

TECHNICAL CATALOGUE

Material Code	L1823S9509105001
Item Description	12P X 1.31 SQ. MM. EXTN. CABLE - KX
Detailed Description	12 Pair x 1.31 mm ² , KX Type extension cable as per Technical Spec. ref.: TCI:254:EXTNCABLE/YADADRI/00 and Quality plan ref.: CI:QA:1823:CQP:08/01.

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Bharat Heavy Electricals Limited

HIGH PRESSURE BOILER PLANT, TIRUCHIRAPPALLI 620 014.




CONTROLS AND INSTRUMENTATION/FB

DATA SHEET FOR MULTIPAIR, SHIELDED, ARMOURED, EXTENSION CABLE (KX)

TSGENCO, YADADRI TPS
5 x 800 MW, Cust. No. 1823-1827

Datasheet No. : TCI:254:EXTNCABLE /YADADRI, Rev. 00

Revision History

Rev. No.	Date	Description	Prepared	Reviewed	Approved
			Blessing Jany Churchil J	Blessing Jany Churchil J	V.M. Selvaraaj
00	25-06-2019	Initial Release			

**Technical Data sheet for Multi-pair Shielded, Armoured,
Extension Cable**

Data sheet No. : TCI:254:EXTNCABLE/YADADRI, Rev. 00

1.	Applicable Standards	ANSI MC 96.1, IS-8784, IS-1554, IS-5831, IS-8130, IS-10418, IS-10810, IEC-332, IEC-754-1, IEEE-383, ASTM-D-2843, ASTM-D-2863, SS-4241475-Cl.-F3, BS 5308-2, IS-3975	
2.	Site Conditions	Dusty, Salty, corrosive & Heavily polluted atmosphere	
3.	Voltage grade	V	650V (Peak Value)
4.	Temperature Rating & Short circuit withstand Rating	°C	85 160
5.	Construction of cable	As per Constructional diagram enclosed with this Data sheet	
6.	Conductor		
a.	No. Of Pairs	No.	12 Pair
b.	Area of Cross-section	sq.mm	(16 AWG) 1.31 Sq.mm
c.	No. of Strands/Strand diameter (mm) – for finished cables	Solid Circular Conductor (1 / 1.29)	
d.	Conductor Type	ANSI Type KX (Extension)	
e.	Material	Positive Lead → Chromel Negative Lead → Alumel	
f.	Accuracy (From 0°C to 200°C)	+/- 2.2	
g.	Conductor loop resistance (maximum)	746	
7.	Insulation		
a.	Material	HRPVC	
b.	Type and Standard	Type-C, as per IS-5831	
c.	Thickness –Nom.	mm	0.6
d.	Method of application	Extruded	
e.	Colour Code	As per ANSI MC 96.1. All pairs of conductors of all varieties shall have the following colour of insulation CHROMEL →YELLOW & ALUMEL →RED	

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f.	Pair Identification	Pair number printed Mylar tape shall be provided over each pair.	
g.	Volume Resistivity (@ 27 °C & @ 85 °C)	Ω-cm	1 x10 ¹³ @ 27 °C & 1 x 10 ¹⁰ @ 85 °C
8.	Pairing & Twisting		
a.	Lay for pairing (Minimum)	Twist/ metre	13-15
b.	Direction of lay (for pairing)	Right Hand	
c.	Lay for laid up pairs	Twist/ metre	4 to 6
9.	Binding Material		
a.	Type of Material	Melinex Tape	
b.	Thickness	mm	0.028
c.	Coverage	%	100
d.	Overlap (Minimum)	%	25
e.	Filler Material (wherever applicable)	<p>Flame Retardant, Non Hygroscopic, moisture resistant material, suitable for the operating temperature of the cable. Fillers shall not stick to the insulation and inner sheath</p> <p>Fillers shall be provided wherever applicable. Position, Shape and Number of fillers shall be suitably decided by the vendor for all the varieties of Cables.</p>	
10.	Shielding		
a.	Type of Material	Aluminium Backed Mylar Tape	
b.	Thickness	mm	For Pair Shielding → 28 Microns For Overall Shielding → 60 Microns
c.	Coverage	%	100
d.	Overlap (Minimum)	%	25
e.	Polyester Tape over Pair Shielding ##	Over the individual pair shielding tape, two laps of 0.05 mm thick (minimum) polyester tape shall be applied with minimum overlap of 25 % and 100 %	

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		coverage.	
11.	Drain wire for Shielding		
a.	Material		Annealed, Tinned Stranded Copper
b.	No. of strands / Dia. of strand	No./mm	7/0.3
c.	Area of cross section	sq.mm	0.5 Sq.mm
d.	Rip cord		Non-metallic ripcord shall be provided below the Inner Sheath
12.	Inner Sheath		
a.	Material	HR PVC with FRLS properties; Resistant to water, fungus termite and rodent attack	
b.	Type and Standard	Type-ST2, as per IS-5831	
c.	Thickness (Minimum)	mm	0.3
d.	Method of application	Extruded	
e.	Colour	Black	
13.	Armouring		
a.	Material	Galvanized Steel wire / strip	
b.	Standard	As per IS-3975 & IS-1554	
c.	Direction of lay	Left Hand	
14.	Outer Sheath		
a.	Material	HR PVC, with FRLS Properties. Resistant to Water, Fungus, Termite & Rodent attack	
b.	Type and Standard	Type-ST2, as per IS-5831	
c.	Thickness (Minimum)	mm	1.8
d.	Method of application	Extruded	
e.	Colour	YELLOW	

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15.	Cable Marking on Outer sheath	"TSGENCO", Manufacturer's name or trademark, Voltage grade, Year of manufacture, Type of Insulation, Number of Pairs & size of cable, FRLS & IS number" embossed @ 625 mm interval.	
16.	Sequential marking on Outer sheath	Every 1 Metre for Progressive Length by Printing.	
17.	Tolerance on Outer diameter	mm	± 2
18.	Tolerance on Outer diameter for the entire length	mm	1
19.	Ovality	mm	1
20.	Recommended Installation Radius		12 Times the OD of the Cable
21.	Standard Packing Length	m	1000
22.	Tolerance on standard packing length	%	+/- 5%
23.	Over all Quantity Tolerance		+ 0 % / - 2 %
24.	Non-standard Length		Last length shall be supplied in single length
25.	Electrical Parameters at 20° C		
a.	Mutual Capacitance @ 0.8 KHz (maximum)	nF/km	200
b.	Insulation Resistance (minimum)	MΩ/km	100
26.	Test Voltage - Between Conductor- Conductor (min.)	KV/ minute	2.0 KV for 1 Minute
27.	Test Voltage - Between Conductor - Shield (min.)	KV/ minute	2.0 KV for 1 Minute
28.	FRLS Properties of Inner & Outer Sheath :-		
a.	Oxygen Index @ ambient temperature as per ASTM-D-2863	%	Not Less than 29
b.	Temperature Index @ oxygen index 21 as per ASTM-D-2863	°C	Not Less than 250

