

Phone : +91-11-49962200
Fax : +91-11-49962288
www.sterlitegrid.com

To,
Mr.M.A.Khan,
M/s Unitech Power Transmission Ltd.
Unitech Commercial Tower II, Ground Floor,
B-Block, Greenwood City, Sector-45
Gurgaon- Haryana

Ref No: SGL/JTCL/ENGG/UNITECH/DC/14
Dated: 17th Dec'2012

Subject: Approval of accessories drawings of 765KV D/C Hexa ACSR Zebra & 7/3.66mm earth-wire.

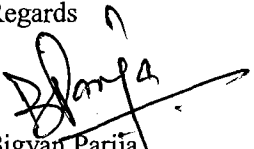
Dear Sir,

This is in reference to your ref letter No: UPTL/Mktg/2012-13/282 dated 7th Dec 12, vide which you have submitted conductor & earth-wire accessories drawing of 765KV Hexa ACSR Zebra & 7/3.66mm earth-wire for our approval. We have examined the same & found generally in order. We are hereby conveying our approval on the below mentioned documents/drawings:

Sr. No.	Description	Drawing No.	Rev. No.
1.	GTP of accessories for Hexa ACSR Zebra conductor		
2.	GTP of accessories for 7/3.66 mm earth-wire		
3.	MSCJ for ACSR Zebra conductor	TCJ-241	1
4.	Repair Sleeve for ACSR Zebra conductor	TRS-11	1
5.	T-connector for ACSR Zebra conductor	TTC-11-1	1
6.	Hex Rigid Spacer for ACSR Zebra conductor	SPHJ-29	1
7.	Suspension Assembly for 7/3.66mm earth-wire	EWSS-13R	0
8.	Tension Assembly for 7/3.66mm earth-wire	GSSA-9	0
9.	MSCJ for 7/3.66mm earth-wire	CJA-9	1
10.	Repair Sleeve for 7/3.66mm earth-wire	RS-9	1
11.	Flexible Copper Bond for 7/3.66mm earth-wire	CB-6C	1
12.	Vibration damper for 7/3.66mm earth-wire	VD4R604	0

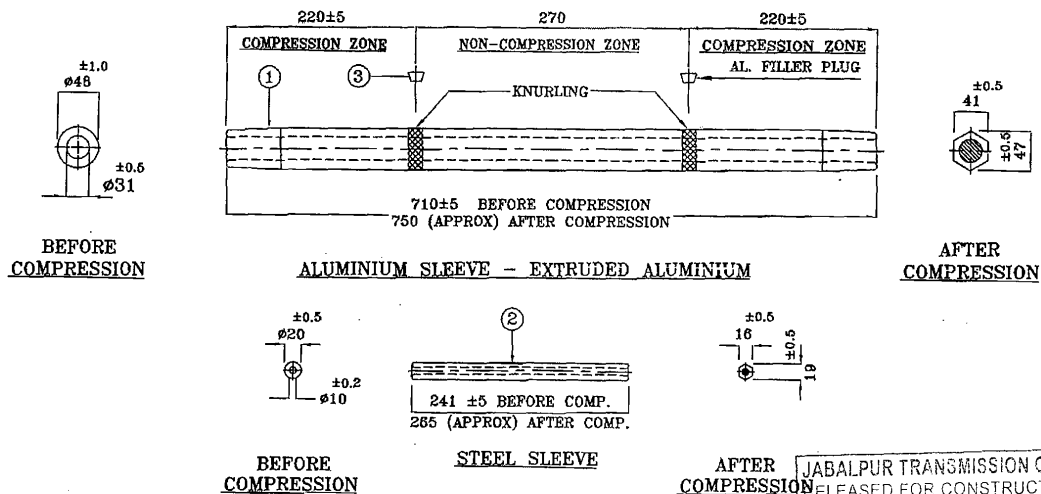
Approval conveyed herein neither relieve M/s UNITECH of his contractual obligation & his responsibilities for correctness of dimension , materials of construction , weights ,designed details , assembly fits, performance particulars & conformity of the supplies with the Indian statutory laws as may be applicable , nor does it limit the JTCL rights under the contract.

Regards


Bigyan Parija
Engineer in Chief - Transmission Line

Copy to:

1. Mr. Jaganmohan Rao along with Encl



TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. FAILING LOAD/SLIP STRENGTH - MIN. 95% OF THE U.T.S. OF CONDUCTOR.
3. CAPACITY OF HYDRAULIC COMPRESSOR : 100 TON.
4. ELECTRICAL RESISTANCE - LESS THAN 75% OF THE MEASURED RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR.
5. MIDSPAN COMPRN. JOINT CONFORM TO IS : 2121 PART-II.
6. MIN. CORONA EXTINCTION VOLTAGE (DRY) 510 KV (A.C) (RMS).
7. RIV AT 510 KV (A.C) (RMS) VOLTAGE (DRY) BELOW 1000 MICROVOLTS.
8. ALL FERROUS PARTS HOT DIP GALVANIZATION AS PER IS SPECIFICATION.

BILL OF MATERIALS

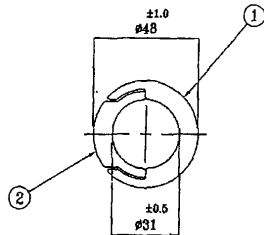
SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.
3.	PLUG	ALUMINIUM ALLOY 19500/1050 IS:733 PURITY 99.5%	-	2 Nos.
2.	STEEL SLEEVE	MILD STEEL Fe-410 IS:2062	H.D.G.	1 No.
1.	ALUMINIUM SLEEVE	ALUMINIUM 19500/1050 IS:733 PURITY 99.5%	-	1 No.

JABALPUR TRANSMISSION COMPANY LTD.
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Date : 17/12/12
Engineering Deptt. *Manu*
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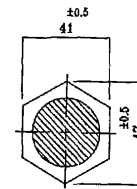
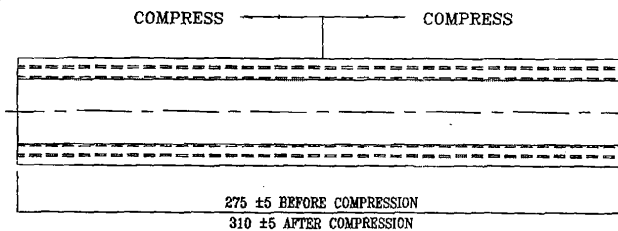
PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED
TENDER SPECIFICATION NO : JTCL/02/001
PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

STANDARD	IS:2121 PART-II	TOLERANCE
1	13.12.12	NEW DIMENSIONS ADDED
REV.	DATE	REV. DESCRIPTION
ISO 9001:2008		
IAC ELECTRICALS PVT. LTD. 701, CENTRAL PLAZA 2/6, SARAT BOSE ROAD, KOLKATA-20, INDIA.		
TITLE : MIDSPAN COMPRESSION JOINT FOR ACSR ZEBRA		
DRG. NO. TCJ-241		

FILE NAME : H:\Drawing Data\DCS\PTT\JABALPUR TRAN. COMP. LTD\765 KV\ZEBRA\POWER\DHARAMJAYGARH-JABALPUR.DWG (EXT. ZEBRA)\ACCESSORIES\TCJ-241.dwg



BEFORE
COMPRESSION



AFTER
COMPRESSION

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. MATERIAL - EXTRUDED ALUMINIUM.
3. FAILING LOAD/SKIP STRENGTH - MIN. 95% OF THE U.T.S. OF CONDUCTOR.
4. CAPACITY OF HYDRAULIC COMPRESSOR : 100 TON.
5. ELECTRICAL RESISTANCE - LESS THAN 75% OF THE MEASURED RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR.
6. MIN. CORONA EXTINCTION VOLTAGE (DRY) 510 KV (A.C) (RMS).
7. RIV AT 510 KV (A.C) (RMS) VOLTAGE (DRY) BELOW 1000 MICROVOLTS.
8. ALL FERROUS PARTS HOT DIP GALVANIZATION AS PER IS SPECIFICATION.
9. DIE CATALOGUE NO : DAH-11.

BILL OF MATERIALS

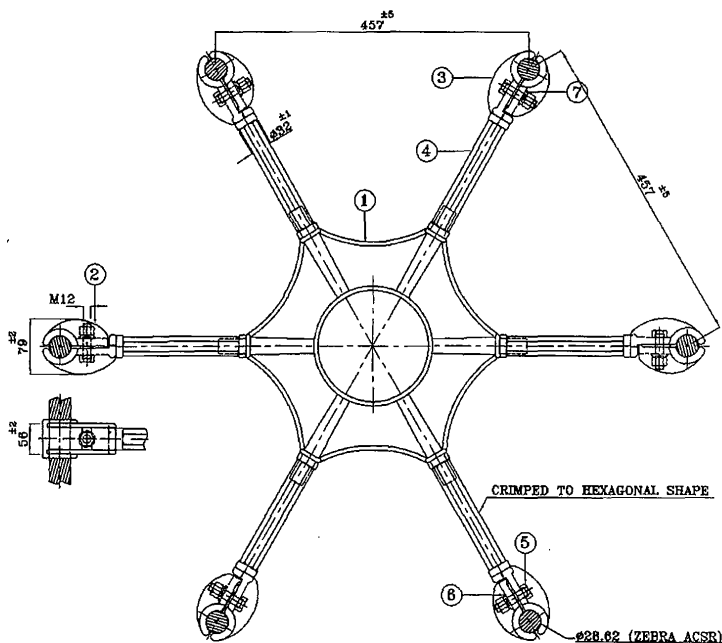
SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.
2.	KEEPER PIECE	ALUMINIUM 19600/1050 IS:733 PURITY 99.5%	-	1 No.
1.	BODY	ALUMINIUM 19600/1050 IS:733 PURITY 99.5%	-	1 No.

