



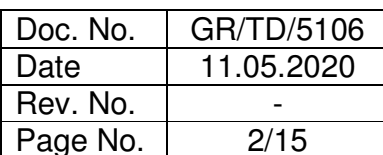
BEML LIMITED
BENGALURU
R & D CENTER

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RS15 Project

**Procurement Technical Specification
of Floor Cushioning**

	Name	Date	Signature
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Reviewed By	R Purushothaman	11.05.2020	<i>R. Purushothaman</i>
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1. Introduction

1.1. General

This Procurement Technical specification (PTS) specifies the technical requirements of Floor Cushion Rubber used for the Vibration Isolation of the Floating Floor of the Metro cars to be supplied for Delhi Metro Rail Corporation Limited (hereafter DMRC) RS15 Project.

BEML will carry out all required works and activities as Contractor for DMRC RS15 project while the supplier shall be responsible for all works required in this PTS with regard to Floor Cushion Rubber and shall be responsible for supporting the BEML activities as contractor for DMRC RS15 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 Metro cars shall operate reliably and safely under the climatic and environmental conditions of Delhi. Accordingly, the floor cushioning shall be designed to operate with satisfactory performance under the following 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:

- 1) 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 Cushion Rubber for DMRC RS15 Project.
- “Supplier” means the Supplier of Floor Cushion Rubber to BEML for DMRC RS15 Project.

3. Qualification Criteria

- (i) Supplier shall be an Original Equipment Manufacturer (OEM) of Floor Cushion Rubber for Railway Metro Rolling stock having experience in design, manufacturing, testing and commissioning for floor cushioning.
- (ii) The Proposed type of floor cushioning shall have been manufactured and

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supplied by the supplier 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.

- (iii) Along with the technical offer, the supplier shall submit the filled Vendor approval form for their supplies meeting the above requirements, and submit for DMRC vendor approval. Selection of vendor is subject to DMRC approval.
- (iv) 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.
- (v) 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 cushioning shall conform to the latest editions of internationally recognized Standards viz., Indian, American, European, Japanese, ISO, etc.

5. Design Criteria

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

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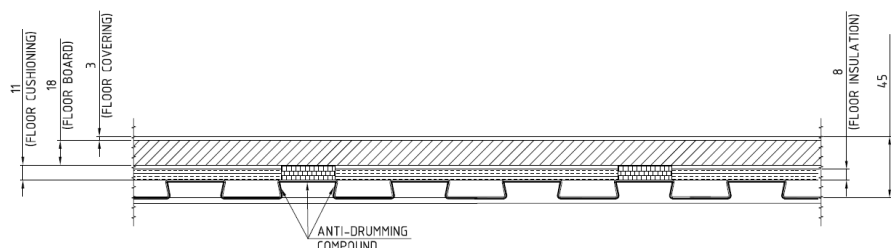
- vii. The sub-floor shall be insulated for anti-drumming and noise suppression.
- viii. The supplier shall demonstrate through design that no floor swelling or undulation shall occur during the design life.

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 cushion rubber 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 cushion rubber shall meet the requirements of EN45545 HL-3 in respect of fire, smoke and toxicity.

The floor cushion rubber supplied shall comply with the environmental conditions and design criteria specified at clause 1.2 and 5 respectively and the following technical requirements

6.2. Technical Parameters

The floor cushion rubber proposed shall be of proven type with superior vibration isolation and high durability. The Cushion rubber shall have a low natural frequency and a wide dynamic range. The cushion rubber shall have a wide temperature range with high creep properties and long lasting performance under the operating loads of the car.

The supplier shall be an OEM for the proposed type of cushion rubber and the proposed type of cushion rubber shall have established its performance in floating floor application of similar Railway vehicles.

