SCI A2 | AISI304

COUNTERSUNK SCREW

CE
EN 14592

3 THORNS TIP

Thanks to the 3 THORNS tip, minimum installation distances are reduced. More screws can be used in less space and larger screws in smaller elements. Costs and time for project implementation are reduced.

SUPERIOR STRENGTH

New tip, special asymmetrical umbrella thread, elongated reamer cutter and under-head cutting ribs provide the screw with higher torsional strength and safer screwing.

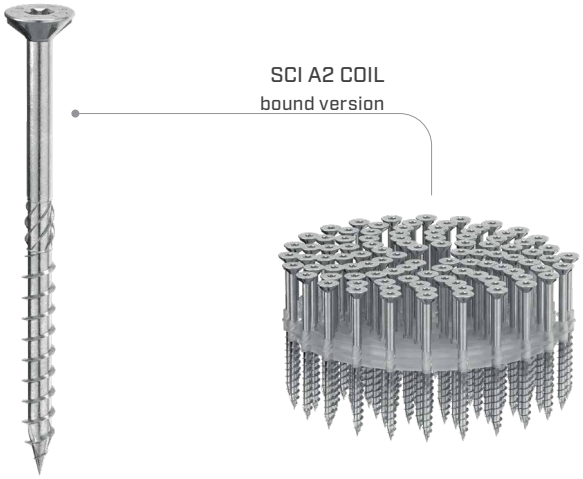
A2 | AISI304

A2 austenitic stainless steel. It offers high corrosion resistance. Suitable for outdoor applications up to 1 km from the sea in class C4 on most acid woods in class T4.

NORTH AMERICAN TESTED

Tested in accordance with ASTM F1575 for bending yield strength and ASTM D1761-20 for withdrawal strength. Tensile testing was conducted in accordance with AISI S904-17.

CANADIAN DESIGN VALUES
USA, EU and more design values available online.



BIT INCLUDED

DIAMETER [mm]

3,5 — 8

LENGTH [mm]

20 — 25 — 320 — 320

SERVICE CONDITION

WET

ATMOSPHERIC CORROSIVITY

C1 C2 C3 C4

WOOD CORROSIVITY

T1 T2 T3 T4

MATERIAL

A2 AISI 304 — A2 | AISI304 austenitic stainless steel (CRC II)

FIELDS OF USE

Use in aggressive outdoor environments.
Wooden boards with density of < 470 kg/m³ (without pre-drill) and < 620 kg/m³ (with pre-drill).

CODES AND DIMENSIONS

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
3,5 TX 15	SCI3525(*)	25	18	7	500
	SCI3530(*)	30	18	12	500
	SCI3535(*)	35	18	17	500
	SCI3540(*)	40	18	22	500
4 TX 20	SCI4030	30	18	12	500
	SCI4035	35	18	17	500
	SCI4040	40	24	16	500
	SCI4045	45	30	15	200
	SCI4050	50	30	20	400
	SCI4060	60	35	25	200
4,5 TX 20	SCI4535	35	24	11	400
	SCI4540	40	24	16	400
	SCI4545	45	30	15	400
	SCI4550	50	30	20	200
	SCI4560	60	35	25	200
	SCI4570	70	40	30	200
	SCI4580	80	40	40	200
5 TX 25	SCI5040	40	20	20	200
	SCI5045	45	24	21	200
	SCI5050	50	24	26	200
	SCI5060	60	30	30	200
	SCI5070	70	35	35	100
	SCI5080	80	40	40	100
	SCI5090	90	45	45	100
	SCI50100	100	50	50	100

(*) Not holding CE marking.

