

PREAMBLE FOR BOQ CUM RATE SCHEDULE

1	Preamble for the Schedule of Quantities/BOQ Cum Rate Schedule:
1.1	Details of the items in the BOQ Cum Rate Schedule shall be read in conjunction with the Corresponding Relevant IS Code and/or ASTM / International Standard and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
1.2	Not Applicable
1.3	Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
1.4	Unless specifically mentioned otherwise in the contract, the contractor shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, labour materials, levies, supervision, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
1.5	Not Applicable
1.6	The quantities of the various items mentioned in the BOQ cum Rate Schedule are approximate and may vary up to any extent or be deleted altogether. The overall variation in contract value on execution shall be dealt as per GCC.
1.7	BHEL Engineer's decision shall be final and binding on the contractors regarding clarification of items in BOQ cum Rate schedule with respect to the other sections of the contract.
1.8	In case of any discrepancy between item description, relevant specification, clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the contractor has quoted for the more stringent requirement.

PROJECT: Various Project Sites of BHEL Across India							
Summary (Un-Priced Rate Schedule)							
Sl. No.	Item Description	Quantity	Units	Quoted Currency in INR / Other Currency	BASIC TOTAL AMOUNT In Figures To be entered by the Bidder (Exclusive of GST) Rs. P	TOTAL AMOUNT (For taxes refer Chapter-V of TCC) Rs. P	TOTAL AMOUNT In Words
1	2	3	4	5	6	7	8
1	TOTAL PRICE FOR ENTIRE SCOPE OF WORK (100% QUANTITY) AS PER TENDER NO. BHEL/CPC/FA/LAB_TEST/27/048 for Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.	1.00	Total Price	INR		0.000	
Total in Figures					0.000	0.000	
Quoted Rate in Words							

PART-B								
PROJECT: Various Project Sites of BHEL Across India								
BOQ CUM RATE SCHEDULE (PRICE BID)								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
B	ROCK TESTING							
B1	Rock Core Logging	IS 11315	ASTM D2113	RM	60			2.783260543
B2	RQD Determination	IS 11315	ASTM D6032	RM	60			1.94828238
B3	UCS of Rock	IS 9143	ASTM D7012	No.	25			0.811784325
B4	Point Load Index	IS 8764	ASTM D5731	No.	25			0.603039784
B5	Mohr's Hardness Test	IS 13630 (Part 13)	ASTM C1895	No.	15			0.146121179
C	CEMENT TESTING							
C1	Fineness	IS 4031 Part 2	ASTM C204	No.	30			0.208744541
C2	Standard Consistency	IS 4031 Part 4	ASTM C187	No.	30			0.224887452
C3	Initial & Final Setting Time	IS 4031 Part 5	ASTM C191	No.	30			0.200394759
C4	Soundness	IS 4031 Part 3	ASTM C151	No.	25			0.265337505
C5	Compressive Strength	IS 4031 Part 6	ASTM C109	No.	40			0.709916989
C6	Chemical Analysis	IS 4032	ASTM C114	No.	20			0.881365839
C6.1	Oxide Composition like Cao,SiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , SO ₃ , MgO, Na ₂ O, K ₂ O by:							
C6.1.1	i) Chemical Method			No.	10			0.448383274
C6.1.1.2	ii) XRF			No.	10			1.669956326
C6.2	Bogues Compound - C ₃ S, C ₂ S, C ₃ A, C ₄ AF and Control Ratio like LSF (Lime Saturation Factor), SR (Silica Ratio), AR (Alumina Ratio)			No.	10			0.208744541
C7	Specific Gravity Test		ASTM C188	No.	20			0.080343454
C8	Heat of Hydration		ASTM C186	No.	20			1.29885492
D	FINE AGGREGATE TESTING							
D1	Sieve Analysis	IS 2386 Part 1	ASTM C136	No.	50			0.385017709
D2	Specific Gravity & Water Absorption	IS 2386 Part 3	ASTM C128	No.	50			0.454599222
D3	Bulking	IS 2386 Part 3	ASTM C29	No.	25			0.162356865
D4	Silt Content (75 µm Passing by Weight & 75 µm Passing by Volume)	IS 2386 Part 2	ASTM C117	No.	40			0.204105773
D5	Organic Impurities	IS 2386 Part 2	ASTM C40	No.	25			0.252812833
D6	Fineness Modulus	IS 2386 Part 1	ASTM C136	No.	50			0.309405797
E	COARSE AGGREGATE TESTING							
E1	Sieve Analysis	IS 2386 Part 1	ASTM C136	No.	50			0.385017709

