

संदर्भ/Ref : CC-ENGG-C2021001-1001422-T14221-4524-BMDD+25BE

Date : 08/11/2024

From : NITESH KUMAR SINHA
Senior DGM**To :** SKIPPER LTD.
3A loudon Street Kolkata 700017
700017**Cc :** ER**Subject :** Tower Package-TW01 for Indian Portion of New Butwal-Gorakhpur 400kV D/C (Quad) line
LOA Ref : 5002002333/CONSULTANCY GIVEN/DOM/A04-CC CS-5/NOA-I/01,NOA-II/02 Dated 13/06/2023

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : SL/PGCIL/400KV/BUTW-GRKH/DD/+25MBE
Orgn. Drg. No. : C2021001-1001422-T14221-4524-BMDD+25BE
Revision No. : 00
Drg. Title : BILL OF MATERIAL FOR TT DD +25M BE FOR 400 kV D/C WZ-5
(ACSR MOOSE) TL
App. Category : CAT-I
Release Date : 08/11/2024



Scan to verify

Comments : ok**अनुमोदित श्रेणी/App. Category:**

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- CATREL/
REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

NO. OF SHEET : 10

POWER GRID CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

BILL OF MATERIALSINITIAL / FINAL
(GALVANIZED)

STRUCTURE UNIT : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTN. INCLUDING CP @ +0m LEVEL

REF.DRG.NO. : C:ENGG:TL:4524-4ACSR-M-P-11 & 19 (SHEET 1 TO 4)

NOA No. : 5002002333/CONSULTANCY GIVEN/DOM/ A04-CC CS -5/NOA-I/01 Dated 13.06.2023 (Supply) & 5002002333/CONSULTANCY GIVEN/DOM/A04-CC-CS -5/NOA-II/02 Dated 13.06.2023 (Service)

LINE NAME : Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

TOWER COMBINATION :

- 1) DD+25M TOWER BASIC TOWER (+) +0M BE (+) +25M BE

NOTE FOR PREFIX	
SP4BDD XXX	FOR M.S
SP4BDD XXXH	FOR H.T

THIS BILL OF MATERIAL IS APPLICABLE FOR MANUFACTURE OF TOWERS
AT FACTORY OF SKIPPER LIMITED, HOWRAH

SUMMARY OF WEIGHTS

SL.NO.	DESCRIPTION	WEIGHT OF +25M BODY EXTN. INCLUDING CP @ +0m LEVEL	
1	WT.OF ALL (HT) MEMBERS IN KGS.	35692.26	
2	WT.OF ALL (MS) MEMBERS IN KGS.(INCL. PACK WASHERS)	5791.79	
3	WT.OF BOLT & NUTS IN KGS.	1302.71	
	TOTAL WT. OF STRUCTURES IN KGS.	42786.76	

0	PROTO CORRECTED	04.11.2024	BKL
REV. No.	DESCRIPTION	DATE	INITIAL
PREPARED BY:	CHECKED BY:	VERIFIED BY:	CONTRACTOR
P.KOLE	B.K.LAHA	S.B	SKIPPER LIMITED KOLKATA

WARNING : THIS IS PROPRIETARY ITEM AND DESIGN RIGHT IS STRICTLY RESERVED WITH POWERGRID.UNDER NO CIRCUMSTANCES
THIS DRAWING SHALL BE USED BY ANYBODY WITHOUT PRIOR PERMISSION FROM THE OWNER IN WRITING.