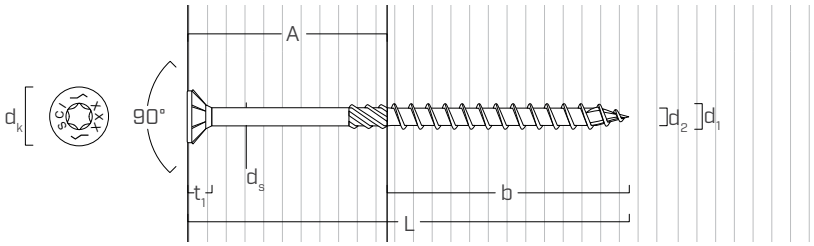
d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
6 TX 30	SCI6060	60	30	30	100
	SCI6080	80	40	40	100
	SCI60100	100	50	50	100
	SCI60120	120	60	60	100
	SCI60140	140	75	65	100
	SCI60160	160	75	85	100
8 TX 40	SCI80120	120	60	60	100
	SCI80160	160	80	80	100
	SCI80200	200	80	120	100
	SCI80240	240	80	160	100
	SCI80280	280	80	200	100
	SCI80320	320	80	240	100

SCI A2 COIL

Bound version available for fast and accurate installation. Ideal for large projects.

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
4 TX 20	SCICOIL4025	25	18	7	3006
5 TX 25	SCICOIL5050	50	30	20	1250
	SCICOIL5060	60	35	25	1250
	SCICOIL5070	70	40	30	625

GEOMETRY AND MECHANICAL CHARACTERISTICS



GEOMETRY

Nominal diameter	d_1	[mm]	3,5	4	4,5	5	6	8
Head diameter	d_K	[mm]	7,00	8,00	9,00	10,00	12,00	14,50
Root diameter	d_2	[mm]	2,25	2,55	2,80	3,40	3,95	5,40
Shank diameter	d_S	[mm]	2,45	2,75	3,15	3,65	4,30	5,80
Head thickness	t_1	[mm]	3,50	3,80	4,25	4,65	5,30	6,00
Pre-drilling hole diameter(1)	d_V	[mm]	2,0	2,5	3,0	3,0	4,0	5,0

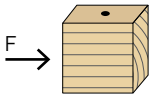
(1) For high density materials, pre-drilled holes are recommended based on the wood specie.

MECHANICAL PROPERTIES

Nominal diameter	d_1	[mm]		3,5	4	4,5	5	6	8
Factored tensile strength	Φf_u	[kN]		-	-	2,52	3,37	5,23	8,04
Bending yield strength	F_{yb}	[MPa]		833	650	591	486	574	523
Factored shear strength of the screw	Φv_s	[kN]		0,86	1,10	1,33	1,96	2,95	4,95
Specified withdrawal resistance per millimeter of threaded shank (tip included)	Y_w	[N/mm]	G=0.35	36,60	41,83	47,06	52,29	52,38	69,83
			G=0.42	42,35	48,40	54,45	60,50	60,60	80,80
			G=0.49	47,91	54,75	61,60	68,44	68,55	91,40
			G=0.55	52,55	60,05	67,56	75,07	75,19	100,30
Specified head pull-through resistance per screw	F_{pt}	[kN]	G=0.35	0,35	0,44	0,55	0,66	0,92	1,28
			G=0.42	0,42	0,53	0,66	0,80	1,10	1,53
			G=0.49	0,48	0,62	0,77	0,93	1,29	1,79
			G=0.55	0,54	0,70	0,86	1,04	1,45	2,01

MINIMUM DISTANCES FOR SHEAR LOADS | TIMBER

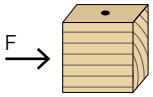
screws inserted **WITHOUT pre-drilled hole** — **G ≤ 0.44**



