

IS 303 : 1989
(Reaffirmed 2003)
Edition 4.6
(2007-08)

Indian Standard
**PLYWOOD FOR GENERAL PURPOSES —
SPECIFICATION**

(Third Revision)

भारतीय मानक
सामान्य प्रयोजनों के लिए प्लाईवुड — विशिष्ट
(तीसरा पुनरीक्षण)

(Incorporating Amendment Nos. 1, 2, 3, 4, 5 & 6)

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FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards on 21 December 1989, after the draft finalized by the Wood Products Sectional Committee had been approved by the Civil Engineering Division Council.

Indian Standard Specification for commercial (common) and moisture proof plywood (tentative) (IS 303 : 1951) published in 1951. This was subsequently revised in 1960 and 1975. This is the third revision of the standard and in this revision, care has been taken to utilize the depleting wood resource judiciously.

In the second revision of the standard, namely, IS 303 : 1975 provided for four grades of plywood based on the type of adhesive used and ten types of plywood depending upon the visual features of face and back thus making a total of as many as 40 classes of plywood.

In this revision, BWP and CWR grades are deleted and the WWR is replaced by moisture resistant or MR grade with temperature of water under normal atmospheric pressure in which test piece shall be immersed brought down to $60 \pm 2^\circ\text{C}$ from $70 \pm 2^\circ\text{C}$. This revision deletes face 'A' and 'D' quality of plywood, and retains face 'B' and 'C' now renamed as 'A' and 'B' thereby permitting in all 3 types of plywood based on appearance.

In the formulation of this standard, due weightage has been given to international coordination among standards and practices prevailing in different countries in addition to relating it to practices in the field in this country.

A scheme of labelling environment friendly products to be known as ECO Mark has been introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO Mark shall be administered by the *Bureau of Indian Standards (BIS)* under the *BIS Act, 1986* as per the Resolution No. 71 dated 21 February 1991 and Resolution No. 425 dated 28 October 1992 published in the Gazette of the Government of India. For a product to be eligible for ECO Mark, it shall also carry the Standard Mark of the BIS besides meeting additional environment friendly requirements. For this purpose, the Standard Mark of BIS would be a single mark being a combination of the ISI Mark and the Eco logo. Requirements to be satisfied for a product to qualify for the BIS Standard Mark for Eco friendliness, will be included in the relevant published Indian Standards through an amendment. These requirements will be optional; manufacturing units will be free to opt for ISI Mark alone also.

The Amendment No. 2 pertaining to Eco criteria is based on the Gazette Notification No. 170 dated 18 May 1996 for Wood Substitutes as Environment Friendly Products published in the Gazette of the Government of India.

This edition 4.6 incorporates Amendment No. 1 (November 1992), Amendment No. 2 (March 2000), Amendment No. 3 (December 2004), Amendment No. 4 (August 2005), Amendment No. 5 (September 2006) and Amendment No. 6 (August 2007). Side bar indicates modification of the text as the result of incorporation of the amendments.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified in this standard.

*Indian Standard***PLYWOOD FOR GENERAL PURPOSES —
SPECIFICATION***(Third Revision)***1 SCOPE**

1.1 This standard covers the requirements of different grades and types of plywood used for general purposes.

2 REFERENCE

2.1 The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

3.0 For purpose of this standard, the definitions given in IS 707 : 1976 shall apply.

4 GRADES

4.1 Plywood for general purposes shall be of the following two grades, depending upon the bond strength developed by the adhesive used for bonding the veneers:

- a) Boiling water resistant or BWR Grade, and
- b) Moisture resistant or MR Grade.

4.1.1 These shall be manufactured in accordance with 6.1 and 6.2. The grades shall conform to the general requirements given in 7 and the test requirements laid down in 11.

5 TYPES BASED ON CLASSIFICATION BY APPEARANCE

5.1 Plywood for general purposes shall be classified into three types, namely, AA, AB and BB based on the quality of the two surfaces, namely, A and B in terms of general permissible defects. The type of plywood shall, therefore, be designated by the kind of surfaces of the panels. The better quality surface shall be called 'face', and the opposite side shall be called 'back'. If the face and the back are of the same quality, they are not distinguished. The type of plywood shall denote first the quality of face followed by the quality of back. For example, Type AA shall have both surfaces of quality A, Type AB shall have face of quality A and the back of quality B and Type BB shall have both the surfaces of quality B.

5.2 The quality requirement of each of the surfaces mentioned under 5.1, shall conform to the requirements given in Table 1. However, the maximum number of categories of defects per-

mitted on any one surface of the panel shall be restricted in accordance with the requirements laid down in Table 2.

6 MATERIALS**6.1 Timber**

Any species of timber may be used for plywood manufacture. However, a list of species, for the manufacture of plywood is given in Annex B for guidance. For ECO Mark only species of wood from sources other than natural forests such as wood from rubber, coconut, cashew, industrial and social forestry plantations etc and shade trees from tea and coffee estates shall be used for the manufacture of plywood.

6.2 Adhesive

The adhesive used for bonding the veneers in different grades of plywood shall be the corresponding type of adhesive as specified in IS 848 : 1974.

6.2.1 Extenders may be used with the synthetic resin adhesive (aminoresins). However, synthetic resin adhesive (aminoresins) when extended by more than 25 percent shall contain suitable preservative chemicals in sufficient concentration to satisfy the mycological test described in 11.2.2.

7 MANUFACTURE

7.1 The veneers for all the grades shall be either rotary cut or sliced. The veneers shall be sufficiently smooth to permit an even spread of adhesive. Treatment as specified below shall be given to the plywood either at the veneer stage or after converting the veneers into boards.

7.1.1 Treatment

Veneers from non-durable species and sapwood of all species when used for plywood manufacture shall be soaked in 1.25 percent solution of boric acid or 1.9 percent solution of borax at a temperature of 85-90°C for a period of 10-40 minutes depending upon the thickness of the veneers or the veneers may be dipped in 2 percent solution of boric acid or 3 percent borax solution for 2 minutes and block stacked at least for two hours. Alternatively, the veneers may be soaked at an ambient

Table 1 Quality Requirements of Plywood for General Purposes

(Clause 5.2)

Sl No.	Defect Categories	Types of Surfaces	
		A	B
(1)	(2)	(3)	(4)
i)	Blister	Nil	Nil
ii)	Checks	Individual check not more than 50 mm in length and the total length not more than 300 mm/m ²	Individual check not more than 100 mm in length and the total length not more than 1 000 mm/m ²
iii)	Discoloration	Nil	5 percent
iv)	Dote	5 cm/m ²	15 cm/m ²
v)	Insect hole	Scattered up to 12 holes/m ²	Scattered up to 24 holes/m ²
vi)	Joints	One joint for every multiple of 200 mm provided no individual piece is less than 100 mm in width	No restriction
vii)	Knots (dead)	2 up to 12 mm dia/m ²	4 up to 20 mm dia/m ²
viii)	Pin knots (dead)	2/m ²	6/m ²
ix)	Pin knots (Live)	No restriction	No restriction
x)	Knots (tight)	6 up to 25 mm dia/m ²	No restriction
xi)	Patches	4 patches/m ² provided they are all tight patches and do not mar the appearance	Any number provided they are all tight patches and do not mar the appearance
xii)	Splits	2 splits, each not more than 1 mm wide and length not more than 100 mm provided they are filled with suitable filler	3 splits, each not more than 4 mm wide and length not more than 150 mm provided they are filled with suitable veneer inserts. Splits up to 25 mm long and 0.8 mm wide may be ignored provided they are suitably filled with a filler
xiii)	Swirl	Unlimited, provided they do not mar the appearance	No restriction

temperature in a mixture of 0.5 percent solution of sodium pentachlorophenate (Na PCP) and 1.5 percent of borax in water, for a period of 2 minutes and then stacked for at least half an hour before drying.

Table 2 Permissible Categories of Defects

(Clause 5.2)

Type of Surface	Maximum Number of Categories of Permissible Defects per sq metre
A	3
B	5

For BWR grade of plywood bonded with synthetic resin adhesive, the preservative may be given conveniently after boards come out of the press, while still hot or the treatment given to the veneers before bonding.

For BWR grade, fixed type of preservative may be used subject to the agreement between the manufacturer and the user according to IS 5539 : 1969.

7.2 Assembly

7.2.1 Thickness

The thickness of all veneers shall be uniform within a tolerance of ± 5 percent. Corresponding veneers on either side of the central ply and those of face and back veneers shall be of species having similar physical and mechanical properties, such as, density, modulus of elasticity, shrinkage, etc. to ensure balanced construction.

7.2.2 Joints in Veneers

Veneers that require to be joined to form a ply shall be spliced (edge jointed) before assembly. All joints shall be cut square. They may be taped on the face of the outer veneers in which case the tape shall be removed at a later stage, and metal clips or staples, if used, shall be removed. Perforated tapes may be used on the glue side of the veneers. In assembly, joints in veneers running in the same direction shall be staggered. End joints and butt joints shall not be permitted for any of the surfaces.

7.2.3 Grain Direction

Unless otherwise specified by the purchaser and except in boards comprising an even number of plies, the direction of grain of the veneer in adjacent plies shall be at right angles to each other, and that of the outer plies shall run parallel to the longer side of the board. In boards comprising even number of plies, the grain of the centre pair shall follow the same direction. In adjacent plies, the grain should be at right angles to each other. However, a deviation not exceeding 10° may be permitted. In all cases, the grain on both faces of the assembly boards shall run in the same direction.

7.2.4 Scarf Joints

When sizes larger than the available press sizes are required, scarf joints through the thickness of the board are permitted. All scarf

joints shall be bonded with the same or a better adhesive than the one used for the manufacture of plywood, and shall be made with an inclination not greater than 1 in 12.

7.2.5 Permissible Defects

7.2.5.1 Gaps in cores and cross-bands may be permitted except for 3 ply plywood, provided the width of the gap does not exceed 1 mm in case of 5 ply and 2 mm in case of plywood of more than 5 ply and provided such gaps, if more than one, shall be spaced not less than 80 mm away from each other and are staggered not less than 50 mm away as between ply, the next ply having the same grain direction.

7.2.5.2 Splits in cores and cross-bands may be permitted to an extent of 2 per core or cross-band.

7.2.5.3 Overlap shall not be permitted.

8 DIMENSIONS AND TOLERANCES

8.1 The dimensions of plywood boards shall be as follows:

2 400 mm × 1200 mm	2 100 mm × 900 mm
2 100 mm × 1200 mm	1 800 mm × 900 mm
1 800 mm × 1200 mm	

NOTE — Any other dimensions as agreed to between the manufacturer and the purchaser may also be used.