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
1	SP4BDD	2000AH	HL110X110X9		6500	14.95	97.18	1	97.18	
2	SP4BDD	2000H	HL110X110X9		6500	14.95	97.18	1	97.18	
3	SP4BDD	2001H	HL110X110X7		6500	11.85	77.03	2	154.06	
4	SP4BDD	2002H	HL110X110X9		6371	14.95	95.25	2	190.50	
5	SP4BDD	2003H	HL110X110X7		6371	11.85	75.50	2	151.00	
6	SP4BDD	2004AH	HL110X110X9		6500	14.95	97.18	1	97.18	
7	SP4BDD	2004H	HL110X110X9		6500	14.95	97.18	1	97.18	
8	SP4BDD	2005H	HL110X110X7		6500	11.85	77.03	2	154.06	
9	SP4BDD	2006H	HL100X100X7		346	10.73	3.71	4	14.84	
10	SP4BDD	2007H	HL100X100X6		346	9.26	3.20	4	12.80	
11	SP4BDD	2008H	H6 THK.	90	346	47.10	1.47	16	23.52	
12	SP4BDD	2009H	H14 THK.	145	605	109.90	9.64	4	38.56	
13	SP4BDD	2010H	HL200X200X12		527	36.85	19.42	8	155.36	
14	SP4BDD	2011H	H14 THK.	416	527	109.90	24.09	4	96.36	
15	SP4BDD	2012H	H14 THK.	165	527	109.90	9.56	8	76.48	
16	SP4BDD	2013H	HL90X90X5		4323	6.97	30.13	4	120.52	
17	SP4BDD	2014H	HL90X90X5		4323	6.97	30.13	4	120.52	
18	SP4BDD	2015H	HL90X90X5		6500	6.97	45.31	4	181.24	
19	SP4BDD	2016H	HL90X90X5		6500	6.97	45.31	4	181.24	
20	SP4BDD	2017H	HL65X65X5		266	4.98	1.32	8	10.56	
21	SP4BDD	2018H	H5 THK.	72	266	39.25	0.75	16	12.00	
22	SP4BDD	2019H	HL90X90X6		466	8.32	3.88	4	15.52	
23	SP4BDD	2020H	HL75X75X5		6504	5.77	37.53	4	150.12	
24	SP4BDD	2021H	HL45X45X4		1651	2.75	4.54	4	18.16	
25	SP4BDD	2022	L45X45X4		1195	2.75	3.29	4	13.16	
26	SP4BDD	2023	L45X45X4		1195	2.75	3.29	4	13.16	
27	SP4BDD	2024H	HL45X45X4		1837	2.75	5.05	4	20.20	
28	SP4BDD	2025H	HL45X45X4		1837	2.75	5.05	4	20.20	
29	SP4BDD	2026H	HL50X50X4		2318	3.08	7.14	4	28.56	
30	SP4BDD	2027H	HL50X50X4		2318	3.08	7.14	4	28.56	
31	SP4BDD	2028H	H5 THK.	125	131	39.25	0.64	8	5.12	
32	SP4BDD	2029H	HL60X60X4		3263	3.71	12.11	4	48.44	
33	SP4BDD	2030H	HL60X60X4		3263	3.71	12.11	4	48.44	
34	SP4BDD	2031H	HL60X60X4		3385	3.71	12.56	4	50.24	
35	SP4BDD	2032H	HL90X90X5		565	6.97	3.94	4	15.76	
36	SP4BDD	3200H	HL200X200X17		5300	51.40	272.42	2	544.84	
37	SP4BDD	3201H	HL200X200X17		5300	51.40	272.42	2	544.84	
38	SP4BDD	3202H	HL200X200X17		5300	51.40	272.42	4	1089.68	
39	SP4BDD	3203H	HL200X200X17		5600	51.40	287.84	2	575.68	
40	SP4BDD	3204H	HL200X200X17		5600	51.40	287.84	2	575.68	
41	SP4BDD	3205H	HL200X200X17		5600	51.40	287.84	4	1151.36	
42	SP4BDD	3206H	HL200X200X17		3152	51.40	162.01	2	324.02	
43	SP4BDD	3207H	HL200X200X17		3152	51.40	162.01	2	324.02	
44	SP4BDD	3208H	HL200X200X17		3152	51.40	162.01	4	648.04	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
45	SP4BDD	3209H	HL200X200X12		610	36.85	22.48	24	539.52	
46	SP4BDD	3210H	HL200X200X12		610	36.85	22.48	24	539.52	
47	SP4BDD	3211H	H14 THK.	366	610	109.90	24.54	12	294.48	
48	SP4BDD	3212H	H14 THK.	150	610	109.90	10.06	24	241.44	
49	SP4BDD	3213H	H14 THK.	98	336	109.90	3.62	4	14.48	
50	SP4BDD	3214H	H14 THK.	100	336	109.90	3.69	48	177.12	
51	SP4BDD	3215H	H14 THK.	167	336	109.90	6.17	4	24.68	
52	SP4BDD	3216H	H14 THK.	143	336	109.90	5.28	4	21.12	
53	SP4BDD	3217H	H14 THK.	169	406	109.90	7.54	4	30.16	
54	SP4BDD	3218H	HL110X110X8		7200	13.40	96.48	2	192.96	
55	SP4BDD	3219H	HL110X110X8		7203	13.40	96.52	2	193.04	
56	SP4BDD	3220H	HL110X110X8		7203	13.40	96.52	2	193.04	
57	SP4BDD	3221H	HL110X110X8		7200	13.40	96.48	2	192.96	
58	SP4BDD	3222H	HL110X110X6		7200	10.20	73.44	2	146.88	
59	SP4BDD	3223H	HL110X110X6		7203	10.20	73.47	2	146.94	
60	SP4BDD	3224H	HL110X110X6		7203	10.20	73.47	2	146.94	
61	SP4BDD	3225H	HL110X110X6		7200	10.20	73.44	2	146.88	
62	SP4BDD	3226H	HL110X110X8		7100	13.40	95.14	2	190.28	
63	SP4BDD	3227H	HL110X110X8		7100	13.40	95.14	2	190.28	
64	SP4BDD	3228H	HL110X110X8		7100	13.40	95.14	2	190.28	
65	SP4BDD	3229H	HL110X110X8		7100	13.40	95.14	2	190.28	
66	SP4BDD	3230H	HL110X110X6		7100	10.20	72.42	2	144.84	
67	SP4BDD	3231H	HL110X110X6		7100	10.20	72.42	2	144.84	
68	SP4BDD	3232H	HL110X110X6		7100	10.20	72.42	2	144.84	
69	SP4BDD	3233H	HL110X110X6		7100	10.20	72.42	2	144.84	
70	SP4BDD	3234H	HL110X110X8		7056	13.40	94.55	2	189.10	
71	SP4BDD	3235H	HL110X110X8		7057	13.40	94.56	2	189.12	
72	SP4BDD	3236H	HL110X110X8		7057	13.40	94.56	2	189.12	
73	SP4BDD	3237H	HL110X110X8		7056	13.40	94.55	2	189.10	
74	SP4BDD	3238H	HL110X110X6		7056	10.20	71.97	2	143.94	
75	SP4BDD	3239H	HL110X110X6		7057	10.20	71.98	2	143.96	
76	SP4BDD	3240H	HL110X110X6		7057	10.20	71.98	2	143.96	
77	SP4BDD	3241H	HL110X110X6		7056	10.20	71.97	2	143.94	
