GEM PARAMETERS

1.0 PRODUCT SPECIFICATIONS

a) Category of cable : FR
b) Type Of Insulation (Shall Conforming To IS:5831:1984 Latest) : TYPE D
c) Nominal Cross Sectional Area Of Conductor (In Sq.Mm) : 2.5, 4.0, 6.0

d) Conductor Material As Per Cl.4.1 Of IS:694:2010

(Complying With IS:8130:1984 Latest) : Plain Copper

ADDITIONAL PARAMETERS

S.No.	Specification Parameter Name	Bid Requirement (Allowed Values)
1	CONDUCTOR CLASS	Class-2 as per IS: 8130
2	MIN. NO. OF STRANDS & MAX.	As per IS 8130 table-2
	RESISTANCE OF CONDUCTOR	_
3	STANDARD BUNDLE LENGTH	90-100 meters
4	THE COLOUR WISE QUANTITY	For 2.5 sq mm:
	(MTR) OF PVC WIRES SHALL BE:	BLACK: 96000
		RED: 32000
		YELLOW: 32000
		BLUE: 32000
		GREY: 2000
		WHITE: 2000
		For 4.0 sq mm:
		BLACK: 40500
		RED: 13500
		YELLOW: 13500
		BLUE: 13500
		For 6 sq mm:
		BLACK: 96000
		RED: 32000
		YELLOW: 32000
		BLUE: 32000
		GREY: 2000
		WHITE: 2000

बीएच ई	MANUFAC SUPPLIER	TURER/ B NAME & ADDRESS	IDDER/	S	ΓANDAR	D QUALIT	ΓY PLAN		SPEC	C. NO :					DATE:
				CUSTOMER:					QP N	O.: PE-QP-999)-558-E	003, F	R01		DATE: 10.07.2020
				PROJECT:					PO N	Ю.:					DATE:
				ITEM: PVC Wire	s	SYST SYST	EM: STATION LI EM	GHTING	SECT	ΓΙΟΝ: II					SHEET 1 OF 4
SL NO.	COMPONENT & OPERATIONS	CHARACTERISTIC S	CLASS	TYPE OF CHECK		NTUM	REFERENCE DOCUMENT	ACCEP E NOR		FORMAT RECOR		A	GENC	Y	REMARKS
1	2	3	4	5		6	7	8		9	*		**		
					М	C/ N					D	М	С	N	
1.0 RAW	/ MATERIAL/BOUG	GHT OUT ITEMS		1	1	Г		T				1	1	1	1
1.1	CONDUCTOR (COPPER)	1. Physical properties	MA	Physical Tests	Sample/ Batch	-	IS:8130	IS:8130		Certificate of conforman ce	✓	P/ V	V	-	
	(5511 =11)	2. Elec. Properties	МА	Electrical Tests	Sample/ Batch	-	-do-	-do-		-do-	✓	P/ V	٧	-	
1.2	PVC Compound for insulation	1. Material Properties	MA	Physical Tests	Sample/ Batch	-	IS 5831	IS 5831		Certificate of conforman ce	1	Р	V	-	
2.0 ROL	JTINE/ ACCEPTAN	ICE/ TYPE TEST													
2.1		SURFACE DEFECTS	MA	Visual	IS 694 Annex A	-	IS:694	IS:69	94	Insp. And test report from manuf.	1	P/ V	V	_	BIS APPROVED MAKE
2.2	PVC Wires	CONSTRUCTION OF WIRE	MA	Visua l / Measurement	-DO-	-	IS-694 (table-3) IS-8130 (table-2) Appd DS	IS-694 (3) IS-8130 2) Appd	(table-	-DO-	V	P/ V	V	-	
2.3		TYPE TESTS	CR	Tests	One sample	One sample of	IS:694 (TABLE-1)	IS:69 (TABL		Test cert.	√	Р	w		Type test shall be conducted on first
		BHEL				BIDDER	/ SUPPLIER			FOR CUST	OMER	REVI	EW &	APPR	ROVAL
	ENGINEERIN	G		QUALITY	Sig	gn & Date		Doc No):						
	Sign & Date	Name	Sign	& Date Na	ime Se	al				ign & Date	Name			Sea	1
Prepared by:	MEET SAGAR SINGH RAJPAL Bill State of the control o	MUDIT CHOPRA Check MEET SAGAR by: SINGH RAJPAL	Kilon	Digitally signed by Kunal Diverse Stand a Gu. comil-hand bared highly the Company of the Company	III			Review by:							
Reviewe by:	PRAVEEN CONTROL CONTRO	PRAVEEN Reviews DUTTA by:	RITESH	y signed by KUMAR JAISWAL 020.07.30 13:36:25 JAISWA	AL _			Approby:	ved						