8.2 Thickness

Unless otherwise specified, thickness of plywood boards shall be as specified in Table 3. The thickness shall be measured up to one place of decimal.

8.3 Tolerances

The following tolerances on the nominal sizes of finished boards shall be permissible:

Dimension	Tolerance
a) Length	: + 6 mm - 0 mm
b) Width	: + 3 mm - 0 mm
c) Thickness	
1) less than 6 mm	: ± 10%
2) 6 mm and above	: ± 5%
d) Squareness	: 0.2%
e) Edge straightness	: 0.2%

Table 3 Thickness of Plywood Boards
(Clause 8.2)

Board	Thickness mm	Board	Thickness mm
(1)	(2)	(1)	(2)
3 ply	3, 4, 5, 6	9 ply	12, 15, 16, 19
5 ply	5, 6, 8, 9	11 ply	19, 22, 25
7 ply	9, 12, 15, 16	Above 11 ply	As ordered

9 WORKMANSHIP AND FINISH

9.1 The plywood boards shall be of uniform thickness within the tolerance limits specified under 8.3.

9.2 The faces of plywood boards shall be reasonably smooth and face veneers shall be of reasonably uniform thickness. Slight sanding may be given to rough boards in order to make them reasonably smooth. The squareness and edge straightness of the board when measured according to the procedure given in Annex C shall be as given in 8.3.

10 SAMPLING

10.1 The method of drawing representative samples and the criteria for conformity shall be as prescribed in IS 7638 : 1999.

11 TESTS

11.1 Six test pieces, cut from each of the boards selected under 10.1 shall be subjected to the tests specified in 11.2, 11.3 and 11.4.

11.2 Glue Adhesion

Glue adhesion shall be deemed satisfactory if the plywood complies with the requirements specified in 11.2.1 and 11.2.2.

11.2.1 Water Resistance Test

Plywood for general purposes of either grade, when tested in the manner specified below shall satisfy minimum pass standard for test for adhesion of plies as given in IS 1734 (Part 5).

11.2.1.1 Three test specimens of size 250 mm × 100 mm shall be prepared from each of the boards selected under 10.1 and shall be tested for respective grade as described below.

BWR Grade

Specimens shall be submerged in boiling water for 8 h and dried for 16 h at a temperature of $65 \pm 2^\circ\text{C}$ and then followed by two more cycles of soaking and drying under the same conditions described above. The specimens shall then be tested in accordance with the method given in IS 1734 (Part 5).

MR Grade

Specimens shall be submerged in water at a temperature of $60 \pm 2^\circ\text{C}$ for 3 h and dried for 8 h at a temperature of $65 \pm 2^\circ\text{C}$ and then followed by two more cycles of soaking and drying under the same conditions described above. The specimens shall then be tested in accordance with the method given in IS 1734 (Part 5).

NOTE — The cycles of drying or soaking can be made up of a number of shorter periods of drying or soaking. In such instances the specimen shall be kept in air at $27 \pm 2^\circ\text{C}$ in between the shorter periods constituting the drying cycle and be kept submerged in water at $27 \pm 2^\circ\text{C}$ in between the shorter periods constituting the soaking cycle.

11.2.2 Mycological Test

Plywood of MR Grade when tested in accordance with the method given in IS 1734 (Part 7) shall satisfy minimum pass condition for test for adhesion of plies as given in IS 1734 (Part 5).

Table 4 Average and Minimum Individual Values of Modulus of Elasticity (MOE) and Modulus of Rupture (MOR)

Sl No. (1)	Grade (2)	MOE (N/mm ²)		MOE (N/mm ²)	
		Average (3)	Min. Ind. (4)	Average (5)	Min. Ind. (6)
i)	BWR Grade				
	Along (direction parallel to the grain direction of the face veneer)	5 000	4 500	40	36
	Across (direction perpendicular to the grain direction of the face veneer)	2 500	2 200	20	18
ii)	MR Grade				
	Along (direction parallel to the grain direction of the face veneer)	4 000	3 600	30	27
	Across (direction perpendicular to the grain direction of the face veneer)	2 000	1 800	15	13

11.3 Moisture Content

The plywood when tested in accordance with IS 1734 (Part 1) : 1983 shall have a moisture content not less than 5 percent and not more than 15 percent.

11.4 Static Bending Strength — Plywood when tested in accordance with IS 1734 (Part 11) shall have an average and a minimum individual Modulus of Elasticity and Modulus of Rupture not less than the values specified in Table 4 against each grade.

11.5 For the purpose of tests specified in 11.3 and 11.4, the mean of all the observations and the minimum individual value of the observations shall be reported in the form given in Annex D.

11.6 Retest

If the samples selected as specified in 10.1 are found not to be fully complying with the requirements of 11.2, 11.3 and 11.4, a further similar set of samples shall be taken at random from the same batch and subjected to the tests. If any of the samples in the second set is also found not to comply fully with the requirements of test, all the boards in the batch represented by the samples shall be rejected.

11.7 Other Tests

For testing any other mechanical property of general purpose plywood, subject to agreement between the purchaser and the supplier, reference shall be made to the provisions of IS 1734 (Parts 1 to 20) : 1983.

12 ADDITIONAL REQUIREMENTS FOR ECO MARK

12.1 General Requirements

12.1.1 The plywood shall conform to the requirements of quality and performance as specified in this standard.

12.1.2 The manufacturer shall produce to BIS environmental consent clearance from the concerned State Pollution Control Board as per the provisions of the *Water (Prevention and Control of Pollution) Act, 1974* and the *Air (Prevention and Control of Pollution) Act, 1981* and the *Water (Prevention and Control of Pollution) Cess Act, 1977* alongwith the authorization, if required under the *Environment (Protection) Act, 1986*, while applying for ECO Mark appropriate with enforced rules and regulations of Forest Department.

12.2 Specific Requirements

The plywood shall conform to the specific requirements given for ECO mark under relevant clauses of the standard.

NOTE — The manufacturer shall provide documentary evidence by way of certificate or declaration to Bureau of Indian Standards while applying for ECO Mark.

13 MARKING

13.1 Each plywood board shall be legibly and indelibly marked or stamped with the following:

- Indication of the source of manufacture,
- Year of manufacture,
- Batch No.,
- The grade and type as follows:
BWR/AA, BWR/AB, BWR/BB,
MR/AA, MR/AB, MR/BB, and
- The criteria for which the plywood has been labelled as ECO Mark.

13.2 All markings shall be done on the face of the board near one corner.

14 DELIVERY

14.1 Unless otherwise specified, the plywood boards shall be delivered in a clean condition and shall be suitably packed according to normal trade. For ECO Mark the material used for packaging of the plywood shall be recyclable, reusable or biodegradable.

ANNEX A

(Clause 2.1)

LIST OF INDIAN STANDARDS REFERRED IN THIS STANDARD

IS No.	Title	IS No.	Title
707 : 1976	Glossary of terms applicable to timber technology and utilization (<i>second revision</i>)	1734 (Part 5) : 1983	Methods of test for plywood : Part 5 Test for adhesion of plies (<i>second revision</i>)
848 : 1974	Specification for synthetic resin adhesives for plywood (phenolic and aminoplastic) (<i>first revision</i>)	1734 (Part 7) : 1983	Methods of test for plywood : Part 7 Mycological test (<i>second revision</i>)
1508 : 1972	Specification for extenders for use in synthetic resin adhesive (urea-formaldehyde) for plywood (<i>first revision</i>)	1734 (Part 11) : 1983	Methods of tests for plywood : Part 11 Determination of static bending strength (<i>second revision</i>)
1734 (Part 1) : 1983	Methods of test for plywood : Part 1 Determination of density and moisture content (<i>second revision</i>)	5539 : 1969	Specification for preservative treated plywood
		7638 : 1999	Wood/Lignocellulosic based panel products — Methods of sampling (<i>second revision</i>)

ANNEX B

(Clause 6.1)

TIMBER SPECIES OF PLYWOOD

NOTE — Species of timber to be treated (see 7.1.1) are indicated by dagger (†).

Sl No.	Trade Name	Botanical Name	Abbreviation	Sl No.	Trade Name	Botanical Name	Abbreviation
1.	Aini	<i>Artocarpus hirsutus</i>	AIN	24.	Gamari	<i>Gmelina arborea</i>	GAM
2.	†Alder	<i>Alnus nitida</i>	ALD	25.	†Garuga	<i>Garuga pinnata</i>	GAU
3.	†Alder	<i>Alnus</i> spp.	ALD	26.	†Gokul	<i>Ailanthus grandis</i>	GOK
4.	Amari	<i>Amoora</i> spp.	AMA	27.	Gurjan	<i>Dipterocarpus</i> spp.	GUR
5.	†Amra	<i>Spondias</i> spp.	AMR	28.	†Gutel	<i>Trewia nudiflora</i>	GUT
6.	Arjun	<i>Terminalia arjuna</i>	ARJ	29.	Haldu	<i>Adina cordifolia</i>	HAL
7.	†Bahera	<i>Terminalia bellerica</i>	BAH	30.	Hathipaila	<i>Pterospermum acerifolium</i>	HAT
8.	†Banati	<i>Lophopetalum wightianum</i>	BAN	31.	†Hollock	<i>Terminalia myriocarpa</i>	HOL
9.	†Birch	<i>Betula</i> , spp.	BIR	32.	Hollong	<i>Dipterocarpus macrocarpus</i>	HON
10.	Bonsum	<i>Phoebe</i> spp.	BON	33.	Indian Oak	<i>Quercus semecarpifolia</i>	IOA
11.	†Carallia	<i>Carallia brachiata</i> (Syn. <i>Carallia integerrima</i>)	CAR	34.	Indian Oak	<i>Quercus dilatata</i>	IOA
12.	Champ	<i>Michelia</i> spp.	CHM	35.	Indian Oak	<i>Quercus serrata</i>	IOA
13.	Chaplash	<i>Artocarpus Chaplasha</i>	CHP	36.	Jaman	<i>Syzygium</i> spp.	JAM
14.	†Chatian	<i>Alstonia scholaris</i>	CHT	37.	†Jhingan	<i>Lannea coromandelica</i> (Syn: <i>Lannea grandis</i>)	JHI
15.	Chikrassy	<i>Chukrasia tabularis</i>	CHI	38.	Jutili	<i>Altingia excelsa</i>	JUT
16.	†Chilauni	<i>Schima wallichii</i>	CHL	39.	†Kadam	<i>Anthocephalus cadamba</i>	KAD
17.	Cinnamom	<i>Cinnamomum cecicodaphne</i>	CIN	40.	†Kanju	<i>Holoptelea integrifolia</i>	KAN
18.	†Debdaru	<i>Polyalthia</i> spp.	DEB				
19.	†Dhup	<i>Canarium</i> spp.	DHU				
20.	†Didu	<i>Salmaia insignis</i>	DID				
21.	†Dillenia	<i>Dillenia</i> spp.	DIL				
22.	Ebony	<i>Diospyros</i> spp.	EBO				
23.	Elm	<i>Ulmus wallichiana</i>	ELM				

