

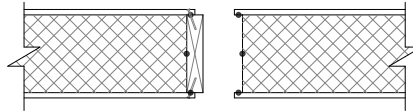
# Technical Bulletin

## Wall Panel Design Charts (LVL Splines) - NBC of Canada 2005

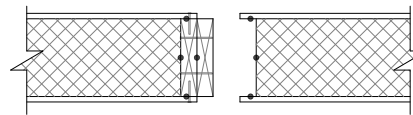
This bulletin provides wall panel design loads for the Insulspan® Structural Insulating Panel (SIP) System when used as a wall system component designed in accordance with the **National Building Code of Canada 2005**. Insulspan has completed structural testing of the Insulspan SIP System for this application using a third party testing laboratory following the requirements of ASTM E72, **Standard Test Methods of Conducting Strength Tests of Panels for Building Construction**. For additional information, refer to Insulspan Technical Bulletin 107 which provides a copy Canadian Construction Materials Centre evaluation report 13016-R.

The attached **Wall Panel Design Load Charts** dated January 6, 2010 summarize design loads for wall panels using the Insulspan SIP System with LVL joint configurations as noted.

- Table W-4-LVL – Transverse Wind Load (Single LVL Spline)



- Table W-5-DLVL – Transverse Wind Load (Double LVL Spline)



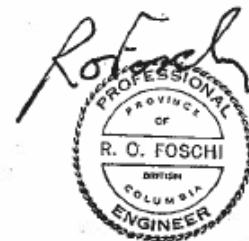
**Table W-4-LVL WALL PANEL DESIGN LOAD**

SINGLE LVL SPLINE @ 4'-0" On Center															
Thickness		Allowable Deflection	PANEL SPAN (feet)												
SIP	EPS		8	9	10	11	12	13	14	15	16	17	18	19	20
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 0 plf</b>															
4 1/2"	3 5/8"	L/360	35	28	21	17	14	11	9	-	-	-	-	-	
		L/240	50	39	29	24	19	16	14	-	-	-	-	-	
		L/180	60	48	37	31	25	22	19	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	78	62	46	37	29	25	22	19	16	14	12	10	9
		L/240	109	86	63	51	40	36	33	28	24	21	18	16	14
		L/180	113	96	79	64	50	47	44	38	32	28	24	21	18
8 1/4"	7 3/8"	L/360	139	111	83	68	53	45	37	31	26	23	20	18	16
		L/240	162	140	118	95	73	62	51	44	37	34	31	27	24
		L/180	162	145	128	109	91	78	65	56	47	44	41	36	31
10 1/4"	9 3/8"	L/360	168	152	137	113	90	76	62	53	45	39	34	30	26
		L/240	168	163	159	144	129	108	88	75	63	55	48	42	37
		L/180	168	163	159	147	135	119	103	91	80	70	61	54	47
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 1000 plf</b>															
4 1/2"	3 5/8"	L/360	29	23	18	14	11	-	-	-	-	-	-	-	
		L/240	42	33	24	19	15	-	-	-	-	-	-	-	
		L/180	50	40	30	24	18	-	-	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	72	57	43	35	28	23	19	16	14	12	10	8	7
		L/240	105	83	61	50	39	33	28	24	20	17	15	13	11
		L/180	113	95	77	63	49	42	36	31	27	23	20	17	15
8 1/4"	7 3/8"	L/360	129	103	77	63	50	42	34	29	25	22	19	16	14
		L/240	162	137	112	92	73	61	50	43	36	31	27	24	21
		L/180	162	145	128	109	91	77	64	55	47	41	36	32	28
10 1/4"	9 3/8"	L/360	168	148	129	107	85	72	59	50	42	37	32	28	24
		L/240	168	162	157	140	123	104	85	73	62	54	46	41	36
		L/180	168	162	157	146	135	119	103	91	79	69	60	53	46
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 2000 plf</b>															
4 1/2"	3 5/8"	L/360	15	9	4	3	2	-	-	-	-	-	-	-	
		L/240	24	15	7	5	3	-	-	-	-	-	-	-	
		L/180	34	22	11	8	5	-	-	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	64	50	37	30	24	20	16	13	11	9	8	6	5
		L/240	97	76	55	46	37	30	24	20	17	14	12	10	9
		L/180	113	92	71	59	48	39	31	26	22	19	16	14	12
8 1/4"	7 3/8"	L/360	118	94	71	58	46	38	31	26	22	19	16	14	12
		L/240	162	133	105	86	68	57	46	39	33	28	24	21	18
		L/180	162	145	128	108	89	74	60	52	44	37	31	27	24
10 1/4"	9 3/8"	L/360	168	145	122	100	79	67	55	47	39	34	29	25	22
		L/240	168	162	156	136	117	99	81	69	58	50	43	38	33
		L/180	168	162	156	145	135	119	103	89	76	66	57	50	43

**Notes:**

1. The tabulated values are design loads based upon design requirements of National Building Code of Canada 2005.
2. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
3. Insulspan SIP skins are nailed to the LVL splines at longitudinal panel joints, top and bottom plates using minimum 8d box nails @ 6" o.c. or equivalent.
4. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of CAN/ULC-S701, type 1.
5. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).
6. Acceptable LVL lumber for assembly with SIP panels is 1.8E LVL or better.