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Technical Data	Test Method	Requirement
Material	-	Rubber with high vibration isolation efficiency and low natural frequency, proven for Metro car floating floor application. With Pressure sensitive Adhesive & release liner on one side.
Visual Inspection	-	Free from visual defects (voids, cracks, discolouration and other visual defects)
Sizes	-	4 mm Thk. x 50 mm Width x 2930 mm Roll / Strip (Length)
		4 mm Thk. x 160 mm Width x 2930 mm Roll / Strip (Length)
		11 mm Thk. x 40 mm Width x 4050 mm Roll / Strip (Length)
Tolerance on length, width, thickness	-	As per ISO 3302-1
Density	ASTM D 1056	Max. 380 kg/m ³
Tear Strength	ISO 34	Min. 2.5 N /mm
Compression deflection test	ASTM D 1056 Measuring the force necessary to produce 25% deflection	Min 0.06 N/mm ²
Compression Set	ASTM D 1056 70 °C, 22hrs @ 50% deflection, 30 min recovery at 23 °C	< 5%

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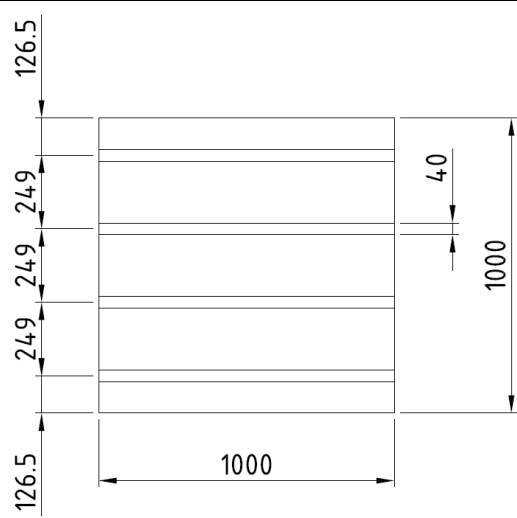
Compression Fatigue Durability	The floor cushioning sample of 150 x 150 x 11mm shall be subjected to 50% compression for 10,00,000 cycles at the rate of 3.5 cycles per second.	The permanent deformation shall be ≤ 0.5 mm and there shall be no wear, overheating and other defects.
Creep	ISO 8013 The creep test shall be tested for load of 0.06N/mm ² for 3,00,000 hours	Permanent deformation < 3 mm
Peel Adhesion for the PSA	EN 1939	30 N/25 mm
Thermal Conductivity	ASTM C 518	< 0.1 W/mK
Operating Temperature	SAE J 2236 -10 °C to +70 °C	By meeting the technical requirements of this PTS the supplier shall declare the tensile strength and elongation as per ASTM D 412. The floor cushion shall have retention of at least 50% original tensile strength and elongation after 1008 hours of heat aging.

The supplier shall submit the technical description and technical data sheet of the floor cushioning.

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6.3. Floor Cushion Calculation

The supplier shall submit the calculation report covering the following.

Description		Calculation input	Supplier results
Design			
Load, kg/m ²	Empty	22	
	Operating	705	
	Maximum	968	
Deflection, mm	At empty load	Initial	
		After 1 year	
		For 35 years	
	At operating load	Initial	
		After 1 year	
		For 35 years	
	At maximum load	Initial	
		After 1 year	
		For 35 years	
Natural frequency, Hz		At empty load	
		At operating load	

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	At maximum load	
Isolation efficiency corresponding to natural frequency	At empty load	
	At operating load	
	At maximum load	
	At 25% deflection	

6.4. Floor Cushioning Self Adhesive Release Tape

The self adhesive with release tape shall be compatible the floor cushioning and with stainless steel 2B finish sheet. The supplier shall submit the compatibility test report.

6.5. Floor Cushioning Removal

The supplier shall submit the detailed floor cushioning and adhesive removal procedure along with the technical offer.

6.6. Fire Safety

The floor cushioning 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 cushioning 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

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

6.7. Workmanship and Finish

The supplier shall ensure that the floor cushioning shall be free from pinholes, blisters, blow holes, tear, wrinkles, lumps and other visual defects that would impair usability of the floor cushioning.