PART-B								
PROJECT: Various Project Sites of BHEL Across India								
BOQ CUM RATE SCHEDULE (PRICE BID)								
SCOPE OF WORK:-								
Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
E2	Specific Gravity & Water Absorption	IS 2386 Part 3	ASTM C127	No.	50			0.454599222
E3	Aggregate Crushing Value	IS 2386 Part 4	ASTM D5821	No.	30			0.225444104
E4	Aggregate Impact Value	IS 2386 Part 4	ASTM D5874	No.	30			0.225444104
E5	Los Angeles Abrasion	IS 2386 Part 4	ASTM C131/C535	No.	30			0.303375399
E6	Flakiness & Elongation Index	IS 2386 Part 1	ASTM D4791	No.	30			0.30894192
F	AGGREGATE DURABILITY (Fine & Coarse Aggregates)							
F1	Soundness in Na ₂ SO ₄ & MgSO ₄	IS 2386	ASTM C88	No.	40			0.66798253
F2	Petrographic Examination	IS 2386	ASTM C295					
F2.1	Optical Microscope Method			No.	20			3.293524976
F2.2	XRD - Analysis			No.	20			3.54193098
F3.1	ASR_Reactivity Analysis	IS 2386	ASTM C1260	No.	40			1.89261717
F3.2	Quick Chemical Analysis		ASTMC 289	No.	20			1.447295483
F3.3	Accelerated Mortar Bar test		ASTMC 1260	No.	20			2.072044699
F3.4	Long Term Concrete Prism test (in case of Coarse aggregates only)		ASTMC 1293	No.	10			0.834978163
F4.1	ACR_Reactivity Analysis	IS 2386	ASTM C586	No.	40			9.277535145
F4.2	Chemical Analysis for CaO, MgO and Al ₂ O ₃ and analyse the ACR reactivity as per CSA 23.2-26A			No.	30			3.896564761
F4.3	Long term concrete Prism Test for 3 months, 6 months & 12 months.		ASTMC 1105	No.	10			6.958151358
G	CRUSHED STONE SAND TESTING							
G1	Grading	IS 383	ASTM C136	No.	25			0.188565902
G2	Micro Fine Content	IS 383	ASTM C117	No.	25			0.146816994
G3	Shape Index	IS 2386	ASTM D4791	No.	20			0.218022076
H	HARDENED CONCRETE TESTING							
H1	Compressive Strength	IS 516	ASTM C39	No.	150			0.967183039
H2	Flexural Strength	IS 516	ASTM C78	No.	40			0.510264433
H3	Split Tensile Strength	IS 5816	ASTM C496	No.	40			0.732925276
H4	Density	IS 516	ASTM C642	No.	30			0.15307933
H5	Modulus of Elasticity	IS 516 Part 5	ASTM C469	No.	15			1.901941092
H6	Core Cutting & Testing	IS 516 Part 4	ASTM C42	No.	10			0.355607922