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Date : 17.12.12
Engineering Deptt. M. S.
The above does not relieve the contractor from their contractual obligations

PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED
TENDER SPECIFICATION NO : JTCL/02/001
PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

STANDARD	IS:2121 PART-II	TOLERANCE	U.T.S.
1	13.12.12	TECHNICAL DATA CHANGED	DRAWN
REV.	DATE	REV. DESCRIPTION	CHECKED
IAC ELECTRICALS PVT. LTD.		APPROVED	UNIT: mm SCALE: NTS
701, CENTRAL PLAZA		DATE : 04.12.2012	DRG. NO.
2/6, SARAI BOSE ROAD, KOLKATA-20, INDIA.		TITLE : REPAIR SLEEVE FOR ACSR ZEBRA	
FILE NAME : E:\Drawing Data\DRG\PTT\JABALPUR TRAN. COMP. LTD\765 KV UNITECH POWER TRANSMISSION-JABALPUR DRG (PKG-C2)\ACCESSORIES\TRS-11.dwg		TR-11	



TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN MM.
2. CLAMP SLIP STRENGTH : 6.5 KN.
3. MIN. CORONA EXTINCTION VOLTAGE (DRY) 510 KV (A.C) (RMS).
4. RIV AT 510 KV (A.C) (RMS) VOLTAGE (DRY) BELOW 1000 MICROVOLTS.
5. COMPRESSION & TENSION LOAD OF RIGID SPACER :-
 - a) COMPRESSION LOAD : 14 KN.
 - b) TENSION LOAD : 7 KN.
6. ALL FERROUS PARTS ARE HOT DIP GALVANISATION & SPRING WASHERS ARE ELECTRO GALVANISED AS PER IS SPECIFICATION.
7. MAGNETIC POWER LOSS OF AT SUB CONDUCTOR CURRENT OF 500A , 50 Hz AC : 1 WATT (MAX.)
8. RECOMMENDED TIGHTENING TORQUE : 40Nm.

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Engineering Deptt.

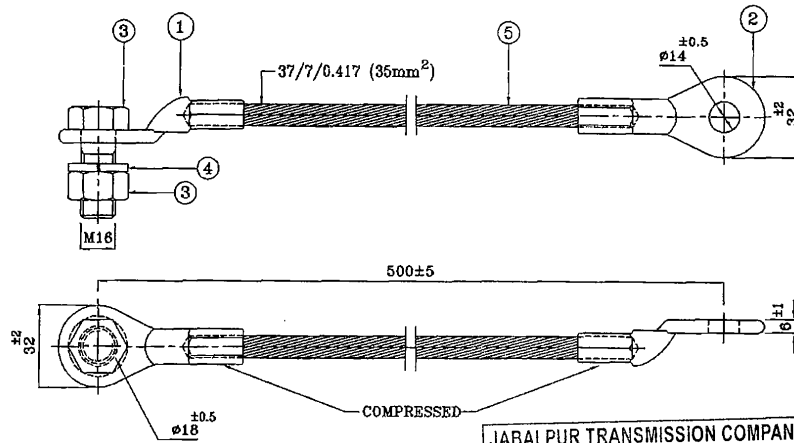
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BILL OF MATERIALS

7.	SPRING WASHER	SPRING STEEL IS:3063	E.G.	6 NOS.
6.	PLAIN WASHER	MILD STEEL IS:2016	H.D.G.	6 NOS.
5.	BOLT, NUT (M12)	MILD STEEL GR. 5.8/5, IS:6639, 1363 PART-III & 1367 PART-XIII	H.D.G.	6+6 NOS.
4.	SPACING TUBE	AL. ALLOY 65032/6061 IS:733	---	6 NOS.
3.	PACKING PIECE	AL. ALLOY 4600, IS:617	---	6 NOS.
2.	CLAMP	AL. ALLOY 4600, IS:617	---	6 NOS.
1.	MAIN BODY	AL. ALLOY 4600, IS:617	---	1 NO.
SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.

PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED			
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED			
TENDER SPECIFICATION NO : JTCL/02/001			
PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)			
STANDARD IS:10162		TOLERANCE	
1 13.12.12 CHANGED AS PER COMMENTS		U.T.S. AS ABOVE	
REV. DATE REV. DESCRIPTION		DRAWN	
IAC ELECTRICALS PVT. LTD.		CHECKED	
701, CENTRAL PLAZA		APPROVED	
2/6, SARAT BOSE ROAD, KOLKATA-20, INDIA.		UNIT : mm SCALE : NTS	
TITLE :		DATE : 04.12.2012	
RIGID SPACER		DRG. NO.	
FOR HEXAGONAL ACSR ZEBRA		SPBJ-29	

FILE NAME : B:\Drawing Data\DC\14\PTT\JABALPUR TRAN. COMP. LTD\765 KV\UNITECH POWER\DHARAMJAYGARH-JABALPUR.DWG (EXT. ZEBRA)\ACCESSORIES\SPBJ-29.dwg



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Date : 17/12/12
Engineering Deptt. M. S. D.

The above does not relieve the contractor from their contractual obligations

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. SLIPPING STRENGTH : 3 KN.
3. ALL FERROUS PARTS EXCEPT SP. WASHERS ARE HOT DIP GALVANISED AS PER IS SPECIFICATION.
4. SPRING WASHERS ARE ELECTRO GALVANISED.

PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED

CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED

UNITECH
Power Transmission Ltd.

TENDER SPECIFICATION NO : JTCL/02/001

PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.
5.	FLEXIBLE BOND WIRE (35 Sq. mm. AREA)	COPPER (ELECTROLYTIC) IS:9567, IS:2982	TINNED	1
4.	SPRING WASHER	SPRING STEEL IS:3063	E.G.	1
3.	BOLT & NUT (M16 x 40)	MILD STEEL GR. 5.8/5, IS:4039 - 1363 PART-III, & 1367 PART-XIII	H.D.G.	1+1
2.	CONNECTING BOND (14 HOLE)	COPPER ALLOY (ELECTROLYTIC) IS:9567	TINNED	1
1.	CONNECTING BOND (18 HOLE)	COPPER ALLOY (ELECTROLYTIC) IS:9567	TINNED	1



STANDARD AS ABOVE TOLERANCE ---
1 13.12.12 CHANGED AS PER COMMENTS
REV. DATE REV. DESCRIPTION

U.T.S. ---
DRAWN ---
CHECKED ---

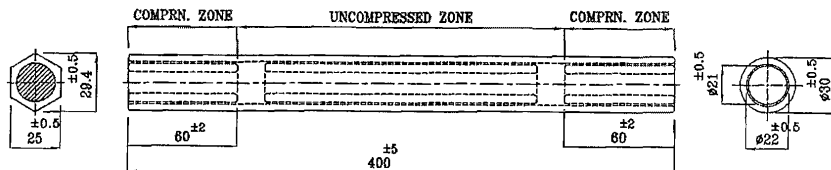


IAC ELECTRICALS PVT. LTD.
701, CENTRAL PLAZA
2/6, SARAT BOSE ROAD, KOLKATA-20, INDIA.

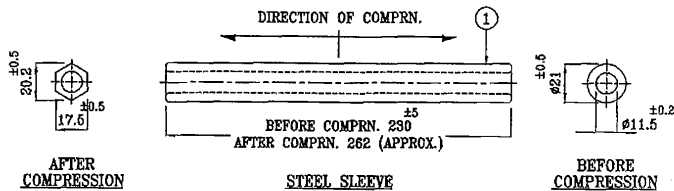
APPROVED ---
UNIT : mm SCALE : NTS
DATE : 04.12.2012

TITLE : FLEXIBLE TINNED COPPER EARTH BOND
FOR 7/3.66mm GSS EARTHWIRE

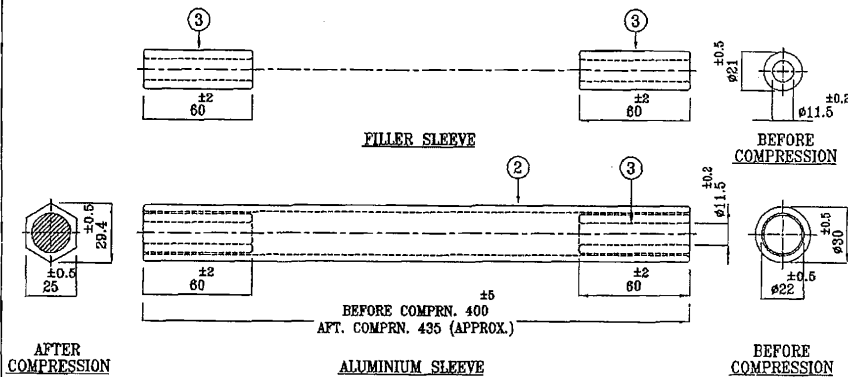
DRG. NO. CB-6C



ASSEMBLY



STEEL SLEEVE



ALUMINIUM SLEEVE

BILL OF MATERIALS

SL. No.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.
3.	ALUMINIUM FILLER SLEEVE	ALUMINIUM 19500/1050 IS:733 99.5% PURITY(MIN.)	--	2
2.	ALUMINIUM SLEEVE	ALUMINIUM 19500/1050 IS:733 99.5% PURITY (MIN.)	--	1
1.	STEEL SLEEVE	MILD STEEL Fe-410, IS:2062	H. D. G.	1

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. SLIP STRENGTH : 85 KN. (MIN.).
3. CAPACITY OF HYDRAULIC COMPRESSOR : 100 TON.
4. RESISTIVITY LESS THAN 75% OF RESISTANCE OF EQUIVALENT LENGTH OF CONDUCTOR.
5. HARDNESS : MAX. 200 (BHN.).
6. MIDSPAN COMP. JOINT CONFORM TO IS : 2121 (II)-1981.
7. ALL FERROUS PARTS ARE HOT DIP GALVANISED AS PER IS SPECIFICATION.