d_1		3,5 [mm]	*0.14 [in]*	4 [mm]	*0.16 [in]*	4,5 [mm]	*0.18 [in]*	5 [mm]	*0.20 [in]*	6 [mm]	*0.24 [in]*	8 [mm]	*0.32 [in]*
S_P	**12·d‡**	96	*1 5/8*	120	*1 7/8*	144	*2 1/8*	60	*2 3/8*	72	*2 13/16*	96	*3 3/4*
S_Q	**5·d**	40	*11/16*	50	*13/16*	60	*7/8*	25	*1*	30	*1 3/16*	40	*1 9/16*
a_L	**15·d‡**	120	*2 1/16*	150	*2 3/8*	180	*2 11/16*	75	*2 15/16*	90	*3 1/2*	120	*4 3/4*
a	**10·d‡**	80	*1 3/8*	100	*1 9/16*	120	*1 3/4*	50	*1 15/16*	60	*2 3/8*	80	*3 1/8*
e_Q	**10·d**	80	*1 3/8*	100	*1 9/16*	120	*1 3/4*	50	*1 15/16*	60	*2 3/8*	80	*3 1/8*
e_P	**5·d**	40	*11/16*	50	*13/16*	60	*7/8*	25	*1*	30	*1 3/16*	40	*1 9/16*

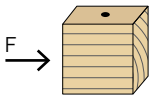
‡ For Western Red Cedar, this minimum spacing shall be increased by 50%.

screws inserted **WITHOUT pre-drilled hole** — **0.44 < G ≤ 0.50**



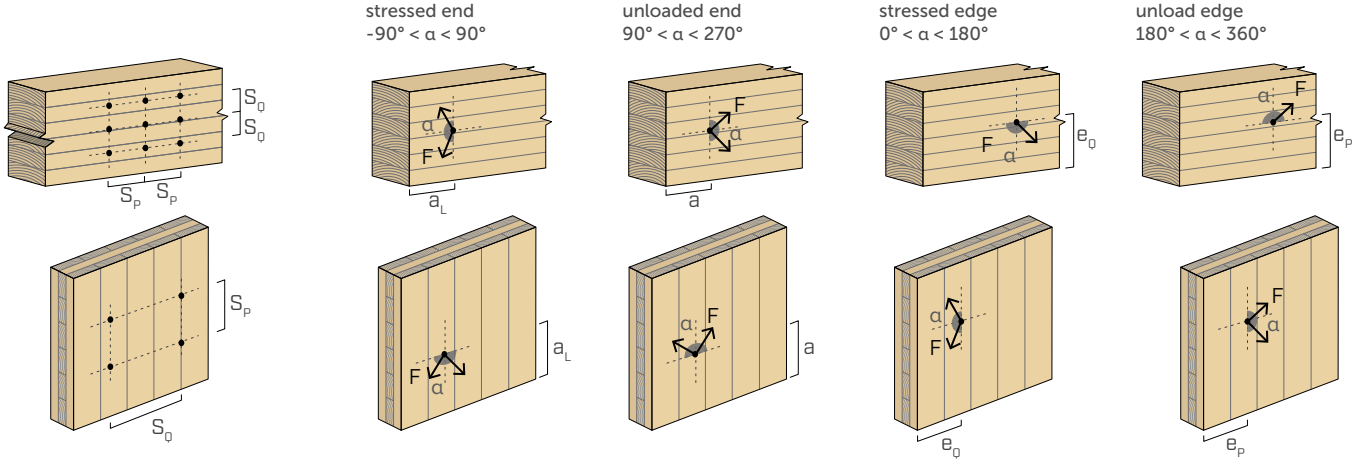
d_1		3,5 [mm]	*0.14 [in]*	4 [mm]	*0.16 [in]*	4,5 [mm]	*0.18 [in]*	5 [mm]	*0.20 [in]*	6 [mm]	*0.24 [in]*	8 [mm]	*0.32 [in]*
S_P	**18·d**	63	*2 1/2*	72	*2 13/16*	81	*3 3/16*	90	*3 1/2*	108	*4 1/4*	144	*5 11/16*
S_Q	**7·d**	25	*1*	28	*1 1/8*	32	*1 1/4*	35	*1 3/8*	42	*1 5/8*	56	*2 3/16*
a_L	**22·d**	77	*3 1/16*	88	*3 7/16*	99	*3 7/8*	110	*4 3/8*	132	*5 3/16*	176	*6 15/16*
a	**15·d**	53	*2 1/16*	60	*2 3/8*	68	*2 11/16*	75	*2 15/16*	90	*3 1/2*	120	*4 3/4*
e_Q	**12·d**	42	*1 5/8*	48	*1 7/8*	*54*	*2 1/8*	*60*	*2 3/8*	72	*2 13/16*	96	*3 3/4*
e_P	**7·d**	25	*1*	28	*1 1/8*	32	*1 1/4*	35	*1 3/8*	42	*1 5/8*	56	*2 3/16*

