

संदर्भ/Ref : CC-ENGG-C2021001-1001422-T14221-4523-BMDC+0BE

Date : 27/04/2024

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/DC/+0MBE
Orgn. Drg. No. : C2021001-1001422-T14221-4523-BMDC+0BE
Revision No. : 01
Drg. Title : BILL OF MATERIAL FOR TT DC +0M BE FOR 400 kV D/C WZ-5 (ACSR MOOSE) TL
App. Category : CAT-I
Release Date : 27/04/2024



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/DC/+0MBE

NO. OF SHEET : 5

POWER GRID CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

BILL OF MATERIALSINITIAL / FINAL
(GALVANIZED)

STRUCTURE UNIT : 400KV D/C "DC(0°-30°)/MKD "QDC5"

PART : +0M BODY EXTENSION

REF.DRG.NO. : C:ENGG:TL:4523-4ACSR-M-P-04 (SHEET 1/2 TO 2/2)

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)

NOTE FOR PREFIX

SP4BDC XXX	FOR M.S
SP4BDC 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 +0M BODY EXTENSION WHEN CONNECTED WITH STUB	WEIGHT OF +0M BODY EXTN. WHEN CONNECTED WITH OTHER BODY EXTN	
1	WT.OF ALL (HT) MEMBERS IN KGS.	5540.76	5540.76	
2	WT.OF ALL (MS) MEMBERS IN KGS.(INCL. PACK WASHERS)	894.78	882.30	
3	WT.OF BOLT & NUTS IN KGS.	218.55	218.55	
	TOTAL WT. OF STRUCTURES IN KGS.	6654.09	6641.61	
A	PROTO CORRECTED & SUCCESSFULLY TESTED AT M/s SKIPPER LTD. TEST BED DATED		22.04.2024	BKL
0	FIRST ISSUE		18.10.2023	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)

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DC/+0MBE

STRUCTURE : 400KV D/C "DC(0°-30°)/MKD "QDC5"

BILL OF MATERIALS

PART : +0M BODY EXTENSION

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	SP4BDC	1100H	HL250X250X18	200	4600	68.10	313.26	2	626.52	
2	SP4BDC	1101H	HL250X250X18		4600	68.10	313.26	2	626.52	
3	SP4BDC	1102H	HL250X250X18		4790	68.10	326.20	2	652.40	
4	SP4BDC	1103H	HL250X250X18		4790	68.10	326.20	2	652.40	
5	SP4BDC	1104H	HL200X200X15		810	45.60	36.94	8	295.52	
6	SP4BDC	1105H	H12 THK.		810	94.20	15.26	16	244.16	
7	SP4BDC	1106H	HL90X90X5		4927	6.97	34.34	2	68.68	
8	SP4BDC	1107H	HL90X90X5		4927	6.97	34.34	2	68.68	
9	SP4BDC	1108H	HL90X90X5		4928	6.97	34.35	2	68.70	
10	SP4BDC	1109H	HL90X90X5		4928	6.97	34.35	2	68.70	
11	SP4BDC	1110H	HL80X80X6		4927	7.36	36.26	2	72.52	
12	SP4BDC	1111H	HL80X80X6		4927	7.36	36.26	2	72.52	
13	SP4BDC	1112H	HL80X80X6		4928	7.36	36.27	2	72.54	
14	SP4BDC	1113H	HL80X80X6		4928	7.36	36.27	2	72.54	
15	SP4BDC	1114H	HL90X90X5		8000	6.97	55.76	2	111.52	
16	SP4BDC	1115H	HL90X90X5		8000	6.97	55.76	2	111.52	
17	SP4BDC	1116H	HL90X90X5		8000	6.97	55.76	2	111.52	
18	SP4BDC	1117H	HL90X90X5		8000	6.97	55.76	2	111.52	
19	SP4BDC	1118H	HL80X80X6		8000	7.36	58.88	2	117.76	
20	SP4BDC	1119H	HL80X80X6		8000	7.36	58.88	2	117.76	
21	SP4BDC	1120H	HL80X80X6		8000	7.36	58.88	2	117.76	
22	SP4BDC	1121H	HL80X80X6		8000	7.36	58.88	2	117.76	
23	SP4BDC	1122H	HL70X70X5	182	316	5.38	1.70	4	6.80	
24	SP4BDC	1123H	HL70X70X5		316	5.38	1.70	4	6.80	
25	SP4BDC	1124H	H6 THK.	50	316	47.10	2.71	8	21.68	
26	SP4BDC	1125H	H12 THK.		316	94.20	1.49	8	11.92	
27	SP4BDC	1126H	HL65X65X5		316	4.98	1.57	4	6.28	
28	SP4BDC	1127H	HL65X65X5		316	4.98	1.57	4	6.28	
29	SP4BDC	1128H	HL45X45X4		498	2.75	1.37	4	5.48	
30	SP4BDC	1129H	HL45X45X4		498	2.75	1.37	4	5.48	
31	SP4BDC	1130H	HL50X50X4		1468	3.08	4.52	4	18.08	
32	SP4BDC	1131H	HL50X50X4		1468	3.08	4.52	4	18.08	
33	SP4BDC	1132H	HL50X50X4		1273	3.08	3.92	4	15.68	
34	SP4BDC	1133H	HL50X50X4		1273	3.08	3.92	4	15.68	
35	SP4BDC	1134H	HL65X65X5		2896	4.98	14.42	4	57.68	
36	SP4BDC	1135H	HL65X65X5		2896	4.98	14.42	4	57.68	
37	SP4BDC	1136AH	HL65X65X5		2549	4.98	12.69	2	25.38	
38	SP4BDC	1136H	HL65X65X5		2549	4.98	12.69	2	25.38	
39	SP4BDC	1137H	HL65X65X5		2549	4.98	12.69	2	25.38	
40	SP4BDC	1138H	HL65X65X5		2549	4.98	12.69	2	25.38	
41	SP4BDC	1139	L55X55X4		2616	3.40	8.89	4	35.56	
42	SP4BDC	1140	L55X55X4		2616	3.40	8.89	4	35.56	
43	SP4BDC	1141H	HL65X65X5		2869	4.98	14.29	2	28.58	
44	SP4BDC	1141AH	HL65X65X5		2869	4.98	14.29	2	28.58	