78	SP4BDD	3242H	HL90X90X6		306	8.32	2.55	8	20.40	
79	SP4BDD	3243H	HL90X90X6		306	8.32	2.55	8	20.40	
80	SP4BDD	3244H	HL90X90X6		306	8.32	2.55	8	20.40	
81	SP4BDD	3245H	HL90X90X6		306	8.32	2.55	8	20.40	
82	SP4BDD	3246H	H14 THK.	80	306	109.90	2.69	16	43.04	
83	SP4BDD	3247H	H6 THK.	204	306	47.10	2.94	16	47.04	
84	SP4BDD	3248H	HL90X90X5		2592	6.97	18.07	4	72.28	
85	SP4BDD	3249H	HL90X90X5		2592	6.97	18.07	4	72.28	
86	SP4BDD	3250H	HL80X80X6		3303	7.36	24.31	4	97.24	
87	SP4BDD	3251H	HL80X80X6		3303	7.36	24.31	4	97.24	
88	SP4BDD	3252H	HL90X90X6		5210	8.32	43.35	3	130.05	
89	SP4BDD	3252AH	HL90X90X6		5210	8.32	43.35	1	43.35	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
90	SP4BDD	3253AH	HL90X90X6	150	5210	8.32	43.35	1	43.35	
91	SP4BDD	3253H	HL90X90X6		5210	8.32	43.35	3	130.05	
92	SP4BDD	3254H	HL80X80X6		3353	7.36	24.68	3	74.04	
93	SP4BDD	3254AH	HL80X80X6		3353	7.36	24.68	1	24.68	
94	SP4BDD	3255AH	HL80X80X6		3353	7.36	24.68	1	24.68	
95	SP4BDD	3255H	HL80X80X6		3353	7.36	24.68	3	74.04	
96	SP4BDD	3256	L80X80X6		3472	7.36	25.55	4	102.20	
97	SP4BDD	3257	L80X80X6		3472	7.36	25.55	4	102.20	
98	SP4BDD	3258	L45X45X4		2837	2.75	7.80	4	31.20	
99	SP4BDD	3259	L45X45X4		2837	2.75	7.80	4	31.20	
100	SP4BDD	3260H	HL100X100X6		7828	9.26	72.49	4	289.96	
101	SP4BDD	3261H	HL100X100X6		7828	9.26	72.49	4	289.96	
102	SP4BDD	3262	6 THK.		175	47.10	1.24	8	9.92	
103	SP4BDD	3263H	HL100X100X6		4173	9.26	38.64	4	154.56	
104	SP4BDD	3264H	HL100X100X6		4173	9.26	38.64	4	154.56	
105	SP4BDD	3265	L55X55X4	75	3358	3.40	11.42	4	45.68	
106	SP4BDD	3266	L55X55X4		3358	3.40	11.42	4	45.68	
107	SP4BDD	3267	L55X55X4		3305	3.40	11.24	4	44.96	
108	SP4BDD	3268	L55X55X4		3305	3.40	11.24	4	44.96	
109	SP4BDD	3269H	HL100X100X7		5700	10.73	61.16	4	244.64	
110	SP4BDD	3270H	HL100X100X7		5700	10.73	61.16	4	244.64	
111	SP4BDD	3271H	HL100X100X7		4740	10.73	50.86	4	203.44	
112	SP4BDD	3272H	HL100X100X7		4740	10.73	50.86	4	203.44	
113	SP4BDD	3273H	HL80X80X6		306	7.36	2.25	4	9.00	
114	SP4BDD	3274H	HL80X80X6		306	7.36	2.25	4	9.00	
115	SP4BDD	3275H	H6 THK.		306	47.10	1.08	16	17.28	
116	SP4BDD	3276H	HL90X90X6		3814	8.32	31.73	4	126.92	
117	SP4BDD	3277H	HL90X90X6		3814	8.32	31.73	4	126.92	
118	SP4BDD	3278	L45X45X4		2818	2.75	7.75	4	31.00	
119	SP4BDD	3279	L45X45X4		2818	2.75	7.75	4	31.00	
120	SP4BDD	3280	L65X65X4	150	4066	4.03	16.39	4	65.56	
121	SP4BDD	3281	L65X65X4		4066	4.03	16.39	4	65.56	
122	SP4BDD	3282	L45X45X4		2797	2.75	7.69	4	30.76	
123	SP4BDD	3283	L45X45X4		2797	2.75	7.69	4	30.76	
124	SP4BDD	3284	L65X65X4		4198	4.03	16.92	4	67.68	
125	SP4BDD	3285	L65X65X4		4198	4.03	16.92	4	67.68	
126	SP4BDD	3286	L45X45X4		2751	2.75	7.57	4	30.28	
127	SP4BDD	3287	L45X45X4		2751	2.75	7.57	4	30.28	
128	SP4BDD	3288H	H16 THK.		353	125.60	6.65	4	26.60	
129	SP4BDD	3289	2 THK.		153	15.70	0.23	4	0.92	
130	SP4BDD	3290H	HL120X120X10		5000	18.15	90.75	2	181.50	
131	SP4BDD	3291H	HL120X120X8		5000	14.66	73.30	2	146.60	
132	SP4BDD	3292H	HL120X120X10		5500	18.15	99.83	2	199.66	
133	SP4BDD	3293H	HL120X120X8		5500	14.66	80.63	2	161.26	
134	SP4BDD	3294H	HL120X120X10		5079	18.15	92.18	2	184.36	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
135	SP4BDD	3295H	HL120X120X8		5079	14.66	74.46	2	148.92	
136	SP4BDD	3296H	HL120X120X10		5500	18.15	99.83	2	199.66	
137	SP4BDD	3297H	HL120X120X8		5500	14.66	80.63	2	161.26	
138	SP4BDD	3298H	HL120X120X10		5000	18.15	90.75	2	181.50	
139	SP4BDD	3299H	HL120X120X8		5000	14.66	73.30	2	146.60	
140	SP4BDD	3300H	HL110X110X8		376	13.40	5.04	8	40.32	
141	SP4BDD	3301H	H6 THK.	100	376	47.10	1.77	16	28.32	
142	SP4BDD	3302H	HL100X100X7		376	10.73	4.03	8	32.24	
143	SP4BDD	3303H	H6 THK.	100	376	47.10	1.77	16	28.32	
144	SP4BDD	3304H	HL200X200X12		449	36.85	16.55	8	132.40	
145	SP4BDD	3305H	H14 THK.	416	449	109.90	20.53	4	82.12	
146	SP4BDD	3306H	H14 THK.	165	449	109.90	8.14	8	65.12	
147	SP4BDD	3307	L75X75X5		7400	5.77	42.70	4	170.80	
148	SP4BDD	3308	L60X60X4		3593	3.71	13.33	4	53.32	
149	SP4BDD	3309	6 THK.	110	115	47.10	0.60	4	2.40	
150	SP4BDD	3310	6 THK.	161	161	47.10	1.22	4	4.88	
151	SP4BDD	3311	L90X90X5		5439	6.90	37.53	4	150.12	
152	SP4BDD	3312	L65X65X4		3898	4.03	15.71	4	62.84	
153	SP4BDD	3313	L65X65X4		3898	4.03	15.71	4	62.84	
154	SP4BDD	3314	8 THK.	195	350	62.80	4.29	4	17.16	
155	SP4BDD	3315	8 THK.	160	160	62.80	1.61	4	6.44	
156	SP4BDD	3330H	HL100X100X6		7285	9.26	67.46	4	269.84	