screws inserted **WITH pre-drilled hole**



d_1		3,5 [mm]	*0.14 [in]*	4 [mm]	*0.16 [in]*	4,5 [mm]	*0.18 [in]*	5 [mm]	*0.20 [in]*	6 [mm]	*0.24 [in]*	8 [mm]	*0.32 [in]*
S_P	**5·d†**	18	*11/16*	20	*13/16*	23	*7/8*	25	*1*	30	*1 3/16*	40	*1 9/16*
S_Q	**4·d**	14	*9/16*	16	*5/8*	18	*11/16*	20	*13/16*	24	*15/16*	32	*1 1/4*
a_L	**12·d†**	42	*1 5/8*	48	*1 7/8*	54	*2 1/8*	60	*2 3/8*	72	*2 13/16*	96	*3 3/4*
a	**7·d†**	25	*1*	28	*1 1/8*	32	*1 1/4*	35	*1 3/8*	42	*1 5/8*	56	*2 3/16*
e_Q	**7·d**	25	*1*	28	*1 1/8*	32	*1 1/4*	35	*1 3/8*	42	*1 5/8*	56	*2 3/16*
e_P	**3·d**	11	*7/16*	12	*1/2*	14	*9/16*	15	*9/16*	18	*11/16*	24	*15/16*

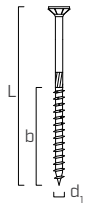
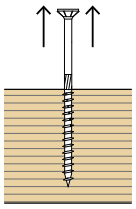
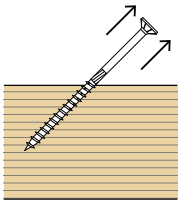
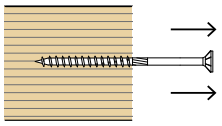
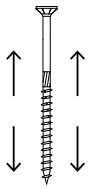
† For Douglas Fir–Larch and Western Red Cedar, this minimum spacing shall be increased by 50%.
d = d_1 = nominal diameter of the screw
α = load-to-grain angle



NOTES

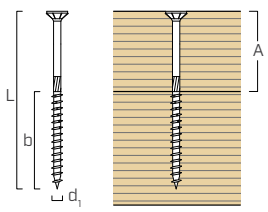
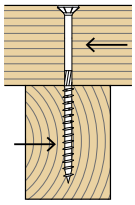
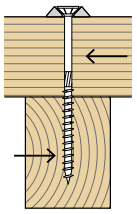
- The minimum spacing and distances comply with Clause 12.12.5 of CSA O86:24, where d_1 refers to the nominal diameter of the self-tapping screw.
- The spacing, end, and edge distances for Rothoblaas screws installed in the narrow face of CLT panels shall comply with the specifications outlined in ETA-11/0030.
- The placement of fasteners subjected to axial loading shall be determined in accordance with Clause 12.12.5 of CSA O86:24.

