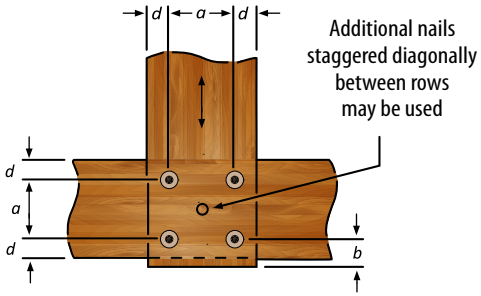
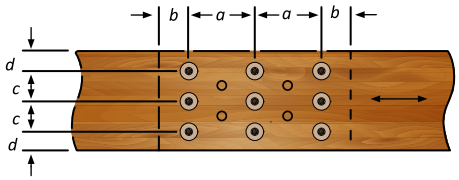
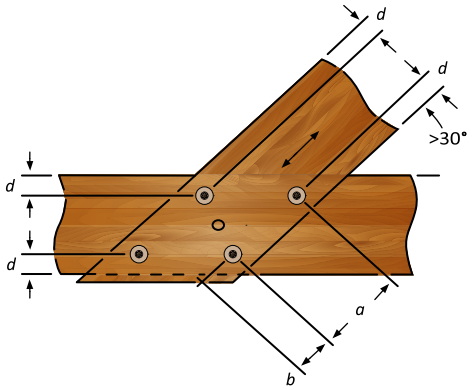
GRK R4 Spacings

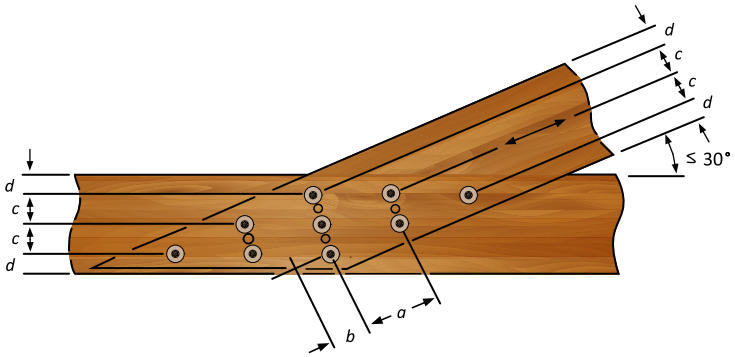
MINIMUM ROW SPACING, SPACING IN ROW AND EDGE DISTANCES AS SPECIFIED IN CLAUSE 12.11 CSA 086-14

R4 NOMINAL DIA.	OUTSIDE THREAD DIA. (IN.)	DIMENSION (SEE FIGURE)	POINT SIDE MEMBER SPECIES	
			D. FIR-L	S-P-F
			MINIMUM DIMENSIONS (in)	
9 x L	0.173	a - Spacing parallel to grain	3.5	2.8
		b - End distance parallel to grain	2.6	2.1
		c - Spacing perpendicular to grain	1.7	1.4
		d - Edge distance perpendicular to grain	0.9	0.7
10 x L	0.193	a - Spacing parallel to grain	3.9	3.1
		b - End distance parallel to grain	2.9	2.3
		c - Spacing perpendicular to grain	1.9	1.5
		d - Edge distance perpendicular to grain	1.0	0.8
12 x L	0.234	a - Spacing parallel to grain	4.7	3.7
		b - End distance parallel to grain	3.5	2.8
		c - Spacing perpendicular to grain	2.3	1.9
		d - Edge distance perpendicular to grain	1.2	0.9









GRK R4 9 x L SAWN LUMBER SIDE PL

MODEL/BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER			
							SIDE MEMBER: D.FIR-L SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)			
							1.5	2	1.5	2
							LATERAL RESISTANCE		WITHDRAWAL RESISTANCE	
							LB.	LB.	LB.	LB.
							kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	---	---	---	---
							---	---	---	---
00101	9 x 2-1/2"		2.375			1.625	155	---	168	---
							0.69	---	0.75	---
01103	9 x 2-3/4"		2.75			1.875	181	146	223	144
							0.81	0.65	0.99	0.64
00105	9 x 3-1/8"		3.125			1.625	186	172	223	217
							0.83	0.77	0.99	0.96
00105	9 x 3-1/8"		3.125			2.125	186	172	223	217
							0.83	0.77	0.99	0.96