PART-B								
PROJECT: Various Project Sites of BHEL Across India								
BOQ CUM RATE SCHEDULE (PRICE BID)								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
I	DURABILITY TESTS							
I1	Rapid Chloride Permeability Test	ASTM Reference	ASTM C1202	No.	15			0.97414119
I2	Water Permeability	DIN/IS Practice	DIN 1048 / EN 12390-8	No.	15			0.6992942115
I3	Water Absorption	IS 516	ASTM C642	No.	20			0.188705065
I4	Sorptivity	ASTM Practice	ASTM C1585	No.	15			1.322048758
I5	Carbonation Test	RILEM CPC-18	RILEM CPC-18	No.	10			0.242793095
I6	Drying Shrinkage	IS 516	ASTM C157	No.	10			0.456918606
I7	Sulphate Resistance	IS 12330	ASTM C1012	No.	10			0.15428541
J	CONCRETE MIX DESIGN							
J1	Normal Concrete Mix Design (M10–M80)	IS 10262	ACI 211.1	Design	50			8.442556982
J2	SCC Mix Design	EFNARC	ASTM C1611	Design	20			3.636793777
J3	Geopolymer Concrete Mix Design	RILEM Guidelines	ASTM C618	Design	15			2.296189948
J4	PQC Mix Design	IRC:SP:62	ASTM C192	Design	20			3.339912652
J5	DLC Mix Design	IRC:15	ASTM C192	Design	20			3.502269517
J6	HPC Mix Design	IS 10262	ACI 211.4R	Design	20			4.174890815
K	BUILDING MATERIALS (AAC Block / Fly Ash Brick / Burnt Clay Bricks/Masonry Units Testing)							
K1	Compressive Strength Test	IS 2185 Part-3	ASTM C495	No.	50			1.461211785
K2	Dry Density Test	IS 2185 Part-3		No.	30			0.396614627
K3	Water Absorption Test	IS 2185 Part-3	ASTM C140	No.	30			0.389656476
K4	Moisture Content Test	IS 6441		No.	30			0.285284206
K5	Drying Shrinkage Test	IS 6441		No.	20			0.533458271
K6	Thermal Conductivity Test		ASTM C518	No.	20			0.93703105
K7	Dimension Tolerance Test	IS 2185 Part-3		No.	20			0.278326054
L	WATER & CHEMICAL TESTING							
L1	Water for Concrete	IS 456	ASTM C1602	No.	30			0.514903201
L2	pH Test	IS 3025	ASTM D1293	No.	30			0.190096695
L3	Chloride Content	IS 3025	ASTM D512	No.	30			0.180911935
L4	Sulphate Content	IS 3025	ASTM D516	No.	30			0.190096695

PART-B								
PROJECT: Various Project Sites of BHEL Across India								
BOQ CUM RATE SCHEDULE (PRICE BID)								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
L5	TDS	IS 3025	ASTM D5907	No.	30			0.190096695
M	BITUMEN MATERIAL TESTING							
M1	Penetration Test	IS 1203	ASTM D5	No.	15			0.212223616
M2	Softening Point	IS 1205	ASTM D36	No.	15			0.212223616
M3	Ductility	IS 1208	ASTM D113	No.	15			0.400093703
M4	Specific Gravity	IS 1202	ASTM D70	No.	15			0.247014373
M5	Flash & Fire Point	IS 1209	ASTM D92	No.	15			0.260930676
M6	Viscosity	IS 1206	ASTM D4402	No.	15			0.30615866
N	BITUMINOUS MIX DESIGN							
N1	Marshall Mix Design	MORTH Section 500	ASTM D6927	Design	10			1.62356865
N2	Bulk Density	ASTM Equivalent	ASTM D2726	No.	20			0.143801795
N3	Stability & Flow	MORTH	ASTM D6927	No.	20			0.417489082
N4	Extraction Test	IS 13826	ASTM D2172	No.	15			0.15307933
O	SWITCHYARD PEBBLE TESTING							
O1	Gradation	IS 2386	ASTM C136	No.	10			0.075426361
O2	Water Absorption	IS 2386	ASTM C127	No.	10			0.080065128
O3	Crushing Value	IS 2386	ASTM D5821	No.	10			0.080065128
O4	Resistivity of Pebbles	IS 3043	ASTM G57	No.	10			0.255132217
R	Floor Tiles / Wall Tiles / Paver Blocks Testing							
R1	Water Absorption Test	IS 1237, IS 15622,	ASTM C373	No.	20			0.378523434
R2	Flexural Strength Test	IS 15622,	ASTM C648	No.	15			0.4314053842
R3	Abrasion Resistance Test	IS 1237,	ASTM C501	No.	15			0.4536714686
R4	Breaking Strength Test		ASTM C648	No.	15			0.473154292
R5	Chemical Resistance Test		ASTM C650	No.	15			0.584484714
R6	Dimension & Surface Quality	IS 13630		No.	15			0.400789518
R7	Slip Resistance Test		ASTM C1028	No.	15			1.217676488
R8	Paver Block Compressive Strength	IS 15658		No.	20			0.560363123
R9	Paver Block Water Absorption	IS 15658		No.	20			0.304303153
R10	Paver Block Abrasion Resistance	IS 15658		No.	15			0.532298579