STRUCTURAL VALUES | AXIAL TENSION

geometry			TENSION[1]												
			thread withdrawal												steel tension
			α = 90°				α = 45°				end grain α = 0°				
															
			factored withdrawal resistance P_{rw}				factored withdrawal resistance P_{rw}				factored withdrawal resistance P_{rw}[2][3]				factored tension resistance T_{rs}
			G				G				G				
d_1	L		0.35	0.42	0.49	0.55	0.35	0.42	0.49	0.55	0.35	0.42	0.49	0.55	
[mm] *[in]*	[mm]	*[in]*	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
3,5 *0.14*	25	*1*	18	0,37	0,43	0,49	0,53	0,34	0,39	0,44	0,48	0,19	0,21	0,24	0,27	-
	30	*1 3/16*	18	0,37	0,43	0,49	0,53	0,34	0,39	0,44	0,48	0,19	0,21	0,24	0,27	
	35	*1 3/8*	18	0,37	0,43	0,49	0,53	0,34	0,39	0,44	0,48	0,19	0,21	0,24	0,27	
	40	*1 9/16*	18	0,37	0,43	0,49	0,53	0,34	0,39	0,44	0,48	0,19	0,21	0,24	0,27	
4 *0.16*	30	*1 3/16*	18	0,41	0,47	0,54	0,59	0,37	0,43	0,49	0,53	0,20	0,24	0,27	0,29	-
	35	*1 3/8*	18	0,41	0,47	0,54	0,59	0,37	0,43	0,49	0,53	0,20	0,24	0,27	0,29	
	40	*1 9/16*	24	0,59	0,68	0,77	0,84	0,53	0,62	0,70	0,76	0,29	0,34	0,38	0,42	
	45	*1 3/4*	30	0,76	0,88	1,00	1,09	0,69	0,80	0,91	0,99	0,38	0,44	0,50	0,55	
	50	*1 15/16*	30	0,76	0,88	1,00	1,09	0,69	0,80	0,91	0,99	0,38	0,44	0,50	0,55	
	60	*2 3/8*	35	0,91	1,05	1,19	1,30	0,83	0,95	1,08	1,18	0,45	0,53	0,59	0,65	
4,5 *0.16*	35	*1 3/8*	24	0,64	0,74	0,84	0,92	0,58	0,68	0,76	0,84	0,32	0,37	0,42	0,46	2,52
	40	*1 9/16*	24	0,64	0,74	0,84	0,92	0,58	0,68	0,76	0,84	0,32	0,37	0,42	0,46	
	45	*1 3/4*	30	0,84	0,97	1,10	1,21	0,76	0,88	1,00	1,10	0,42	0,49	0,55	0,60	
	50	*1 15/16*	30	0,84	0,97	1,10	1,21	0,76	0,88	1,00	1,10	0,42	0,49	0,55	0,60	
	60	*2 3/8*	35	1,00	1,16	1,32	1,44	0,91	1,06	1,20	1,31	0,50	0,58	0,66	0,72	