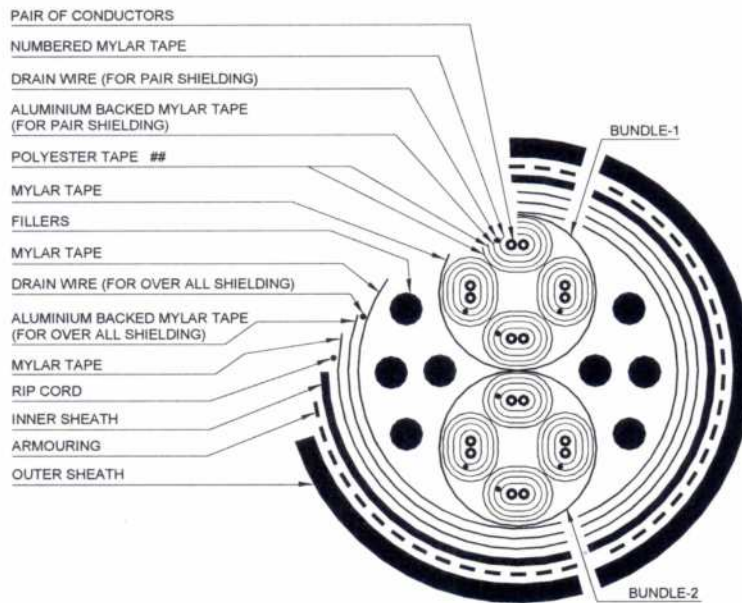
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c.	Smoke density rating as per ASTM-D-2843	%	Shall not be more than 60 %.
d.	Acid gas generation as per IEC 754	%	Shall not be more than 20% by weight
e.	Flammability Tests as per IEEE-383, IEC-332-3, Category-B and SS-4241475, Clause-F3		Shall pass
29.	Anti-rodent, Anti termite and Moisture resistance properties for Inner and Outer Sheath		Shall be present. Presence of lead shall be confirmed
30.	Quality Plan	QA:CI:STD:QP:29, Rev. 06	
31.	Packing Details	<p>Cables shall be supplied in Non-returnable wooden drums of heavy construction. The surface of the drum and the outer most cable layer shall be covered with waterproof cover. Both the ends of the cables shall be properly sealed with heat shrinkable PVC/Rubber caps secured by 'U' nails so as to eliminate ingress of water during transportation, storage and erection. All ferrous parts used shall be treated with suitable rust preventive finish or coating to avoid rusting during transit or storage. Wooden cable drum shall be treated by immersing in copper-nitrate solution. Wooden drums shall comply with IS-10418.</p> <p>Each drum shall carry "TSGENCO", Manufacturer's name or trademark, Type of cable, Voltage grade, Year of manufacture, Type of insulation, Number of pairs & size of conductor, Cable code (FRLS), Length of cable on drum, No. of length on drum, Approximate gross mass, IS/IEC number, ISI mark in printed form. A tag containing same information shall be attached to the both ends of the cable. An arrow and suitable accompanying wording shall be marked on one end of the reel indicating the direction of rotation in which it should be rolled.</p>	

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CONSTRUCTIONAL DIAGRAM OF A
8 PAIR, PAIR SHIELDED & OVER ALL SHIELDED CABLE



Constructional details of a 8 Pair cable have been shown. However, constructional details for 12 Pair Cables will be similar to the one shown.

Instruction to Vendors

Guarantee	A Guarantee Certificate for 18 months of trouble-free operation/performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.
General	All the parameters shall comply with the respective IS, wherever applicable.
Confirmation to be given by the vendor.	<ol style="list-style-type: none"> Any deviation to this Data sheet requirement shall be clearly brought out in the offer, separately in the Sub-Delivery Enquiry Deviation format. In case of No deviation, the Sub-Delivery Enquiry Deviation format has to be filled in as "No Deviation" and furnished along with the offer, indicating the Data sheet No. and Quality Plan No. Within 15 days of placement of a Purchase order, vendor shall submit the Filled in, Signed copy of the Data sheet, and get it approved by BHEL(T) before start of manufacture.

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TOLERANCE ON OUTER DIAMETER

Definition:-

This is the allowable Limits on the diameter of the actual cable from the Data sheet value /Design value.

The Data sheet indicates ± 2 mm. This means that if the Data sheet value / Design value of the cable diameter is 'X' mm, then all the actual cable diameter measured over the entire length / quantity shall fall within the Upper Limit 'X + 2' mm and the Lower Limit 'X - 2' mm. However, the following clauses must also be satisfied.

Example:-

Let the Data sheet value / Design value }
of the cable diameter be } = 14 mm (X)

Then, the measurements of the actual }
cable diameter taken over the entire }
length shall fall between the Limits } = 16 mm and 12 mm
(X + 2) (X - 2)

TOLERANCE ON OUTER DIAMETER FOR THE ENTIRE LENGTH

Definition:-

This is the maximum allowable difference between the Highest actual cable diameter and the Lowest actual cable diameter measured over a drum length.

The Data sheet indicates 1 mm. This means that if the Highest actual cable diameter is say, 'D1' mm, and the Lowest actual cable diameter is 'D2' mm, then, 'D1 - D2' shall be maximum 1 mm and 'D1' and 'D2' shall also fall within the Upper and Lower limits as above.

Example:-

Let the Highest actual cable diameter }
measured be } = 16 mm (D1)

Let the Lowest actual cable diameter }
measured be } = 15 mm (D2)

Then, Tolerance for the entire length } = 16 mm - 15 mm = 1 mm
(D1) (D2)

Comment :-

As the Highest actual cable diameter and Lowest actual cable diameter falls within the Upper and Lower Limits as above, and the difference between them is 1 mm maximum, the diameter values are acceptable.

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OVALITY

Definition :-

This is the maximum allowable difference between the measurements of the actual cable diameter in 'x' and 'y' directions in any particular section.

The Data sheet indicates 1 mm. This means that if the actual cable diameters measured are say, 'D3' mm, and 'D4' mm, in 'x' and 'y' directions respectively in one particular section. Then, the difference between 'D3' and 'D4' shall be maximum 1 mm. Also 'D3' and 'D4' shall fall within the Upper and Lower limits as above.