157	SP4BDD	3331H	HL100X100X6		7285	9.26	67.46	4	269.84	
158	SP4BDD	3332H	HL100X100X6		7284	9.26	67.45	4	269.80	
159	SP4BDD	3333H	HL100X100X6		7284	9.26	67.45	4	269.80	
160	SP4BDD	3334H	HL80X80X6		306	7.36	2.25	8	18.00	
161	SP4BDD	3335H	H6 THK.	80	306	47.10	1.15	16	18.40	
162	SP4BDD	3336	L75X75X5		4561	5.77	26.32	4	105.28	
163	SP4BDD	3337	L75X75X5		4512	5.77	26.03	4	104.12	
164	SP4BDD	3338	L75X75X5		4512	5.77	26.03	4	104.12	
165	SP4BDD	3339	L50X50X4		3132	3.08	9.65	4	38.60	
166	SP4BDD	3340	L50X50X4		3132	3.08	9.65	4	38.60	
167	SP4BDD	3341	L45X45X4		2461	2.75	6.77	4	27.08	
168	SP4BDD	3342	L45X45X4		2461	2.75	6.77	4	27.08	
169	SP4BDD	3343	L45X30X4		1591	2.27	3.61	4	14.44	
170	SP4BDD	3344	L45X30X4		1591	2.27	3.61	4	14.44	
171	SP4BDD	3345	8 THK.	166	320	62.80	3.34	4	13.36	
172	SP4BDD	3346H	H6 THK.	200	210	47.10	1.98	8	15.84	
173	SP4BDD	3347H	HL90X90X5		8740	6.97	60.92	4	243.68	
174	SP4BDD	3348	L45X45X4		2209	2.75	6.07	4	24.28	
175	SP4BDD	3349	6 THK.	105	110	47.10	0.54	4	2.16	
176	SP4BDD	3350H	H6 THK.	150	231	47.10	1.63	4	6.52	
177	SP4BDD	3351H	HL90X90X6		624	8.32	5.19	4	20.76	
178	SP4BDD	3352H	HL100X100X8		615	12.18	7.49	4	29.96	
179	SP4BDD	3353H	HL60X60X4		3514	3.71	13.04	4	52.16	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
180	SP4BDD	3354	L70X70X5	110	4284	5.38	23.05	4	92.20	
181	SP4BDD	3355	L70X70X5		4284	5.38	23.05	4	92.20	
182	SP4BDD	3356	L75X75X5		7214	5.77	41.62	4	166.48	
183	SP4BDD	3357	6 THK.		261	47.10	1.35	4	5.40	
184	SP4BDD	3358	L90X90X5		5304	6.90	36.60	4	146.40	
185	SP4BDD	3359	L90X90X5		5304	6.90	36.60	4	146.40	
186	SP4BDD	3360H	HL100X100X6	75	6000	9.26	55.56	4	222.24	
187	SP4BDD	3361H	HL100X100X6		4907	9.26	45.44	4	181.76	
188	SP4BDD	3362H	HL80X80X6		306	7.36	2.25	4	9.00	
189	SP4BDD	3363H	H6 THK.		306	47.10	1.08	8	8.64	
190	SP4BDD	3364H	HL110X110X8		6693	13.40	89.69	4	358.76	
191	SP4BDD	3365H	HL110X110X8		6693	13.40	89.69	4	358.76	
192	SP4BDD	3366H	HL150X150X12	120	7900	27.29	215.59	4	862.36	
193	SP4BDD	3367H	HL150X150X12		6707	27.29	183.03	4	732.12	
194	SP4BDD	3368H	HL130X130X10		466	19.72	9.19	4	36.76	
195	SP4BDD	3369H	H8 THK.		466	62.80	3.51	8	28.08	
196	SP4BDD	3370	L90X90X5		7793	6.90	53.77	4	215.08	
197	SP4BDD	3371	L90X90X5		7793	6.90	53.77	4	215.08	
198	SP4BDD	3372	L60X60X4	105	5952	3.71	22.08	4	88.32	
199	SP4BDD	3373	L60X60X4		5952	3.71	22.08	4	88.32	
200	SP4BDD	3374	L50X50X4		2331	3.08	7.18	4	28.72	
201	SP4BDD	3375	L50X50X4		2331	3.08	7.18	4	28.72	
202	SP4BDD	3376	6 THK.	120	135	47.10	0.76	8	6.08	
203	SP4BDD	3377	6 THK.	105	105	47.10	0.52	8	4.16	
204	SP4BDD	3378	8 THK.	170	170	62.80	1.81	4	7.24	
205	SP4BDD	3379H	H8 THK.	120	174	62.80	1.31	8	10.48	
206	SP4BDD	3380H	H8 THK.	140	343	62.80	3.02	4	12.08	
207	SP4BDD	3381H	H8 THK.	140	343	62.80	3.02	4	12.08	
208	SP4BDD	3382	8 THK.	140	370	62.80	3.25	4	13.00	
209	SP4BDD	3383	8 THK.	140	370	62.80	3.25	4	13.00	
210	SP4BDD	3384H	H10 THK.	200	393	78.50	6.17	4	24.68	
211	SP4BDD	3385H	H10 THK.	200	393	78.50	6.17	4	24.68	
212	SP4BDD	3386H	H14 THK.	230	362	109.90	9.15	4	36.60	
213	SP4BDD	3387H	H14 THK.	230	362	109.90	9.15	4	36.60	
214	SP4BDD	3388	8 THK.	165	359	62.80	3.72	4	14.88	
215	SP4BDD	3389	8 THK.	165	359	62.80	3.72	4	14.88	
216	SP4BDD	3390H	H8 THK.	120	317	62.80	2.39	4	9.56	
217	SP4BDD	3391H	H8 THK.	120	317	62.80	2.39	4	9.56	
218	SP4BDD	3400H	HL200X200X16	120	6100	48.53	296.03	2	592.06	
219	SP4BDD	3401H	HL200X200X16		6100	48.53	296.03	2	592.06	
220	SP4BDD	3402H	HL200X200X16		6100	48.53	296.03	4	1184.12	
221	SP4BDD	3403H	HL200X200X16		6948	48.53	337.19	2	674.38	
222	SP4BDD	3404H	HL200X200X16		6948	48.53	337.19	2	674.38	
223	SP4BDD	3405H	HL200X200X16		6948	48.53	337.19	4	1348.76	
224	SP4BDD	3406H	HL200X200X12		610	36.85	22.48	8	179.84	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
225	SP4BDD	3407H	HL200X200X12		610	36.85	22.48	8	179.84	
226	SP4BDD	3408H	H14 THK.	366	610	109.90	24.54	4	98.16	
227	SP4BDD	3409H	H14 THK.	150	610	109.90	10.06	8	80.48	
228	SP4BDD	3410H	HL200X200X12		610	36.85	22.48	8	179.84	
229	SP4BDD	3411H	HL200X200X12		610	36.85	22.48	8	179.84	
230	SP4BDD	3412H	H14 THK.	366	610	109.90	24.54	4	98.16	
231	SP4BDD	3413H	H14 THK.	150	610	109.90	10.06	8	80.48	
232	SP4BDD	3414H	HL120X120X8		6300	14.66	92.36	2	184.72	
233	SP4BDD	3415H	HL120X120X8		6303	14.66	92.40	2	184.80	
234	SP4BDD	3416H	HL120X120X8		6303	14.66	92.40	2	184.80	