	70	*2 3/4*	40	1,17	1,35	1,53	1,68	1,06	1,23	1,39	1,53	0,58	0,68	0,77	0,84	
	80	*3 1/8*	40	1,17	1,35	1,53	1,68	1,06	1,23	1,39	1,53	0,58	0,68	0,77	0,84	
5 *0.20*	40	*1 9/16*	20	0,55	0,64	0,72	0,79	0,50	0,58	0,65	0,72	0,27	0,32	0,36	0,39	3,37
	45	*1 3/4*	24	0,70	0,80	0,91	1,00	0,63	0,73	0,83	0,91	0,35	0,40	0,46	0,50	
	50	*1 15/16*	24	0,70	0,80	0,91	1,00	0,63	0,73	0,83	0,91	0,35	0,40	0,46	0,50	
	60	*2 3/8*	30	0,92	1,06	1,20	1,31	0,83	0,96	1,09	1,19	0,46	0,53	0,60	0,66	
	70	*2 3/4*	35	1,10	1,27	1,44	1,58	1,00	1,16	1,31	1,43	0,55	0,64	0,72	0,79	
	80	*3 1/8*	40	1,28	1,48	1,68	1,84	1,16	1,35	1,52	1,67	0,64	0,74	0,84	0,92	
	90	*3 1/2*	45	1,46	1,69	1,92	2,10	1,33	1,54	1,74	1,91	0,73	0,85	0,96	1,05	
	100	*4*	50	1,65	1,91	2,16	2,36	1,50	1,73	1,96	2,15	0,82	0,95	1,08	1,18	
6 *0.24*	60	*2 3/8*	30	0,88	1,02	1,15	1,26	0,80	0,93	1,05	1,15	0,44	0,51	0,58	0,63	5,23
	80	*3 1/8*	40	1,25	1,44	1,63	1,79	1,13	1,31	1,48	1,63	0,62	0,72	0,82	0,89	
	100	*4*	50	1,61	1,87	2,11	2,32	1,47	1,70	1,92	2,11	0,81	0,93	1,06	1,16	
	120	*4 3/4*	60	1,98	2,29	2,59	2,84	1,80	2,08	2,36	2,58	0,99	1,15	1,30	1,42	
	140	*5 1/2*	75	2,53	2,93	3,31	3,63	2,30	2,66	3,01	3,30	1,26	1,46	1,66	1,82	
	160	*6 1/4*	75	2,53	2,93	3,31	3,63	2,30	2,66	3,01	3,30	1,26	1,46	1,66	1,82	
8 *0.32*	120	*4 3/4*	60	2,54	2,94	3,33	3,65	2,31	2,67	3,02	3,32	1,27	1,47	1,66	1,83	8,04
	160	*6 1/4*	80	3,52	4,07	4,61	5,06	3,20	3,70	4,19	4,60	1,76	2,04	2,30	2,53	
	200	*8*	80	3,52	4,07	4,61	5,06	3,20	3,70	4,19	4,60	1,76	2,04	2,30	2,53	
	240	*9 1/2*	80	3,52	4,07	4,61	5,06	3,20	3,70	4,19	4,60	1,76	2,04	2,30	2,53	
	280	*11*	80	3,52	4,07	4,61	5,06	3,20	3,70	4,19	4,60	1,76	2,04	2,30	2,53	
	320	*12 5/8*	80	3,52	4,07	4,61	5,06	3,20	3,70	4,19	4,60	1,76	2,04	2,30	2,53	