Example :-

Let the actual cable diameter in 'x' }
direction in one section be } = 16 mm (D3)

Let the actual cable diameter in 'y' }
direction in the same section be } = 15 mm (D4)

Then, Ovality = 16 mm - 15 mm = 1 mm
(D3) (D4)

Comment :-

As the actual cable diameters measured in 'x' and 'y' directions of the same section falls within the Upper and Lower limits as above, and the difference between them is 1 mm maximum, the diameter values are acceptable.

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Sl. No	Component & Operation	Characteristics	Class	Type of Check	Quantum of check		Ref Doc. & Acceptance STD	Format of record	AGENCY			REMARKS
					M	B/C			M	B	C	
A RAW MATERIAL & BOUGHT OUT ITEMS INSPECTION												
01	Raw Material for Conductor/ Drain wire	a. Chemical composition check	Major	CHEM	OSPL	OSPL	IS 8130	LGB	P	-	-	
		b. Conductivity / Resistivity	Critical	ELEC	-do-	OSPL	IS 8130	LGB	P	-	-	
02	PVC compound (For insulation, Inner & outer sheath)	a. Make	Major	VISU	100%	OSPL	Manufacturer approved sources	LGB	P	-	-	
		b. Type / Grade	Major	VISU	100%	OSPL	IS 5831	LGB	P	-	-	
		c. Thermal Stability	Critical	CHEM	OSPL	OSPL	-do-	LGB	P	-	-	
		d. FRLS Properties (Oxygen index, Temp. Index, Smoke density, HCL gas emission)	Major	CHEM	OSPL	OSPL	ASTM-D 2863, ASTM-D 2843, IEC 60754-1	LGB	P	-	-	Applicable for inner and outer Sheath
		e. TS and percentage elongation before and after ageing.	Major	PHYS	OSPL	OSPL	IS 5831	LGB	P	-	-	
		f. Loss of mass in oven air.	Major	PHYS	OSPL	OSPL	IS 8130	LGB	P	-	-	
03	Steel wire	a. Dimension	Major	MEAS	OSPL	OSPL	IS 3975	LGB	P	-	-	
		b. Tensile strength & Elongation	Major	MECH	-do-	OSPL	IS 3975	LGB	P	-	-	
		c. Make	Major	VISU	100%	OSPL	BIS approved sources	LGB	P	-	-	
		d. Mass of zinc coating	Major	CHEM	OSPL	OSPL	IS 3975	LGB	P	-	-	
		e. Uniformity of Zinc coating	Major	CHEM	-do-	OSPL	-do-	LGB	P	-	-	
		f. Torsion (Wire)	Major	MECH	OSPL	OSPL	-do-	LGB	P	-	-	
		g. Wrapping test	Major	MECH	OSPL	OSPL	-do-	LGB	P	-	-	
		h. Resistivity	Major	ELEC	OSPL	OSPL	-do-	LGB	P	-	-	
04	Binding Tapes (Mylar and Al. backed Mylar)	a. Thickness	Major	MEAS	OSPL	OSPL	ADS	LGB	P	-	-	

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					M	B/C			M	B	C	
		b. Size	Major	MEAS	OSPL	OSPL	-do-	LGB	P	-	-	
05	Wooden drum	a. Constructional checks b. Dimensional Check	Major	VISU	One drum	One drum	IS 10418	LGB	P	V	V	
B IN PROCESS INSPECTION												
01	Wire drawing and Annealing	a. Size	Major	MEAS	**	--	Manufacturer Standard	LGB	P	-	-	** 1 Sample/Setting of each size
		b. Surface finish	Major	VISU	100%	--	Smooth & Free from Scratches	LGB	P	-	-	
		c. % of Elongation	Major	MECH	**	--	IS 8130	LGB	P	-	-	** 1 Sample/Setting of each size
02	Tinning (for and Drain wire)	a. Size	Major	MEAS	OSPL	--	Manufacturer Standard	LGB	P	-	-	
		b. % of Elongation	Major	MECH	OSPL	--	Manufacturer Standard	LGB	P	-	-	
03	Bunching / Stranding	a. Dimension and No. of strands	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
04	Insulation	a. Surface Finish	Major	VISU	100%	--	Smooth & Free from Scratches	LGB	P	-	-	
		b. Radial Thickness (Min & Max)	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		c. Spark Test	Major	ELEC	100%	--	IS10810	LGB	P	-	-	
		d. Color, Marking / Identification	Major	VISU	100%	--	ADS	LGB	P	-	-	
		e. Tensile Strength & % of Elongation	Major	MECH	OSPL	--	IS 5831	LGB	P	-	-	
05	Twisting	a. Lay length	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		b. Direction	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
06	Laying of pairs / Tapping / Shielding	a. Construction	Major	VISU	100%	--	ADS	LGB	P	-	-	Wherever Applicable
		b. Dimension	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		c. Coverage / Overlap	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		d. Continuity	Major	ELEC	OSPL	--	Manufacturer Standard	LGB	P	-	-	
07	Inner Sheath	a. Diameter / Thickness	Major	MEAS	-do-	--	ADS	LGB	P	-	-	
		b. Surface finish	Major	VISU	-do-	--	Smooth & Free from Scratches	LGB	P	-	-	

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					M	B/C			M	B	C	
		c. Color	Major	VISU	-do-	--	ADS	LGB	P	-	-	
08	Armoring	a. Diameter over armoring	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		b. Size. of Wires / Strip	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		c. No. of wires / strip	Major	MEAS	OSPL	--	Manufacturer Standard	LGB	P	-	-	
		d. Direction of Lay & Coverage	Major	VISU	100%	--	IS 3975	LGB	P	-	-	
		e. Surface finish	Major	VISU	100%	--	Smooth & Free from visual defects like rusting.	LGB	P	-	-	
09	Outer sheath	a. Surface finish	Major	VISU	100%	--	Smooth & Free from Scratches	LGB	P	-	-	
		b. Colour / Marking / Embossing	Major	VISU	100%	--	ADS	LGB	P	-	-	
		c. Overall Diameter, Thickness	Major	MEAS	OSPL	--	ADS	LGB	P	-	-	
		d. Tensile Strength & % of Elongation	Major	MECH	OSPL	--	IS 5831	LGB	P	-	-	
C	FINAL INSPECTION											
01	Routine tests	a. Conductor resistance	Critical	ELEC	100%	--	ADS	TR	P	V	V	
		b. Insulation resistance	Critical	ELEC	100%	--	ADS	TR	P	V	V	
		c. High voltage test	Critical	ELEC	100%	--	ADS	TR	P	V	V	
		d. Drain wire continuity	Critical	ELEC	100%	--	Drain wire conduction to be continuous	TR	P	V	V	