235	SP4BDD	3417H	HL120X120X8		6300	14.66	92.36	2	184.72	
236	SP4BDD	3418H	HL110X110X6		6300	10.20	64.26	2	128.52	
237	SP4BDD	3419H	HL110X110X6		6303	10.20	64.29	2	128.58	
238	SP4BDD	3420H	HL110X110X6		6303	10.20	64.29	2	128.58	
239	SP4BDD	3421H	HL110X110X6		6300	10.20	64.26	2	128.52	
240	SP4BDD	3422H	HL120X120X8		5000	14.66	73.30	2	146.60	
241	SP4BDD	3423H	HL120X120X8		5000	14.66	73.30	2	146.60	
242	SP4BDD	3424H	HL120X120X8		5000	14.66	73.30	2	146.60	
243	SP4BDD	3425H	HL120X120X8		5000	14.66	73.30	2	146.60	
244	SP4BDD	3426H	HL110X110X6		5000	10.20	51.00	2	102.00	
245	SP4BDD	3427H	HL110X110X6		5000	10.20	51.00	2	102.00	
246	SP4BDD	3428H	HL110X110X6		5000	10.20	51.00	2	102.00	
247	SP4BDD	3429H	HL110X110X6		5000	10.20	51.00	2	102.00	
248	SP4BDD	3430H	HL120X120X8		6610	14.66	96.90	2	193.80	
249	SP4BDD	3431H	HL120X120X8		6611	14.66	96.92	2	193.84	
250	SP4BDD	3432H	HL120X120X8		6611	14.66	96.92	2	193.84	
251	SP4BDD	3433H	HL120X120X8		6610	14.66	96.90	2	193.80	
252	SP4BDD	3434H	HL110X110X6		6610	10.20	67.42	2	134.84	
253	SP4BDD	3435H	HL110X110X6		6611	10.20	67.43	2	134.86	
254	SP4BDD	3436H	HL110X110X6		6611	10.20	67.43	2	134.86	
255	SP4BDD	3437H	HL110X110X6		6610	10.20	67.42	2	134.84	
256	SP4BDD	3438H	HL100X100X7		346	10.73	3.71	8	29.68	
257	SP4BDD	3439H	HL100X100X7		346	10.73	3.71	8	29.68	
258	SP4BDD	3440H	HL90X90X6		346	8.32	2.88	8	23.04	
259	SP4BDD	3441H	HL90X90X6		346	8.32	2.88	8	23.04	
260	SP4BDD	3442H	H14 THK.	80	346	109.90	3.04	16	48.64	
261	SP4BDD	3443H	H6 THK.	202	346	47.10	3.29	16	52.64	
262	SP4BDD	3444H	HL80X80X6		2407	7.36	17.72	4	70.88	
263	SP4BDD	3445H	HL80X80X6		2407	7.36	17.72	4	70.88	
264	SP4BDD	3446H	HL80X80X6		3515	7.36	25.87	4	103.48	
265	SP4BDD	3447H	HL80X80X6		3515	7.36	25.87	4	103.48	
266	SP4BDD	3448H	HL75X75X6		4839	6.86	33.20	4	132.80	
267	SP4BDD	3449H	HL75X75X6		4839	6.86	33.20	4	132.80	
268	SP4BDD	3450H	H6 THK.	110	200	47.10	1.04	8	8.32	
269	SP4BDD	3451H	HL80X80X6		3532	7.36	26.00	4	104.00	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
270	SP4BDD	3452H	HL80X80X6		3532	7.36	26.00	4	104.00	
271	SP4BDD	3453	L60X60X4		3783	3.71	14.03	4	56.12	
272	SP4BDD	3454	L60X60X4		3783	3.71	14.03	4	56.12	
273	SP4BDD	3455	L50X50X4		3184	3.08	9.81	4	39.24	
274	SP4BDD	3456	L50X50X4		3184	3.08	9.81	4	39.24	
275	SP4BDD	3457H	HL75X75X6		7272	6.86	49.89	4	199.56	
276	SP4BDD	3458H	HL75X75X6		7272	6.86	49.89	4	199.56	
277	SP4BDD	3459H	H6 THK.	152	190	47.10	1.36	8	10.88	
278	SP4BDD	3460	6 THK.	120	180	47.10	1.02	8	8.16	
279	SP4BDD	3461	6 THK.	115	180	47.10	0.97	8	7.76	
280	SP4BDD	3462H	HL80X80X6		3450	7.36	25.39	4	101.56	
281	SP4BDD	3463H	HL80X80X6		3450	7.36	25.39	4	101.56	
282	SP4BDD	3464	L50X50X4		3255	3.08	10.03	4	40.12	
283	SP4BDD	3465	L50X50X4		3255	3.08	10.03	4	40.12	
284	SP4BDD	3466	L55X55X4		3544	3.40	12.05	4	48.20	
285	SP4BDD	3467	L55X55X4		3544	3.40	12.05	4	48.20	
286	SP4BDD	3468	L50X50X4		3261	3.08	10.04	4	40.16	
287	SP4BDD	3469	L50X50X4		3261	3.08	10.04	4	40.16	
288	SP4BDD	3470	L55X55X4		3533	3.40	12.01	4	48.04	
289	SP4BDD	3471	L55X55X4		3533	3.40	12.01	4	48.04	
290	SP4BDD	3472	L50X50X4		3213	3.08	9.90	4	39.60	
291	SP4BDD	3473	L50X50X4		3213	3.08	9.90	4	39.60	
292	SP4BDD	3474	2 THK.	82	178	15.70	0.23	4	0.92	
293	SP4BDD	3475	6 THK.	145	329	47.10	2.25	8	18.00	
294	SP4BDD	3476	6 THK.	145	382	47.10	2.61	8	20.88	
295	SP4BDD	3477	6 THK.	111	145	47.10	0.76	8	6.08	
296	SP4BDD	3478H	H14 THK.	69	336	109.90	2.55	4	10.20	
297	SP4BDD	3479H	H14 THK.	100	336	109.90	3.69	40	147.60	
298	SP4BDD	3480H	H14 THK.	148	336	109.90	5.47	4	21.88	
299	SP4BDD	3481H	H14 THK.	149	336	109.90	5.50	4	22.00	
300	SP4BDD	3482H	HL55X55X4		5152	3.40	17.52	4	70.08	
301	SP4BDD	3483	L45X45X4		2511	2.75	6.91	4	27.64	
302	SP4BDD	3484	6 THK.	102	105	47.10	0.50	4	2.00	
303	SP4BDD	3485	6 THK.	168	168	47.10	1.33	4	5.32	
304	SP4BDD	3486H	H6 THK.	110	121	47.10	0.63	8	5.04	
305	SP4BDD	3487	L55X55X4		3371	3.40	11.46	4	45.84	
306	SP4BDD	3488	L45X45X4		2418	2.75	6.65	4	26.60	
307	SP4BDD	3489	L45X45X4		2418	2.75	6.65	4	26.60	
308	SP4BDD	3490	6 THK.	190	320	47.10	2.86	4	11.44	
309	SP4BDD	3491	6 THK.	182	182	47.10	1.56	4	6.24	
310	SP4BDD	3492	6 THK.	102	115	47.10	0.55	8	4.40	
311	SP4BDD	3500H	HL55X55X4		3237	3.40	11.01	4	44.04	
312	SP4BDD	3501	L70X70X5		4508	5.38	24.25	4	97.00	
313	SP4BDD	3502	L70X70X5		4508	5.38	24.25	4	97.00	
314	SP4BDD	3503	L70X70X5		6673	5.38	35.90	4	143.60	