Sl No.	Trade Name	Botanical Name	Abbreviation	Sl No.	Trade Name	Botanical Name	Abbreviation
41.	†Karani	<i>Cullenia rosayroana</i> (Syn. <i>cullenia excelsa</i>)	KAR	63.	Pitraj	<i>Aphanamixis polystachya</i>	PIT
42.	Kathal	<i>Artocarpus heterophyllus</i>	KAT	64.	Poon	<i>Colopyllum</i> spp.	POO
43.	Kindal	<i>Terminalia paniculata</i>	KIN	65.	Poplar	<i>Populus ciliata</i>	POP
44.	Kokko	<i>Albizia lebbeck</i>	KOK	66.	Poplar	<i>Populus deltoides</i>	POP
45.	†Lampati	<i>Duabanga grandiflora</i>	LAP	67.	†Pula	<i>Kydia calycina</i>	PUL
46.	Laurel	<i>Terminalia tomentosa</i>	LAU	68.	Pussur	<i>Xylocarpus molluccensis</i>	PUS
47.	†Litsa	<i>Liteasa polyantha</i>	LIT	69.	Pyinma	<i>Lagerstroemia hypoleuca</i>	PYI
48.	†Machilus	<i>Machilus</i> spp.	MAC	70.	Red Bombwe	<i>Planchonia valida</i> (Syn. <i>Planchonia andamanica</i>)	RBO
49.	Mahogany	<i>Swietenia</i> spp.	MAG	71.	†Red Dhup	<i>Parishia insignis</i>	RDH
50.	†Maina	<i>Teterameles nudiflora</i>	MAI	72.	Rosewood	<i>Dalbergia latifolia</i>	ROS
51.	Makai	<i>Shorea assamica</i>	MAK	73.	†Salai	<i>Boswellia serrata</i>	SAA
52.	†Mango	<i>Mangifera indica</i>	MAN	74.	Satinwood	<i>Chloroxylon swietenia</i>	SAT
53.	Maple	<i>Acer</i> spp.	MAP	75.	Seleng	<i>Sapium baccatum</i>	SEL
54.	Menudito	<i>Enterolobium</i> spp.(Exotic)	MEN (ENT)	76.	†Semul	<i>Salmalia malabarica</i>	SEM
55.	Mullilam	<i>Fagara budrunga</i> (Syn. <i>Zanthoxylum rhetsa</i>)	MUI	77.	†Silver Oak	<i>Grevillea robusta</i>	SOA
56.	†Mundani	<i>Acrocarpus fraxinifolius</i>	MUN	78.	Sissoo	<i>Dalbergia sissoo</i>	SIS
57.	†Narikel	<i>Pterygota alata</i>	NAR	79.	Teak	<i>Tectona grandis</i>	TEA
58.	Neem	<i>Azadirachta indica</i>	NEE	80.	Toon	<i>Cedrela</i> spp.	TOO
59.	Nodunari	<i>Mansonia</i> spp.	NED	81.	†Udal	<i>Firmiana villosa</i> (Syn. <i>Sterculia villosa</i>)	UDA
60.	Pali	<i>Paiaquium ellipticum</i>	PAL	82.	Uriam	<i>Bischofia javanica</i>	URI
61.	Persian Lilach	<i>Melia azadarach</i>	PLI	83.	†Vellapine	<i>Vateria Indica</i>	VEL
62.	†Piney	<i>Kingiodendron pinnatum</i> (Syn. <i>Hardwickia pinnata</i>)	PIN	84.	†Walnut	<i>Juglans</i> spp.	WAL
				85.	†White Bombwe (badam)	<i>Terminalia procera</i>	WBO
				86.	White Cedar	<i>Dysoxylum malabricum</i>	WCE
				87.	†White Chuglam	<i>Terminalia bialata</i> (Sapwood)	WCH

ANNEX C

(Clause 9.2)

METHOD OF TEST FOR SQUARENESS AND EDGE STRAIGHTNESS

C-1 PROCEDURE FOR EDGE STRAIGHTNESS

C-1.1 The straightness of the edges and ends of plywood shall be verified against a straightedge not less than the full length of the plywood. If the edge on the end of plywood is convex, it shall be held against the straightedge in such a way as to give approximately equal gap at each end. The largest gap between the straightedge

and the edge shall be measured to the nearest millimetre and record.

C-2 PROCEDURE FOR SQUARENESS

C-2.1 The squareness of plywood shall be checked with a 1200 mm × 1200 mm square, by applying, one arm of the square to the plywood. The maximum width of the gap shall be recorded.

ANNEX D

(Clause 11.5)

FORM OF REPORT FOR TESTS ON PLYWOOD

1. Indication of the source of manufacture.....
2. Species used.....
3. Sizes of plywood boards.....
4. Thickness of plywood in mm:
 - a) Nominal.....
 - b) Actual average.....
5. No. of veneers in plywood.....
6. Glue Adhesion
 - a) Water Resistance test as determined by clause 11.2.1 of IS 303
 - b) Mycological Test as determined by clause 11.2.2 of IS 303
7. Average moisture content of plywood as determined by the method given in IS 1734 (Part 1) : 1983
8. (a) Modulus of Elasticity as determined by method given in IS 1734 (Part 11) : 1983

Average:
Min. Ind.

 (b) Modulus of Rupture as determined by method given in IS 1734 (Part 11) : 1983

Average:
Min. Ind.
9. Details of defects of face and back

Face.....
Back.....
10. General remarks on compliance with the specification.....
11. Certified that:

*The plywood passed the requirements.....Grade.....

Type.....of plywood according to IS:.....in all respects.

*The plywood failed to conform to IS :.....for reasons given in Sl. No. above.

Signature of Testing Officer.....

Designation.....

Name of Testing Laboratory.....

*Source out either remark.

Bureau of Indian Standards

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This Indian Standard has been developed from Doc : No. CED 20 (4395)

Amendments Issued Since Publication

Amend No.	Date of Issue
Amd. No. 1	November 1992
Amd. No. 2	March 2000
Amd. No. 3	December 2004
Amd. No. 4	August 2005
Amd. No. 5	September 2006
Amd. No. 6	August 2007

BUREAU OF INDIAN STANDARDS

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CORPORATE PURCHASING SPECIFICATION

AA51102

Rev No. 00

PAGE 1 of 3

PLYWOOD FOR PATTERN MAKING

1 General

This purchase specification specifies the technical requirements for Plywood as one of the input materials in pattern making.

2 Application

Plywood shall be used for making patterns of different shapes, maintaining dimensions, layout preparation, etc.

3 Compliance with national standard

Specification is related to IS 303-1989 and corporate specification AA51101 Rev 02.

4 Properties

4.1 Moisture content

5-15%

4.2 Glue shear strength in dry state (applicable for 4 mm thickness and above)

Average value: 550 N minimum

Individual value: 450 N minimum

4.3 The faces of plywood shall be reasonably smooth and veneers shall be of reasonably uniform thickness.

4.4 In pattern making, the ply sheets are often required to make cylindrical shapes. Therefore the plywood of 3 mm and 4 mm thickness shall be checked by bending to Ø 600 mm and Ø 800 mm respectively. There should not be appearance of crack in plywood or cracking sound while bending. This test shall be done on the samples to be supplied by the party before commencement of bulk supply. The bulk supply should also conform to the above mentioned requirement. The plywood of 3 mm and 4 mm should be flexible and should not crack or break during bending to cylindrical shape Ø 600 and Ø 800 mm respectively. This test shall be done on samples to be supplied by party along with their quotation. The bulk supply of plywood shall be in conformity of the approved samples.

Revisions:

Due to wrong codification AA51804 withdrawn and issued in favour of AA51102

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(FN)

Rev No.00

Amd No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

Dt:

Dt:

Year:

CFFP, Haridwar

Corp.R&D

23-08-2016



5 Tolerances

5.1 Sizes

Length, width and thickness shall be as stated in PO.

5.2 The following tolerances on the nominal size of finished plywood shall be permissible:

Parameter	Nominal size	Tolerance
Length	all sizes	+6 mm -0
Width	all sizes	+3 mm -0
Thickness	Less than 6 mm	±10%
	6 mm and above	±5%

Acceptance

The material shall be accepted as per Clause No. 4 & 5. The supplier shall submit sample of size 300 mm x 400 mm along with the offer.

7 Test Certificates

7.1 Unless otherwise specified, one original and three copies of original manufacturer's test certificates shall be supplied with each consignment bearing the following information. In order to facilitate quick clearance of material, the supplier shall ensure to send a copy of test certificate along with despatch document.

- BHEL PO No. with Date
- Specification No.
- Supplier reference / trade mark
- Identification No. / Batch No.
- Properties as per Clause 4 & 5
- Date of manufacture
- Any other specific information which the supplier would like to convey.

7.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to trader's invoice stating the batch No. /lot No., etc.

8 Inspection, Deviation and Replacement

8.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance enclosing a copy of test certificate of the material offered for inspection. However, inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable facilities without charge to satisfy the latter that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests elsewhere.

8.2 If the material received at BHEL is not found in accordance with the requirements, it shall be rejected and the supplier will have to replace it free of cost at the earliest.

8.3 For any deviation from the specification demanded by the supplier prior approval of BHEL must be obtained in writing.



CORPORATE PURCHASING SPECIFICATION

AA51102

Rev No. 00

PAGE 3 of 3

9 Packing and Marking

The material shall be suitably packed to avoid damage, breakage and moisture pickup during transit and storage. The packing shall be that of the original manufacturer's. Each consignment is to be legibly marked or labelled with the following information.