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					M	B/C			M	B	C	
		e. Mutual capacitance	Critical	ELEC	100%	--	ADS	TR	P	V	V	
02	Type tests											
	a. Conductor	a. Resistance	Major	ELEC	One sample for each type	One sample for each type	ANSI 96.1 /ADS	TC	V	V	V	
		b. Diameter	Major	MEAS	-do-	-do-	ADS	TC	V	V	V	
		c. Tin coating test for Drain wire and conductor	Major	CHEM	-do-	-do-	Manufacturer standard	TC	V	V	V	
	b. Test for Insulation & Sheath	a. Thickness	Major	MEAS	-do-	-do-	IS 1554 / ADS	TC	V	V	V	
		b. Thermal stability	Major	THER	-do-	-do-	IS 1554/IS 5831	TC	V	V	V	
		c. Cold bend / Cold impact	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		d. Loss of mass test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		e. Ageing in air oven	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		f. Tensile strength & Elongation before and after ageing test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		g. Heat shock test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		h. Hot deformation test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		i. Shrinkage test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		j. Colour fastness to water	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		k. Bleeding and Blooming test	Major	THER	-do-	-do-	-do-	TC	V	V	V	
		l. Volume Resistivity	Major	THER	-do-	-do-	IS 5831/ ADS	TC	V	V	V	
	c. Test for Outer Sheath	a. Oxygen/temperature index test	Major	CHEM	-do-	-do-	ASTM-D 2863, ADS	TC	V	V	V	
		b. Acid gas generation test	Major	CHEM	-do-	-do-	IEC 60754-1, ADS	TC	V	V	V	

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Sl. No	Component & Operation	Characteristics	Class	Type of Check	Quantum of check		Ref Doc. & Acceptance STD	Format of record	AGENCY			REMARKS
					M	B/C			M	B	C	
		c. Smoke density rating	Major	CHEM	-do-	-do-	ASTM-D 2843, ADS	TC	V	V	V	
	d. Test for Aluminum – Mylar shield	a. Continuity test	Major	ELEC	-do-	-do-	Mfr. Standard	TC	V	V	V	
		b. Shield thickness test	Major	MEAS	-do-	-do-	Mfr. Standard	TC	V	V	V	
		c. Overlap test	Major	VISU	-do-	-do-	Mfr. Standard / ADS	TC	V	V	V	
	e. Test for overall cable	a. Flammability test	Major	CHEM	-do-	-do-	IEC-60332-1	TC	V	V	V	
		b. Noise Interference	Major	ENVI	-do-	-do-	ADS	TC	V	V	V	
		c. Dimensional checks	Major	MEAS	-do-	-do-	ADS	TC	V	V	V	
		d. Cross talk	Major	ENVI	-do-	-do-	ADS	TC	V	V	V	
		e. Mutual capacitance	Major	ELEC	-do-	-do-	ADS	TC	V	V	V	
		f. High Voltage Test	Major	ELEC	-do-	-do-	ADS	TC	V	V	V	
		g. Drain wire continuity	Major	ELEC	-do-	-do-	Mfr. Standard	TC	V	V	V	
		h. Insulation Resistance	Major	ELEC	-do-	-do-	ADS	TC	V	V	V	
		i. Swedish chimney test	Major	ENVI	-do-	-do-	SS 4241475 class F3	TC	V	V	V	
		j. Attenuation	Major	ENVI	-do-	-do-	ADS	TC	V	V	V	
03	Acceptance Test	a. Conductor resistance (Cable & Drain wire)	Major	ELEC	100%	OSPL	ANSI 96.1 /ADS	TR	P	W	W	
		b. Constructional and dimensional check	Major	MEAS MECH	100%	OSPL	ADS	TR	P	W	W	
		c. Insulation resistance test	Critical	ELEC	100%	OSPL	ADS	TR	P	W	W	
		d. High voltage test	Major	ELEC	100%	OSPL	ADS	TR	P	W	W	
		e. Outer sheath – Color, Marking / Embossing & End sealing.	Major	VISU	OSPL	OSPL	ADS	TR	P	W	W	
		f. Length checking	Major	MEAS	**	**	Manufacturer Standard	TR	P	W	W	** 1 no. of each size & type per lot
		g. Core – Numbering, Color.	Major	VISU	OSPL	OSPL	ADS	TR	P	W	W	

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QUALITY PLAN FOR
COMPENSATING CABLE

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Sl. No	Component & Operation	Characteristics	Class	Type of Check	Quantum of check		Ref Doc. & Acceptance STD	Format of record	AGENCY			REMARKS
					M	B/C			M	B	C	
		h. Overall Coverage / overlap of shield & Continuity of drain wire	Major	VISU	-do-	-do-	ADS	TR	P	W	W	Continuity shall be checked
		i. Thermal EMF test	Major	ELEC	OSPL	OSPL	ANSI MC 96.1	TR	P	W	W	
		j. Thermal Stability (Insulation & Sheath)	Major	CHEM	-do-	-do-	IS 5831	TR	P	W	W	
		k. Mutual capacitance and inductance	Major	ELEC	-do-	-do-	ADS	TR	P	W	W	
		l. Swedish chimney test (Overall cable)	Major	CHEM	OSPL	OSPL	SS 4241475 class F3	TR	P	W	W	
		m. FRLS test for outer sheath for Oxygen index, Temperature Index, Smoke Density Rating, Acid (HCL) gas generation	Major	CHEM	OSPL	OSPL	ASTM D 2843, ASTM D 2863 IEC 60754-1	TR	P	W	W	
		n. Tensile Strength and % Elongation test of Insulation & Sheath (Before & After ageing)	Major	MECH	OSPL	OSPL	IS 5831/ ADS	TR	P	W	W	Vendor to submit COC after ageing.
		o. Volume Resistivity (At room and Elevated Temperature)	Major	ELEC	OSPL	OSPL	-do-	TR	P	W	W	
		p. Armoring Dimension & Zn coating. (if applicable)	Major	MEAS	OSPL	OSPL	ADS	TR	P	W	W	
		q. Flammability Test	Major	MECH	OSPL	OSPL	IEC 60332-1	TR	P	W	W	
		r. Rodent and termite repulsion test	Major	CHEM	OSPL	OSPL	Mfr. Standard	TR	P	V	V	Presence of lead shall be confirmed

Quality
11/6
ED/TPC

M- MANUFACTURER/ SUB-VENDOR; B - BHEL / TPI ; C - TSGENCO / TPI
P - PERFORM; W - WITNESS V - VERIFICATION OF DOCUMENTS;