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Date : 17/12/12
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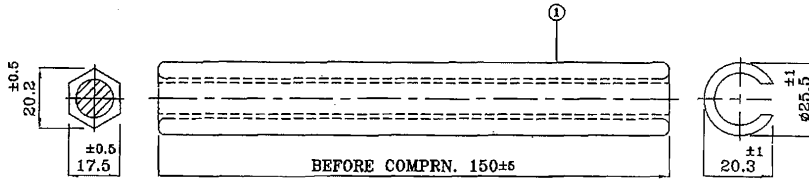
PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED
TENDER SPECIFICATION NO : JTCL/02/001
PROJECT : 765 KV D/C DEARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

STANDARD	IS:2121 PART-II	TOLERANCE	--
1	13.12.12	CHANGED AS PER COMMENTS	U.T.S.
REV.	DATE	REV. DESCRIPTION	DRAWN
ISO 9001 : 2008			CHECKED
IAC			APPROVED
IAC ELECTRICALS PVT. LTD.			UNIT : mm SCALE : NTS
216, SARAT BOSE ROAD, KOLKATA-20, INDIA.			DATE : 04.12.2012
TITLE : MIDSPAN COMPRESSION JOINT			DRG. NO.
FOR 7/3.66mm EARTHWIRE			CJA-9

FILE NAME : H:\Drawing Data\BRO\PTT\JABALPUR TRAN. COMP. LTD\765 KV UNITECH POWER TRANSMISSION\ACCESSORIES\CA-1.dwg

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. CAPACITY OF HYDRAULIC COMPRESSOR : 100 TON.
3. RESISTIVITY LESS THAN 75% OF RESL. OF EQUIVALENT LENGTH OF EARTHWIRE.
4. REPAIR SLEEVE CONFORM TO IS : 2121 (PART-III).
5. ALL FERROUS PARTS ARE HOT DIP GALVANISED AS PER IS SPECIFICATION.



**AFTER
COMPRESSION**

STEEL SLEEVE

**BEFORE
COMPRESSION**

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Date : 17.12.12
Engineering Deptt. Munshi
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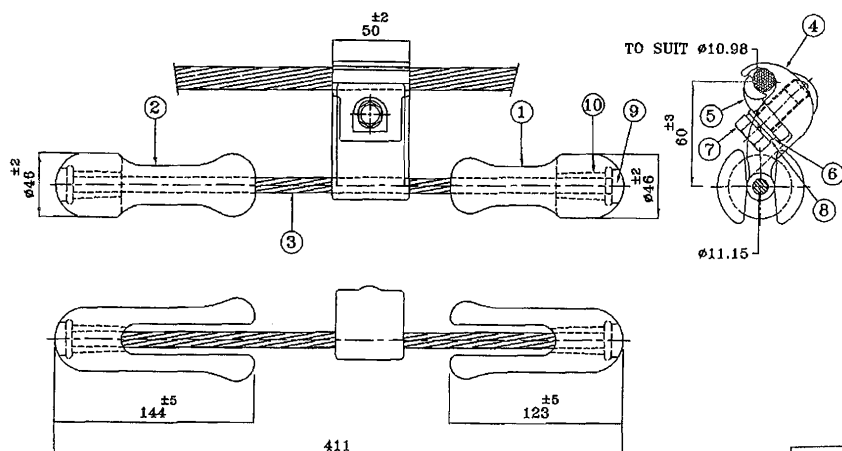
PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED **Unitech**
TENDER SPECIFICATION NO : JTCL/02/001
PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

BILL OF MATERIALS

SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.
1.	STEEL SLEEVE	MILD STEEL Fe-410 IS:2062	H.D.G.	1 No.

STANDARD	AS ABOVE	TOLERANCE	U.T.S.	AS ABOVE
1	13.12.12	CHANGED AS PER COMMENTS	DRAWN	<u>Munshi</u>
ISO 9001:2008	REV. DATE	REV. DESCRIPTION	CHECKED	<u>Munshi</u>
IAC IAC ELECTRICALS PVT. LTD. 701, CENTRAL PLAZA 2/6, SARAI BOSE ROAD, KOLKATA-20, INDIA.			APPROVED	<u>Munshi</u>
TITLE: REPAIR SLEEVE FOR 7/3.66mm. EARTHWIRE			UNIT: mm	SCALE: NTS
			DATE : 04.12.2012	DRG. NO. RS-9

FILE NAME : E:\Drawing Data\JST\VT. PTV\JABALPUR TRAN. COMP. LTD\765 KV\UNITECH POWER TRANSMISSION-JABALPUR\DCS (REL. ZEBRA)\ACCESSORIES\RS-9.dwg



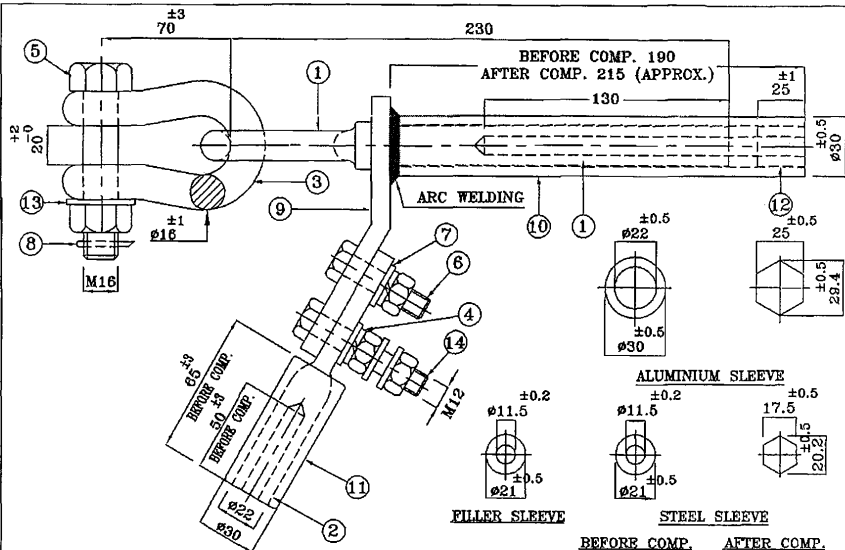
TECHNICAL DATA :-

13. ALL WELDING PARTS EXCEPT SP. WELDERS ARE HOT DIP GALVANISED AS PER IS SPEC.
JABALPUR STEEL WAREHOUSE ARE ELECTRO GALVANISED.
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BILL OF MATERIALS

10.	FIXING TAPER SLEEVE	ALUMINIUM ALLOY 4600, IS:617	--	2
9.	SEALING PLUG	PURE ALUMINIUM 19500/1050 IS:733	--	2
8.	SPRING WASHER	SPRING STEEL IS:3063	E. G.	1
7.	BOLT (M12)	MILD STEEL GR. 5.8/5, IS:6639 - 1963 PART-III, & 1367 PART-XIII	H. D. G.	1
6.	PLAIN WASHER	MILD STEEL IS:2016	--	1
5.	COVER HALF CLAMP	ALUMINIUM ALLOY 4600, IS:617	--	1
4.	HOOK HALF CLAMP	ALUMINIUM ALLOY 4600, IS:617	--	1
3.	MESSENGER CABLE (19/2.23)	HIGH TENSILE STEEL IS:4826	H. D. G.	1
2.	DAMPER WEIGHT (Large)	CAST IRON IS:210	H. D. G.	1
1.	DAMPER WEIGHT (Small)	CAST IRON IS:210	H. D. G.	1
SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT	QTY.

 KVA ISO 9001:2008	STANDARD		AS ABOVE	TOLERANCE		AS ABOVE
					U.T.S.	AS ABOVE
 LAC 701, CENTRAL PLAZA 2/6, SARAT BOSE ROAD, KOLKATA-20, INDIA.	REV.	DATE	REV.	DESCRIPTION	CHECKED	<i>Amang</i>
					APPROVED	<i>Signature</i>
					UNIT: mm	SCALE: NTS
					DATE: 13.12.2012	
TITLE: 4R TYPE STOCK BRIDGE VIBRATION DAMPER FOR 7/3.66mm EARTHWIRE				DRG. NO. VD4R604		



TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN mm.
2. SLIP STRENGTH OF TENSION CLAMP : 65 KN.
3. CAPACITY OF HYDRAULIC COMPRESSOR : 100 TON.
4. BR. STRENGTH OF THE ASSLY. EXCLUDING CLAMP NOT LESS THAN 70 KN.
5. BRINELL HARDNESS OF STEEL CLAMP MAX. 200.
6. THE ASSEMBLY CONFORM TO IS : 2486.
7. TOLERANCE OF $\pm 3\%$ IS APPLICABLE UNLESS OTHERWISE SPECIFIED.
8. ALL FERROUS PARTS EXCEPT SP. WASHERS ARE HOT DIP GALVANISED AS PER IS SPEC.
9. SPRING WASHERS ARE ELECTRO GALVANISED.

BILL OF MATERIALS

SL. NO.	DESCRIPTION	MATERIAL	QTY.
14.	BOLT & NUT (M12 x 60)	MILD STEEL GR. 5.6/5, IS:6639 - 1363 PART-III, & 1367 PART-XIII	H. D. G. 1+2
13.	PLAIN WASHER (M16)	MILD STEEL IS:2016	H. D. G. 1
12.	FILLER TUBE	ALUMINIUM 19500/1050 IS:733	-- 1
11.	JUMPER COVER	ALUMINIUM 19500/1050 IS:733	-- 1
10.	DEAD END COVER	ALUMINIUM 19500/1050 IS:733	-- 1
9.	JUMPER PLATE	MILD STEEL Fe-410 IS:2062	H. D. G. 1
8.	SPLIT PIN	STAINLESS STEEL AISI-304	-- 1
7.	PLAIN WASHER (M12)	MILD STEEL IS:2016	H. D. G. 4
6.	BOLT & NUT (M12x40)	MILD STEEL GR. 5.6/5, IS:6639 - 1363 PART-III, & 1367 PART-XIII	H. D. G. 1+1
5.	BOLT & NUT (M16x80)	MILD STEEL GR. 5.6/5, IS:6639 - 1363 PART-III, & 1367 PART-XIII	H. D. G. 1+1
4.	SPRING WASHER (M12)	SPRING STEEL IS:3063	E. G. 2
3.	ANCHOR SHACKLE	FORGED STEEL CL-4, IS:2004	H. D. G. 1
2.	JUMPER	FORGED STEEL CL-2, IS:2004	H. D. G. 1
1.	LINK TYPE COMPRESSION TUBE	FORGED STEEL CL-2, IS:2004	H. D. G. 1
SL. NO.	DESCRIPTION	MATERIAL	SURFACE TREATMENT QTY.