PART-B								
PROJECT: Various Project Sites of BHEL Across India								
BOQ CUM RATE SCHEDULE (PRICE BID)								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	RATES = TOTAL QUOTED PRICE * WEIGHTAGE / (QUANTITY * 100)	AMOUNT (INR) = RATE * QUANTITY	WEIGHTAGE IN % (UPTO 10 DECIMAL POINT)
	TOTAL							100.000000000

PART-C								
PROJECT: Various Project Sites of BHEL Across India								
Quantities Breakup of all three Packages								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	PACKAGE-I QTY-50%	PACKAGE-II QTY-30%	PACKAGE-III QTY-20%
B	ROCK TESTING					0.5	0.3	0.2
B1	Rock Core Logging	IS 11315	ASTM D2113	RM	60	30	18	12
B2	RQD Determination	IS 11315	ASTM D6032	RM	60	30	18	12
B3	UCS of Rock	IS 9143	ASTM D7012	No.	25	13	8	5
B4	Point Load Index	IS 8764	ASTM D5731	No.	25	13	8	5
B5	Mohr's Hardness Test	IS 13630 (Part 13)	ASTM C1895	No.	15	8	5	3
C	CEMENT TESTING							
C1	Fineness	IS 4031 Part 2	ASTM C204	No.	30	15	9	6
C2	Standard Consistency	IS 4031 Part 4	ASTM C187	No.	30	15	9	6
C3	Initial & Final Setting Time	IS 4031 Part 5	ASTM C191	No.	30	15	9	6
C4	Soundness	IS 4031 Part 3	ASTM C151	No.	25	13	8	5
C5	Compressive Strength	IS 4031 Part 6	ASTM C109	No.	40	20	12	8
C6	Chemical Analysis	IS 4032	ASTM C114	No.	20	10	6	4
C6.1	Oxide Composition like Cao,SiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , SO ₃ , MgO, Na ₂ O, K ₂ O by:							
C6.1.1	i) Chemical Method			No.	10	5	3	2
C6.1.1.2	ii) XRF			No.	10	5	3	2
C6.2	Bogues Compound - C ₃ S, C ₂ S, C ₃ A, C ₄ AF and Control Ratio like LSF (Lime Saturation Factor), SR (Silica Ratio), AR (Alumina Ratio)			No.	10	5	3	2
C7	Specific Gravity Test		ASTM C188	No.	20	10	6	4
C8	Heat of Hydration		ASTM C186	No.	20	10	6	4
D	FINE AGGREGATE TESTING							
D1	Sieve Analysis	IS 2386 Part 1	ASTM C136	No.	50	25	15	10
D2	Specific Gravity & Water Absorption	IS 2386 Part 3	ASTM C128	No.	50	25	15	10
D3	Bulking	IS 2386 Part 3	ASTM C29	No.	25	13	8	5
D4	Silt Content (75 µm Passing by Weight & 75 µm Passing by Volume)	IS 2386 Part 2	ASTM C117	No.	40	20	12	8
D5	Organic Impurities	IS 2386 Part 2	ASTM C40	No.	25	13	8	5