MODEL/BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER			
							SIDE MEMBER: S-P-F SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)			
							1.5	2	1.5	2
							LATERAL RESISTANCE		WITHDRAWAL RESISTANCE	
							LB.	LB.	LB.	LB.
							kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	---	---	---	---
							---	---	---	---
00101	9 x 2-1/2"		2.375			1.625	137	---	128	---
							0.61	---	0.57	---
01103	9 x 2-3/4"		2.75			1.875	159	129	183	110
							0.71	0.57	0.81	0.49
00105	9 x 3-1/8"		3.125			1.625	168	152	223	165
							0.75	0.67	0.99	0.73
00105	9 x 3-1/8"		3.125			2.125	168	152	223	165
							0.75	0.67	0.99	0.73

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 9 x L PLYWOOD SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER							
							SIDE MEMBER: DFP PANEL THICKNESS OF SIDE MEMBER (in.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	141	153	161	165	56	74	93	111
							0.63	0.68	0.71	0.73	0.25	0.33	0.41	0.50
00101	9 x 2-1/2"		2.375			1.625	141	153	166	179	56	74	93	111
							0.63	0.68	0.74	0.80	0.25	0.33	0.41	0.50
01103	9 x 2-3/4"		2.75			1.875	141	153	166	179	56	74	93	111
							0.63	0.68	0.74	0.80	0.25	0.33	0.41	0.50
00105	9 x 3-1/8"		3.125			1.625	141	153	166	179	56	74	93	111
							0.63	0.68	0.74	0.80	0.25	0.33	0.41	0.50
00105	9 x 3-1/8"		3.125			2.125	141	153	166	179	56	74	93	111
							0.63	0.68	0.74	0.80	0.25	0.33	0.41	0.50

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER							
							SIDE MEMBER: CSP PLYWOOD THICKNESS OF SIDE MEMBER (IN.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	124	134	138	141	56	74	93	111
							0.55	0.60	0.61	0.63	0.25	0.33	0.41	0.50
00101	9 x 2-1/2"		2.375			1.625	124	135	146	157	56	74	93	111
							0.55	0.60	0.65	0.70	0.25	0.33	0.41	0.50
01103	9 x 2-3/4"		2.75			1.875	124	135	146	157	56	74	93	111
							0.55	0.60	0.65	0.70	0.25	0.33	0.41	0.50
00105	9 x 3-1/8"		3.125			1.625	124	135	146	157	56	74	93	111
							0.55	0.60	0.65	0.70	0.25	0.33	0.41	0.50
00105	9 x 3-1/8"		3.125			2.125	124	135	146	157	56	74	93	111
							0.55	0.60	0.65	0.70	0.25	0.33	0.41	0.50

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 9 x L COLD-FORMED STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	180	194	209	228	264	241	241	241	241	241
							0.80	0.86	0.93	1.01	1.17	1.07	1.07	1.07	1.07	1.07
00101	9 x 2-1/2"		2.375			1.625	180	194	209	228	265	313	313	313	313	313
							0.80	0.86	0.93	1.01	1.18	1.39	1.39	1.39	1.39	1.39
01103	9 x 2-3/4"		2.75			1.875	180	194	209	228	265	320	361	361	361	361
							0.80	0.86	0.93	1.01	1.18	1.42	1.61	1.61	1.61	1.61
00105	9 x 3-1/8"		3.125			1.625	180	194	209	228	265	313	313	313	313	313
							0.80	0.86	0.93	1.01	1.18	1.39	1.39	1.39	1.39	1.39
00105	9 x 3-1/8"		3.125			2.125	180	194	209	228	265	320	409	409	409	409
							0.80	0.86	0.93	1.01	1.18	1.42	1.82	1.82	1.82	1.82

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.329	0.173	1.25	163	177	192	209	236	183	183	183	183	183
							0.73	0.79	0.85	0.93	1.05	0.81	0.81	0.81	0.81	0.81
00101	9 x 2-1/2"		2.375			1.625	163	178	193	211	236	238	238	238	238	238
							0.73	0.79	0.86	0.94	1.05	1.06	1.06	1.06	1.06	1.06
01103	9 x 2-3/4"		2.75			1.875	163	178	193	211	236	275	275	275	275	275
							0.73	0.79	0.86	0.94	1.05	1.22	1.22	1.22	1.22	1.22
00105	9 x 3-1/8"		3.125			1.625	163	178	193	211	236	238	238	238	238	238
							0.73	0.79	0.86	0.94	1.05	1.06	1.06	1.06	1.06	1.06
00105	9 x 3-1/8"		3.125			2.125	163	178	193	211	236	311	311	311	311	311
							0.73	0.79	0.86	0.94	1.05	1.39	1.39	1.39	1.39	1.39