α = screw-to-grain angle

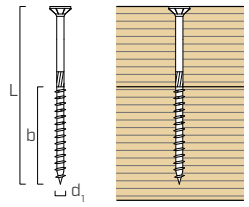
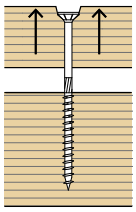
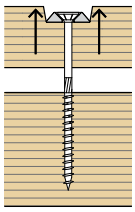
NOTES and GENERAL PRINCIPLES on page 8.

geometry					SHEAR[4]							
					timber-to-timber α = 90°				timber-to-timber with HUS A4 washer α = 90°			
												
					factored lateral resistance N_r				factored lateral resistance N_r			
					G				G			
d_1	L		b	A	0.35	0.42	0.49	0.55	0.35	0.42	0.49	0.55
[mm] *[in]*	[mm]	*[in]*	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
3,5 *0.14*	25	*1*	18	7	0,23	0,27	0,32	0,35	-	-	-	-
	30	*1 3/16*	18	12	0,26	0,31	0,37	0,40	-	-	-	-
	35	*1 3/8*	18	17	0,30	0,36	0,41	0,46	-	-	-	-
	40	*1 9/16*	18	22	0,33	0,38	0,43	0,46	-	-	-	-
4 *0.16*	30	*1 3/16*	18	12	0,30	0,36	0,42	0,47	-	-	-	-
	35	*1 3/8*	18	17	0,34	0,40	0,47	0,52	-	-	-	-
	40	*1 9/16*	24	16	0,36	0,41	0,47	0,51	-	-	-	-
	45	*1 3/4*	30	15	0,35	0,40	0,46	0,50	-	-	-	-
	50	*1 15/16*	30	20	0,39	0,45	0,49	0,53	-	-	-	-
	60	*2 3/8*	35	25	0,40	0,45	0,49	0,53	-	-	-	-
4,5 *0.16*	35	*1 3/8*	24	11	0,37	0,43	0,48	0,52	-	-	-	-
	40	*1 9/16*	24	16	0,41	0,47	0,53	0,59	-	-	-	-
	45	*1 3/4*	30	15	0,40	0,46	0,52	0,57	-	-	-	-
	50	*1 15/16*	30	20	0,44	0,51	0,58	0,62	-	-	-	-
	60	*2 3/8*	35	25	0,47	0,52	0,58	0,62	-	-	-	-
	70	*2 3/4*	40	30	0,47	0,52	0,58	0,62	-	-	-	-
	80	*3 1/8*	40	40	0,47	0,52	0,58	0,62	-	-	-	-
5 *0.20*	40	*1 9/16*	20	20	0,46	0,55	0,65	0,73	-	-	-	-
	45	*1 3/4*	24	21	0,51	0,61	0,69	0,76	-	-	-	-
	50	*1 15/16*	24	26	0,55	0,65	0,72	0,77	-	-	-	-
	60	*2 3/8*	30	30	0,59	0,65	0,72	0,77	-	-	-	-
	70	*2 3/4*	35	35	0,59	0,65	0,72	0,77	-	-	-	-
	80	*3 1/8*	40	40	0,59	0,65	0,72	0,77	-	-	-	-
	90	*3 1/2*	45	45	0,59	0,65	0,72	0,77	-	-	-	-
	100	*4*	50	50	0,59	0,65	0,72	0,77	-	-	-	-
6 *0.24*	60	*2 3/8*	30	30	0,75	0,90	1,03	1,11	0,76	0,90	1,03	1,13
	80	*3 1/8*	40	40	0,84	0,94	1,03	1,11	0,99	1,11	1,21	1,30
	100	*4*	50	50	0,84	0,94	1,03	1,11	1,08	1,21	1,33	1,43
	120	*4 3/4*	60	60	0,84	0,94	1,03	1,11	1,16	1,32	1,45	1,56
	140	*5 1/2*	75	65	0,84	0,94	1,03	1,11	1,16	1,32	1,47	1,60
	160	*6 1/4*	75	85	0,84	0,94	1,03	1,11	1,16	1,32	1,47	1,60
8 *0.32*	120	*4 3/4*	60	60	1,37	1,53	1,67	1,79	1,78	1,99	2,19	2,35
	160	*6 1/4*	80	80	1,37	1,53	1,67	1,79	1,82	2,07	2,30	2,50
	200	*8*	80	120	1,37	1,53	1,67	1,79	1,82	2,07	2,30	2,50
	240	*9 1/2*	80	160	1,37	1,53	1,67	1,79	1,82	2,07	2,30	2,50
	280	*11*	80	200	1,37	1,53	1,67	1,79	1,82	2,07	2,30	2,50
	320	*12 5/8*	80	240	1,37	1,53	1,67	1,79	1,82	2,07	2,30	2,50

α = screw-to-grain angle

NOTES and GENERAL PRINCIPLES on page 8.

