



## BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

### MANUFACTURING QUALITY PLAN -- OPGW

	MANUFACTURER / VENDOR ADDRESS:	Customer: BSPTCL	EPC CONTRACTOR:	Item:	Quality Plan No. 039	Valid from: 15.01.2016
				OPGW	Rev. No 00	Valid Till- Till Revision
					Date: 07.01.2016	

Sr.No.	Components / Operations & Description of Test	Type of Check	Quantum of Check / Sampling with basis	Reference document of testing	Acceptance Norms	Format of Record	Applicable codes						Remarks
							1	2	3	4	5	6	

<b>SECTION - A</b>	<b>Final Inspection Test(Factory Acceptance Tests)</b>
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1.1	<b>Complete OPGW</b>																	
1.1.1	Visual examination & Dimensional checks	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.2	Rated Tensile Strength	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.3	lay Length	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.4	Traverse Control	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.5	Wires Gap	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.6	DC Resistance	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.7	No. Of Wires	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						
1.1.8	Optical performance	Measurement	10% drums/lot	IEC 61089	IEC 61089	EMTC	A	J	S	W	E	N						

CIP Customer Inspection Point,(Inspection by Power Grid)



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<b>SECTION - A</b>													<b>Final Inspection Test(Factory Acceptance Tests)</b>				
1.2	<b>Individual Al Clad Steel Wires</b>																
1.2.1	Visual examination & Dimensional checks	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.2	Tensile Strength	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.3	Twist Test	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.4	Tension at 1% Extension	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.5	DC Resistance	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.6	Wrapping Test	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					
1.2.7	Elongation	Measurement	10% drums/lot	IEC 61232	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N					

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<b>SECTION -A Final Inspection Test(Factory Acceptance Tests)</b>													
1.3	<b>Optical Fiber</b>												
1.3.1	Attenuation Coefficient and length verification	Measurement	10% drums/lot	IEC 60793-1-40	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	
1.3.2	Attenuation at water Peak	Measurement	10% drums/lot	ITU-T. G652	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	
1.3.3	Point Discontinuity	Measurement	10% drums/lot	IEC 60793-1-40	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	
1.3.4	Chromatic Dispersion	Measurement	10% drums/lot	IEC 60793-1-42	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	
1.3.5	*Core-Clad Concentricity Error	Measurement	10% drums/lot	IEC 60793-1-20	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	
1.3.6	*Cladding Diameter	Measurement	10% drums/lot	IEC 60793-1-20	BSPTCL Specification, relevant std & approved Drawing (as applicable)	EMTC	A	J	S	W	E	N	

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SECTION - A Final Inspection Test(Factory Acceptance Tests)																	
1.4	Cable Drum																
1.4.1	Appereance of OPGW	Naked eyes	100% drums	vendor plant std.	BSPTCL Specification, relevant std & vendor plant Std. (as applicable)			EMTC									
1.4.2	Dimension verification	Measurment	10% drums/lot	vendor plant std.	BSPTCL Specification/ approved drawing relevant std			EMTC									
1.4.3	Material of Drum	Measurment	100% drums	BSPTCL TS	BSPTCL Specification, relevant std & vendor plant Std. (as applicable)			EMTC									
1.4.4	Sealing Cable with End caps	Naked eyes	100% drums	BSPTCL TS	BSPTCL Specification, relevant std & vendor plant Std. (as applicable)			EMTC									
1.4.5	Signing with inspections official on Drum details printed on Paper	Naked eyes	100% drums	BSPTCL TS	BSPTCL Specification, relevant std & vendor plant Std. (as applicable)			EMTC									
1.4.6	Sealing /Pasting the Drum details over the end capswith transparent tape	Naked eyes	100% drums	BSPTCL TS	BSPTCL Specification, relevant std & vendor plant Std. (as applicable)			EMTC									

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<b>SECTION - A</b>													
<b>Final Inspection Test(Factory Acceptance Tests)</b>													
1.1	<b>OPGW Hardware Fittings &amp; Accessories-Suspension Assembly, Tension Assembly, Vibration Damper, Structure Mounting Clamp, Joint Box and FODP</b>												
<b>Suspension &amp; Tension Assembly</b>													
1.1.1	Visual examination & Dimensional checks	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.2	Rated Tensile Strength	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.3	Slip strength test	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.4	Mechanical strength test on Assembly and each component	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
<b>Vibration Damper</b>													
1.1.5	Visual examination & Dimensional checks	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.6	Galvanizing Test	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.7	Damper response (resonant frequency)	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.8	Mass pull off Test	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.9	Strength of Messenger wire	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.10	Clamp slip strength	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
<b>Structure Mounting Clamp</b>													
1.1.11	Visual examination & Dimensional checks	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.12	Clamp Fit Test	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.13	Clamp Strength Test	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
<b>Joint Box and FODP</b>													
1.1.14	Visual examination & Dimensional checks	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.15	Seal Performance	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
1.1.16	Optical performance	Measurement	10% of lot	IEC 61284	IEC 61284	EMTC	A	J	S	W	E	N	
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