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 9xL MILD STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.173	0.329	1.25	275	275	275	275	275	241	241	241	241	241
							1.23	1.23	1.23	1.23	1.23	1.07	1.07	1.07	1.07	1.07
00101	9 x 2-1/2"		2.375			1.625	275	275	275	275	275	313	313	313	313	313
							1.23	1.23	1.23	1.23	1.23	1.39	1.39	1.39	1.39	1.39
01103	9 x 2-3/4"		2.75			1.875	275	275	275	275	275	361	361	361	361	361
							1.23	1.23	1.23	1.23	1.23	1.61	1.61	1.61	1.61	1.61
00105	9 x 3-1/8"		3.125			1.625	275	275	275	275	275	313	313	313	313	313
							1.23	1.23	1.23	1.23	1.23	1.39	1.39	1.39	1.39	1.39
00105	9 x 3-1/8"		3.125			2.125	275	275	275	275	275	409	409	409	409	409
							1.23	1.23	1.23	1.23	1.23	1.82	1.82	1.82	1.82	1.82

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00099	9 x 2"	0.128	2	0.173	0.329	1.25	240	240	240	240	240	183	183	183	183	183
							1.07	1.07	1.07	1.07	1.07	0.81	0.81	0.81	0.81	0.81
00101	9 x 2-1/2"		2.375			1.625	240	240	240	240	240	238	238	238	238	238
							1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.06
01103	9 x 2-3/4"		2.75			1.875	240	240	240	240	240	275	275	275	275	275
							1.07	1.07	1.07	1.07	1.07	1.22	1.22	1.22	1.22	1.22
00105	9 x 3-1/8"		3.125			1.625	240	240	240	240	240	238	238	238	238	238
							1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.06
00105	9 x 3-1/8"		3.125			2.125	240	240	240	240	240	311	311	311	311	311
							1.07	1.07	1.07	1.07	1.07	1.39	1.39	1.39	1.39	1.39

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 10xL SAWN LUMBER SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: D.FIR-L SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	1.5	2	2.5	3	3.5
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	177	---	---	---	---	184	---	---	---	---
							0.79	---	---	---	---	0.82	---	---	---	---
00135	10 x 2-3/4"		2.75			1.875	206	167	---	---	---	223	158	---	---	---
							0.92	0.74	---	---	---	0.99	0.70	---	---	---
00137	10 x 3-1/8"		3.125			1.625	217	196	---	---	---	223	237	---	---	---
							0.97	0.87	---	---	---	0.99	1.05	---	---	---
00139	10 x 3-1/2"		3.5			2	217	217	187	---	---	223	297	211	---	---
							0.97	0.97	0.83	---	---	0.99	1.32	0.94	---	---
00141	10 x 4"		3.875			2.625	217	217	216	177	---	223	297	290	184	---
							0.97	0.97	0.96	0.79	---	0.99	1.32	1.29	0.82	---
00143	10 x 4-3/4"		4.625			3	217	217	217	217	196	223	297	371	342	237
							0.97	0.97	0.97	0.97	0.87	0.99	1.32	1.65	1.52	1.05

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: S-P-F SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	1.5	2	2.5	3	3.5
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	156	---	---	---	---	140	---	---	---	---
							0.69	---	---	---	---	0.62	---	---	---	---
00135	10 x 2-3/4"		2.75			1.875	181	148	---	---	---	200	120	---	---	---
							0.81	0.66	---	---	---	0.89	0.53	---	---	---
00137	10 x 3-1/8"		3.125			1.625	196	173	---	---	---	223	180	---	---	---
							0.87	0.77	---	---	---	0.99	0.80	---	---	---
00139	10 x 3-1/2"		3.5			2	196	196	165	---	---	223	240	160	---	---
							0.87	0.87	0.73	---	---	0.99	1.07	0.71	---	---
00141	10 x 4"		3.875			2.625	196	196	156	156	---	223	297	220	140	---
							0.87	0.87	0.69	0.69	---	0.99	1.32	0.98	0.62	---
00143	10 x 4-3/4"		4.625			3	196	196	196	196	173	223	297	371	260	180
							0.87	0.87	0.87	0.87	0.77	0.99	1.32	1.65	1.16	0.80