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Approved Vide Ref. Letter No. SG/L/JTCL/ENG/G/UNITECH/D/14
Date : 17/12/12
Engineering Deptt. M. S. J.
The above does not relieve the contractor from their contractual obligations

PURCHASER : JABALPUR TRANSMISSION COMPANY LIMITED
CONTRACTOR : UNITECH POWER TRANSMISSION LIMITED
TENDER SPECIFICATION NO : JTCL/02/001
PROJECT : 765 KV D/C DHARAMJAYGARH-JABALPUR TRANSMISSION LINE (PKG-C2)

STANDARD	AS ABOVE	TOLERANCE	AS ABOVE
ISO 9001:2008	REV. DATE	REV. DESCRIPTION	U.T.S. 70 KN.
IAC	701, CENTRAL PLAZA	2/6, SARAT BOSE ROAD, KOLKATA-20, INDIA.	DRAWN <u>Amrta</u>
TITLE:	STRAIN ASSEMBLY COMPRESSION TYPE	FOR 7/3.66mm EARTHWIRE	CHECKED <u>Amrta</u>
			APPROVED <u>Amrta</u>
			UNIT: mm SCALE: NTS
			DATE : 13.12.2012
			DRG. NO. GSSA-9



IAC ELECTRICALS PRIVATE LIMITED

701 CENTRAL PLAZA ; 2/6 SARAT BOSE ROAD ; CALCUTTA - 700 020, INDIA
 PHONES: 2485 8814/15/16/17 ; GRAM: INDASIATIC ; FAX: 91 33 2485 9974/8820
 E-mail: info@iacelectricals.com ; Website: www.iacelectricals.com



ISO 9001 : 2008

STANDARD GUARANTEED TECHNICAL PARTICULARS OF ACCESSORIES FOR 765 KV HEXA ZEBRA & 7/3.66 mm EARTHWIRE

4.0 Mid span compression Joint for ACSR Zebra Conductor				
Sl.	Description	Unit	Particulars/ Value	
			<u>Aluminium Sleeves</u>	<u>Steel Sleeves</u>
1.	Material of Joint		Aluminium of Purity 99.5%	Mild Steel (Fe-410, IS:2062)
2.	Range of Hardness of the Steel Sleeve (Brinnel Hardness)	BHN	100 to 200	
3.	Dimension of sleeve Before compression		<u>Aluminum sleeve</u>	<u>Steel Sleeves</u>
i)	Inside diameter	mm	31.00 ± 0.5	10.00 ± 0.2
ii)	Outside diameter	mm	48.00 ± 1.0	20.00 ± 0.5
iii)	Length	mm	710 ± 5	241 ± 5
4.	Dimensions of Sleeve after compression			
i)	Outside dimension (Corner to corner)	mm	47.00 ± 0.5	19.0 ± 0.5
ii)	Outside dimension (face to face)	mm	41.00 ± 0.5	16.0 ± 0.5
5.	Slip strength	KN	123.8	
6.	Maximum resistance of the compressed unit expressed, as percentage of the resistance of equivalent length of bare conductor.	%	75	
7.	Minimum corona Extinction voltage kV (rms) under dry condition	kV	510	
8.	Maximum Radio Interference Voltage at 1 MHz for phase to earth voltage of 510 kV (rms) under dry condition	Micro Volts	1000	
9.	Galvanising			
a)	Minimum Weight of Zinc coating for steel parts	gm/m ²	610	
b)	Purity of Zinc coating for steel parts	%	99.95 (IS 209) or 98.5 (IS 13229)	
c)	Min. No. of dips in standard preece test the ferrous parts can withstand.	No	a) Fasteners : 4 dips of 1 min b) Spring washers : 3 dips of 1 min c) All others : 6 dips of 1 min	

DATE : 05.12.2012

For IAC ELECTRICALS PVT. LTD.

JABALPUR TRANSMISSION COMPANY LTD.
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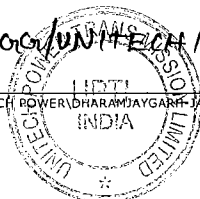
Date : 17.12.12

Engineering Dept. JABALPUR TRANSMISSION COMPANY LTD 765 KV/UNT ECH POWER/DHARAMDAYGARH JABALPUR/GTP/GTP-765 KV -HEX ZEBRA.doc

Page No. : 1 of 8

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BRIJ MOHAN GARODIA
 DIRECTOR TECHNICAL





IAC ELECTRICALS PRIVATE LIMITED

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ISO 9001 : 2008

4.1	Repair sleeve for ACSR Zebra Conductor		
Sl.	Description	Unit	Particulars/ Value
1.	Material		Aluminium of Purity 99.5%
2.	Dimension of Aluminum sleeve Before compression		
i)	Inside diameter	mm	31.00 ± 0.5
ii)	Outside diameter	mm	48.00 ± 1.0
iii)	Length	mm	275.00 ± 5.0
3.	Dimensions of Aluminum Sleeve After compression		
i)	Outside dimension (Corner to corner)	mm	47.00 ± 0.5
ii)	Outside dimension (face to face)	mm	41.00 ± 0.5
4.	Minimum corona Extinction voltage kV (rms) under dry condition	kV	510
5.	Maximum Radio Interference Voltage at 1 MHz for phase to earth voltage of 510 kV (rms) under dry condition	Micro Volts	1000

DATE : 05.12.2012

For IAC ELECTRICALS PVT. LTD.



Brij Mohan Garodia

BRIJ MOHAN GARODIA
DIRECTOR TECHNICAL

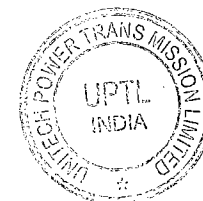
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ISO 9001 : 2008

4.2 T-connector for ACSR Zebra Conductor			
Sl.	Description	Unit	Particulars/ Value
1.	Material		Extruded Aluminium (99.5% Purity)
2.	Dimension of Aluminum sleeve Before compression		
	i) Inside diameter	mm	31.0 ± 0.5
	ii) Outside diameter	mm	48.0 ± 1.0
	iii) Length	mm	400.00 ± 5.0
3.	Dimensions of Aluminum Sleeve after compression		
	i) Outside dimension(Corner to corner)	mm	47.0 ± 0.5
	ii) Outside dimension (face to face)	mm	41.0 ± 0.5
4.	Axial tensile strength of welded portion of T-connector	KN	30
5.	Maximum resistance of the compressed unit expressed, as percentage of the resistance of equivalent length of bare conductor.	%	75
6.	Minimum corona Extinction voltage kV (rms) under dry condition	kV	510
7.	Maximum Radio Interference Voltage at 1 MHz for phase to earth voltage of 510 kV (rms) under dry condition	Micro Volts	1000

DATE : 05.12.2012

For IAC ELECTRICALS PVT. LTD.



Brij Mohan Garodia

BRIJ MOHAN GARODIA
DIRECTOR TECHNICAL

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ISO 9001 : 2008

4.4 Mid span compression Joint for 7/3.66 mm GS Earth wire					
Sl.	Description	Unit	Particulars/ Value		
			<u>Aluminium / Filler . Sleeve</u>	<u>Steel Sleeve</u>	
1.	Material of Joint		Aluminium of minimum purity 99.5%	Mild Steel(Fe-410, IS:2062)	
2.	Range of Hardness of the steel sleeve (Brinell hardness)	BHN	100 to 200		
3.	Weight of Zinc coating	gm/m ²	610		
4.	Dimension of sleeve Before compression				
			<u>Aluminium Sleeve</u>	<u>Steel Sleeve</u>	<u>Alu filler sleeve</u>
i)	Inside diameter	mm	22.00 ± 0.5	11.50 ± 0.2	11.50 ± 0.2
ii)	Outside diameter	mm	30.00 ± 0.5	21.00 ± 0.5	21.00 ± 0.5
iii)	Length	mm	400 ± 5	230 ± 5	60 ± 5
5.	Dimensions of Sleeve after compression				
			<u>Aluminium Sleeve</u>	<u>Steel Sleeve</u>	
i)	Outside dimension(Corner to Corner)	mm	29.40 ± 0.5	20.20 ± 0.5	
ii)	Outside dimension (face to face)	mm	25.00 ± 0.5	17.50 ± 0.5	
iii)	Length	mm	435 (approx)	262 (approx)	
6.	Slip strength	KN	65		
7.	Maximum resistance of the compressed unit expressed, as percentage of the resistance of equivalent length of bare Earthwire	%	75		

DATE : 05.12.2012

For IAC ELECTRICALS PVT. LTD.



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BRIJ MOHAN GARODIA
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ISO 9001 : 2008

4.5 Repair Sleeves for 7/3.66 mm GS Earth wire			
Sl.	Description	Unit	Particulars/ Value
1.	Material of Joint		Mild Steel (Fe-410, IS:2062)
2.	Range of Hardness of the steel sleeve (Brinnel hardness)	BHN	100 to 200
3.	Weight of Zinc coating	gm/m ²	610
4.	Dimension of sleeve Before compression		
i)	Inside diameter	mm	20.3 ± 1
ii)	Outside diameter	mm	25.5 ± 1
iii)	Length	mm	150 ± 5
5.	Dimensions of Sleeve after compression		
i)	Outside dimension(Corner to Corner)	mm	20.2 ± 0.5
ii)	Outside dimension (face to face)	mm	17.5 ± 0.5
iii)	Length	mm	180 ± 5
6.	Slip strength	KN	65
7.	Maximum resistance of the compressed unit expressed, as percentage of the resistance of equivalent length of bare Earthwire	%	75

4.6 Flexible Copper Bond for 7/3.66 mm GS Earth wire			
Sl.	Description	Unit	Particulars/ Value
1.	Stranding		37/7/0.417
2.	Cross sectional area	Sq.mm	35.0
3.	Minimum copper equivalent area	Sq.mm	34
4.	Length of copper cable	mm	500 ± 5
5.	Material of lugs		Tinned copper
6.	Bolt Size		
i)	Diameter	mm	16
ii)	Length	mm	40

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For IAC ELECTRICALS PVT. LTD.