Specification No.

BHEL PO No.

Manufacturer's / supplier's name and trade mark if any

Batch No.

Size and quantity supplied

Date of manufacture.

Any material found broken, damaged, soiled due to improper packaging or mishandling during transportation or otherwise shall be rejected and has to be replaced in equal quantity by the supplier within 15 days of intimation.

10 Referred Standards (latest publications and amendments)

- 1) AA51101

BHEL, R.C.PURAM, HYDERABAD.								
PURCHASE / F&P								
TECHNO COMMERCIAL BID FORMAT (To be filled in by the vendor strictly as for the format and submitted duly signed and stamped)								
ENQUIRY NUMBER		Z1A1R24140				SUPPLIER'S OFFER NO		
ENQUIRY DATE		27.01.2018				OFFER DATE		
DUE DATE :		17.02.2018						
NO. OF ITEMS		05						
ITEMS REQUIREMENT						SUPPLIER'S OFFER (TECHNICAL)		
SL NO	INDENT NO/ ITEM	DESCRIPTION (MATL CODE)	QTY (NOs)	BHEL SPEC	DELIVERY PERIOD	BHEL SPEC	QTY (NOs)	DELIVERY PERIOD FROM THE DATE OF PO / LOI
1	1200024140 /10	PLY WOOD 6MM THICK Matl Code: AA5111701044	50	BHEL Spec:AA51102, Rev:00 and IS303	Feb-18	BHEL Spec:AA51102, Rev:00 and IS303	50	
2	1200024140 /20	PLY WOOD 8MM THICK Matl Code:AA5111701052	100	BHEL Spec:AA51102, Rev:00 and IS303	Feb-18	BHEL Spec:AA51102, Rev:00 and IS303	100	
3	1200024140 /30	PLYWOOD 10MM THICK Matl Code: AA5111701079	100	BHEL Spec:AA51102, Rev:00 and IS303	Feb-18	BHEL Spec:AA51102, Rev:00 and IS303	100	
4	1200024140 /40	PLY WOOD 12MM THICK MATERIAL No: AA5111701257	100	BHEL Spec:AA51102, Rev:00 and IS303	Feb-18	BHEL Spec:AA51102, Rev:00 and IS303	100	
5	1200024140 /50	PLYWOOD FOR PATTERN MAKING - 15 mm MATERIAL No: AA5111702016	50	BHEL Spec:AA51102, Rev:00 and IS303	Feb-18	BHEL Spec:AA51102, Rev:00 and IS303	50	
Evaluation will be done on overall basis considering all the item together and not by item wise. This plywood is used for pattern making and is referred as "Boiling Water Proof " Plywood.								
BHEL TECHNICAL & COMMERCIAL REQUIREMENT						SUPPLIER OFFER COMMERCIAL TERMS		
1	Address for submission of tenders & time	1.1) DGM / Purchase/Coordination, Vendor complex, near Administrative building, BHEL RC.Puram, Hyderabad. Ph:040-2318 2322. Tender shall be submitted on or before due date before 11.00hrs. In of emergency only you may submit the offers in two parts 1.2) Technical offer to be submitted to technicalbid_hyd@bhel.in and Price Bid to be submitted to pricebid_hyd@bhel.in 1.3) Interchanging the information in the mails may lead to rejection of your offer. Supplier shall have no claim on email offers sent on any other email ID. 1.4) BHEL in no way responsible for non-receipt of offers sent through email due to server breakdown/internet failure/transmission error etc. 1.5) In of e-mail offers, vendor's name, address including contact details shall be mentioned. Note:In the mail, subject should contain Enquiry No.,Vendor's name and Due date.						

2	General terms & conditions for submitting the tender.	2.1) Tenders will be received upto 11:00 hrs from Monday to Saturday and tender will be opened at 14:00 hrs. 2.2) Tenders received after due date & time will be rejected. 2.3) Technical bid and Price bid shall be kept in separate sealed covers / envelopes superscribing BHEL Enquiry no., due date on top of the cover/ envelope and vendor name shall be indicated at bottom of the cover / envelope. 2.4) Offers received without enquiry no & due date will be treated unsolicited offers and will not be considered.	
3	Mode of Tender Evaluation	3.1) First Techno-Commercial bids will be opened. 3.2) Price bid will be opened only after freezing of Techno-commercial bids and prior intimation will be given to the technically qualified vendors to witness price bid opening. 3.3) Tender will be evaluated on destination cost to BHEL. 3.4) Evaluation will be done on overall basis considering all the item together and not by item wise	
4	ITB cum GCC, activity timelines	ITB cum GCC, activity sheet to be accepted and filled in along with Techno-Commercial Bid.	
5	Vendor address	Please indicate the following without any fail 5.1) Concerned contact person name 5.2) Office telephone no a) Mobile b) Landline 5.3) Office Fax 5.4) E-mail 1: E-mail 2:	
6	Technical Confirmation	6.1) As Per BHEL Spec: AA51102, Rev:00. and IS303 6.2) Vendor shall furnish information against each point and send the documents duly signed & stamped along with technical bid. 6.3) Minimum dimension of the items Dimensions of items are as below Item 1 - L8'x W4', 6mm Thick Item 2 - L8'x W4', 8mm Thick Item 3 - L8'x W4', 10mm Thick Item 4 - L8'x W4', 12mm Thick Item 5 - L8'x W4', 15mm Thick 6.4) This plywood is used for pattern making and is referred as "Boiling Water Proof " Plywood.	
7	Name of the Manufacturer / make of the Product :	This is required for our records. Please indicate.	
8	Delivery Terms	F O R BHEL Ramachandrapuram, Hyd (Please quote including freight).	
9	Delivery Period	9.1) Supplier to indicate Delivery period in terms of no.of weeks from the date of PO. Delivery is the essence of contract. 9.2) BHEL reserves the right to reject offers with unsuitable deliveries.	
10	Offer Validity	offer shall be valid for a period of 90 days from the date of bid opening (Technical bid /part-I in of two part bid).	
11	Price Variation Clause	11.1) Quoted price shall be firm till completion of the supplies / PO. 11.2) Offers with PVC will be rejected.	
12	Weighment	12.1) BHEL is having the Electronics weigh machine at its 04 holding stores. Material weighment will be done on this machine. 12.2) BHEL weighment will be the final for accounting the material and making the payment. 12.3) Tenders will be rejected and their price bids will not be considered who do not agree for BHEL weighment terms.	

13	Packing and Marking	13.1) Material shall be supplied as per Spec: AA51102, Rev:00 & IS303 13.2) Marking Strictly as per Spec: AA51102, Rev:00, and no unwanted information should be present on the packing.	
14	Test certificate	14.1) To be provided along with materials at time of dispatch 14.2) Test certificates format should be as per spec AA51102. please note test certificate format not confirming Specification will lead to delay in acceptance of material which will further delay the payment	
15	Quantity / Tolerance	15.1) Qty will be as per the enquiry. 15.2) Tolerance is +/-10% on Qty and value.	
16	Inspection	Will be carried out by BHEL,Hyd at vendor works as Per BHEL SPEC: AA51102 rev 00 & IS303	
17	Additional information	17.1) All the dimensions mentioned are minimum. 17.2) Items less than mentioned dimensions shall be rejected. 17.3) Payment will be limited to the minimum dimensions, but any extra dimensions will be accepted. 17.4) L1 vendor will be decided by considering all the items put together	
18	pre - qualification criteria	Vendor should have experience of having supplied similar material. Documentary proof such as PO/invoice to be provided.	
Only basic price should be quoted in the Price bid as per the format. All other additional charges should be indicated against the following heads.			
19	Inspection And Testing Charges	To be indicated (if applicable)	
20	Packing And Forwarding Charges	To be indicated (if applicable)	
21	Frieght Charges	To be indicated (if applicable)	
22	GST number / ARN	To be indicated (if applicable)	
23	GST/ rates	To be indicated (if applicable)	
24	For Imported Material	Indicate applicable taxes & duties like BCD+CESS, CVD+CESS, SAD/ ACD etc.	
25	Insurance	To be indicated (if applicable)	
26	Any Other Charges	To be indicated (if applicable)	
27	BHEL Rights	BHEL reserves the right to accept or reject any offer at its discretion without assigning any reason to the vendors	
			Name: Signature : Seal :

 BHEL, R.C.PURAM, HYDERABAD.							
PURCHASE F&P							
PRICE BID FORMAT							
You can copy this format on your company / office letter head.							
ENQUIRY NUMBER		Z1A1R24140			SUPPLIER'S OFFER NO		
ENQUIRY DATE		27.01.2018			OFFER DATE		
DUE DATE :		17.02.2018					
NO. OF ITEMS		05					
ITEMS REQUIREMENT					SUPPLIER'S OFFER (TECHNICAL)		
SL NO	INDENT NO/ ITEM	DESCRIPTION (MATL CODE)	QTY (NOs)	BHEL SPEC	CURRENCY	PRICE per NO	QTY (NOs)
1	1200024140 /10	PLY WOOD 6MM THICK Matl Code: AA5111701044	50	BHEL Spec: AA51102, Rev:00 and IS303	Feb-18		
2	1200024140 /20	PLY WOOD 8MM THICK Matl Code:AA5111701052	100	BHEL Spec: AA51102, Rev:00 and IS303	Feb-18		
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4	1200024140 /40	PLY WOOD 12MM THICK MATERIAL No: AA5111701257	100	BHEL Spec: AA51102, Rev:00 and IS303	Feb-18		
5	1200024140 /50	PLYWOOD FOR PATTERN MAKING-15 mm MATERIAL No: AA5111702016	50	BHEL Spec: AA51102, Rev:00 and IS303	Feb-18		
1) evaluation will be done on overall basis considering all the item together and not by item wise. This plywood is used for pattern making and is referred as "Boiling Water Proof " Plywood. 2) ONLY BASIC PRICE IS TO BE INDICATED IN THE PRICE BID. TAXES AND OTHER TERMS TO BE INDICATED IN TECHNO-COMMERCIAL BID.				Signature			
				Name			
				Stamp /Seal			



BHARAT HEAVY ELECTRICALS LTD. , RC.PURAM, HYDERABAD

Document No. HY:MM:ITB Rev:07

INSTRUCTIONS TO BIDDER (ITB)

(Attachment to Enquiry No. Z1A1R24140 Due on Date 17.02.2018 for submission by 11.00 hrs to open from 14.00 hrs.)