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SI/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.		SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
315	SP4BDD	3504	6 THK.	120	269	47.10	1.52	4	6.08	
316	SP4BDD	3505	L90X90X5		5357	6.90	36.96	4	147.84	
317	SP4BDD	3506	L90X90X5		5357	6.90	36.96	4	147.84	
318	SP4BDD	3507	L100X100X7		5500	10.73	59.02	4	236.08	
319	SP4BDD	3508	L100X100X7		4604	10.73	49.40	4	197.60	
320	SP4BDD	3509	L80X80X6		306	7.36	2.25	4	9.00	
321	SP4BDD	3510	6 THK.	75	306	47.10	1.08	8	8.64	
322	SP4BDD	3511	L65X65X4		5878	4.03	23.69	4	94.76	
323	SP4BDD	3512	L65X65X4		5878	4.03	23.69	4	94.76	
324	SP4BDD	3513	L50X50X4		4734	3.08	14.58	4	58.32	
325	SP4BDD	3514	L50X50X4		4734	3.08	14.58	4	58.32	
326	SP4BDD	3515	L50X50X4		2454	3.08	7.56	4	30.24	
327	SP4BDD	3516	L50X50X4		2454	3.08	7.56	4	30.24	
328	SP4BDD	3517	6 THK.	100	102	47.10	0.48	8	3.84	
329	SP4BDD	3518	6 THK.	105	110	47.10	0.54	8	4.32	
330	SP4BDD	3519	6 THK.	140	186	47.10	1.23	4	4.92	
331	SP4BDD	3520H	H8 THK.	120	184	62.80	1.39	8	11.12	
332	SP4BDD	3521H	H8 THK.	140	358	62.80	3.15	4	12.60	
333	SP4BDD	3522H	H8 THK.	140	358	62.80	3.15	4	12.60	
334	SP4BDD	3523	8 THK.	140	365	62.80	3.21	4	12.84	
335	SP4BDD	3524	8 THK.	140	365	62.80	3.21	4	12.84	
336	SP4BDD	3525	10 THK.	170	382	78.50	5.10	4	20.40	
337	SP4BDD	3526	10 THK.	170	382	78.50	5.10	4	20.40	
338	SP4BDD	3527	6 THK.	150	358	47.10	2.53	4	10.12	
339	SP4BDD	3528	6 THK.	150	358	47.10	2.53	4	10.12	
340	SP4BDD	3529H	H8 THK.	120	328	62.80	2.47	4	9.88	
341	SP4BDD	3530H	H8 THK.	120	328	62.80	2.47	4	9.88	
TOTAL WT=									41456.94	