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 DIRECTOR TECHNICAL





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ISO 9001 : 2008

4.7 Vibration Damper for 7/3.66 mm GS Earth wire			
Sl.	Description	Unit	Particulars/ Value
1.	Type of Damper		4R-Stockbridge type
2.	Materials of components		
	a) Damper masses		Cast iron duly hot dip galvanised
	b) Clamp		Aluminum alloy 4600
	c) Messenger cable		High tensile strength galvanized steel
3.	Number of strands in stranded messenger cable	Nos.	19
4.	Minimum ultimate tensile strength of stranded messenger cable	Kg/mm ²	135
5.	Slip strength of stranded messenger cable (mass pull off)	kN	2.5
6.	Slipping strength of damper clamp		
	(a) Before fatigue test	kN	2.5
	(b) After fatigue test	kN	2
7.	Resonance frequencies	Hz	(F1 =16 , F2 =23 , F3 =38 ,F4 =50) +2
8.	Percentage variation in reactance after fatigue test in comparison with that . before fatigue test	%	+/-40 (Maximum)
9.	Percentage variation in power dissipation after fatigue test in comparison with that before fatigue test	%	+/-40 (Maximum)

4.8 Suspension Clamp for 7/3.66 mm GS Earth wire			
Sl.	Description	Unit	Particulars/ Value
1.	Material of components		
	(a) Shackle		Forged Steel
	(b) Clamp Body & Keeper		Malleable cast iron
	(c) U- Bolt		Mild Steel
2.	Total Drop (Maximum)	mm	150
3.	Breaking Strength (Minimum)	kN	25
4.	Slipping Strength	kN	12 to 17
5.	Galvanizing		
a)	Min. Wgt. of Zinc Coating for Steel Parts	gm/m ²	610
b)	Purity of Zinc used for galvanizing	%	99.95 %
c)	Min. No. of dips in standard preece test the ferrous parts can withstand.	Nos	a) Fasteners : 4 dips of 1 min b) Spring washers : 3 dips of 1 min c) All others : 6 dips of 1 min

DATE : 05.12.2012

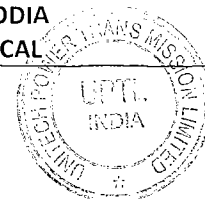
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 E-mail : info@iacelectricals.com ; Website : www.iacelectricals.com



ISO 9001 : 2008

4.9 Tension Clamp for 7/3.66 mm GS Earth wire					
Sl.	Description	Unit	Particulars/ Value		
1.	Material of components				
	(i) Anchor Shackle		Forged Steel		
	(ii) Compression Clamp				
	a) Steel Sleeve		Mild Steel		
	b) Aluminium sleeve		Aluminium of purity 99.5%		
	c) Aluminium Filler sleeve		Aluminium of purity 99.5%		
3.	Range of Hardness of the steel sleeve (Brinell hardness)	BHN	120-200		
4.	Dimension of sleeve Before compression				
			<u>Aluminium Sleeve</u>	<u>Steel Sleeve</u>	<u>Alu filler sleeve</u>
i)	Inside diameter	mm	22.00 ± 0.5	11.50 ± 0.2	11.50 ± 0.2
ii)	Outside diameter	mm	30.00 ± 0.5	21.00 ± 0.5	21.00 ± 0.5
iii)	Length	mm	215 ± 5	230 ± 5	25.0 ± 1.0
5.	Dimensions of Sleeve after compression				
			<u>Aluminium Sleeve</u>	<u>Steel Sleeve</u>	
i)	Outside dimension(Corner to Corner)	mm	29.40 ± 0.5	20.20 ± 0.5	
ii)	Outside dimension (face to face)	mm	25.0 ± 0.5	17.50 ± 0.5	
6.	Slip strength	KN	65		
7.	Minimum Breaking strength of assembly (excluding clamp)	KN	70		
8.	Compression Pressure	Ton	100		
9.	Galvanising				
a)	Minimum Weight of Zinc Coating for Steel Parts	gm/m ²	610		
b)	Purity of Zinc used for galvanising	%	99.95 %		
c)	Min. No. of dips in standard preece test the ferrous parts can withstand.	Nos	a) Fasteners : 4 dips of 1 min b) Spring washers : 3 dips of 1 min & c) All others : 6 dips of 1 min		

DATE : 05.12.2012

For IAC ELECTRICALS PVT. LTD.



Brij Mohan Garodia

BRIJ MOHAN GARODIA
DIRECTOR TECHNICAL

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Phone : +91-11-49962200
Fax : +91-11-49962288
www.sterlitetechnologies.com

To,
Mr.R. Ranjan,
M/s Lanco Infratech Ltd.
EPC Division, Plot No 404-405,
Udyog Vihar, Phase-III
Gurgaon- Haryana

Ref No: SGL/JTCL/ENGG/LANCO/15
Dated: 18th Jan'13

Subject: Approval of accessories drawings of 765KV D/C Hexa ACSR Zebra & 7/3.66mm earth-wire.

Dear Sir,

This is in reference to conductor & earth-wire accessories drawings submitted for 765KV Hexa ACSR Zebra & 7/3.66mm earth-wire for our approval. We have examined the same & found generally in order. We are hereby conveying our approval on the below mentioned documents/drawings:

Sr. No.	Description	Drawing No.	Rev. No.
1.	MSCJ for ACSR Zebra conductor	20044P	1
2.	Repair Sleeve for ACSR Zebra conductor	20050P	0
3.	Hex Rigid Spacer for ACSR Zebra conductor	20061A/P	0
4.	Suspension Assembly for 7/3.66mm earth-wire	20060P	0
5.	Tension Assembly for 7/3.66mm earth-wire	20059P	1
6.	MSCJ for 7/3.66mm earth-wire	20047P	1
7.	Repair Sleeve for 7/3.66mm earth-wire	20053P	1
8.	Flexible Copper Bond for 7/3.66mm earth-wire	20048P	1
9.	Vibration damper for 7/3.66mm earth-wire	20049P	1

Approval conveyed herein neither relieve M/s LANCO of his contractual obligation & his responsibilities for correctness of dimension , materials of construction , weights ,designed details , assembly fits, performance particulars & conformity of the supplies with the Indian statutory laws as may be applicable , nor does it limit the JTCL rights under the contract.

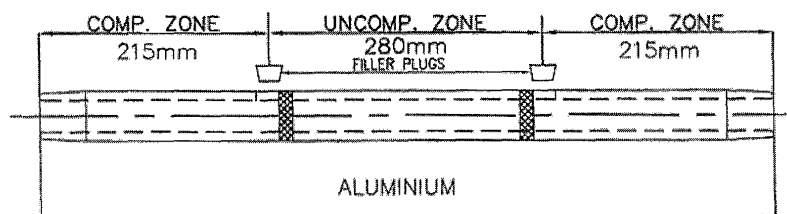
Regards


Bigyan Parija
Engineer in Chief - Transmission Line

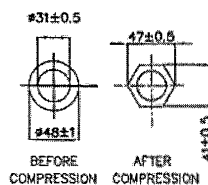
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1. Mr. Jaganmohan Rao along with Encl

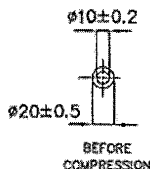
Encl: As above



BEFORE COMPRESSION : 710 ± 5
AFTER COMPRESSION : 760 (Approx)



BEFORE COMP.: 241 ± 5
AFTER COMP. : 265 (Approx)



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3.	FILLER PLUG	ALUMINIUM ALLOY	2
2.	STEEL SLEEVE	GALVANISED STEEL (Fe 410 IS:2062)	1
1.	ALUMINIUM SLEEVE	EXT.ALU.TUBE (99.5%)	1
SL.	DESCRIPTION	MATERIAL	QTY.

TECHNICAL DATA :-

- ALL DIMENSIONS ARE IN mm.
- COMPRESSION PRESSURE : 100 TONS
- SUP STRENGTH : 124KN (95% OF UTS OF CONDUCTOR)
- HARDNESS RANGE OF THE STEEL SLEEVE : 100-200BHN. (Brinell Hardness)
- RESISTANCE LESS THAN 75% OF RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR
- RIV AT 510 KV(rms) (DRY) BELOW 1000 MICRO VOLT.
- MID SPAN COMPRESSION JOINT CONFORM TO JTCL SPECN/ IS:2121(PART II),1981
- ALL FERROUS PARTS ARE HOT DIP GALVANISED TO JTCL SPECN.
- MIN.CORONA EXTINCTION VOLTAGE 510 KV.(rms)(DRY)
- MARKING : SUP -ACSR ZEBRA
- MATERIAL WILL CONFORM TO : JTCL SPECN.

Project: Tower Package for 765kV D/C Dharanjoygarh-Jabalpur Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)
CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

OWNER: Jabalpur Transmission Company Limited
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"WANSARWAR" Scheme No. 14/Plot No-523, Gharti Chowk, Vijay Nagar, JABALPUR - 482002

Contractor: **LANCO** LANCO INFRA TECH LIMITED
(CONSTRUCTION DIVISION)
PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

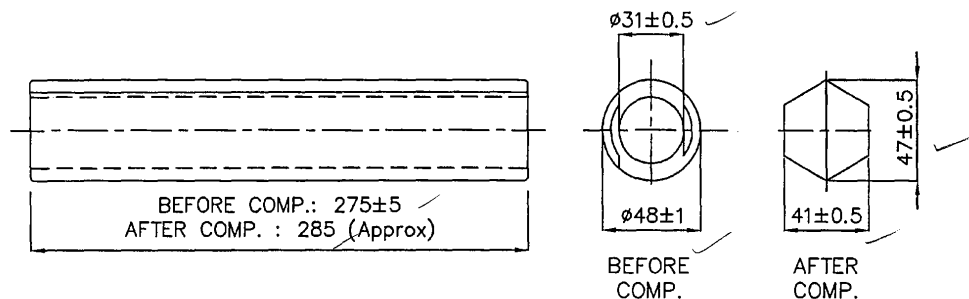
SUPREME & CO.PVT.LTD.
P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL
TEL : (033) 2651-6701-05 FAX : (033) 2651-6705/4792
Email : sales@supreme.in www.supreme.in

Title : 765KV. MID SPAN COMPRESSION JOINT
SUITABLE FOR ACSR ZEBRA(Ø28.62)

DRN. BY.:	R.S.D.	TOLERANCE:	DRG.NO.:
CHKD. BY.:	A.K.P.	UNIT :- MM	20044P
APPVD. BY.:	H.K.A.	SCALE :- N.T.S	DATE: 21.12.12