PART-C								
PROJECT: Various Project Sites of BHEL Across India								
Quantities Breakup of all three Packages								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	PACKAGE-I QTY-50%	PACKAGE-II QTY-30%	PACKAGE-III QTY-20%
D6	Fineness Modulus	IS 2386 Part 1	ASTM C136	No.	50	25	15	10
E	COARSE AGGREGATE TESTING							
E1	Sieve Analysis	IS 2386 Part 1	ASTM C136	No.	50	25	15	10
E2	Specific Gravity & Water Absorption	IS 2386 Part 3	ASTM C127	No.	50	25	15	10
E3	Aggregate Crushing Value	IS 2386 Part 4	ASTM D5821	No.	30	15	9	6
E4	Aggregate Impact Value	IS 2386 Part 4	ASTM D5874	No.	30	15	9	6
E5	Los Angeles Abrasion	IS 2386 Part 4	ASTM C131/C535	No.	30	15	9	6
E6	Flakiness & Elongation Index	IS 2386 Part 1	ASTM D4791	No.	30	15	9	6
F	AGGREGATE DURABILITY (Fine & Coarse Aggregates)							
F1	Soundness in Na ₂ SO ₄ & MgSO ₄	IS 2386	ASTM C88	No.	40	20	12	8
F2	Petrographic Examination	IS 2386	ASTM C295					
F2.1	Optical Microscope Method			No.	20	10	6	4
F2.2	XRD - Analysis			No.	20	10	6	4
F3.1	ASR_Reactivity Analysis	IS 2386	ASTM C1260	No.	40	20	12	8
F3.2	Quick Chemical Analysis		ASTMC 289	No.	20	10	6	4
F3.3	Accelerated Mortar Bar test		ASTMC 1260	No.	20	10	6	4
F3.4	Long Term Concrete Prism test (in case of Coarse aggregates only)		ASTMC 1293	No.	10	5	3	2
F4.1	ACR_Reactivity Analysis	IS 2386	ASTM C586	No.	40	20	12	8
F4.2	Chemical Analysis for CaO, MgO and Al ₂ O ₃ and analyse the ACR reactivity as per CSA 23.2-26A			No.	30	15	9	6
F4.3	Long term concrete Prism Test for 3 months, 6 months & 12 months.		ASTMC 1105	No.	10	5	3	2
G	CRUSHED STONE SAND TESTING							
G1	Grading	IS 383	ASTM C136	No.	25	13	8	5
G2	Micro Fine Content	IS 383	ASTM C117	No.	25	13	8	5
G3	Shape Index	IS 2386	ASTM D4791	No.	20	10	6	4
H	HARDENED CONCRETE TESTING							

PART-C								
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Quantities Breakup of all three Packages								
SCOPE OF WORK:-								
Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	PACKAGE-I QTY-50%	PACKAGE-II QTY-30%	PACKAGE-III QTY-20%
H1	Compressive Strength	IS 516	ASTM C39	No.	150	75	45	30
H2	Flexural Strength	IS 516	ASTM C78	No.	40	20	12	8
H3	Split Tensile Strength	IS 5816	ASTM C496	No.	40	20	12	8
H4	Density	IS 516	ASTM C642	No.	30	15	9	6
H5	Modulus of Elasticity	IS 516 Part 5	ASTM C469	No.	15	8	5	3
H6	Core Cutting & Testing	IS 516 Part 4	ASTM C42	No.	10	5	3	2
I	DURABILITY TESTS							
I1	Rapid Chloride Permeability Test	ASTM Reference	ASTM C1202	No.	15	8	5	3
I2	Water Permeability	DIN/IS Practice	DIN 1048 / EN 12390-8	No.	15	8	5	3
I3	Water Absorption	IS 516	ASTM C642	No.	20	10	6	4
I4	Sorptivity	ASTM Practice	ASTM C1585	No.	15	8	5	3
I5	Carbonation Test	RILEM CPC-18	RILEM CPC-18	No.	10	5	3	2
I6	Drying Shrinkage	IS 516	ASTM C157	No.	10	5	3	2
I7	Sulphate Resistance	IS 12330	ASTM C1012	No.	10	5	3	2
J	CONCRETE MIX DESIGN							
J1	Normal Concrete Mix Design (M10-M80)	IS 10262	ACI 211.1	Design	50	25	15	10
J2	SCC Mix Design	EFNARC	ASTM C1611	Design	20	10	6	4
J3	Geopolymer Concrete Mix Design	RILEM Guidelines	ASTM C618	Design	15	8	5	3
J4	PQC Mix Design	IRC:SP:62	ASTM C192	Design	20	10	6	4
J5	DLC Mix Design	IRC:15	ASTM C192	Design	20	10	6	4
J6	HPC Mix Design	IS 10262	ACI 211.4R	Design	20	10	6	4
K	BUILDING MATERIALS (AAC Block / Fly Ash Brick / Burnt Clay Bricks/Masonry Units Testing)							
K1	Compressive Strength Test	IS 2185 Part-3	ASTM C495	No.	50	25	15	10
K2	Dry Density Test	IS 2185 Part-3		No.	30	15	9	6
K3	Water Absorption Test	IS 2185 Part-3	ASTM C140	No.	30	15	9	6