Reviewed By



Last Revision: January 6, 2010

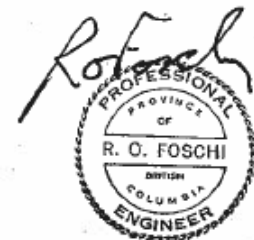
**Table W-5-DLVL WALL PANEL DESIGN LOAD**

DOUBLE LVL SPLINE @ 4'-0" On Center														
Thickness		Allowable Deflection	PANEL SPAN (feet)											
SIP	EPS		8	9	10	11	12	13	14	15	16	17	18	19
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 0 plf</b>														
4 1/2"	3 5/8"	L/360	43	34	25	20	16	13	11	-	-	-	-	-
		L/240	59	47	36	29	22	19	16	-	-	-	-	-
		L/180	75	60	45	36	28	24	21	-	-	-	-	-
6 1/2"	5 5/8"	L/360	113	89	66	54	42	35	29	24	20	17	15	13
		L/240	156	126	96	78	60	50	41	35	30	26	22	19
		L/180	156	140	124	101	78	65	53	46	39	34	29	25
8 1/4"	7 3/8"	L/360	167	143	120	98	77	64	52	44	37	32	27	24
		L/240	167	161	155	133	112	94	76	65	54	47	40	35
		L/180	167	161	155	150	145	121	98	84	70	61	52	46
10 1/4"	9 3/8"	L/360	172	168	164	148	133	112	91	77	64	55	47	41
		L/240	172	168	164	159	155	143	132	113	94	81	69	60
		L/180	172	168	164	159	155	154	154	138	122	106	90	79
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 1000 plf</b>														
4 1/2"	3 5/8"	L/360	39	30	22	18	14	11	9	-	-	-	-	-
		L/240	58	46	34	27	21	17	14	-	-	-	-	-
		L/180	75	59	44	36	28	23	19	-	-	-	-	-
6 1/2"	5 5/8"	L/360	105	82	60	49	38	31	25	21	18	15	13	11
		L/240	153	121	90	73	57	47	38	32	27	23	20	17
		L/180	156	137	118	96	75	63	51	43	36	31	26	23
8 1/4"	7 3/8"	L/360	166	139	113	92	72	60	48	41	34	29	25	22
		L/240	166	160	155	130	106	89	72	61	51	44	37	32
		L/180	166	160	155	147	139	116	94	80	67	58	49	43
10 1/4"	9 3/8"	L/360	172	167	163	145	127	106	86	73	61	53	45	39
		L/240	172	167	163	159	155	141	127	108	90	78	66	58
		L/180	172	167	163	159	155	154	154	136	118	102	87	76
<b>TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 2000 plf</b>														
4 1/2"	3 5/8"	L/360	28	20	13	10	7	5	4	-	-	-	-	-
		L/240	45	33	22	17	12	9	7	-	-	-	-	-
		L/180	63	47	31	24	17	13	10	-	-	-	-	-
6 1/2"	5 5/8"	L/360	96	75	54	44	34	28	22	18	15	12	10	8
		L/240	144	113	83	67	52	43	34	29	24	20	17	14
		L/180	154	132	110	89	69	57	46	39	32	27	23	20
8 1/4"	7 3/8"	L/360	166	136	107	87	67	55	44	37	31	26	22	19
		L/240	166	160	155	128	101	84	67	57	47	40	34	30
		L/180	166	160	155	144	133	111	90	76	63	54	46	40
10 1/4"	9 3/8"	L/360	172	167	163	142	122	101	81	69	57	49	42	36
		L/240	172	167	163	159	155	138	122	104	86	74	63	55
		L/180	172	167	163	159	155	154	154	134	114	98	83	73

**Notes:**

1. The tabulated values are design loads based upon design requirements of National Building Code of Canada 2005.
2. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
3. Insulspan SIP skins are nailed to the LVL splines at longitudinal panel joints, top and bottom plates using minimum 8d box nails @ 6" o.c. or equivalent.
4. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of CAN/ULC-S701, type 1.
5. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).
6. Acceptable LVL lumber for assembly with SIP panels is 1.8E LVL or better.

Reviewed By



Last Revision: January 6, 2010