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 10xL PLYWOOD SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER							
							SIDE MEMBER: DFP PANEL THICKNESS OF SIDE MEMBER (in.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50
00135	10 x 2-3/4"		2.75			1.875	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50
00137	10 x 3-1/8"		3.125			1.625	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50
00139	10 x 3-1/2"		3.5			2	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50
00141	10 x 4"		3.875			2.625	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50
00143	10 x 4-3/4"		4.625			3	158	172	185	199	56	74	93	111
							0.70	0.76	0.82	0.88	0.25	0.33	0.41	0.50

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER							
							SIDE MEMBER: CSP PLYWOOD THICKNESS OF SIDE MEMBER (IN.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50
00135	10 x 2-3/4"		2.75			1.875	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50
00137	10 x 3-1/8"		3.125			1.625	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50
00139	10 x 3-1/2"		3.5			2	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50
00141	10 x 4"		3.875			2.625	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50
00143	10 x 4-3/4"		4.625			3	140	152	163	175	56	74	93	111
							0.62	0.68	0.73	0.78	0.25	0.33	0.41	0.50

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 10xL COLD-FORMED STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER SPECIES: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	207	224	240	261	302	342	342	342	342	342
							0.92	0.99	1.07	1.16	1.34	1.52	1.52	1.52	1.52	1.52
00135	10 x 2-3/4"		2.75			1.875	207	224	240	261	302	357	395	395	395	395
							0.92	0.99	1.07	1.16	1.34	1.59	1.76	1.76	1.76	1.76
00137	10 x 3-1/8"		3.125			1.625	207	224	240	261	302	342	342	342	342	342
							0.92	0.99	1.07	1.16	1.34	1.52	1.52	1.52	1.52	1.52
00139	10 x 3-1/2"		3.5			2	207	224	240	261	302	357	421	421	421	421
							0.92	0.99	1.07	1.16	1.34	1.59	1.87	1.87	1.87	1.87
00141	10 x 4"		3.875			2.625	207	224	240	261	302	357	477	553	553	553
							0.92	0.99	1.07	1.16	1.34	1.59	2.12	2.46	2.46	2.46
00143	10 x 4-3/4"		4.625			3	207	224	240	261	302	357	477	596	632	632
							0.92	0.99	1.07	1.16	1.34	1.59	2.12	2.65	2.81	2.81

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER SPECIES: S-P-F SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	188	204	221	242	276	260	260	260	260	260
							0.84	0.91	0.98	1.07	1.23	1.16	1.16	1.16	1.16	1.16
00135	10 x 2-3/4"		2.75			1.875	188	204	221	242	276	301	301	301	301	301
							0.84	0.91	0.98	1.07	1.23	1.34	1.34	1.34	1.34	1.34
00137	10 x 3-1/8"		3.125			1.625	188	204	221	242	276	260	260	260	260	260
							0.84	0.91	0.98	1.07	1.23	1.16	1.16	1.16	1.16	1.16
00139	10 x 3-1/2"		3.5			2	188	204	221	242	276	321	321	421	321	321
							0.84	0.91	0.98	1.07	1.23	1.43	1.43	1.43	1.43	1.43
00141	10 x 4"		3.875			2.625	188	204	221	242	276	357	421	421	421	421
							0.84	0.91	0.98	1.07	1.23	1.59	1.87	1.87	1.87	1.87
00143	10 x 4-3/4"		4.625			3	188	204	221	242	276	357	477	481	481	481
							0.84	0.91	0.98	1.07	1.23	1.59	2.12	2.14	2.14	2.14