D. NOTES:

1. LEGENDS:

MECH	: Mechanical	MEAS	: Measurement
ELEC	: Electrical	CHEM	: Chemical
VISU	: Visual	THER	: Thermal
LGB	: Log Book	ENVI	: Environmental
TR	: Test Report	TC	: Test certificate
		Mfr.	: Manufacture
OSPL	: One sample per offered lot	ADS	: BHEL approved datasheet
FRLS	: Fire Retardant Low Smoke		

2. The vendor at their works shall arrange all testing facilities. Tests for which facilities are not available are to be carried out at recognized National Test Houses like ETDC/CIL/NPL/ERTL/ERDA/CPRI etc., at vendor cost.
3. Through Log Book / any other documents available at the vendor's works, it shall be possible to correlate the finished products with raw material and in process stage checks / inspection carried out.
4. All Measuring and Testing Instruments shall be periodically calibrated from recognized test houses & certificates made available during inspection for verification.
5. Test certificates for routine & type tests are to be furnished by the vendor.
6. Type test certificate shall not be earlier than 5 years from the date of Purchase enquiry.
7. Vendor to give tentative inspection program in advance and confirm exact date two weeks in advance for arranging BHEL's inspection.
8. Cable ends shall be sealed with heat shrinkable type PVC caps to avoid ingress of moisture.
9. PVC compound and other raw material shall be procured from reputed manufacturers only. If special insulation and sheath compounds (e.g. Low smoke Low Halogen type) are being used, manufacturer guaranteed technical particulars and TC shall be available for review at the time of inspection.
10. Process records for all stages shall be certified by vendor's QC and are subjected to verification during inspection.

11. Joins in conductors / cables for mechanical continuity (to obtain long lengths to facilitate taxing, extrusion, etc) shall be electrically discontinuous or shorted. Vendor to ensure (by examining the cut and discarded portion) and certify that such joints have been completely removed.
12. Distance between two adjacent welds in an armour wire is to be min 5 metres apart and a joint in any wire shall not be less than 1 metre from the nearest joint in armour wires in the completed cable.
13. Packing shall be as per the "PACKING PROCEDURE" indicated in the specification.

E. REFERENCE STANDARDS:


(For Indicated Standards Refer the Latest Version)

IS 1554 Pt.1	: Specification for PVC insulated electric cable (heavy duty) for working voltages up to and including 100V
IS 3975	: Mild steel wires, strips, and tapes for armouring cables
IS 5831	: PVC insulation and sheath of electric cables
IS 8130	: Conductors for insulated electric cables and flexible cables.
IS 10810	: Method of test for cables
ASTM-D 2843	: Standard test method for density of smoke from burning and decomposition of plastics.
ASTM-D 2863	: Standard test method for measuring Oxygen / Temp. Indexes.
IS 8784	: Specification for Thermocouple Compensating Cables
IEC 60754-1	: Test on gases evolved during combustion of electric cables – Determination of the amount of halogen acid gas evolved during the combustion of polymeric materials taken from cables.
IEC 60332-1	: Standard for flammability testing
SVENSK SS 4241475	: Standard for Flammability testing.
IS 5082	: Wrought aluminium and aluminium alloy bars, rods, tubes and sections for electrical purposes
IS613	: Copper Rods and Bars for Electrical Purposes – Specification
ANSI MC 96.1	: Standard for thermocouple cable

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Beulah
11/5
ED/TPE

	<p style="text-align: center;">CONTROLS & INSTRUMENTATION (FB) PRE-QUALIFICATION REQUIREMENT (PQR) GUIDELINES</p>	<p style="text-align: center;">CI:PE:PQR:COMP_CAB Rev. No: 00 Dt. : 12-04-2022</p>
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CABLES REQUIRMENT [95-091] - PVC EXTENSION/COMPENSATING CABLE

Sl. No.	Description	Bid Requirements
1.	Type of Vendor	Vendor shall be the Original Equipment Manufacturer (OEM) of PVC Extension/Compensating Cable. Vendor shall be active in the manufacturing & supplying of these cables for a period of at-least 5 years, as on the date of enquiry.
2.	Proven Track record/Past Experience	<ul style="list-style-type: none"> • Vendor shall demonstrate their capability of track record of having supplied at least one customer order of similar lot size and variety of cables, as per the present enquiry, to be deployed in any power plant or equivalent industrial applications in India, within last 4 years as on the date of enquiry. • Vendor shall submit the reference list (signed and sealed) with details of customer, project/site, year of supply, contact details & recent PO copies. • Vendor shall submit the copy of the largest purchase order in terms of Quantity & value, executed by them so far.
3.	Facilities required	All machineries and facilities that are required for the complete manufacturing of cables, shall be available in-house. None of the major stages/processes (wire drawing, stranding, bunching, sheathing (extrusion/wrapping), armouring, printing, embossing) involved in the manufacturing of the cable, shall be off loaded or out-sourced.
4.	Testing Facilities	Vendor shall have the facility to conduct acceptance, routine and type tests as per the enquiry, either in-house or at NABL accredited labs.
5.	Past Supply Association / Experience with BHEL	Previous purchase orders executed with BHEL, if any shall be referred to.

ADDITIONAL TERMS & CONDITIONS (ATC)

Description of the Material Thermocouple extension cables for Yadadri project.		
GENERAL INFORMATION		
The bidder has to keep track of any changes by viewing the Corrigendum's issued by the Buyer on time-to-time basis in the Government e Marketplace (GeM) portal. The Company calling for tenders shall not be responsible for any claims/problems arising out of this. Any pre-bid query, kindly contact: Mr. Kevin Ark Kumar, Manager/Materials Management/BOI Tel: 0431-2578109, email: kevin@bhel.in ; Mr. N Mohan, Deputy Engineer/Materials Management/BOI Tel: 0431-2577446, email: mohann@bhel.in.		
Sl.No	Terms and Conditions	Vendor's confirmation
1	Firm Price: Vendor shall quote rates inclusive of Packing, Forwarding, Freight & GST in GeM. The quoted / finalised rates shall be Firm till execution GeM Contract.	
2	<p>The items are required for Yadadri 5x800MW project</p> <p>Package Details: The tender is floated as a single package.</p> <p>Thermocouple extension cables KX type – 11,700 meters</p> <p>Destination: Main items (11,250 meters) to Yadadri project site, Telangana and Spare items (450 meters) to BHEL Stores Trichy</p> <p>It is mandatory to quote all items in a package, there will be no splitting of quantity within a package.</p> <p>PRE-QUALIFICATION REQUIREMENT (PQR): It is mandatory to submit the filled up PQR (compliance) with all the supporting documents.</p> <p>TECHNICAL OFFER: Refer enclosed technical catalogues, datasheets, specification, SQP, packing standard.</p> <p><u>Deviations if any, shall be mentioned in the Deviation Format</u></p>	
3	<p>Delivery term: F.O.R Destination basis inclusive of Packing, Forwarding, Freight.</p> <p><u>Insurance is in BHEL Scope.</u></p>	
4	LIQUIDATED DAMAGES: Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional LD at the rate of 0.5% of the PO pending value per week of the delay or part thereof subject to a maximum of 10% of the undelivered portion. (PU)	
5	PAYMENT TERM: 100% Payment within 90 days of issue of Consignee Receipt-cum-Acceptance Certificate (CRAC) and online submission of bills.	
6	GUARANTEE / WARRANTY PERIOD: Guarantee / Warranty clause is 18 months from the date of delivery or 12 months from the date of actual put in use; whichever is earlier. It is mandatory to accept the Guarantee / Warranty clause else the offer is liable to be rejected.	