PART-C								
PROJECT: Various Project Sites of BHEL Across India								
Quantities Breakup of all three Packages								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	PACKAGE-I QTY-50%	PACKAGE-II QTY-30%	PACKAGE-III QTY-20%
K4	Moisture Content Test	IS 6441		No.	30	15	9	6
K5	Drying Shrinkage Test	IS 6441		No.	20	10	6	4
K6	Thermal Conductivity Test		ASTM C518	No.	20	10	6	4
K7	Dimension Tolerance Test	IS 2185 Part-3		No.	20	10	6	4
L	WATER & CHEMICAL TESTING							
L1	Water for Concrete	IS 456	ASTM C1602	No.	30	15	9	6
L2	pH Test	IS 3025	ASTM D1293	No.	30	15	9	6
L3	Chloride Content	IS 3025	ASTM D512	No.	30	15	9	6
L4	Sulphate Content	IS 3025	ASTM D516	No.	30	15	9	6
L5	TDS	IS 3025	ASTM D5907	No.	30	15	9	6
M	BITUMEN MATERIAL TESTING							
M1	Penetration Test	IS 1203	ASTM D5	No.	15	8	5	3
M2	Softening Point	IS 1205	ASTM D36	No.	15	8	5	3
M3	Ductility	IS 1208	ASTM D113	No.	15	8	5	3
M4	Specific Gravity	IS 1202	ASTM D70	No.	15	8	5	3
M5	Flash & Fire Point	IS 1209	ASTM D92	No.	15	8	5	3
M6	Viscosity	IS 1206	ASTM D4402	No.	15	8	5	3
N	BITUMINOUS MIX DESIGN							
N1	Marshall Mix Design	MORTH Section 500	ASTM D6927	Design	10	5	3	2
N2	Bulk Density	ASTM Equivalent	ASTM D2726	No.	20	10	6	4
N3	Stability & Flow	MORTH	ASTM D6927	No.	20	10	6	4
N4	Extraction Test	IS 13826	ASTM D2172	No.	15	8	5	3
O	SWITCHYARD PEBBLE TESTING							
O1	Gradation	IS 2386	ASTM C136	No.	10	5	3	2
O2	Water Absorption	IS 2386	ASTM C127	No.	10	5	3	2
O3	Crushing Value	IS 2386	ASTM D5821	No.	10	5	3	2

PART-C								
PROJECT: Various Project Sites of BHEL Across India								
Quantities Breakup of all three Packages								
SCOPE OF WORK:- Framework Agreement (Rate Contract) for testing of construction material, including design mix approval, and allied test for various project sites of BHEL across India.								
ST NO	Description of Work/Test	Relevant IS Code	ASTM / International Standard	UOM	TOTAL QTY	PACKAGE-I QTY-50%	PACKAGE-II QTY-30%	PACKAGE-III QTY-20%
O4	Resistivity of Pebbles	IS 3043	ASTM G57	No.	10	5	3	2
R	Floor Tiles / Wall Tiles / Paver Blocks Testing							
R1	Water Absorption Test	IS 1237, IS 15622,	ASTM C373	No.	20	10	6	4
R2	Flexural Strength Test	IS 15622,	ASTM C648	No.	15	8	5	3
R3	Abrasion Resistance Test	IS 1237,	ASTM C501	No.	15	8	5	3
R4	Breaking Strength Test		ASTM C648	No.	15	8	5	3
R5	Chemical Resistance Test		ASTM C650	No.	15	8	5	3
R6	Dimension & Surface Quality	IS 13630		No.	15	8	5	3
R7	Slip Resistance Test		ASTM C1028	No.	15	8	5	3
R8	Paver Block Compressive Strength	IS 15658		No.	20	10	6	4
R9	Paver Block Water Absorption	IS 15658		No.	20	10	6	4
R10	Paver Block Abrasion Resistance	IS 15658		No.	15	8	5	3
	TOTAL							