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 10xL MILD STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER SPECIES: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	322	322	322	322	322	342	342	342	342	342
							1.43	1.43	1.43	1.43	1.43	1.52	1.52	1.52	1.52	1.52
00135	10 x 2-3/4"		2.75			1.875	322	322	322	322	315	395	395	395	395	395
							1.43	1.43	1.43	1.43	1.43	1.76	1.76	1.76	1.76	1.76
00137	10 x 3-1/8"		3.125			1.625	322	322	322	322	322	342	342	342	342	342
							1.43	1.43	1.43	1.43	1.43	1.52	1.52	1.52	1.52	1.52
00139	10 x 3-1/2"		3.5			2	322	322	322	322	322	421	421	421	421	421
							1.43	1.43	1.43	1.43	1.43	1.87	1.87	1.87	1.87	1.87
00141	10 x 4"		3.875			2.625	322	322	322	322	322	553	553	553	553	553
							1.43	1.43	1.43	1.43	1.43	2.46	2.46	2.46	2.46	2.46
00143	10 x 4-3/4"		4.625			3	322	322	322	322	322	632	632	632	632	632
							1.43	1.43	1.43	1.43	1.43	2.81	2.81	2.81	2.81	2.81

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER SPECIES: S-P-F SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00133	10 x 2-1/2"	0.142	2.375	0.368	0.193	1.625	281	281	281	281	281	260	260	260	260	260
							1.25	1.25	1.25	1.25	1.25	1.16	1.16	1.16	1.16	1.16
00135	10 x 2-3/4"		2.75			1.875	281	281	281	281	281	301	301	301	301	301
							1.25	1.25	1.25	1.25	1.25	1.34	1.34	1.34	1.34	1.34
00137	10 x 3-1/8"		3.125			1.625	281	281	281	281	281	260	260	260	260	260
							1.25	1.25	1.25	1.25	1.25	1.16	1.16	1.16	1.16	1.16
00139	10 x 3-1/2"		3.5			2	281	281	281	281	281	321	321	321	321	321
							1.25	1.25	1.25	1.25	1.25	1.43	1.43	1.43	1.43	1.43
00141	10 x 4"		3.875			2.625	281	281	281	281	281	421	421	421	421	421
							1.25	1.25	1.25	1.25	1.25	1.87	1.87	1.87	1.87	1.87
00143	10 x 4-3/4"		4.625			3	281	281	281	281	281	481	481	481	481	481
							1.25	1.25	1.25	1.25	1.25	2.14	2.14	2.14	2.14	2.14

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 12xL D.FIR-L SAWN LUMBER SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: D.FIR-L SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	4	4.5	5	6	8
							LATERAL RESISTANCE									
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	291	304	304	303	257	---	---	---	---	---
							1.30	1.35	1.35	1.35	1.14	---	---	---	---	---
00173	12 x 5-5/8"		5.5			3	291	304	304	304	304	291	245	---	---	---
							1.30	1.35	1.35	1.35	1.35	1.30	1.09	---	---	---
00177	12 x 6-3/8"		6.25			3	291	304	304	304	304	304	304	268	---	---
							1.30	1.35	1.35	1.35	1.35	1.35	1.35	1.19	---	---
00179	12 x 7-1/4"		7			3	291	304	304	304	304	304	304	304	245	---
							1.30	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.09	---
00181	12 x 8"		7.875			3	291	304	304	304	304	304	304	304	304	---
							1.30	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	---
02187	12 x 10"		9.75			3	291	304	304	304	304	304	304	304	304	304
							1.30	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
02193	12 x 12"		11.75			3	291	304	304	304	304	304	304	304	304	304
							1.30	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: D.FIR-L SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	4	4.5	5	6	8
							WITHDRAWAL RESISTANCE									
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	223	297	371	401	277	---	---	---	---	---
							0.99	1.32	1.65	1.78	1.23	---	---	---	---	---
00173	12 x 5-5/8"		5.5			3	223	297	371	445	493	370	247	---	---	---
							0.99	1.32	1.65	1.98	2.19	1.65	1.10	---	---	---
00177	12 x 6-3/8"		6.25			3	223	297	371	445	520	555	432	308	---	---
							0.99	1.32	1.65	1.98	2.31	2.47	1.92	1.37	---	---
00179	12 x 7-1/4"		7			3	223	297	371	445	520	594	617	493	247	---
							0.99	1.32	1.65	1.98	2.31	2.64	2.74	2.19	1.10	---
00181	12 x 8"		7.875			3	223	297	371	445	520	594	668	709	462	---
							0.99	1.32	1.65	1.98	2.31	2.64	2.97	3.15	2.06	---
02187	12 x 10"		9.75			3	223	297	371	445	520	594	668	740	740	432
							0.99	1.32	1.65	1.98	2.31	2.64	2.97	3.29	3.29	1.92
02193	12 x 12"		11.75			3	223	297	371	445	520	594	668	740	740	740
							0.99	1.32	1.65	1.98	2.31	2.64	2.97	3.29	3.29	3.29