7	<p>DELIVERY PERIOD: 120 days (including manufacturing, Inspection and dispatch altogether). Vendor to manufacture the items only upon receipt of manufacturing clearance from BHEL. Vendor to dispatch items to site only upon receipt of dispatch clearance / MDCC from BHEL.</p>	
8	<p>Techno-Commercial bids of vendors will be evaluated; however, the Price bid will be opened, subject to our customer’s approval, else the offer will be rejected. Vendors shall submit credentials for taking up with customer, for their approval.</p>	
9	<p>DOCUMENT SUBMISSION (to be uploaded in GeM)</p> <ol style="list-style-type: none"> 1. The documents called for in Pre-Qualification Requirement (PQR) shall be mandatorily submitted. 2. All the technical documents which have been attached along with this tender i.e Specification, Drawings, Data Sheet, QP, packing procedure etc.; signature to be endorsed on all pages with company seal on all Technical documents & Sub-delivery enquiry deviation format. 3. Filled-in/signed Annexure-A, ATC: ADDITIONAL TERMS & CONDITIONS. (Mandatory for Commercial evaluation) 4. Filled-in / signed Annexure B (Vendor questionnaire) 5. If MSE vendor, please attach Udyam Regn Certificate. 6. Self-Certification for Make In India Clause as per Format. 	
10	<p>Any deviation on technical/QP/packing requirements shall specifically be indicated in the “sub-delivery enquiry deviation format” attached along with the enquiry. Deviations / clarifications declared elsewhere will not be evaluated. <u>Also, any deviations from the commercial terms and conditions shall be clearly spelt out in this format itself.</u> Deviations / clarifications declared elsewhere will not be evaluated. Deviations taken, if any, by vendor as per our requirement above shall be clearly got accepted by BHEL in writing during enquiry stage itself.</p> <p>In the event of an order no deviations, unless accepted by BHEL in writing during enquiry stage will be entertained and all other techno-commercial requirements will be binding on successful bidder and failure to execute the terms will lead to disciplinary action by BHEL against the said bidder.</p>	
11	<p>Technical / commercial clarification, if any, will be initiated through GeM Portal / email. Vendor to respond to the clarifications within 2 working days. If the vendor fails to respond, even after three reminders, then the vendor will be considered as non-responsive and the offer is liable to be rejected.</p>	
12	<p>INSPECTION: Pre-dispatch inspection is applicable; Inspection will be done by BHEL / Third Party Inspection Agency / Customer at Vendor works. The Inspection call has to be raised in the CQIR portal 07 days in advance from the required date of inspection.</p>	
13	<p>After Placement of Purchase Order</p> <ol style="list-style-type: none"> 1. Order acknowledgement to be signed and furnished by supplier within 03 days from the date of PO either by mail or in hard copy. 2. Documents (Drawings, Datasheet, QPs) for approval if applicable, shall be submitted within 07 working days from the date of PO. 3. Inspection call to be raised 07 days in advance from the required date of inspection. <p>Dispatch shall be initiated only after getting clearance from BHEL Trichy. Vendor to manufacture the items only upon receipt of manufacturing clearance for each unit from BHEL, as each Boiler unit will be required at Site in a</p>	

	<p>staggered manner. Vendor to dispatch items to site only upon receipt of dispatch clearance/MDCC from BHEL.</p> <p>Vendor to manufacture main & spare items and to offer them for inspection at the same time; however, despatches of main item & spare item to be initiated to respective location (Project Site / BHEL Trichy Stores) only against BHEL clearance.</p>	
<p>14</p>	<p>FRAUD PREVENTION POLICY</p> <p>Suppliers involving in fraudulent practices or delayed supply (or) non-Supply will be dealt with provision as indicated in “Guidelines for Suspension of Business Dealings with Suppliers / Contractors” which is hosted in website www.bhel.com The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.</p> <p>1.0 Integrity commitment, performance of the contract and punitive action thereof:</p> <p>1.1 Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in transparent and fair manner, and with equity.</p> <p>1.2 Commitment by Bidder / Supplier / Contractor:</p> <p>1.2.1. The bidder / supplier / contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.</p> <p>1.2.2. The bidder / supplier / contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issues from time to time by Govt. of India / BHEL.</p> <p>1.2.3. The bidder / supplier / contractor will perform / execute the contract as per the contract terms & Conditions and will not default without any reasonable cause, which causes loss of business / money / reputation, to BHEL.</p> <p>If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions.</p>	
<p>15</p>	<p>BHEL reserves the right to cancel / modify the tender, if the need so arises, without assigning any further notice or reason therefore.</p> <p>SPECIAL POWER TO TERMINATION: If at any time after the award of contract, BHEL shall for any reason whatsoever does not require whole or any part of the contract to be carried out, then Head of MM shall give notice in writing of the fact to the Supplier and terminate the contract. The supplier shall have no claim to any payment of compensation or otherwise howsoever on account of any profit or advantage which he might have derived from the</p>	