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MICHS				CUSTOMER:						QP No	O.: PE-QP-999)-558-E(003, R	k01		DATE: 10.07.2020
				PROJECT:						PO NO	0.:					DATE:
				ITEM: PVC Wire	es		SYSTI SYSTE	EM: STATION LIG	GHTING	SECT	ION: II					SHEET 2 OF 4
SL NO.	COMPONENT & OPERATIONS	CHARACTERISTIC S	CLASS	TYPE OF CHECK		QUANT OF CHE	UM	REFERENCE DOCUMENT	ACCEP E NOR		FORMAT RECOR		A	GENO	CY	REMARKS
1	2	3	4	5		6		7	8		9	*		**		
	2	3	4	5	М		C/ N		0		9	D	М	С	N	
					of ea wire t & si	type	each wire type & size									project Order supply from rate Contract. 2) Refer note 1 & 2
2.4		ACCEPTANCE TESTS a) Annealing test b) Conductor Resistance test c) Thickness of Insulation d) Tensile strength and elongation at break of insulation e) IR test f) HR Test g) Flammability test h) Oxygen index test i) Temperature index j) Halogen acid	MA	CR	IS 6 Anne		IS 694 Annex A	IS 694/ IS 8130	IS 108	810	Test Report	٧	Р	W		Refer note-1
		BHEL					BIDDER/	SUPPLIER			FOR CUST	OMER	REVI	EW &	APPF	ROVAL
	ENGINEERIN	(G		QUALITY		Sign &	t Date		Doc No):						
	Sign & Date	Name	Sign	& Date N	ame	Seal					gn & Date	Name			Sea	ıl
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by:

Approved

MANUFACTURER/

MEET SAGAR SINGH RAJPAL by:

Reviewed

The Prince PRAVEEN
CONSTITUTE OF THE PROPERTY OF THE PROPERTY

by:

MEET SAGAR SINGH RAJPAL

Reviewed PRAVEEN Systematic Matter Company Com

DUTTA,

GANDHI

Digitally signed by RTESH KUMAR JAISWAL Date: 2020,07.30 13:37:13 +05'30'

BIDDER/

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				CUSTOMER:						QP No	O.: PE-QP-999	-558-E0)03, R	:01		DATE: 10.07.2020
				PROJECT:						PO NO	O.:					DATE:
				ITEM: PVC Wire	S	l l	(STE	EM: STATION LIG EM	GHTING	SECT	ION: II					SHEET 3 OF 4
SL NO.	COMPONENT & OPERATIONS	S	CLASS	TYPE OF CHECK	QUAN OF CH			REFERENCE DOCUMENT	ACCEP E NOR		FORMAT RECOR		A	GENO	CY	REMARKS
1	2	3	4	5	6			7	8		9	*		**		
_ '	2	3	4		М	C/ N			0		9	D	М	С	N	
		gas k) Smoke density														
2.5		ROUTINE TESTS	MA	-DO-	100%	-		-DO-	-DC)_	-DO -	V	P/ V	٧		
2.6		MARKING	MA	VISUAL	IS 694 Annex A	IS 69- Annex		APPD DS	APPD	DS	INSP. REPORT	√	P/ V	W		
3.0 PA	CKING															
	PACKING	Soundness of Packing against transit damage	Major	Visual	100%	100%	6	BHEL approved document	BHEL approved documen		Inspection report	√	Р	w	-	

NOTES:

MANUFACTURER/

- 1. In case of FR type wires, FR properties test (Oxygen Index & Temp. Index) are also applicable.
- 2. Type test report of successfully conducted test on First project of rate contract shall be referred for subsequent purchase orders & further conduction of type test is not required.