NOTE: Bidder to confirm in affirmative by typing "YES" or "Applicable Data" in the response column. Deviations , if any shall be recorded in deviations/comments column (Separate sheet can be attached if needed). Non deviatable clauses are indicated as "NON DEVIATABLE".

Sl. No.	DETAILED TERMS & CONDITIONS	VENDOR RESPONSE (YES/NO)	DEVIATION S/ COMMENT
1.	SCOPE OF SUPPLY:		
	Signed & Sealed offers are invited for the Scope of Supply of goods and Services or both as detailed in the enquiry. Relevant enclosures/supporting documents / catalogue, if any shall be enclosed to the technical offer. Bidder can also submit offer through email at their own risk. The offer is to be submitted in two parts. Technical offer to be submitted to mail ID technicalbid_hyd@bhel.in , and price bid to be submitted to mail ID pricebid_hyd@bhel.in as an <u>attachment only</u> . Interchanging the information in the mails may lead to rejection of the offer. Supplier shall have no claim on e-mail offers sent on any other e-mail ID. In case of e-mail offers, the mail subject should contain Enquiry No. Due date and Supplier name, Supplier address including contact details shall be mentioned in the content of the mail. Without these details offer is liable for rejection.		
2.	GENERAL INSTRUCTIONS:		
A	The quotation should be neatly typed and free from over writing/ erasures. Any correction or addition must be authenticated. The offer including annexures and brochures should be submitted in English / Hindi. All Pages of Techno Commercial Bids (Main Pages), ITB should be signed and Stamped. If there is a conflict in case of bilingual submission, the submission in English will be final.		Non Deviatable
B	In case of Single-Part bid Tender, the complete bid shall be submitted in a single sealed cover super subscribing the Tender number and due date. Incomplete offers are liable for rejection. E mail bids shall be sent to mail ID pricebid_hyd@bhel.in as an <u>attachment only</u> .		Non Deviatable
C	Bidders to please note that the Terms & conditions contained in this document and Special conditions, if any, are to be read fully before submission of quotations.		Non Deviatable
D	BHEL reserves the right to process the tender through Reverse Auction (RA) route. Bidders are requested to go through RA guidelines (which are attached) and confirm acceptance of the same. Otherwise the offer is liable for rejection. BHEL will decide (after technical bid opening), at its discretion, to process the tender through Reverse Auction or by opening price bids.		Non Deviatable
E	Vendors are advised to comply with specific conditions of the enquiry, Should there be any deviations (where deviations are permitted), it shall be entered in the deviation column. BHEL reserves the right to reject such offers or load the bid suitably for evaluation.		Non Deviatable
F	Offers shall be submitted directly, only by the vendor or by their authorized representative / agent and the offer should be in line with the regulatory guidelines (i.e A valid Agency agreement between principal vendor and agent / representative shall be attached and the agreement shall cover the scope of services rendered by Agent, Agency Commission and any other information called for as per the regulatory guidelines). OEM / Mill details shall be provided if supplier is not a manufacturer. Bid envelopes shall bear the name of Supplier. In case of submission through authorized representative/agent, the name of representative/agent should also be mentioned apart from supplier name.		Non Deviatable
G	Offer received after the specified time and date of submission shall be rejected. No further correspondence shall be entertained.		Non Deviatable
H	Unsolicited offers shall not be considered.		Non Deviatable
3.	OTHER PARTICULARS (Please indicate applicable data)		
A	Name of the Bid currency (freely tradable foreign currency for imports and Indian Rupees for indigenous purchase).		
B	Name of the Port of loading and Port of Discharge (applicable to imports).		
4	BID SUBMISSION PROCEDURE:		
A.	For Single Part Bids: Offers addressed to DGM/CMM, Vendor Complex, BHEL, Hyderabad must be sent in a sealed cover on which tender enquiry number and the due date shall be super subscribed and sent by appropriate mode to above address or dropped in tender box located at vendor complex on or before the specified time and date of submission of offers, preferably in the bidder's envelope. For e-mail offers please follow the procedure mentioned in 2 (B).		Non Deviatable
B	For two-Part Bids:		



BHARAT HEAVY ELECTRICALS LTD. , RC.PURAM, HYDERABAD

Document No. HY:MM:ITB Rev:07

INSTRUCTIONS TO BIDDER (ITB)

(Attachment to Enquiry No. Z1A1R24140 Due on Date 17.02.2018 for submission by 11.00 hrs to open from 14.00 hrs.)

i	Two part bid consisting of Techno-commercial Bid - (Part-I), with all technical specification & scope including bill of material etc., EMD (where applicable) and unpriced bid with all applicable Commercial Terms and Conditions, rates of agency commission , duties, taxes and other charges, <u>except the price</u> , super scribing enquiry No. (Techno-Commercial Bid) and due date Signed and Stamped ITB and special conditions of contract, if any is required to be attached along with Techno-commercial Bid - (Part-1) AND Price Bid (Part-II), containing ONLY the price (including agency commission, if any) and the applicable duties/taxes/other charges shall be kept in a separate sealed cover super subscribing Enquiry no. (Price bid) & due date. Both these covers shall be kept in a Third cover super subscribing Enquiry no. & due date. All techno commercial terms & conditions mutually agreed prior to price bid opening shall prevail and supersede any terms and conditions specified otherwise in price bid.		Non Deviatable
ii	Techno-commercial Bid will be opened on the assigned date .Only the price bids of vendors whose techno commercial bids are accepted will be opened later on a specified date. In case BHEL opts for Reverse Auction, the date of conducting RA will be intimated separately to all the qualified bidders.		Non Deviatable
iii	The bidders whose bids are techno commercially not accepted will be informed & EMD (Earnest Money Deposit) shall be returned wherever submitted.		
iv	Bidders will be allowed to submit the impact on their quoted prices due to changes in technical scope, specifications, and commercial terms/conditions as specified in NIT which in the opinion of BHEL warrant changes in prices.		Non Deviatable
v	Bids shall be opened on due time and date in the presence of bidders who may like to be present. Only one representative of each bidder shall be permitted to attend the bid opening.		Non Deviatable
5	Delivery Instructions		
A	Indigenous Purchase		
	Goods shall be delivered on FOR Destination basis to the named destination(s) or as specified in the enquiry, Insurance in the scope of supplier.		
B.	Imports		
	The goods shall be delivered on CIP-basis to port of discharge as mentioned in the purchase order.		
6	Documentation:		
A	Indigenous Purchase		
	Seller shall arrange to send to BHEL, Hyderabad along with all the required documents as detailed in Purchase Order, such as, Tax Invoice (Original for Recipient, Duplicate for Transporter), consignee copy of LR, Packing list , Pre-dispatch Inspection report, Test/ Guarantee/ Warranty certificate/ O&M manuals (as applicable) etc. immediately on dispatch of the goods. Any addition/ exclusion to such documents shall be as specified in the Purchase Order. In case of dispatches from vendor works to site, material receipt certified by site office / Customer shall be provided. Softcopies of the above documents shall be uploaded in Pradan portal https://web.bhelhyd.co.in/mm/ immediately after dispatch of the material		Non Deviatable
B	Imports		
	(i). Seller shall inform the purchaser the readiness of material along with packing details well in 30 days advance from the date of delivery. Seller shall also upload soft copy of the dispatch documents consisting of BL / AWB, Invoice, Shipping list & Test certificates and other documents as specifically indicated in the Purchase Order in PRADAN Portal (https://web.bhelhyd.co.in/mm/) within 3 days from the B/L date for sea shipment and 1 day from AWB date for Air shipment. (ii). In case of CIP shipments, seller shall also inform purchaser the information about discharge port agent details and ship arrival information within 7 working days from the date of Shipment. (iii).In case the material shipped in Full Containers(FCL), Seller shall ensure that the Bill of Lading should clearly spell out the following		



BHARAT HEAVY ELECTRICALS LTD. , RC.PURAM, HYDERABAD

Document No. HY:MM:ITB Rev:07

INSTRUCTIONS TO BIDDER (ITB)

(Attachment to Enquiry No. Z1A1R24140 Due on Date 17.02.2018 for submission by 11.00 hrs to open from 14.00 hrs.)

	1. Port of discharge -- "Nhavaseva"/chennai 2. Place of Delivery / Final Destination - "ICD Sanath Nagar". 3. For air consignment the port of discharge will be Hyderabad, India and consignee shall be BHEL. (iv).In case of Air shipment, the following dimensions of single package may be noted. a). Dimension of the cargo(ODC) -- > 125" x 88" x 63" b).Weight of the cargo -- >3.5 MT. If any package dimension or weight crosses the above set limits, it will be treated as Over Dimension Cargo (ODC) or Over Weight Cargo and seller shall inform BHEL well in advance of 20 days prior to the delivery date to enable BHEL to finalize the freight forwarder (v). Recovery charges for non-submission of documents : - Seller shall submit all the required documents to BHEL as prescribed in the Purchase order and NIT. If BHEL incurs any charges such as Penalty, demurrage, container detention, wharf age, storage, Ground rent etc., due to non - compliance / non - submission of documents prescribed in Purchase Order/Tender Document/Letter of credit , the same shall be recovered from the seller as under: 1. EUROPE/USA/Black Sea/ Far East/Middle East/South East sector A For EX-WORKS / FCA/ FAS / FOB Sea Consignments:- Penalty for late submission / negotiation of documents beyond 14 days shall be as under <table><tr><th rowspan="2">Sl. no</th><th rowspan="2">Period (From Date of Bill of Lading)</th><th>Recoverable Charges</th><th colspan="2">Recoverable Charges per day per container</th></tr><tr><th>LCL per week/ Break bulk cargo per day</th><th>20FT Container</th><th>40FT Container</th></tr><tr><td>i</td><td>Upto 14th day</td><td>Nil</td><td>Nil</td><td>Nil</td></tr><tr><td>ii</td><td>15th day onward</td><td>USD 10</td><td>USD 50</td><td>USD 105</td></tr></table> For CIF / CFR / CIP / CPT Sea Shipments:- For CIF / CFR / CIP / CPT Sea Shipments, Vendor shall provide rates for detention charges after free period at the time of offer itself in case of engagement of 20FT Container and 40FT category. In case of late presentation of documents to the bank recovery will be effected from the Vendor as per the rates quoted by the Vendor at the time of offer in this regard. In case of Break bulk cargo and LCL Demurrage/storage charges shall be recovered at rate of USD 10 per day and storage charges rate of USD 10 per week respectively shall be charged as late presentation charges. (vi) Description of items in invoice, packing list, BL / AWB or LR shall be same as PO item description. Vendors shall ensure that invoice shall contain PAN nos. of both seller and buyer along with other tax related numbers. BHEL PAN AAACB4146P and BHEL TAN HYDB00086C Any other additional documents sought by the statutory authorities, the same shall be produced by the seller on priority basis. (vii) Seller shall provide package details including number of packages, gross weight, net weight etc. (viii) The seller shall provide the following documents at the time of submission of offer :- a) No Business Connection in India declaration issued by the seller as per the format specified. (or) b) (i) No Permanent Establishment in India declaration issued by the seller as per the format specified. (ii) Tax Residence Certificate issued by the seller's tax authorities. (iii) Form 10F issued by the supplier. c) In case the seller has a Business Connection in India as per Section 9 of Income Tax Act or Permanent Establishment in India as per Article 5 of Double Taxation Avoidance Agreement between India and the seller's country, the seller shall provide a withholding tax order issued by the Indian Income Tax authority for recovery of applicable tax.	Sl. no	Period (From Date of Bill of Lading)	Recoverable Charges	Recoverable Charges per day per container		LCL per week/ Break bulk cargo per day	20FT Container	40FT Container	i	Upto 14th day	Nil	Nil	Nil	ii	15th day onward	USD 10	USD 50	USD 105		
Sl. no	Period (From Date of Bill of Lading)			Recoverable Charges	Recoverable Charges per day per container																
		LCL per week/ Break bulk cargo per day	20FT Container	40FT Container																	
i	Upto 14th day	Nil	Nil	Nil																	
ii	15th day onward	USD 10	USD 50	USD 105																	
7	Delivery Schedule																				