	execution of the contract in full but which he did not derive in consequence of the fore-closing of the contract.	
16	JURISDICTION: In case of any suit or other legal proceedings arising under or relating to this Contract, the courts at Trichy, Tamil Nadu only shall have the Jurisdiction and is only after exhausting the arbitration clause.	
17	<p>SECRECY OF CONFIDENTIAL INFORMATION: The Contractor undertakes and agrees that he/it will not disclose or reveal in part or full the proprietary/confidential information, which terms shall mean and include patents, trademarks, service marks, registered designs, copyright, design rights, know-how, confidential information, trade and business names and any other similar protected information of BHEL received during negotiation or currency of the contract to any third party or governmental authorities without written permission from BHEL. In the event of termination or expiry of the contract, the contractor shall return all proprietary/confidential information to BHEL. This clause shall survive termination or expiry of the contract.</p> <p>All the input details: transmittals and sample drawings supplied for preparation of drawings are confidential information of BHEL for specific purpose only. The contractor shall never pass on / part with the information to anybody and shall maintain the secrecy of the information. As soon as the bills are certified by BHEL, all the relevant drawing files shall be erased from PCs and shall not be made use under any circumstances.</p> <p>BHEL reserves the right to initiate appropriate action including legal proceeds / termination of contract, recovery of damages, penalties etc., if the contractor is found guilty / wrong usage of the documents given by BHEL for any unauthorized activity.</p>	
18	<p>Deduction of tax at source (TDS) on payment of certain sum for purchase of goods u/s 194Q of the Income tax Act:</p> <p>TDS on Purchase of Goods u/s 194Q of the Income Tax Act 1961 has been introduced vide Finance Act 2021. The provisions of above section are to be made applicable w.e.f. 01.07.2021. The provisions of section 194Q are reproduced below:</p> <p>Section 194Q : Any person, being a buyer who is responsible for paying any sum to any resident (hereafter in this section referred to as the seller) for purchase of any goods of the value or aggregate of such value exceeding fifty lakh rupees in any previous year, shall, at the time of credit of such sum to the account of the seller or at the time of payment thereof by any mode, whichever is earlier, deduct an amount equal to 0.1 per cent. of such sum exceeding fifty lakh rupees as income-tax. Explanation--For the purposes of this sub-section, "buyer" means a person whose total sales, gross receipts or turnover from the business carried on by him exceed ten crore rupees during the financial year immediately preceding the financial year in which the purchase of goods is carried out, not being a person, as the Central Government may, by notification in the Official Gazette, specify for this purpose, subject to such conditions as may be specified therein.</p> <p>The key aspects of the provisions of section 194Q are as under:</p> <p>a. Section 194Q requires the buyer of goods to deduct TDS @ 0.1% at the time of payment to the seller or at the time of credit to the account of seller whichever is earlier.</p> <p>b. TDS is deductible where the value of goods purchased during the year exceeds Rs. 50 Lacs and is applicable on the value in excess of Rs.50 lacs.</p>	

	<p>c. Buyer for this section means a person having total sales/gross receipts/turnover exceeding Rs.10 crore during previous financial year TCS on Sales of goods as per section 206C (1H), which is currently applicable @ 0.1%, would not be applicable wherever TDS has been deducted u/s 194Q TDS. This is in line with proviso to section 206C (1H) which states that TCS provisions will not apply if the buyer is liable to deduct TDS on the purchase of goods under any other section of the Income Tax Act 1961 and has deducted the same.</p>	
19	<p>PURCHASE PREFERENCE TO MICRO AND SMALL ENTERPRISES (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 100% of total value. Payment to Micro & Small Enterprises will be as per the MSMED Act 2006 Payment to Medium Enterprises with valid UDHYAM registration will be 100% Payment within 60 days of issue of Consignee Receipt-cum-Acceptance Certificate and online submission of bills.</p>	
20	<p>PREFERENCE TO MAKE IN INDIA PRODUCTS (FOR BIDS < 200 CRORE): Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate. In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.</p>	
21	<p>ARBITRATION & CONCILIATION: 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</p>	

	<p>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/Region/Division 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 (the place from which the contract is issued). The cost of arbitration shall be borne as per the award of the Arbitrator.</p> <p>Subject to the arbitration in terms of Clause above, the Courts at TRICHY shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.</p> <p>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.</p> <p>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.</p>	
<p>22</p>	<p>RISK PURCHASE: In case of abnormal delays (beyond the maximum late delivery period as per LD clause) or non-fulfilment of any other terms and conditions given in work order, BHEL may cancel the work order in full or part thereof, and may also make a contract of such work/service from elsewhere / alternative source at the risk and cost of the original contractor. BHEL will take all reasonable steps to complete the contract obligations 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. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract. Risk & cost clause, in line with conditions of contract may be invoked in any of the following cases:</p>	

	<p>1. Contractor’s poor progress of the work vis-à-vis execution timeline as stipulated in the contract, backlog attributable to contractor/ supplier including unexecuted portion of work/ supply does not appear to be executable within balance available period (#) considering its performance of execution.</p> <p>2. Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.</p> <p>3. Non completion of work / Non-supply by the contractor within scheduled completion/delivery period as per contract or as extended from time to time, for the reason attributable to the contractor.</p> <p>4. Termination of contract on account of any other reason (s) attributable to contractor.</p> <p>5. Assignment, transfer, subletting of contract without BHEL’s written permission resulting in termination of Contract or part thereof by BHEL.</p> <p>6. Non-compliance to any contractual condition or any other default attributable to contractor.</p> <p>Risk and Cost amount against balance work will be calculated as follows: $Risk \ \& \ Cost \ Amount = [(A-B) + (A \times H/100)]$ Where, A= Value of Balance scope of Work/ Supply (*) as per rates of new contract B= Value of Balance scope of Work/ Supply (*) as per rates of old contract being paid to the contractor/ supplier at the time of termination of contract i.e. inclusive of PVC & ORC, if any. H = Overhead Factor to be taken as 5 In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero). *(Balance scope of work/ supply) Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for ‘Termination of Contract’, shall be taken as balance scope of Work/ Supply for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities. Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities. Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions. However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose.</p> <p>NOTE: In case portion of work is being withdrawn, contract quantities pertaining to portion of work withdrawn shall be considered as ‘Balance scope of work/supply’ for calculating Risk & Cost amount.</p>	
23	IMPLEMENTATION OF GST	