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN m.m. ✓
- ~~2. DIMENSIONAL TOLERANCE :-~~ ✓
3. COMPRESSION PRESSURE : 100 TONS ✓
4. REPAIR SLEEVE CONFORM TO JTCL SPECN./IS:2121(PART II),1981 ✓
5. RESISTANCE LESS THAN 75% OF RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR ✓
6. MIN.CORONA EXTINCTION VOLTAGE 510 KV.(rms)(DRY) ✓
7. RIV AT 510 KV(rms) (DRY) BELOW 1000 MICRO VOLT. ✓
8. MIN.FAILING LOAD OF SLEEVE AFTER COMPRESSION SHOULD BE ABOVE 95% OF UTS OF CONDUCTOR ✓
9. MARKING : SUP -ACSR ZEBRA ✓
10. MATERIAL WILL CONFORM TO : JTCL SPECN. ✓



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1.	REPAIR SLEEVE	1 SET	EXT.ALU SECTION(99.5%)
SI.	I T E M	QTY.	MATERIAL

Project: Tower Package for 765kV D/C Dharamjaygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)
CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

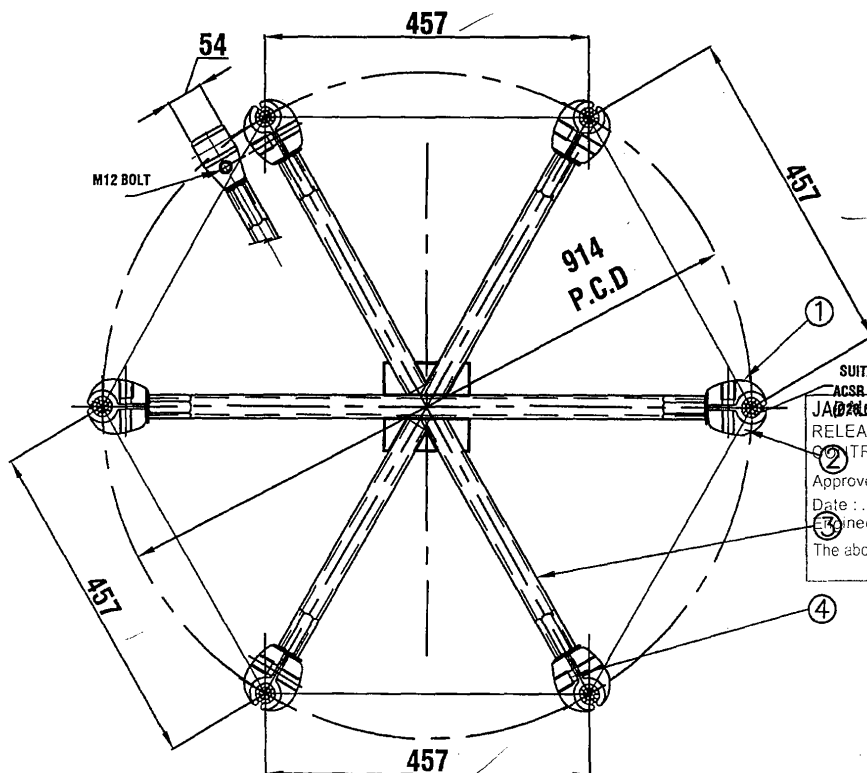
OWNER: **Jabalpur Transmission Company Limited**
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"WANSARWAR" Scheme No. 14, Plot No.-523, Ghazi Chowk, Vijay Nagar, JABALPUR - 482002

Contractor:
LANCO LANCO INFRA TECH LIMITED
Always Inspiring (CONSTRUCTION DIVISION)
PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

SUPREME & CO.PVT.LTD.
P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL
TEL : (033) 2651-6701-05, FAX : (033) 2651-6706/4792
Email : sales@supreme.in | www.supreme.in

Title :
765kV. REPAIR SLEEVE FOR ACSR ZEBRA(Ø28.62)

DRN. BY.:	R.S.D	TOLERANCE :	DRG.NO.:
CHKD. BY.:	A.K.P.	UNIT :- MM.	20050P
APPRD. BY.:	H.K.A	SCALE - N.T.S	DATE: 21.12.12



4.	M12 BOLT & NUT	GALV. STEEL	6
3.	MAIN FRAME	ALUMINIUM TUBE	1(SET)
2.	KEEPER	AL.ALLOY A-6 A-6 IS: 617 GDC	6
1.	CLAMP BODY	AL.ALLOY A-6 A-6 IS: 617 GDC	6
SL. NO.	DESCRIPTION	MATERIAL	QTY./SET

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN MM.
2. TENSILE LOAD : 7.0 KN
3. COMPRESSION STRENGTH : 15 KN
4. SLIP STRENGTH OF CLAMP = 6.5 KN
5. MAGNETIC POWER LOSS OF AT SUB CONDUCTOR CURRENT OF 500 AMPERES, 50Hz AC. - BELOW 1 WATT
6. MIN. CORONA EXTINCTION VOLTAGE 510kV (rms)
7. RIV AT 510 KV (DRY) BELOW 1000 MICRO VOLT.
8. RECOMMENDED BOLT TORQUE : 60 N/m
9. GALVANISING WILL CONFORM TO ISS
10. MIN. CORONA EXTINCTION VOLTAGE 510 KV(rms.)

SUITABLE FOR
ACSR ZEBRA

JABALPUR TRANSMISSION COMPANY LTD.
RELEASED FOR CONSTRUCTION

CONTROLLED COPY

Approved Vide Ref. Letter No. 3545-CL/244/LANCO/15

Date : 12/1/13

Engineering Dept.

The above does not release the contractor from their contractual obligations

Project: Tower Package for 765kV D/C Dharamjaygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)

CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

OWNER: Jabalpur Transmission Company Limited
(A Wholly Owned Subsidiary of Sterlite Grid Limited)

"MANSAROVAR" Scheme No. 14/Plot No-523, Ghazil Chowk, Vijay Nagar, JABALPUR - 482002

Contractor:

LANCO LANCO INFRATECH LIMITED
(CONSTRUCTION DIVISION)

Always Inspiring

PLOT NO.404 & 405, Udyog Vihar, Phase-II, GURGAON-122016

SUPREME & CO.PVT.LTD.

P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL

TEL : (033) 2651-6701-05,

FAX : (033) 2651-6706/4792

Email : sales@supreme.in

www.supreme.in

Title :

765KV. HEXAGONAL RIGID SPACER FOR ACSR ZEBRA(Ø28.62)

DRN. BY.:

R.S.D

TOLERANCE : ±0.5

DRG.NO.: 20081A/P

CHKD. BY.:

A.K.P.

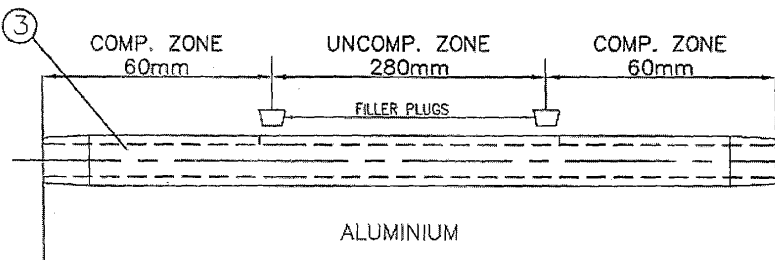
UNIT : MM.

APPVD. BY.:

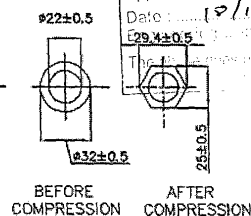
H.K.A

SCALE : N.T.S

DATE: 21.12.12



BEFORE COMPRESSION : 400 ± 5
AFTER COMPRESSION: 430(Approx)



3.	ALUMINIUM SLEEVE	EXT.ALU.TUBE (99.5%)	1
2.	FILLER AL.SLEEVE	EXT.ALU.TUBE (99.5%)	2
1.	STEEL SLEEVE	GALVANISED STEEL(Fe 410 IS:2062)	1
SL.	DESCRIPTION	MATERIAL	QTY.

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN m.m.
2. COMPRESSION PRESSURE : 100 TONS
3. SUP STRENGTH : 65 KN.
4. HARDNESS OF THE STEEL SLEEVE= 100-200 BHN
5. RESISTANCE LESS THAN 75% OF RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR
6. MID SPAN COMPRESSION JOINT CONFORM TO JTCL SPECN/ IS:2121(PART II),1981
7. ALL FERROUS PARTS ARE HOT DIP GALVANISED TO JTCL SPECN./ IS:2633.
8. MARKING : SUP - ACSR ZEBRA

JABALPUR TRANSMISSION COMPANY LTD.
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Approved Vice President No. 364/5 T.C.L./en
Date: 10/1/13
E294±0.5
The contractor shall be responsible for the contractor from their

Project: Tower Package for 765kV D/C Dharamjaygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 68 Kms Approx)
CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

OWNER: Jabalpur Transmission Company Limited
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"MANSAROVAR" Scheme No. 14, Plot No.-523, Gharti Chowk, Vijay Nagar, JABALPUR - 482002

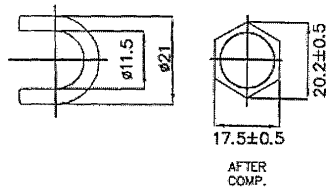
Contractor:
LANCO LANCO INFRA TECH LIMITED
Always inspiring (CONSTRUCTION DIVISION)
PLOT NO.404 & 405, Udaya Vihar, Phase-III, GURGAON-122016

SUPREME & CO.PVT.LTD.			
P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL			
TEL : (033) 2651-6701-05,	FAX : (033) 2651-6706/4792	01	09.01.11
Email : sales@supreme.in	www.supreme.in	REV.	DATE

Title : 765KV. MID SPAN COMPRESSION JOINT
SUITABLE FOR 7/3.66mm EARTHWIRE

DRN. BY.:	R.S.D	TOLERANCE: ~~0.005~~	DRG.NO.: 20047P
CHKD. BY.:	A.K.P.	UNIT: - MM.	
APPVD. BY.:	H.K.A	SCALE - N.T.S	DATE: 21.12.12