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- 3. Project specific QP shall be based on customer requirement. In case, any changes in QP commented by customer at contract stage shall be carried out by bidder without any implication to BHEL/ Customer.
- 4. For export jobs, BHEL technical specification for seaworthy packing for export jobs is to be followed.
- 5. Packing shall be suitable for storage at site in tropical climatic conditions. Refer Annexure-I for packing specification.
- 6. Latest revision/ year of issue of all the standards (IS/ASME/ IEC etc.) Indicated in QP shall be referred.
- 7. BHEL reserves the right for conducting repeat test if required.

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BIDDER/

8. After packing and prior to issue MDCC, photographs of items to be dispatched shall be sent to BHEL purchase group for review.

		ВНІ	£L.				DDER/ SUPPLIER	l
	ENGINEERIN	(G		QUALITY		Sign & Date		Ι
	Sign & Date	Name		Sign & Date	Name	Seal		Г
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Reviewed by:	PRAVEEN Cognition property PANCELON DESCRIPTION OF THE PROPERTY PR	Market DUTTA	Reviewed by:	DETECTION AND INTOVINE	R. K. JAISWAL			A b

	FOR CU	STOMER REVIE	W & APPROVAL	
Doc No:				
	Sign & Date	Name	Seal	
Reviewed by:				
Approved by:				

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				CUSTOMER:				QP NO	O.: PE-QP-999-558-E0	003, R01	DATE: 10.07.2020
				PROJECT:				PO NO	D.:		DATE:
				ITEM: PVC Wire	es	SYSTEM: STATION LIC SYSTEM	GHTING	SECT	ION: II		SHEET 4 OF 4
SL	COMPONENT	CHARACTERISTIC	CLASS	TYPE OF	QUANTUM	REFERENCE	ACCEP.	TANC	FORMAT OF	ACENCY	REMARKS

NO.	OPERATIONS	3		CHECK	OF CHECK	DOCUMENT	NORMS	RECORD	AGENCY	
1	2	3	4	5	6 M C/ N	7	8	9 * D	** M C N	

LEGENDS:

JAISWAL/

*RECORDS, INDENTIFIED WITH "TICK" ($\sqrt{}$) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION, ** M: SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, C: MAIN SUPPLIER/ BHEL/ THIRD PARTY INSPECTION AGENCY, N: CUSTOMER,

P: PERFORM, W: WITNESS, V: VERIFICATION, AS APPROPRIATE

MA: MAJOR, MI: MINOR, CR: CRITICAL, D: DOCUMENTATION

	BHEL										
	ENGINEERIN	iG	QUALITY								
	Sign & Date	Name		Sign & Date	Name						
Prepared by:	MUDIT CHOPRA Date of the control of	MUDIT CHOPRA MEET SAGAR SINGH RAJPAL	Checked by:	Wind	KUNAL GANDHI						
Reviewed by:	PRAVEEN SQUARE S	DUTTA	Reviewed by:	RITESH KUMAR	This by greed by RITESH RUMAR JAJSWAL three to distance theory Electricals Ltd, graphic 45-64, possib Code-201301, 15-00-1692-24. ALZ 22-201301, 2.5.4.20-16692-2815236/78546-88-18-55d (601189/7-35/6990-3498807/91aws-117						

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1	Sign & Date	
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	FOR CUSTOMER REVIEW & APPROVAL									
Doc No:										
Reviewed by:	Sign & Date	Name	Seal							
Approved by:										

ANNEXURE-I TO QUALITY PLAN PACKING SPECIFICATIONS- PVC WIRES PACKAGE

PACKING

- 1. The material shall be packed to ensure protection against damage during transit, storage for prolonged periods and handling.
- 2. The wire shall be clean and dry prior to packaging.
- 3. The wire shall be supplied in packed coils. The tapes used for packing shall not bleed, leave residue, or damage the item when removed.
- 4. The inside coil diameters shall not be smaller than the minimum safe allowable bending diameter for wires.
- 5. The coil shall be placed in a corrugated paperboard/ fibreboard container/ mono carton.
- 6. The mono cartons shall be wrapped or bagged or tied in place in master cartons. The master carton shall be taped and then wrapped with cushioning material.
- 7. The dimensions of cartons shall be as per manufacturer's recommendations.