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 12xL SPF SAWN LUMBER SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: S-P-F SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	4	4.5	5	6	8
							LATERAL RESISTANCE									
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	256	273	273	266	226	---	---	---	---	---
							1.14	1.22	1.22	1.18	1.01	---	---	---	---	---
00173	12 x 5-5/8"		5.5			3	256	273	273	273	273	256	216	---	---	---
							1.14	1.22	1.22	1.22	1.22	1.14	0.96	---	---	---
00177	12 x 6-3/8"		6.25			3	256	273	273	273	273	273	273	236	---	---
							1.14	1.22	1.22	1.22	1.22	1.22	1.22	1.05	---	---
00179	12 x 7-1/4"		7			3	256	273	273	273	273	273	273	273	216	---
							1.14	1.22	1.22	1.22	1.22	1.22	1.22	1.22	0.96	---
00181	12 x 8"		7.875			3	256	273	273	273	273	273	273	273	273	---
							1.14	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	---
02187	12 x 10"		9.75			3	256	273	273	273	273	273	273	273	273	273
							1.14	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
02193	12 x 12"		11.75			3	256	273	273	273	273	273	273	273	273	273
							1.14	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: S-P-F SAWN LUMBER THICKNESS OF SIDE MEMBER (in.)									
							1.5	2	2.5	3	3.5	4	4.5	5	6	8
							WITHDRAWAL RESISTANCE									
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	223	297	371	305	211	---	---	---	---	---
							0.99	1.32	1.65	1.36	0.94	---	---	---	---	---
00173	12 x 5-5/8"		5.5			3	223	297	371	445	375	282	188	---	---	---
							0.99	1.32	1.65	1.98	1.67	1.25	0.84	---	---	---
00177	12 x 6-3/8"		6.25			3	223	297	371	445	516	422	329	235	---	---
							0.99	1.32	1.65	1.98	2.30	1.88	1.46	1.04	---	---
00179	12 x 7-1/4"		7			3	223	297	371	445	520	563	469	375	188	---
							0.99	1.32	1.65	1.98	2.31	2.51	2.09	1.67	0.84	---
00181	12 x 8"		7.875			3	223	297	371	445	520	563	563	540	352	---
							0.99	1.32	1.65	1.98	2.31	2.51	2.51	2.40	1.57	---
02187	12 x 10"		9.75			3	223	297	371	445	520	563	563	563	563	329
							0.99	1.32	1.65	1.98	2.31	2.51	2.51	2.51	2.51	1.46
02193	12 x 12"		11.75			3	223	297	371	445	520	563	563	563	563	563
							0.99	1.32	1.65	1.98	2.31	2.51	2.51	2.51	2.51	2.51

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 12xL PLYWOOD SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER							
							SIDE MEMBER: DFP PANEL THICKNESS OF SIDE MEMBER (in.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
00173	12 x 5-5/8"		5.5			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
00177	12 x 6-3/8"		6.25			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
00179	12 x 7-1/4"		7			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
00181	12 x 8"		7.875			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
02187	12 x 10"		9.75			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50
02193	12 x 12"		11.75			3	203	218	232	246	56	74	93	111
							0.90	0.97	1.03	1.10	0.25	0.33	0.41	0.50

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER							
							SIDE MEMBER: CSP PLYWOOD THICKNESS OF SIDE MEMBER (in.)							
							3/8	1/2	5/8	3/4	3/8	1/2	5/8	3/4
							LATERAL RESISTANCE				WITHDRAWAL RESISTANCE			
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
00173	12 x 5-5/8"		5.5			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
00177	12 x 6-3/8"		6.25			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
00179	12 x 7-1/4"		7			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
00181	12 x 8"		7.875			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
02187	12 x 10"		9.75			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50
02193	12 x 12"		11.75			3	181	193	205	217	56	74	93	111
							0.80	0.86	0.91	0.97	0.25	0.33	0.41	0.50