For MILD STEEL : (As Per IS : 2062, Designated Y.S. 250Mpa)

For HIGH TENSILE STEEL : (As Per IS:2062, Designated Y.S. 350Mpa)

LIST OF PACK WASHERS

4 THK. PACK WASHERS (For 16 Ø Bolt)	0.014	68	0.95	
5 THK. PACK WASHERS (For 16 Ø Bolt)	0.018	72	1.30	
6 THK. PACK WASHERS (For 16 Ø Bolt)	0.021	544	11.42	
8 THK. PACK WASHERS (For 16 Ø Bolt)	0.028	480	13.44	
TOTAL WT.			27.11	Kgs

				SKIPPER LIMITED
REV. No	REVISION		DATE	INITIAL

Tower Package TW0I for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

OM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"

PART : +25M BODY EXTENSION AT ±0M LEVEL

BILL OF MATERIALS

SL.No.	MARK No.	SECTION / PLATE THICKNESS (mm)	PLATE WIDTH (mm)	LENGTH (mm)	UNIT WT (kg/m)	WEIGHT/PC (kg)	PIECES / STRUCT.	TOTAL WT. (kg)	REMARKS
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WEIGHT OF STEEL MEMBERS

A) TOTAL WT. OF HT STEEL FAB. MEMBER	=	35692.26	Kgs
B) TOTAL WT. OF MILD STEEL FAB. MEMBER	=	5764.68	Kgs
C) TOTAL WT. OF PACK WASHERS	=	27.11	Kgs
GRAND TOTAL WT. OF FAB. MEMBER WITH PACK WASHERS (A+B+C)	=	41484.05	Kgs

LIST OF BOLTS & NUTS CONFORMING TO IS:12427 WITH MECHANICAL PROPERTIES CONFORMING TO PROPERTY CLASS 5.6 FOR BOLTS AND CLASS 5.0 FOR NUTS.
LIST OF SPRING WASHERS (TYPE-B) AS PER IS:3063-1994, ELECTRO GALVD.