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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 scope of supply includes the floor cushioning with self adhesive release tape along with the required tools, required for the proper installation of the floor cushioning, as a minimum.

8.1. Floor cushioning

The supplier shall supply the floor cushioning with self adhesive release tape to the required size and thickness as specified in the tender.

8.2. Tools

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

8.3. Packing

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

8.4. Service Life

The supplier shall ensure that the floor cushioning shall not get permanently deformed by > 3mm for 35 years of revenue service.

9. Type Tests & Routine Tests

The floor cushioning 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.

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Sl. No.	Kind of Test	Test Method	Type Test	Routine Test
1	Material	As per approved sample	O	O
2	Visual Inspection	-	O	O
3	Dimension	-	O	O
4	Density	ASTM D 1056		
5	Tear Strength	ISO 34	O	O
6	Compression deflection test	ASTM D 1056 Measuring the force necessary to produce 25% deflection	O	-
7	Compression Set	ASTM D 1056 70 °C, 22hrs @ 50% deflection, 30 min recovery at 23 °C	O	-
8	Compression Fatigue Durability	The floor cushioning of size 150 x1 50 x 11mm shall be subjected to 50% compression for 10,00,000 cycles at the rate of 3.5 cycles per second	O	-
9	Creep	ISO 8013 The creep test shall be tested for load of 0.06N/mm ² for 3,00,000 hours	O	-
10	Peel Adhesion for the PSA	EN 1939	O	-
11	Thermal Conductivity	ASTM C 518	O	-
12	Operating Temperature	SAE J 2236 -10 °C to +70 °C	O	-
13	Fire safety including heat release rate	EN 45545	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.

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9.1. First Article Inspection (FAI)

The supplier shall offer the floor cushioning 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 technical specifications, System design and manufacturing process.

The Supplier shall ensure that the produced floor cushioning 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.

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1. Complete Technical Offer for floor cushioning including technical description and floor cushioning calculation as per clause no. 6.3 of this PTS.
2. Technical data sheet of floor cushioning, Self adhesive release tape and installation tools.
3. Fire safety test report copies of earlier projects.
4. Installation guide for the floor cushioning.
5. Supporting documents for Qualification Criteria compliance (Clause 3).
6. Duly Filled Vendor credential form along with supporting documents and company profile with infrastructure facilities, product range etc., for the floor cushioning.
7. Clause wise comments against PTS Document No. GR/TD/5106.

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>			

Date:

Proforma No: RS15/BEML/V.NNO/CAT-___/___/P1/___

**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; align-items: flex-end;"> (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 Cushioning	PTS DOC No.: GR/TD/5106
BEML Enquiry/ RFQ Reference :		

Sl. No.	DETAILS	SUBMITTED	NOT SUBMITTED
1	Complete Technical Offer for floor cushioning including technical description and floor cushioning calculation as per clause no. 6.3 of this PTS.	<input type="checkbox"/>	<input type="checkbox"/>
2	Technical data sheet of floor cushioning, Self adhesive release tape and installation tools.	<input type="checkbox"/>	<input type="checkbox"/>
3	Fire safety test report copies of earlier projects.	<input type="checkbox"/>	<input type="checkbox"/>
4	Installation guide for the floor cushioning.	<input type="checkbox"/>	<input type="checkbox"/>
5	Supporting documents for Qualification Criteria compliance (Clause 3).	<input type="checkbox"/>	<input type="checkbox"/>
6	Duly Filled Vendor approval form along with supporting documents and company profile with infrastructure facilities, product range etc., for the floor cushioning.	<input type="checkbox"/>	<input type="checkbox"/>
7	Clause wise comments against PTS Document No. GR/TD/5106.	<input type="checkbox"/>	<input type="checkbox"/>

Note : Incomplete submissions are liable for Rejection.

Signature of the Bidder with Seal