BHARAT HEAVY ELECTRICALS LTD. , RC.PURAM, HYDERABAD

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A	The tendered goods shall be delivered within the period stipulated in PO . Delivery at BHEL can be accepted at the earliest, 30 days prior to delivery date as mentioned in the Purchase order. Delivery earlier than 30 days of contractual delivery date may be accepted with the written permission of BHEL -Purchase department. Goods arriving after the delivery date will be accepted only with the prior written permission of BHEL otherwise they will not be allowed inside the factory. BHEL reserves the right to reject the material, if not delivered by scheduled Purchase Order Delivery Date. (In case of imports , the final entry date of Import General Manifest (IGM) will be reckoned as delivery completion date)		Non Deviatable
B	Documents such as TC,GCs Inspection reports are to be submitted within 10 days of dispatch of these materials. C note date or Date of submission of documents whichever is later shall be considered as delivery date incase documents are not submitted within 10 days from the dispatch of the material. Supply of plant/ equipment/ stores shall not be considered complete until they have been inspected and accepted at the place and destination specified for delivery by the time stipulated under the terms & conditions of the Order/ Contract. Mere payment by itself shall not constitute acceptance of the goods or materials in any manner, whatsoever.		
8	Pricing Terms		
	Prices once quoted shall remain firm and valid during the execution of PO. Offers with PVC will be rejected outright except in cases where specifically called for in the NIT.		Non Deviatable
9	PRICE VALIDITY :		
	Unless otherwise specified, offer shall be valid for a period of 90 days from the date of bid opening (Technical bid /part-I in case of two part bid). However the prices quoted for spare parts of the Main equipment shall be kept valid for a period of 1 year from the date of Placement of PO for the main equipment		
10	Taxes & Duties (RATE TO BE INDICATED by the bidder against the space provided)		
A	Indigenous Purchase		
	The Taxes as applicable shall be quoted in the following manner.		
i	Vendor to indicate HSN of Goods or SAC of Services.		
ii	IGST/CGST/SGST/UTGST: Rate of Tax to be quoted as extra in %		
	NOTE: Bidders to ensure correct applicability of IGST/CGST/SGST/UTGST based on the Inter / Intra state movement of goods. Taxes prevalent on the contractual delivery date or the actual delivery date (incase of delay) which ever is lower shall be applicable paid. In case Bidder has opted for GST Composition Scheme, the same may be stated explicitly both in their technical and price bids.		
iii	Any other taxes & duties not covered anywhere above may be indicated separately.		
iv	Taxes deducted at source: TDS as per the extant statute shall be recovered. In case vendor does not provide PAN details/concessional certificates, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.		Non Deviatable
B	Foreign Purchase (Imports)		
	The offered price shall be inclusive of all the Taxes and duties as applicable in country of bidder / country of dispatch for the quoted CIP price.		Non Deviatable
	Taxes deducted at source: TDS as per the extant statute shall be recovered. In case vendor does not provide PAN details/concessional certificates, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.		Non Deviatable
11	Payment Terms: Unless otherwise specified in Special Conditions, following shall be the terms of Payment.		
A	Indigenous: 100% payment along with taxes, freight & insurance will be made with in 75 days from the date of receipt of complete documentation as per PO. However payment would be done only after receipt of original documents, including site/ Customer acknowledgement on LR (MRC - Material Receipt Certificate at site) / GR clearance at BHEL Stores. For MSEs (covered under MSME Act) which are registered and periodically renewed with BHEL, this period will be 45 days* as prescribed in the relevant act. Adherence to the above time schedule of payment is contingent upon Vendor complying with GST provisions and availment of Input Tax Credit by BHEL before the date of payment.		



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	*The taxes and duties that are reimbursed would be the ones applicable as on the contractual Purchase Order delivery date or the amount actually paid whichever is less. In case GST credit is delayed/ denied to BHEL, due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST Law for availing such ITC, or any other reason not attributable to BHEL, GST amount shall be recoverable from Vendor along with interest levied/ leviable on BHEL.		
B	Imports:- 100% payment (less Indian Agency Commission, if any) shall be paid through "Usance Letter of Credit / Cash Against Documents (CAD) / Wire Transfer" with a credit period of 60 days LC will be opened after successful completion of pre dispatch inspection prior to the scheduled / agreed delivery date LC will be opened within 7 working days from the date of request.		
C	Note: No advance payment is acceptable. However, in exceptional/rare cases, BHEL at its discretion, may consider advance payment against Bank Guarantee valid up to receipt of material at BHEL for 110% of advance amount issued / confirmed by any of the BHEL consortium banks. Wherever EMD (Earnest Money Deposit) is applicable, it may be noted that no interest will be paid on EMD and the EMD will be paid back to unsuccessful bidders within fifteen days after award of the contract. Successful bidder's EMD will be converted to SD (Security Deposit). Tender Cost wherever applicable is not refundable.		Non Deviatable
12	Penalty clause: In the event of delay in supply of goods, penalty of 0.5% per week or part there of shall be levied on the undelivered portion subject to a maximum of 10% of the order value. Penalty amount so determined along with applicable GST thereon shall be recovered.		
13	Excess materials supplied beyond tolerance limit as specified in PO, will not be accounted for.		Non Deviatable
14	Rejected materials, if any, shall be collected by the vendor within 90 days of such communication to the vendor .Beyond 90 days a ground rent of 0.25 % of the value of the material per week will be levied for a maximum period of two weeks.. Beyond this period the supplier forfeits their right to the materials.		Non Deviatable
15	Guarantee / Warranty Period : (Deviation to this clause is not acceptable.) Wherever required, and so provided in the specifications/Purchase Order, the seller shall guarantee that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance. If within the guarantee period, the delivery is found to be non-complaint, the seller shall on his own account, replace repair, or re-execute the delivery at Purchaser's discretion on the purchaser's first request or within the mutually agreed period, without prejudice to Purchaser's other legal rights. If the seller continues to default on their obligations, purchaser has the right to proceed to replace, repair or re-execute the order at the seller's expense, with or without help from third parties. Purchaser shall notify the seller of the exercise of this right in advance where ever possible. Unless otherwise specified, guarantee period shall be 12 months from the date of commissioning or 18 months from the date of supply/replacement whichever is earlier. For bought out packages which are intended to be incorporated in installations or systems the guarantee period shall not start until the time the installations or systems are commissioned, provided always that the period ends not later than 30 months after the date of supply of the goods. The guarantee period shall be extended by the period during which the goods are not in compliance. A guarantee period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery.		Non Deviatable
NOTE: Deviations (Commercial as well as Technical) from the tender specifications and conditions are generally not acceptable. However, deviation if any, shall be brought out clearly with proper justification in the offer. The deviation, if considered by BHEL, shall be loaded for comparison, while evaluating the offer. If a bidder unconditionally withdraws any deviation before price bid opening, the same shall not be loaded. Loading criteria in respect of major commercial conditions where deviations if any are accepted shall be as per clause No.16. The Vendors may specifically note the following.			
16	Evaluation and Loading Criteria:		
A	Evaluation of prices shall be done item-wise unless otherwise specified in the enquiry. Evaluation shall be on the basis of delivered cost, i.e. "total cost to BHEL" w.r.t the finalized technical scope and commercial conditions (after considering incidence of applicable taxes and duties and loading). For evaluation, exchange rate (TT selling rate of State Bank of India) as		