Before Compression = 150 ± 5
 After Compression 170 (Approx)



JABALPUR TRANSMISSION COMPANY LTD.
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Approved Vide Ref. Letter No. *564/5.T.S.C./ENGA/LANCO/15*
 Date : *18.12.12*
 Engineering Deptt. *H.K.A.*
 The above does not relieve the contractor from their contractual obligations

1.	REPAIR SLEEVE	MILD STEEL ,H.D.G (IS: 2633/2629)
SL.	DESCRIPTION	MATERIAL

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN m.m.
2. SLIP STRENGTH :- 95% OF UTS OF EARTHWIRE
3. RESISTANCE - LESS THAN 75% OF RESISTANCE OF EQUIVALENT LENGTH OF CONDUCTOR (AS PER IS:2121, Part - 2)
4. MARKING : SUP

Project: Tower Package for 765kV D/C Dharamjaygarh-Jabalpur
 Transmission Line, Package-C1
 (Route Line Length of 88 Kms Approx)
 CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

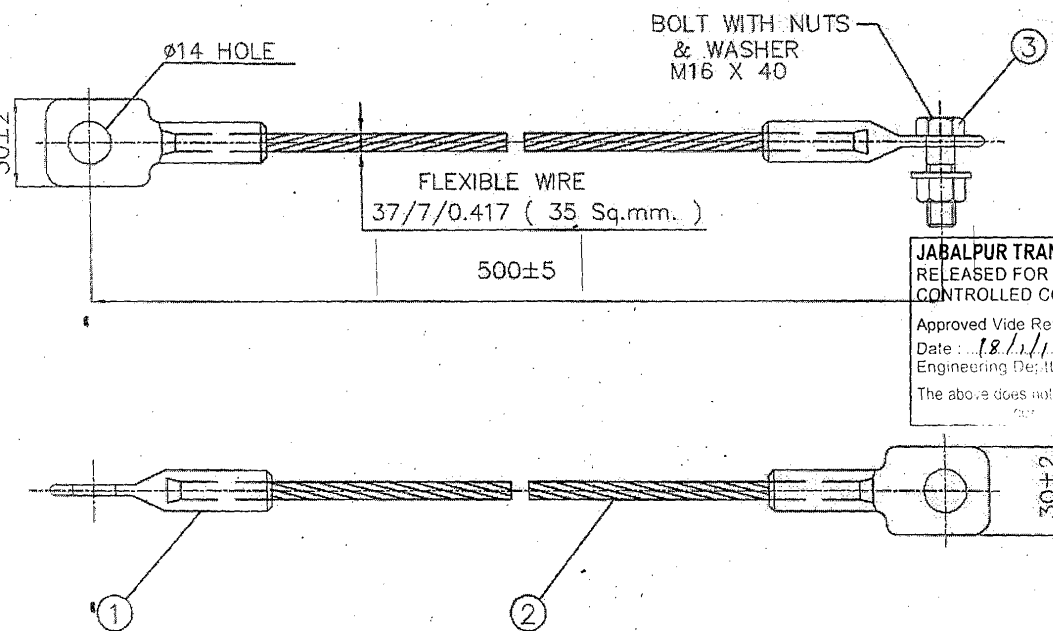
OWNER: **Jabalpur Transmission Company Limited**
 (A Wholly Owned Subsidiary of Sterlite Grid Limited)
 "MANISAROVAR" Scheme No. 14, Plot No.-523, Ghosh Chowk, Vijay Nagar, JABALPUR - 482002

Contractor:
LANCO LANCO INFRA TECH LIMITED
 (CONSTRUCTION DIVISION)
 Always Inspiring
 PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

SUPREME & CO.PVT.LTD.
 P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL
 TEL : (033) 2691-6701-05, FAX : (033) 2691-6705/4792
 Email : sales@supreme.in, www.supreme.in

Title : **765kV. REPAIR SLEEVE
 FOR 7/3.66mm EARTHWIRE**

DRN. BY. :	R.S.D	TOLERANCE :	DRG.NO.:	20053P
CHKD. BY. :	A.K.P.	UNIT : - MM.		
APPVD. BY. :	H.K.A	SCALE : N.T.S	DATE:	21.12.12



3.	BOLT, NUT & WASHER	STEEL, H.D.G IS: 2633	1 SET
2.	EARTHING BOND	TINNED COPPER STRANDED WIRE	1
1.	COMPRESSED LUG	TINNED COPPER	2
SL.	DESCRIPTION	MATERIAL	QTY.

TECHNICAL DATA :-

1. ALL DIMENSIONS ARE IN m.m.
2. ALL FERROUS PARTS ARE HOT DIP GALVANISED TO JTCL SPECN/IS:2633/1367 PT-13
3. SLIP STRENGTH : 3 KN.
4. SPRING WASHER - ELECTRO GALVANISED
5. RESISTANCE : 0.001429 OHMS.(MAX.)

JABALPUR TRANSMISSION COMPANY LTD.
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CONTROLLED COPY

Approved Vide Ref. Letter No. *Sub/J.T.C.L./C-64/LANCO/15*
Date : *12.11.12*
Engineering Deptt.
The above does not release the contractor from their

Project: Tower Package for 765KV D/C Charamjoygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)
CA No-7220000010 (Supply) & 7240000027,28 (Civil & Erection)

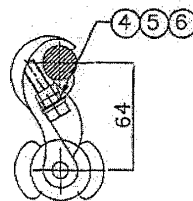
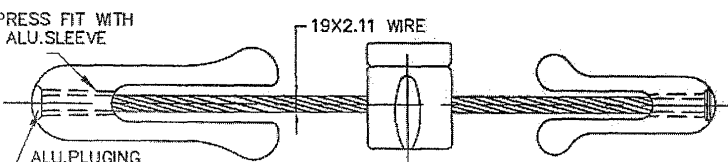
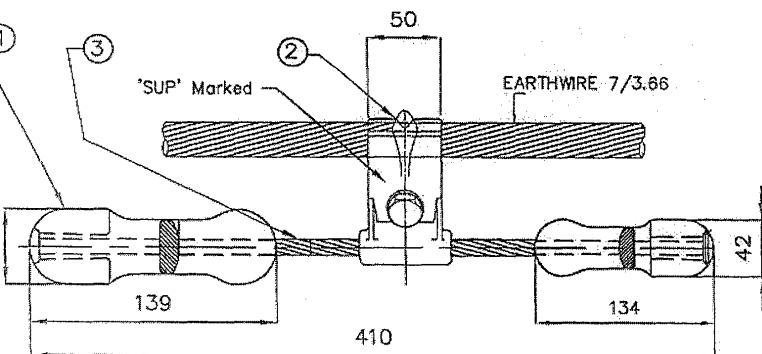
OWNER: **Jabalpur Transmission Company Limited**
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"WARSARVAR" Scheme No. 14, Plot No.-523, Ghosi Chok, Nijy Nagar, JABALPUR - 482002

Contractor:
LANCO **LANCO INFRATECH LIMITED**
(CONSTRUCTION DIVISION)
PLOT NO.404 & 405, Udyog Vinay, Phase-III, SURGAON-122015

LOA NO.:
SUPREME & CO.PVT.LTD.
P-200 BENARAS ROAD, HOWRAH-711 103, WEST BENGAL
TEL : (033) 2651-6701-05, FAX : (033) 2651-6706/4792
Email : sales@supreme.in, www.supreme.in

Title : **765KV. COPPER EARTH BOND**

DRN. BY. :	R.S.D	TOLERANCE :	DRG.NO.:	20048P
CHKD. BY. :	A.K.P.	UNIT : - MM	DATE:	21.12.13
APPVD. BY. :	H.K.A	SCALE : H.T.S		



JABALPUR TRANSMISSION COMPANY LTD.
RELEASED FOR CONSTRUCTION
CONTROLLED COPY
Approved Vide Ref. Letter No. *56/L/STCL/2004/LANCO/15*
Date : *18.11.13*
Engineering Deptt. *Manoj*
The above does not relieve the contractor from their contractual obligations

TECHNICAL DATA :-

1. All Dimensions are in mm.
2. Hot Dip Galv. as per IS-2633.
3. Clamp & Keeper - Alu. Alloy (Gravity Die Casting)
4. Bolt - Mild Steel (Hot Dip Galvanised)
5. Slip strength of Clamp - 2.0 kN
6. Mass pull off - 2.5 kN.
7. Bolt Torque - 3 kg. m
8. UTS of Messenger Cable = 135kg./sq.mm.
9. Resonance Frequencies Range = 10 to 60 Hz.

6.	Spring Washer	1	Sp.Steel Elec.Galv.	
5.	Plain Washer	1	Galv.Steel	
4.	M.S. Bolt(M16)	1	Galv.Steel	
3.	Messenger Cable 19/2.11=10.55 DIA	1	Hi-Strength Galv.Steel Wire	135 KG/SQ.MM
2.	Hook & Cover Half Clamp	1	Al.Alloy(GR.4600)	IS:617
1.	Damper Mass	2	Cast Iron(H.D.G)	IS:210
Sl.	I T E M	QTY.	MATERIAL	U.T.S

Project: Tower Package for 765kV D/C Dharanajygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)
CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

OWNER: **Jabalpur Transmission Company Limited**
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"WANSAROWR" Scheme No. 14, Plot No.-523, Ghoshi Chowk, Vijay Nagar, JABALPUR - 492002

Contractor:
LANCO INFRATECH LIMITED
(CONSTRUCTION DIVISION)
PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

SUPREME & CO.PVT.LTD.