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 12xL COLD-FORMED STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
00173	12 x 5-5/8"		5.5			3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
00177	12 x 6-3/8"		6.25			3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
00179	12 x 7-1/4"		7			3	280	307	320	345	394	426	568	711	740	740
							1.24	1.37	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
00181	12 x 8"		7.875			3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
02187	12 x 10"		9.75			3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29
02193	12 x 12"		11.75			3	280	300	320	345	394	426	568	711	740	740
							1.24	1.33	1.42	1.53	1.75	1.90	2.53	3.16	3.29	3.29

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: COLD-FORMED STEEL THICKNESS OF SIDE MEMBER (in.)									
							20 GA.	18 GA.	16 GA.	14 GA.	12 GA.	20 GA.	18 GA.	16 GA.	14 GA.	12 GA.
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
00173	12 x 5-5/8"		5.5			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
00177	12 x 6-3/8"		6.25			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
00179	12 x 7-1/4"		7			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
00181	12 x 8"		7.875			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
02187	12 x 10"		9.75			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51
02193	12 x 12"		11.75			3	253	273	293	318	367	426	563	563	563	563
							1.12	1.21	1.30	1.41	1.63	1.90	2.51	2.51	2.51	2.51

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).

GRK R4 12xL MILD STEEL SIDE PL

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: D.FIR-L SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
00173	12 x 5-5/8"		5.5			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
00177	12 x 6-3/8"		6.25			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
00179	12 x 7-1/4"		7			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
00181	12 x 8"		7.875			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
02187	12 x 10"		9.75			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29
02193	12 x 12"		11.75			3	450	450	450	450	450	740	740	740	740	740
							2.00	2.00	2.00	2.00	2.00	3.29	3.29	3.29	3.29	3.29

MODEL/ BULK PART NO.	R4 NOMINAL DIA.	SHANK DIAMETER (in.)	SCREW LENGTH (in.)	HEAD DIAMETER (in.)	OUTSIDE THREAD DIAMETER (in.)	THREAD LENGTH (in.)	POINT-SIDE MEMBER: S-P-F SAWN LUMBER									
							SIDE MEMBER: MILD STEEL THICKNESS OF SIDE MEMBER (in.)									
							1/8	9/64	3/16	1/4	1/2	1/8	9/64	3/16	1/4	1/2
							LATERAL RESISTANCE					WITHDRAWAL RESISTANCE				
							LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.	LB.
							kN	kN	kN	kN	kN	kN	kN	kN	kN	kN
00165	12 x 4"	0.171	4.625	0.439	0.234	3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
00173	12 x 5-5/8"		5.5			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
00177	12 x 6-3/8"		6.25			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
00179	12 x 7-1/4"		7			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
00181	12 x 8"		7.875			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
02187	12 x 10"		9.75			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51
02193	12 x 12"		11.75			3	368	392	392	392	392	550	563	563	563	563
							1.64	1.75	1.75	1.75	1.75	2.45	2.51	2.51	2.51	2.51

[1] Resistance values have been developed in accordance with Clause 12.11 "Wood Screws" CSA O86-14 and have been factored with the material resistance factor (φ). No other modification factors affecting resistance have been applied. Values must be multiplied by all applicable modification factors as specified for wood screws in accordance with CSA O86-14.

[2] ICC ESR-3201 report can be referred to for information not provided in this table. Note that resistance values of GRK R4 screw connections with cold-formed steel, mild steel and plywood side members have not been developed in the ICC ESR-3201 report.

[3] Multiply lateral resistance values by 0.83 for toe-screw installation and by 0.67 for end-grain installation. Toe-screw and end-grain installations are not permitted for screws loaded in withdrawal.

[4] Minimum row spacing, spacing in row and edge distances, penetration lengths, and member thicknesses shall be as specified in Clause 12.11.2 CSA O86-14. The minimum spacing table provided in this catalogue can be used for reference.

[5] '---' indicates the screw cannot be used for the resistance due to the screw length not meeting the minimum penetration length into the point-side member. Resistance values have been developed assuming the screw is fully penetrated into the point-side member.

[6] Resistance values with mild steel side member have been developed for mild steel referenced in CSA S16 (ASTM A36/A36M steel; fu = 400 MPa). Resistance values with cold-formed steel side member have been developed for cold-formed steel light gauge steel referenced in CSA S136 (Grade SS 230; fu = 310 MPa).

[7] Convert inches to millimetres by multiplying the value by 25.4 (1 in. = 25.4 mm).