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	on the date of bid opening (Part-I, in case of two-part bids) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.
B	In case of foreign bidders, the quoted CIP price shall be loaded by the following factors to arrive at the Delivered Cost:
i	- Import duty as applicable at the time of Price/ Part-II bid opening.
ii	- Port handling/ clearing charges & inland freight and insurance: @ 5% of CIP value (10% for plates, pipes & structurals).
iii	In other cases subject to acceptance by BHEL, loading for various factors (in addition to above) as the case may be will be done as follows 0.5% for unloading at Port of Destination Marine Freight 4% and Marine Insurance 1% (9% and 1% towards Freight and Insurance respectively for Plates, Pipes, Rounds & Structurals)
C	Incase of Indigenous Bidders, Ex-works offers received (as against FOR Destination mentioned in enquiry) shall be loaded by 4% of Ex-works value (9% for plates, pipes, rounds & structurals) unless otherwise mentioned in enquiry.
D	Deviated Penalty: Any loading on penalty clause shall be 10% or to the extent to which the vendor has opted for deviation.
E	Deviated Payment Terms: Terms: In case BHEL considers any deviation in payment terms, the bids shall be loaded with 18% interest per annum to the extent of deviation.
17	Procurement directly from the manufacturers/ suppliers shall be preferred. However, no agent shall be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from both from the manufacturer/ supplier and the agent, bid received from the agent shall be ignored.
18	RIGHT OF REJECTION /NON- PLACEMENT OF PO: BHEL reserves the right to accept or reject any or all bid/s in full or part without assigning any reason whatsoever.
19	INTEGRITY PACT Vendors shall have to enter into Integrity Pact with BHEL as per attachment - for order value of rupees five crores and above and shall be signed by the competent authority before the issue of purchase order, failing which vendor's offer will be rejected.
20	Benefits earmarked for Purchase from Micro & Small Enterprises (MSEs) – Indigenous Purchase
20 A	Tender documents to the NSIC registered vendors (If registered for tendered items) shall be issued free of cost & no EMD wherever called for will be insisted upon. NSIC registered unit bidders shall submit along with bid relevant documents including valid NSIC certificate. Date to be reckoned for determining the deemed validity will be the last date of Technical bid submission. Non- submission of such document will lead to consideration of their bid, at par with other bidders and MSE status of such bidders shall be shifted to Non- MSE supplier till the supplier submit these documents
20 B	In tender, participating MSEs quoting price within price band of L1+15% shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a MSE and such MSE shall be allowed to supply up to 20% of total tendered value. In case of more than one such MSE, the supply shall be shared proportionately. A quantum of 4% out of 20% quantity, so earmarked, will be reserved for MSE's owned by SC / ST entrepreneurs who submit their bid with relevant documents. applicable in case of item-level evaluation tenders
20 C	If an enterprise falling under MSME category as defined in the Act, graduates to a higher category from its original category or beyond the purview of the Act, it shall continue to avail all non-tax benefits of its original category notified by the Ministry of Micro, Small and Medium Enterprise for a period of three years from the date of such graduation to the higher category.
21	For Claiming Payments for goods received at BHEL works / Site from Vendors' Works) a. Original of Invoice marked as ORIGINAL FOR RECIPIENT b. Duplicate of Invoice marked as DUPLICATE FOR TRANSPORTER c. Packing List - clearly showing number of packages, gross weight and net weight. d. Warranty/Guarantee certificates (If applicable as per PO terms) e. Insurance certificate f. Third Party Inspection Certificates. g. LR Copy signed & stamped by Site incharge / Customer for site deliveries) (For material received at BHEL payment will be made against GR for accepted quantity)
22	Inspection Measuring and Test Equipment (IMTE) whether used by the Seller/ Contractor or sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE maintained in sound condition during usage.
23	ISO-9001, ISO14001 and OHSAS 18001 shall be complied
24	Applicable Conditions :These General conditions of Contract for Purchase apply to all enquiries, tenders, request for quotations, orders and agreements concerning the supply of goods and the rendering of related services (hereinafter referred to as "deliverables") to Bharat Heavy Electricals Limited, Ramachandra puram , Hyderabad (hereinafter referred to as "BHEL" or the Purchaser) or its projects/customers.



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	Any deviations from or additions to these General conditions of contract for Purchase' require Purchaser's express written consent. The general terms of business or sale of the Seller shall not apply to Purchaser. Orders, agreements and amendments thereto shall be binding if made or confirmed by the Purchaser in writing. Only the Purchasing department of the Purchaser is authorized to issue the Purchase order or any amendment thereof.
25	Being PMD Vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion such PMD vendor from BHEL's approved vendor list Vendor shall ensure that PAN details are available/updated with BHEL, else Vendor shall attach PAN details with enquiry failing which offer shall be liable for rejection.
26	Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 Status
27	Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.
28	The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
29	In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / equivalent market price at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. Nonperformance of contract attracts penal provisions inline with BHEL's Suspension of Business dealings.
30	Any other terms and conditions of the bidder attached / referred against the tender enquiry will not be considered.
31	All drawings as also all patterns and tool supplied by BHEL or made at BHEL's expense are BHEL's property. These cannot be used or referred to any other party and must only be used in the execution of BHEL's orders.
32	Any amount payable by the consignor / supplier under any of the condition of this contract shall be liable to be adjusted against any amount payable to the consignor / supplier under any other work / contract awarded to him. This is without prejudice to any other action as may be deemed fit by BHEL.
33	The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The list of firms banned by BHEL is available on BHEL web site www.bhel.com
34	Definitions
Throughout these conditions and in the specifications, the following terms shall have the meanings assigned to them, unless the subject matter or the context requires otherwise.	
37A3 4 34A	'The P Purchaser' means BHEL-HPEP, Ramachandra puram, Hyderabad-502 032 of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the companies Act having its registered office at BHEL House, Siri fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
34 B 34 B	'The seller' means the persons, firm, company or organization on whom the Purchase order is placed and shall be deemed to include the seller's successors, representatives, heirs, executors and administrator as the case may be. It may also be referred to as Contractor, supplier or vendor.
34 c	'Contract' shall mean and include the Purchase order incorporating various documents viz., tender/offer, letter of intent/acceptance, the General Conditions of contract and special conditions of contract for Purchase, specifications, inspection/quality plan, schedule of prices and quantities, drawings, if any enclosed are to be provided by the Purchaser or his authorized nominee and the samples or patterns if any to be provided under the provision of the contract. In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI/LOA followed by specific conditions, special conditions of contract and general conditions of contract for commercial conditions; and specific agreement on technical conditions, special technical conditions and general technical conditions, tender/ offer.
35	'Parties to the contract' shall mean the seller and the purchaser as named in the main body of the Purchase Order.
36	Ordering and confirmation of order The seller shall send the order acceptance in Toto within one week from the date of LOI/Purchase order or such other period as specified/agreed by the Purchaser. Purchaser reserves the right to revoke the order placed if the order confirmation differs from the original order placed. Purchaser shall only be legally bound if agreed explicitly in writing to be in agreement with the deviation. The acceptance of deliverables or supplies by Purchaser as well as payments made in this regard shall not imply acceptance of any deviations. The Purchaser order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified /agreed by the Purchaser) from the date of P.O. Purchaser, is at liberty to send signed P.O. through electronic media such as e-mail and the receipt of which shall be treated

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	as receipt of order.
37	Execution
	The whole contract is to be executed in the most workman like manner, substantial and approved as per the contracted terms.
38	Progress Report
	The seller shall render such report as to the progress of work and in such form as may be called for by the Purchaser from time to time. The submission and acceptance of such reports shall not prejudice the rights of the purchaser in any manner. Seller shall communicate to BHEL immediately, change of address, ownership, contact person(s), the mobile numbers and e-mail of the dealing person concerned. Milestones shall be periodically updated by vendor/subcontractor through PRADAN Portal (https://web.bhelhyd.co.in/mm/). Non updation will adversely affect service rating of vendor performance.
39	Product information, Drawings and documents / Non-disclosure and Information Obligations
	Drawings, technical documents or other technical information received by one party shall not without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are confidential and binding only to the extent that they are by reference expressly included in the contract. The seller shall, as per agreed date/s but not later than the date of delivery, provide free of charge any information and/or drawings which are necessary to permit the Purchaser to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in the number of copies agreed upon or at least three copies of each. All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the contract shall continue to be the property of the submitting party. The seller shall provide Purchaser with all information pertaining to the delivery in so far as it could be of importance to Purchaser. The seller shall not reveal confidential information to its own employees not involved with the tender/contract and its execution and delivery or to third parties, unless Purchaser has agreed to this in writing beforehand. The seller shall not be entitled to use the Purchaser's name in advertisements and other commercial publications including website without prior written permission from Purchaser. In the event of violation of the confidentiality as agreed, BHEL will take legal action as deemed fit. Non disclosure agreement to be entered as per Annexure- II wherever applicable.
40	Inspection and Testing
40 A	The goods and stores shall be manufactured by approved quality system and each part/component may be inspected and tested by the Purchaser prior to shipment and shall fully comply with relevant requirements of Purchaser. Purchaser has the right to inspect at any stage during manufacture/ delivery. In the event of rejection, Purchaser shall inform the seller accordingly and Purchaser shall be entitled to replacement or repair at his discretion or may proceed to terminate or cancel the agreement. All this, does not affect Purchaser's right to recover compensation.
40 B	Purchaser or his authorized representative shall be entitled at all reasonable times during execution to inspect, examine and test at the seller's premises the material and workmanship of all stores to be supplied under the contract, and if the part of the stores are being manufactured at other premises, the seller shall obtain for purchaser or his authorized representative permission to inspect, examine and test as if the said stores are being manufactured at the seller's premises. Such inspection, examination and testing, if made shall not release the seller from any obligation under the contract. For indigenous suppliers all costs related to first inspection request shall be borne by the purchaser and the cost of subsequent inspections due to non-readiness of material/rework/ rejections shall be borne by the seller. In case of imports all inspection charges including third party inspections if any shall be borne by the seller. The cost of inspection staff/third party specified by the Purchaser shall be borne by seller unless otherwise specifically agreed. Whether the contract provides for tests on the premises of the seller or any of his sub-contractor/s, seller shall be responsible to provide such assistance, labor, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by the seller unless otherwise specifically agreed in the contract. The Seller shall give the authorized representative of the purchaser reasonable notice in writing of the date on and the place at which any stores will be ready for inspection/ testing as provided in the Contract. Annexure - I may be strictly be complied with for the time lines. Any delay in submission of the documents by the vendor will not alter the delivery date.
41	Quality and Condition of the Deliverables
	The seller shall be responsible for compliance with applicable technical, safety, quality, environmental requirements and other regulations in relation to his products, packaging and raw and ancillary materials.
42	Packaging and Dispatch
	The seller shall package the deliverables safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by sea/air/rail/road to its destination suitably protected against loss, damage,