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)

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DC/+0MBE

STRUCTURE : 400KV D/C "DC(0°-30°)/MKD "QDC5"

BILL OF MATERIALS

PART : +0M BODY EXTENSION

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	SP4BDC	1142H	HL65X65X5		2869	4.98	14.29	2	28.58	
46	SP4BDC	1143H	HL65X65X5		2869	4.98	14.29	2	28.58	
47	SP4BDC	1144H	HL65X65X5		3824	4.98	19.04	4	76.16	
48	SP4BDC	1145H	HL65X65X5		3824	4.98	19.04	4	76.16	
49	SP4BDC	1146H	HL65X65X5		4496	4.98	22.39	4	89.56	
50	SP4BDC	1147H	HL65X65X5		4496	4.98	22.39	4	89.56	
51	SP4BDC	1148H	HL55X55X4		1745	3.40	5.93	4	23.72	
52	SP4BDC	1149H	HL55X55X4		1745	3.40	5.93	4	23.72	
53	SP4BDC	1150	L45X30X4		1255	2.27	2.85	4	11.40	
54	SP4BDC	1151	L45X30X4		1255	2.27	2.85	4	11.40	
55	SP4BDC	1152	L50X50X4		3801	3.08	11.71	4	46.84	
56	SP4BDC	1153	L50X50X4		3801	3.08	11.71	4	46.84	
57	SP4BDC	1154H	HL45X45X4		1663	2.75	4.57	4	18.28	
58	SP4BDC	1155H	HL45X45X4		1663	2.75	4.57	4	18.28	
59	SP4BDC	1156	L50X50X4		2397	3.08	7.38	4	29.52	
60	SP4BDC	1157	L50X50X4		2397	3.08	7.38	4	29.52	
61	SP4BDC	1158H	H5 THK.	110	214	39.25	0.92	8	7.36	
62	SP4BDC	1159H	H6 THK.	118	214	47.10	1.19	4	4.76	
63	SP4BDC	1160H	H6 THK.	118	223	47.10	1.24	4	4.96	
64	SP4BDC	1161H	H6 THK.	125	122	47.10	0.72	8	5.76	
65	SP4BDC	1162H	H6 THK.	125	125	47.10	0.74	8	5.92	
66	SP4BDC	1163H	H6 THK.	125	125	47.10	0.74	8	5.92	
67	SP4BDC	1164H	H5 THK.	105	129	39.25	0.53	8	4.24	
68	SP4BDC	1165	6 THK.	120	192	47.10	1.09	2	2.18	
69	SP4BDC	1166	6 THK.	120	192	47.10	1.09	4	4.36	
70	SP4BDC	1190H	HL45X45X4		1802	2.75	4.96	4	19.84	
71	SP4BDC	1191	L50X50X4		3664	3.08	11.29	4	45.16	
72	SP4BDC	1192	L50X50X4		3664	3.08	11.29	4	45.16	
73	SP4BDC	1193	L55X55X4		5150	3.40	17.51	4	70.04	
74	SP4BDC	1194	L55X55X4		5150	3.40	17.51	4	70.04	
75	SP4BDC	1195	L55X55X4		4840	3.40	16.46	4	65.84	
76	SP4BDC	1196	L55X55X4		4840	3.40	16.46	4	65.84	
77	SP4BDC	1197	L50X50X4		2362	3.08	7.27	4	29.08	
78	SP4BDC	1198	L50X50X4		2362	3.08	7.27	4	29.08	
79	SP4BDC	1199	L45X30X4		1188	2.27	2.70	4	10.80	
80	SP4BDC	1200	L45X30X4		1188	2.27	2.70	4	10.80	
81	SP4BDC	1201	L50X50X4		4050	3.08	12.47	4	49.88	
82	SP4BDC	1202	L50X50X4		4050	3.08	12.47	4	49.88	
83	SP4BDC	1203	8 THK.	100	152	62.80	0.95	8	7.60	
84	SP4BDC	1203PH	H8 THK.	100	173	62.80	1.09	8	8.72	
85	SP4BDC	1204H	H5 THK.	110	257	39.25	1.11	8	8.88	
86	SP4BDC	1205	5 THK.	125	302	39.25	1.48	4	5.92	
87	SP4BDC	1206	5 THK.	125	302	39.25	1.48	4	5.92	
88	SP4BDC	1207	5 THK.	110	290	39.25	1.25	4	5.00	