BOLT & NUTS

HRH BOLT / NUT FOR M16X35	0.119		802	95.44
HRH BOLT / NUT FOR M16X40	0.126		1016	128.02
HRH BOLT / NUT FOR M16X45	0.134		1300	174.20
HRH BOLT / NUT FOR M16X50	0.142		482	68.44
HRH BOLT / NUT FOR M16X55	0.150		672	100.80
HRH BOLT / NUT FOR M16X60	0.158		492	77.74
HRH BOLT / NUT FOR M16X65	0.164		256	41.98
HRH BOLT / NUT FOR M16X70	0.173		252	43.60
HRH BOLT / NUT FOR M16X75	0.180		72	12.96
HRH BOLT / NUT FOR M16X80	0.185		52	9.62
HRH BOLT / NUT FOR M16X85	0.193		72	13.90
HRH BOLT / NUT FOR M16X90	0.199		20	3.98
MS STD. SPR. WASHERS FOR M16 BOLTS	0.009		5488	49.39
HRH BOLT / NUT FOR M24X90	0.524		800	419.20
MS STD. SPR. WASHERS FOR M24 BOLTS	0.026		800	20.80
STEP BOLTS OF 16X175MM DIA WITH 2 NUTS 1 S.W	0.374		114	42.64
TOTAL WT. OF HEXAGONAL BOLTS / NUTS , SPRING WASHERS STEP BOLT		=	1302.71	Kgs

SUMMARY OF WEIGHTS

A) WT. OF MS MEMBERS	=	5764.68	Kgs
B) WT. OF PACK WASHERS	=	27.11	Kgs
C) WT. OF HT MEMBERS	=	35692.26	Kgs
D) WT. OF FAB MEMBERS (A+B+C)	=	41484.05	Kgs
E) WT. OF BOLT & NUTS	=	1302.71	Kgs
F) TOTAL	=	42786.76	Kgs

REV. No	REVISION	DATE	INITIAL

SKIPPER LIMITED

Tower Package TW01 for India Portion of 400 KV D/C (Quad Moose) New Butwal - Gorakhpur Transmission Line.
(Specification No. 5002002333/ CONSULTANCY GIVEN/DOM/A04-CC CS-5)

STRUCTURE : 400KV D/C "DD(0°-60°)/DE(0°-15°)"-MKD"G507 DD"
PART : +25M BODY EXTENSION AT ±0M LEVEL

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DD/+25MBE

SECTION ABSTRACT

MILD STEEL	WEIGHT (Kg)	HIGH TENSILE	WEIGHT (Kg)	MS. PLATE	WEIGHT
L40X40X3		HL180X180X15		2 THK.	1.84
L40X40X4		HL180X180X16		3 THK.	
L40X40X5		HL45X45X4	58.56	4 THK.	
L40X40X6		HL45X45X5		5 THK.	
L45X30X4	28.88	HL50X50X4	57.12	6 THK.	173.32
L45X30X5		HL50X50X5		8 THK.	125.64
L45X45X4	432.08	HL55X55X4	114.12	10 THK.	40.80
L45X45X3		HL55X55X5		14 THK.	
L45X45X5		HL60X60X4	199.28	32 THK.	
L45X45X6		HL60X60X5		20 THK.	
L50X50X3		HL60X60X6		22 THK.	
L50X50X4	630.00	HL65X65X4			
L50X50X5		HL65X65X5	10.56	TOTAL MS PLT.	341.60
L50X50X6		HL65X65X6			
L55X55X4	419.60	HL70X70X5		HT. PLATE	WEIGHT
L55X55X5		HL70X70X6		H6 THK.	270.76
L55X55X6		HL75X75X5	150.12	H5 THK.	17.12
L55X55X8		HL75X75X6	664.72	H8 THK.	137.92
L60X60X4	342.20	HL80X80X6	1196.76	H10 THK.	49.36
L60X60X5		HL80X80X5		H12 THK.	
L60X60X6		HL90X90X6	764.60	H14 THK.	1885.96
L65X65X4	581.68	HL90X90X7		H16 THK.	26.60
L65X65X5		HL90X90X5	1007.52	H20 THK.	
L65X65X6		HL100X100X6	2385.12	H18 THK.	
L80X80X5		HL100X100X7	1002.60		
L70X70X5	522.00	HL100X100X8	29.96	TOTAL HT PLT.	2387.72
L70X70X6		HL100X100X10			
L75X75X5	650.80	HL110X110X8	3047.40		
L75X75X6		HL110X110X10			
L80X80X6	213.40	HL110X110X9	579.22		
L80X80X8		HL200X200X16	5065.76		
L90X90X5	1168.76	HL120X120X8	2865.36		
L90X90X7		HL120X120X10	946.68		
L90X90X8		HL120X120X9			
L100X100X6		HL130X130X14			
L100X100X7	433.68	HL130X130X12			
L110X110X10		HL130X130X10	36.76		
L150X150X15		HL130X130X15			
L150X150X16		HL130X130X9			
L150X150X20		HL150X150X12	1594.48		
L200X200X16		HL150X150X14			
L200X200X20		HL110X110X6	3204.40		
		HL110X110X7	459.12		
		HL200X200X17	5778.16		
		HL200X200X12	2086.16		
		HL200X200X15			
TOTAL	5423.08	TOTAL	33304.54		
		GRAND TOTAL =	41456.94		