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	corrosion in transit and the effect or tropical salt laden atmosphere. The packages shall be provided with fixtures/hooks and sling marks as may be required for easy and safe handling by mechanical means. Special packaging conditions/ environmental conditions as defined in the enquiry shall be fully complied. Each package must be marked with consignee name, P.O. number Package No. gross weight & net weight, dimensions (LxBxH) and seller's name. The packing shall allow for easy removal and checking of goods on receipt and comply with carrier's conditions of packing or established trade practices. Packing list of goods inside each package with P.O. item No. & quantity must also be fixed securely outside the box to indicate the contents. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols/instructions. Hazardous material should be notified as such and their packing, transportation and other protection must confirm to relevant regulations.
43	Delivery: Except as otherwise indicated in the Purchase order, delivery shall be FOR (Destination) for indigenous orders and CIP for imported orders. The delivery date (s) or delivery period (s) as stipulated in the agreement shall be firm and binding and shall apply to the entire delivery for each P.O. item. Partial shipments may however, be permitted by the purchaser on prior intimation from the Seller. Unless specifically agreed otherwise, transit insurance coverage will only be within India for imported consignments by BHEL. Accordingly, the seller shall send an intimation to the Purchase officer/Manager giving Purchase Order No., shipping particulars, Invoice value etc., immediately on dispatch of goods.
44	Penalty The time or period of delivery as stipulated in the schedule of delivery shall be deemed to be the essence of the contract. Should circumstances arise whereby the deadline for an agreed delivery date(s) or period(s) is expected to be exceeded, the seller shall inform Purchaser hereof without delay. If delay in delivery is caused by any of the circumstances mentioned in clause 52 (Force Majeure) or which are caused exclusively by the acts of Purchaser, the Purchaser shall extend the time for delivery by a period which is reasonable having regard to all the circumstances in the case. If the Seller delays beyond any agreed delivery date(s) or period(s), Purchaser shall levy penalty for such delay @ 0.5% per week (7 days) or part thereof on delayed portion of the order value subject to a maximum of 10% of the value of the Purchase Order. However, penalty for delayed delivery will be calculated on 100% of the purchase order value if the material supplied cannot be put to intended use. The penalty will be charged on the value of the purchase order excluding statutory levies, freight and insurance wherever not included in the price. Penalty amount so determined along with applicable GST thereon shall be recovered. Imposition, recovery or settlement of this penalty shall not affect Purchaser's right to performance, compensation and termination of the agreement. For delay analysis, period referred in Annexure-I will be considered as standard time lines for various major activities.
45	Transfer of Ownership and Risk The risk for the delivery remains with the seller until the goods are delivered at the agreed place. However ownership shall get transferred as per terms of purchase order in line with INCOTERMS.
46	Price, invoicing and payment The agreed prices are fixed prices in the currency as specified in the Purchase Order. They shall include packing, forwarding , loading and carriage to the place specified by the purchaser and are exclusive of all applicable taxes, duties etc., except for those specifically agreed by the Purchaser. Invoices shall be submitted bearing the Purchase Order number & date, item number/s and supporting documents as called for in the Purchaser order. The direct payments (including LC/documents through Bank on collection basis), shall be made by E-payment mode and not by cheque /bank drafts except in special circumstances. Vendors shall furnish the E-payment particulars in the prescribed formats duly authenticated by their respective Bankers, If not got registered earlier with the Buyer. Invoice has to be raised quoting HSN Code of Goods or Accounting Code of Services. Invoice should mention BHEL-HPEP-HYDERABAD GSTIN: 36AAACB4146P1ZG or GSTIN of BHEL Nodal Agency as mentioned in PO. Indian Agency commission if payable and so specified in the Purchase order shall be paid in Indian Rupees, considering the SBI TT selling exchange rate prevailing on the date of tender opening (part 1 in case of two part bid), after successful completion of the contract. If so stipulated in the order, the seller shall furnish, on receipt of the Purchase Order or along with order acknowledgement, the billing break-up of prices (BBU) for approval by the purchaser in respect of the major items/components going into the equipment. This BBU is required by the Purchaser for admitting the claims of the seller if part shipments are contemplated and also to facilitate custom clearance after payment of duties in case of imports. In case of delay in receipt of supporting document details, consequential demurrage/wharf age /detention charges shall be to the account of the seller. Payment does not imply in any respect whatsoever a waiver of Purchaser's right to performance of the agreement. Purchaser is entitled to set off claimable debts against claimable liabilities with the seller by means of a setoff Note.
47	Contract variations; Increase or decrease in the scope of supply



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	Purchaser may vary the contracted scope during execution due to exigencies of project requirement. If the seller is of the opinion that the variation has an effect on the agreed price or delivery period, Purchaser shall be informed of this immediately in writing along with technical details, and in the event of additional work, submit a quotation with regards to the price and period involved, as well as the effect this additional work will have on the other work to be performed by the seller. Provided, that if unit rates are available in the contract, the same shall be applied to such additional work. The seller shall not perform additional work before purchaser has issued written instructions/amendment to the purchase order to that effect. The work which the seller should have or could have anticipated in terms of delivering the service (s) and functionality (ies) as described in this agreement should be executed by the vendor without any price implication.
48	Short shipments/ warranty/guarantee replacements In case of any short shipment during initial supply which is subsequently dispatched by the seller or any guarantee / warranty replacements shall be dispatched on "DDP-Delivered duty paid BHEL stores" basis for imported items and "FOR-BHEL Stores/designated destination" basis for indigenous items. Taxes, if any paid by indigenous vendor for short supply, guarantee /warranty replacement, repair activity shall be to vendor's account only. Vendor has to raise a credit note for short supplied quantity as per GST provisions.
49	Rejection/Replacement The seller shall arrange replacement / repair under its obligation under the contract within one month from the date of intimation or mutually agreed period. The rejected goods shall be taken away by the seller and replaced on DDP/FOR-BHEL Stores/designated destination basis within such period. In the event of the seller's failure to comply. Purchaser may take appropriate action including disposal of rejections, at the cost and risk of the seller. Vendor has to raise a credit note for rejected quantity as per GST provisions. In case defects attributable to seller are detected during processing of the goods at purchaser's / his subcontractor works, the seller shall be responsible for replacement /repair of the goods as required by the purchaser at seller's cost.
50	Export Administration Regulations If a delivery includes such technology and / or supply that is subjected to the export regulations the seller shall obtain due permissions, approvals, license etc.
51	Cancellation / Termination of contract and risk purchase Purchaser shall have the right to completely or partially terminate the agreement by means of written notice to that effect without prejudicing their other rights in the event that : -The seller is declared bankrupt, its business has been shut down or liquidated, a substantial part of its assets have been attached/destroyed, or the business has been transferred to a third party. -Any misrepresentation or hiding of material fact if detected at a later stage. -The delivery is rejected after inspection or re-inspection. -In the event of termination, the risk of the items already delivered but not of use to Purchaser, as determined by purchaser, remains with the seller. The items shall then be at the seller's disposal and they are to be collected by the seller. The seller shall refund any payments made by purchaser in terms of the terminated agreement immediately, not later than 30 days, - In the event of Cancellation/ termination of contract, BHEL reserves the right to procure the items which are not delivered as per PO and charge the excess cost from the defaulting seller. Incase the excess cost is not repaid by or recovered from the defaulting seller within 30 days, apart from legal recourse for effecting such recoveries, Penal action in line with BHEL's Suspension of Business dealings will be taken.
52	Force Majeure The supplier shall not be considered in default if delay occurs due to causes beyond their control such as Acts of God, Natural calamities, Fire, Frost, Flood, Civil War, civil commotion, riot, Government Restrictions. Only those causes that have duration of more than seven days shall be considered cause of force majeure. Notification to this effect duly certified by local chamber of commerce/statutory authorities with supporting documents shall be given by the supplier to BHEL by registered letter/courier service immediately without loss of time. In the event of delay due to such causes the delivery schedule shall be extended for a length of time equal to the period of Force Majeure or at the option of BHEL the order may be cancelled. Such cancellation would be without any liability whatsoever on the part of BHEL. In the event of such cancellation the supplier shall refund any amount advanced or paid to the supplier by BHEL and deliver back any material issued to him by BHEL and release facilities, if any provided by BHEL.
53	Non-waiver of Defaults If any individual provision of the contract is invalid, the other provisions shall not be affected.
54	Settlement of Disputes Except as otherwise specifically provided in the contract, all disputes concerning questions of the facts arising under the contract, shall be decided by the Purchaser, subject to written appeal by the seller to the purchaser, whose decision shall be final.



BHARAT HEAVY ELECTRICALS LTD. , RC.PURAM, HYDERABAD

Document No. HY:MM:ITB Rev:07

INSTRUCTIONS TO BIDDER (ITB)

(Attachment to Enquiry No. Z1A1R24140 Due on Date 17.02.2018 for submission by 11.00 hrs to open from 14.00 hrs.)

	Any disputes of differences shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration.
	The seller shall continue to perform the contract, pending settlement of disputes(s).
55	Arbitration & conciliation clause and Interest clause : (I).Except as provided elsewhere in this contract, in case amicable settlement is not reached between the parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the contract; or, the respective rights and liabilities of the parties; or, in relation to interpretation of any provision of the contract; or, in any manner touching upon the contract, then, either party may, by a notice in writing to the other party refer such dispute or difference to the sole arbitration of an arbitrator appointed by head of the BHEL unit issuing the contract. The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the parties. Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause, the seat of arbitration shall be at Hyderabad. The cost of arbitration shall be borne as per the award of the Arbitrator. Subject to the arbitration in terms of clause 55, the courts at Sangareddy, Telangana State shall have exclusive jurisdiction over any matter arising out of or in connection with this contract. Notwithstanding the existence or any dispute or differences and / or reference for the arbitration, the contractor shall proceed with and continue without hindrance the performance of its obligations under this contract with due diligence and expedition in a professional manner except where the contract has been terminated by either party in terms of this contract. In case of contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable: In the event of any dispute or difference relating to the interpretation and application of the provisions of the contract, such dispute or difference shall be referred by either party for arbitration to the sole arbitrator in the Department of Public Enterprises to be nominated by the secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law and justice, Government of India. Upon such reference the dispute shall be decided by the Law secretary or the special Secretary or Additional secretary when so authorized by the Law secretary, whose decision shall bind the parties hereto finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator. (2) INTEREST CLAUSE: In order to bring uniformity in all the contracts / agreements entered between BHEL and its contractors / vendors / suppliers / service providers etc., it is hereby advised to incorporate the following clause in all tenders and agreements. "No interest shall be payable by BHEL on earnest money or security deposit or any money due to the contractor by BHEL."
56	Applicable Laws and jurisdiction of Courts
	This agreement shall be construed and interpreted in accordance with the laws of India and shall have exclusive jurisdiction of Sangareddy/Hyderabad courts, Telangana, India.
57	BHEL-Fraud prevention policy shall be adhered to.
	The Bidder along with its associate/ Collaborators/ Sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention policy displayed on BHEL Website http://www.bhel.com and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.
	Fraud prevention policy and list of nodal officers is hosted on BHEL Hyderabad website web.bhelhyd.co.in