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)

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DC/+0MBE

STRUCTURE : 400KV D/C "DC(0°-30°)/MKD "QDC5"

BILL OF MATERIALS

PART : +0M BODY EXTENSION

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
89	SP4BDC	1208	5 THK.	110	290	39.25	1.25	4	5.00	
90	SP4BDC	1209	5 THK.	110	295	39.25	1.27	4	5.08	
91	SP4BDC	1210	5 THK.	110	295	39.25	1.27	4	5.08	
92	SP4BDC	1211	5 THK.	110	257	39.25	1.11	8	8.88	
93	SP4BDC	1212	5 THK.	110	279	39.25	1.20	4	4.80	
94	SP4BDC	1213	5 THK.	110	279	39.25	1.20	4	4.80	
95	SP4BDC	1214	6 THK.	110	231	47.10	1.20	4	4.80	
96	SP4BDC	1215	6 THK.	110	231	47.10	1.20	4	4.80	
97	SP4BDC	1216	5 THK.	140	179	39.25	0.98	4	3.92	
98	SP4BDC	1217	5 THK.	78	158	39.25	0.48	4	1.92	
TOTAL WT=									6409.06	

ADDITIONAL MEMBER WHEN CONNECTED WITH STUB

99	SP4BDC	1167	16 THK. PLT	65	276	125.60	2.25	8	18.00	
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ADDITIONAL MEMBER WHEN CONNECTED WITH BODY EXTENSION

100	SP4BDC	1167A	8 THK. PLT	65	168	62.80	0.69	8	5.52	
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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	0	0.00	
5 THK. PACK WASHERS (For 16 Ø Bolt)	0.018	0	0.00	
6 THK. PACK WASHERS (For 16 Ø Bolt)	0.021	76	1.60	
8 THK. PACK WASHERS (For 16 Ø Bolt)	0.028	0	0.00	
10 THK. PACK WASHERS (For 16 Ø Bolt)	0.036	0	0.00	
12 THK. PACK WASHERS (For 16 Ø Bolt)	0.043	160	6.88	
TOTAL WT.	8.48	Kgs		

WEIGHT OF STEEL MEMBERS

<u>A) TOTAL WT. OF HT STEEL FAB. MEMBER</u>	=	5540.76	Kgs
<u>B) TOTAL WT. OF MILD STEEL FAB. MEMBER</u>	=	868.30	Kgs
<u>C) TOTAL WT. OF PACK WASHERS</u>	=	8.48	Kgs
GRAND TOTAL WT. OF FAB. MEMBER WITH PACK WASHERS (A+B+C)	=	6417.54	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)

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DC/+0MBE

STRUCTURE : 400KV D/C "DC(0°-30°)/MKD "QDC5"

BILL OF MATERIALS

PART : +0M BODY EXTENSION

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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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		376	44.74
HRH BOLT / NUT FOR M16X40	0.126		160	20.16
HRH BOLT / NUT FOR M16X45	0.134		284	38.06
HRH BOLT / NUT FOR M16X50	0.142		56	7.95
HRH BOLT / NUT FOR M16X55	0.150		88	13.20
HRH BOLT / NUT FOR M16X60	0.158		0	0.00
HRH BOLT / NUT FOR M16X65	0.164		0	0.00
HRH BOLT / NUT FOR M16X70	0.173		360	62.28
HRH BOLT / NUT FOR M16X75	0.180		24	4.32
HRH BOLT / NUT FOR M16X80	0.185		0	0.00
HRH BOLT / NUT FOR M16X85	0.193		0	0.00
HRH BOLT / NUT FOR M16X90	0.199		0	0.00
MS STD. SPR. WASHERS FOR M16 BOLTS	0.009		1348	12.13
STEP BOLTS OF 16X175MM DIA WITH 2 NUTS 1 S.W	0.374		42	15.71
TOTAL WT. OF HEXAGONAL BOLTS / NUTS , SPRING WASHERS STEP BOLT			=	218.55