P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL

TEL : (033) 2651-6701-05,

FAX : (033) 2651-6706/4792

Email : sales@supreme.in

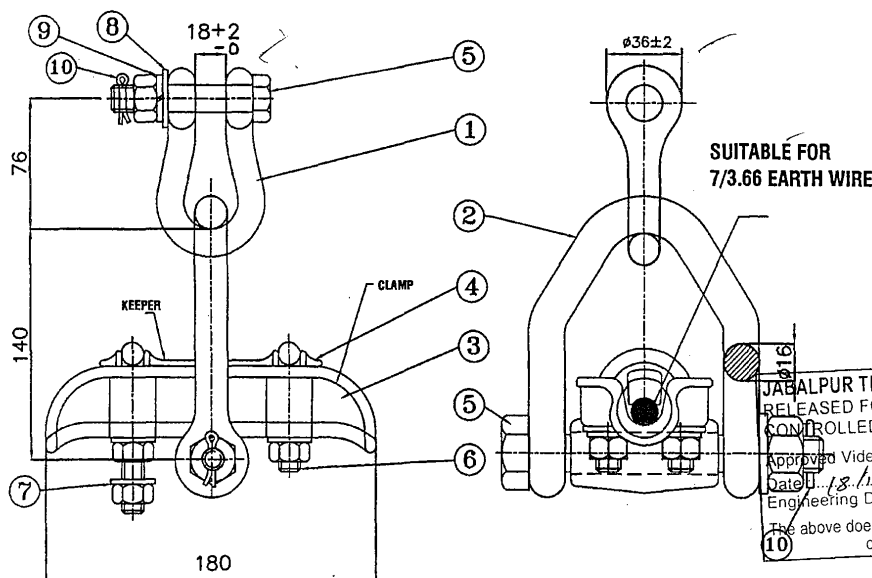
www.supreme.in

01. 09.01.13

REV. DATE

Title : **765KV. '4R' TYPE VIBRATION DAMPER
SUITABLE FOR 7/3.66mm EARTH WIRE**

DRN. BY. :	R.S.D.	TOLERANCE :	DRG.NO.:	20049P
CHKD. BY. :	A.K.P.	UNIT : - MM.		
APPVD. BY. :	H.K.A	SCALE : N.T.S	DATE:	21.12.12



TECHNICAL DATA :-

1. All Dimensions are in mm.
2. ~~General Tolerance : ± 0.5% unless otherwise specified~~
3. All ferrous parts are HDG:IS-2633 IS-1367 (P-13) except spring washer electro galv.
4. Total Drop (Max.) = 150mm
5. Bolt Tightening Torque: 2.7 KG-MTR.
6. Slip strength of Clamp = 12 TO 17 kN.
7. Breaking Strength of Clamp (Min.) = 25 kN.
8. U.T.S of Fitting = 68.4 kN.

JABALPUR TRANSMISSION COMPANY LTD.
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Approved Vide Ref. Letter No. *Sub/5.T.C./J.T.C./LANCO/15*
Date *18.11.13*
Engineering Deptt. *Manu*
The above does not relieve the contractor from their
contract obligations.

Project: Lower Package for 765kV D/C Dharanjaygarh-Jabalpur
Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)

CA No-7220000018 (Supply) & 7240000027,28 (Civil & Erection)

OWNER: **Jabalpur Transmission Company Limited**
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"MANSAROVAR" Scheme No. 14, Plot No-523, Charhi Chok, Vijay Nagar, JABALPUR - 482002

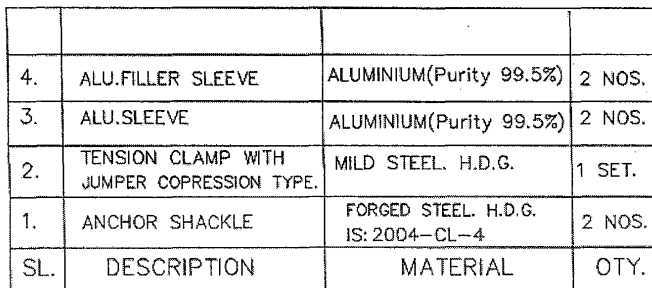
Contractor:
LANCO LANCO INFRA TECH LIMITED
(CONSTRUCTION DIVISION)
Always Inspiring
PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

SUPREME & CO.PVT.LTD.
P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL
TEL : (033) 2651-6701-05, FAX : (033) 2651-6706/4792
Email : sales@supreme.in www.supreme.in

Title : **765kV. EARTHWIRE SUSPENSION ASSEMBLY
FOR 7/3.66 EARTHWIRE**

DRN. BY.:	R.S.D	TOLERANCE: ± 0.5%	DRG.NO.: 20060P
CHKD. BY.:	A.K.P.	UNIT : - MM.	
APPVD. BY.:	H.K.A	SCALE - N.T.S	
DATE: 21.12.12			

SL.NO.	DESCRIPTION	MATERIAL	QTY.
10	SPLIT PIN	STAINLESS STEEL	2
9	SPRING WASHER	SPRING STEEL	4
8	PLAIN WASHER FOR SHACKLE	STEEL, H.D.G	2
7	PLAIN WASHER FOR U-BOLT	STEEL, H.D.G	5
6	M12 'U' BOLT & NUT	MILD STEEL, H.D.G	2/5
5	M16 BOLT & NUT	STEEL, H.D.G	1+1
4	KEEPER	M.C.I H.D.G	1
3	SUSPENSION CLAMP	M.C.I H.D.G	1
2	BOW SHACKLE	FORGED STEEL. H.D.G.	1
1	ANCHOR SHACKLE	FORGED STEEL. H.D.G.	1



DRN. BY.:	R.S.D	TOLERANCE: ~~0.05~~	DRG.NO.: 20059P
CHKD. BY.:	A.K.P.	UNIT : - MM.	
APPVD. BY.:	H.K.A	SCALE - N.T.S	DATE: 21.12.12

To,
Mr. Dinesh Pandey,
M/s Lanco Infrotech Ltd.
EPC Division, Plot No 404-405,
Udyog Vihar, Phase-III
Gurgaon- Haryana

Ref No: SGL/JTCL/ENGG/LANCO/24
Dated: 8th August'13

Subject: Approval of revised MSCJ drawings of 765KV D/C Hexa ACSR Zebra for JTCL T/L.

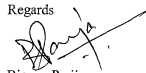
Dear Sir,

This is in reference to samples of MSCJ for ACSR Zebra conductor tested at your works & Type test report of test conducted at CPRI submitted for our approval of MSGJ revised drawing. We have examined the same & found generally in order. We are hereby conveying our approval on the below mentioned documents/drawings:

Sr. No.	Description	Drawing No.	Rev. No.
1.	Revised MSCJ for ACSR Zebra conductor	20044P	3

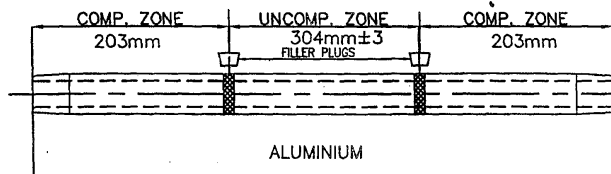
Approval conveyed herein neither relieve M/s LANCO of his contractual obligation & his responsibilities for correctness of dimension , materials of construction , weights ,designed details , assembly fits, performance particulars & conformity of the supplies with the Indian statutory laws as may be applicable , nor does it limit the JTCL rights under the contract.

Regards

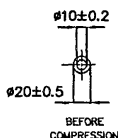
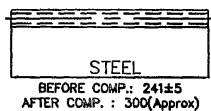
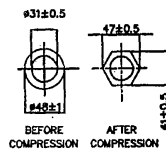

Bigyan Parija
Head Engineering- Grid Business

Copy to:

1. Mr. Jagannmohan Rao along with Encl
Encl: As above



BEFORE COMPRESSION : 710±5
AFTER COMPRESSION : 760 (Approx)



JABALPUR TRANSMISSION COMPANY LTD.
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CONTROLLED COPY

Approved Mr. [Signature] Letter No. 844/JTCL/ANCO/24
Date: 8/8/13
Engineering Deptt.

The above does not relieve the contractor from their contractual obligations



3.	FILLER PLUG	ALUMINIUM ALLOY	2
2.	STEEL SLEEVE	GALVANISED STEEL (Fe 410 IS: 2062)	1
1.	ALUMINIUM SLEEVE	EXT. ALU. TUBE (99.5%)	1
SL.	DESCRIPTION	MATERIAL	QTY.

TECHNICAL DATA :-

- ALL DIMENSIONS ARE IN mm.
- COMPRESSION PRESSURE : 100 TONS
- SLIP STRENGTH : 124KN (95% OF UTS OF CONDUCTOR)
- HARDNESS RANGE OF THE STEEL SLEEVE : 100-200BHN. (Brinell Hardness)
- RESISTANCE LESS THAN 75% OF RESISTANCE OF THE EQUIVALENT LENGTH OF CONDUCTOR
- RIV AT 510 KV(rms) (DRY) BELOW 1000 MICRO VOLT.
- MID SPAN COMPRESSION JOINT CONFORM TO JTCL SPECN/ IS:2121(PART II),1981
- ALL FERROUS PARTS ARE HOT DIP GALVANISED TO JTCL SPECN.
- MIN. CORONA EXTINCTION VOLTAGE 510 KV(rms)(DRY)
- MARKING : SUP -ACSR ZEBRA
- MATERIAL WILL CONFORM TO : JTCL SPECN.

Project: Tower Package for 765kV D/C Dharanajygarh-Jabalpur Transmission Line, Package-C1
(Route Line Length of 88 Kms Approx)
CA No-7220000019 (Supply) & 7240000027.28 (Civil & Erection)

OWNER: **Jabalpur Transmission Company Limited**
(A Wholly Owned Subsidiary of Sterlite Grid Limited)
"MANSARVAR" Scheme No. 14/Plot No.-523, Charvi Chowk, Vijay Nagar, JABALPUR - 482002

Contractor: **LANCO** **LANCO INFRA TECH LIMITED**
(CONSTRUCTION DIVISION)
Always Inspiring
PLOT NO.404 & 405, Udyog Vihar, Phase-III, GURGAON-122016

SUPREME & CO. PVT. LTD.
P-200 BENARAS ROAD, HOWRAH-711 108, WEST BENGAL
TEL : (033) 2651-6701-05, FAX : (033) 2651-6706/4792
Email : sales@supreme.in, www.supreme.in

Title : **765KV. MID SPAN COMPRESSION JOINT**
SUITABLE FOR ACSR ZEBRA(Ø28.62)

DRW. BY : R.S.D. TOLERANCE : ±3% DRG.NO.: 20044P
CHKD. BY : A.K.P. UNIT : -MM.
APPRD. BY : H.K.A. SCALE : N.T.S. DATE: 21.12.12