<p>For supplies after implementation of New GST Return System i.e. from 01/10/2019, the following conditions will apply and supplier shall fully comply to the below points.</p> <p>Indigenous suppliers:</p> <ol style="list-style-type: none"> 1. Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration No (GSTIN) which should be clearly mentioned in the offer. If the dealer is exempted from GST registration, a declaration with due supporting documents need to be furnished for considering the offer. Dealers under composition scheme should declare that he is a composition dealer supported by the screen shot taken from GST portal. The dealer has to submit necessary documents if there is any change in status under GST. 2. Supplier shall mention their GSTIN in all their invoices (incl. credit Notes, Debit Notes) and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No. which is linked/uploaded in GSTN network shall be clearly indicated), Billed to party (with GSTIN) & Shipped to party details, item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, Place of Supply etc. 3. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code). 4. Invoices will be processed only upon completion of statutory requirement and further subject to following: <ol style="list-style-type: none"> a. Vendor declaring such invoice in Form GST ANX-1 b. Receipt of Goods or Services and Tax invoice by BHEL 5. As the continuous uploading of tax invoices in GSTN portal (in GST ANX-1) is available for all (i.e. both Small & Large) tax payers under proposed new GST Return System, all invoices raised on BHEL may be uploaded immediately in GST portal on despatch of material /rendering of services. The supplier shall ensure availability of Invoice in GST portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the invoices are available in GSTN portal (in BHEL's GST ANX-2). 6. In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL. 7. In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-08 or Form GST RET-01 to be submitted) within stipulated time, then GST paid on the invoices pertaining to the month for which GST return not filed by the vendor will be recovered from the vendor along with the applicable interest (currently 24% p.a) and all subsequent bills of the vendor will not be processed till filing of the GST return by the vendor 8. In case GST credit is denied to BHEL due to non-receipt or delayed receipt of goods and/ or tax invoice or expiry of timeline prescribed in GST law for 	
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<p>availing such ITC, or any other reasons not attributable to BHEL, GST amount claimed in the invoice shall be disallowed to the vendor.</p> <p>9. Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.</p> <p>10. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contracts. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Tax Invoice will be issued by BHEL indicating the respective supply invoice number.</p> <p>11. GST TDS will be deducted as per Section 51 of CGST Act 2017 and in line with Notification 50/2018 – Central Tax dated 13.09.2018. GST TDS certificate which will be generated in GST portal subsequent to vendor accepting the TDS deduction in the GST portal, will be issued to the vendor. As per Sec 31 of CGST Act 2017, Tax Invoice has to be raised by the registered person supplying taxable goods before or at the time of removal of goods for supply to the recipient, where the supply involves movement of goods. Hence before commencement of movement, two invoices one by vendor on BHEL and another by BHEL on customer have to be raised. As per Section 129 of CGST Act 2017, if a taxable person supplies any goods without issue of any invoice, the tax authorities have powers to detain the consignment and impose penalties equivalent to 200% of the tax payable.</p> <p>Dispatch of goods to customer sites by vendors should effect only after ensuring availability of BHEL’s invoice on customer at their end.</p> <p>In case the vendors allow to commence the movement of goods without BHEL’s invoice on customers, it will be at the risk and cost of the vendors and all the resultant implications will be to the account of the vendors.</p> <p>AVAILING INPUT TAX CREDIT (ITC): As per GST in line with new GST Return System from 1st Oct 2019.</p>	
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Kindly fill up this Annexure.

By signing this Annexure, the vendor consents the above Additional Terms & Conditions (ATC) are accepted, this, shall be binding between BHEL and the Vendor; and no other terms quoted / mentioned by vendor, elsewhere in the Offer / Qtn will be considered or accepted by BHEL.

This document is part of Tender terms & Conditions and shall be filled up and mandatorily uploaded along with the offer documents in GeM Portal in ATC.

ANNEXURE-B

SI No	DESCRIPTION	DETAILS TO BE FILLED
1.	VENDOR / FIRM NAME	
2.	BHEL VENDOR CODE (IF ANY)	
3.	QUOTATION REFERENCE & DATE	
4.	CONTACT PERSON NAME	
5.	CONTACT PERSON MOBILE NO	
6.	CONTACT PERSON EMAIL ID	
7.	WORKS ADDRESS & TELE NO	
8.	OFFICE ADDRESS & TELE NO	
9.	PAN NO	
10.	GST NO	
11.	MSE VENDOR / NON MSE VENDOR	MICRO / SMALL

VENDOR QUESTIONNAIRE

Sl no	Terms	Questions	Vendor confirmation
1	HSN CODE	PI mention	
2	GST	PI Mention	%
3	MII	PI mention the percentage of Local content	%
4	Attachments 1	Have you submitted the Udyam registration certificate? (applicable only for MSME)	Yes / No
5	Attachments 2	Have you submitted the point wise supporting documents required against Pre-Qualification Report (PQR)?	Yes / No
6	Attachments 3	Have you submitted the filled-in, signed / with company seal "NIL Deviation Format"?	Yes / No
7	Attachments 4	Have you submitted the signed / with company seal, all pages of "Technical Specification, Drawing, datasheet & Quality Plan" with respect to this tender along with your quoted offer?	Yes / No
8	Attachments 5	Have you submitted the filled-in, signed, sealed "Self declaration format for MII clause" as per format in your company letter head? (Indicate the % of Local Content)	Yes / No

PLEASE UPLOAD THIS DOCUMENT IN GEM PORTAL DULY FILLED SIGNED AND STAMPED ALONG WITH YOUR OFFER

/ On Bidder's office letter pad /**Self-Declaration**

Enq.No.

Enq. Date

In line with Government public procurement order Number P45021/2/2017-B.E-II dated 15.06.2017, and further modified order Number P-45021/2/2017-PP(BE-II) dt. 04.06.2020 issued by Department for Promotion of Industry and Internal Trade (DPIIT), I / We hereby declare that I / We are a "Local Supplier" meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No. :
Street / Address 1 :
Street / Address 2 :
District :
State :
Country :
PIN Code :

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:


Seal:

Signature:

Date:

Place:

(Please fill all the yellow color field)

	PURCHASE / MM / BOI ENQUIRY DEVIATION	
429-024	PAGE 1 OF 1	
ENQUIRY NO / Date: 		
DESCRIPTION		
SPECIFICATION		
QUALITY PLAN		
PACKING AS PER SPEC		
DOCUMENT REFERENCE	BHEL ENQ. CALLED FOR	FIRM'S ALTERNATIVE OFFER
	NIL DEVIATION	
CERTIFIED THAT OTHER THAN THE ABOVE DEVIATIONS, WE ARE ACCEPTING ALL THE OTHER SPECIFICATIONS AND REQUIREMENTS IN FULL TO YOUR ENQUIRY.		
STATION:		
DATE:	SIGNATURE OF COMPANY REPRESENTATIVE	COMPANY SEAL
NOTE 1. Deviations should to be taken only in the extreme case. 2. If necessary, use additional sheets with page control number.		

SCOPE OF SUPPLY					
Pkg No	MATL CODE	DESCRIPTION	QTY	UOM	Destination
1	L182319509107001	12P X 1.31 SQ. MM. EXTN. CABLE - KX	11,250	meter	Yadadri 5x800 MW project site Telangana
	L1823S9509105001	12P X 1.31 SQ. MM. EXTN. CABLE - KX	450	meter	BHEL Trichy Stores, Tamilnadu
		Total	11,700	meter	

Note:

1. The catalogues of each item of the package is attached.
2. The applicable specification & drawings are attached.
3. Vendor to submit Nil deviation certificate.
4. Partial offer within a package is not acceptable.
5. Vendor to quote for each line item within the PACKAGE.