Kgs

SUMMARY OF WEIGHTS OF +0M BODY EXTENSION WHEN CONNECTED WITH STUB

A) WT. OF MS MEMBERS	=	886.30	Kgs
B) WT. OF PACK WASHERS	=	8.48	Kgs
C) WT. OF HT MEMBERS	=	5540.76	Kgs
D) WT. OF FAB MEMBERS (A+B+C)	=	6435.54	Kgs
E) WT. OF BOLT & NUTS	=	218.55	Kgs
F) TOTAL	=	6654.09	Kgs

SUMMARY OF WEIGHTS OF +0M BODY EXTENSION WHEN CONNECTED WITH BODY EXTENSION

A) WT. OF MS MEMBERS	=	873.82	Kgs
B) WT. OF PACK WASHERS	=	8.48	Kgs
C) WT. OF HT MEMBERS	=	5540.76	Kgs
D) WT. OF FAB MEMBERS (A+B+C)	=	6423.06	Kgs
E) WT. OF BOLT & NUTS	=	218.55	Kgs
F) TOTAL	=	6641.61	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 "DC(0°-30°)/MKD "QDC"

BOM NO. SL/PGCIL/400KV/BUTW-GRKH/DC/+0MBE

PART : +0M BODY EXTENSION

SECTION ABSTRACT					
MILD STEEL	WEIGHT (Kg)	HIGH TENSILE	WEIGHT (Kg)	MS. PLATE	WEIGHT
L40X40X3		HL45X30X4		2 THK.	
L40X40X4		HL45X30X5		3 THK.	
L40X40X5		HL45X45X4	67.36	4 THK.	
L40X40X6		HL45X45X5		5 THK.	56.32
L45X30X4	44.40	HL50X50X4	67.52	6 THK.	16.14
L45X30X5		HL50X50X5		8 THK.	7.60
L45X45X4		HL55X55X4	47.44	10 THK.	
L45X45X3		HL55X55X5		12 THK.	
L45X45X5		HL60X60X4		14 THK.	
L45X45X6		HL60X60X5		16 THK.	
L50X50X3		HL60X60X6		20 THK.	
L50X50X4	400.96	HL65X65X4		22 THK.	
L50X50X5		HL65X65X5	675.20	25 THK.	
L50X50X6		HL65X65X6		32 THK.	
L55X55X4	342.88	HL70X70X4			
L55X55X5		HL70X70X5	13.60	TOTAL MS PLT.	80.06
L55X55X6		HL70X70X6			
L55X55X8		HL75X75X4		HT. PLATE	WEIGHT
L60X60X4		HL75X75X5		H5 THK.	20.48
L60X60X5		HL75X75X6		H6 THK.	49.00
L60X60X6		HL80X80X5		H8 THK.	8.72
L65X65X4		HL80X80X6	761.16	H10 THK.	
L65X65X5		HL80X80X7		H12 THK.	256.08
L65X65X6		HL80X80X8		H14 THK.	
L80X80X5		HL90X90X5	720.84	H16 THK.	
L70X70X4		HL90X90X6		H20 THK.	
L70X70X5		HL90X90X7		H30 THK.	
L70X70X6		HL90X90X8			
L75X75X4		HL100X100X6		TOTAL HT PLT.	334.28
L75X75X5		HL100X100X7			
L90X90X5		HL110X110X7			
L90X90X6		HL110X110X8			
L90X90X7		HL110X110X9			
L90X90X8		HL110X110X10			
L100X100X6		HL110X110X12			
L100X100X7		HL120X120X7			
L100X100X8		HL120X120X8			
L100X100X10		HL120X120X9			
L110X110X6		HL120X120X10			
L110X110X7		HL120X120X12			
L110X110X10		HL130X130X9			
L110X110X12		HL130X130X10			
L120X120X8		HL130X130X11			
L120X120X10		HL130X130X12			
L120X120X12		HL130X130X14			
L150X150X10		HL150X150X12			
L150X150X16		HL150X150X15			
		HL200X200X15	295.52		
		HL250X250X18	2557.84		
TOTAL	788.24	TOTAL	5206.48		
		GRAND TOTAL =	6409.06		