vendor(s) shall comprise of Signal flow diagram, flow charts, functional blocks, details of signals, interpretations so as to enable engineer to debug and implement vehicle/train level modifications based on DMRC's experience, operational & maintenance requirements. Full access to the application software to DMRC shall be provided for this purpose.

It shall be possible for DMRC to modify/change various parameters/logics used in the software and implement the changes on trains. Full facilities including any software/hardware tools, simulation/test bench which are essential for this purpose shall be supplied.


It is committed to supply the software/hardware etc. within the scope specified in respective clauses of ERTS relevant for the proposed item/vendor and we would be fully complying with GCC 5.8

(b) Clause 8.12 of ERGS:

It is certified that _____ (proposed vendor) will supply all drawings, specifications, patterns and any other information required by DMRC for arranging such items in case the manufacture of these items is discontinued within 10 years by the proposed vendor.

(BEML Limited)

_____ (Proposed Vendor)

	TECHNICAL OFFER SUBMITTALS CHECK SHEET	Project RS15
Aggregate	Floor Board	PTS DOC No.: GR/TD/5022
BEML Enquiry/ RFQ Reference :		

Sl. No.	DETAILS	SUBMITTED	NOT SUBMITTED
1	Complete Technical Offer for floor board including technical description.	<input type="checkbox"/>	<input type="checkbox"/>
2	Complete Technical details as per Clause 6	<input type="checkbox"/>	<input type="checkbox"/>
3	Fire safety test report copies of earlier similar projects	<input type="checkbox"/>	<input type="checkbox"/>
4	Duly filled vendor approval form along with supporting documents including QAP & ITP for RS15 project, company profile with infrastructure facilities, product range etc., and satisfactory revenue service performance certificate from end user/Metro corporations for the floor board	<input type="checkbox"/>	<input type="checkbox"/>
5	Clause wise comments against PTS Document No. GR/TD/5022.	<input type="checkbox"/>	<input type="checkbox"/>

Note : Incomplete submissions are liable for Rejection.

Signature of the Bidder with Seal