STRUCTURAL VALUES | AXIAL TENSION

TENSION											
geometry				head pull-through				head pull-through with HUS A4 washer			
											
				factored head pull-through resistance P_{pt}				factored head pull-through resistance P_{pt}			
				G				G			
d_1	L		b	0.35	0.42	0.49	0.55	0.35	0.42	0.49	0.55
[mm] *[in]*	[mm]	*[in]*	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
3,5 *0.14*	25	*1*	18	0,24	0,29	0,34	0,38	-	-	-	-
	30	*1 3/16*	18	0,24	0,29	0,34	0,38	-	-	-	-
	35	*1 3/8*	18	0,24	0,29	0,34	0,38	-	-	-	-
	40	*1 9/16*	18	0,24	0,29	0,34	0,38	-	-	-	-
4 *0.16*	30	*1 3/16*	18	0,31	0,37	0,43	0,49	-	-	-	-
	35	*1 3/8*	18	0,31	0,37	0,43	0,49	-	-	-	-
	40	*1 9/16*	24	0,31	0,37	0,43	0,49	-	-	-	-
	45	*1 3/4*	30	0,31	0,37	0,43	0,49	-	-	-	-
	50	*1 15/16*	30	0,31	0,37	0,43	0,49	-	-	-	-
	60	*2 3/8*	35	0,31	0,37	0,43	0,49	-	-	-	-
4,5 *0.16*	35	*1 3/8*	24	0,38	0,46	0,54	0,60	-	-	-	-
	40	*1 9/16*	24	0,38	0,46	0,54	0,60	-	-	-	-
	45	*1 3/4*	30	0,38	0,46	0,54	0,60	-	-	-	-
	50	*1 15/16*	30	0,38	0,46	0,54	0,60	-	-	-	-
	60	*2 3/8*	35	0,38	0,46	0,54	0,60	-	-	-	-
	70	*2 3/4*	40	0,38	0,46	0,54	0,60	-	-	-	-
	80	*3 1/8*	40	0,38	0,46	0,54	0,60	-	-	-	-
5 *0.20*	40	*1 9/16*	20	0,47	0,56	0,65	0,73	-	-	-	-
	45	*1 3/4*	24	0,47	0,56	0,65	0,73	-	-	-	-
	50	*1 15/16*	24	0,47	0,56	0,65	0,73	-	-	-	-
	60	*2 3/8*	30	0,47	0,56	0,65	0,73	-	-	-	-
	70	*2 3/4*	35	0,47	0,56	0,65	0,73	-	-	-	-
	80	*3 1/8*	40	0,47	0,56	0,65	0,73	-	-	-	-
	90	*3 1/2*	45	0,47	0,56	0,65	0,73	-	-	-	-
	100	*4*	50	0,47	0,56	0,65	0,73	-	-	-	-
6 *0.24*	60	*2 3/8*	30	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
	80	*3 1/8*	40	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
	100	*4*	50	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
	120	*4 3/4*	60	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
	140	*5 1/2*	75	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
	160	*6 1/4*	75	0,64	0,77	0,90	1,01	1,91	2,29	2,67	2,99
8 *0.32*	120	*4 3/4*	60	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23
	160	*6 1/4*	80	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23
	200	*8*	80	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23
	240	*9 1/2*	80	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23
	280	*11*	80	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23
	320	*12 5/8*	80	0,89	1,07	1,25	1,41	2,69	3,23	3,77	4,23

α = screw-to-grain angle

NOTES and GENERAL PRINCIPLES on page 8.

STRUCTURAL VALUES

GENERAL PRINCIPLES

- The reference factored lateral resistance for self-tapping screws has been determined following the guidelines in Clause 12.12 of the CSA O86:24 including the withdrawal restraint effect. Listed values are based on standard long term load duration factor (K_D = 1.0), dry service condition factor (K_{SF} = 1.0), and treatment factor (K_T = 1.0).
- The reference lateral design values are calculated for screws inserted without pre-drilling as per CSA O86:24 Clause 12.12.10.5.3. The direction of the bearing-to-grain angle does not influence lateral resistance. In the case of screws inserted with pre-drilling, greater resistance values can be obtained.
- Head pull-through values have been determined in accordance with CSA O86:24, Clause A.12.12.8.3. Withdrawal and head pull-through values given in this datasheet are likewise applicable to CLT connections.
- Connection design requires comparing head pull-through resistance to both screw tensile capacity and thread withdrawal - the minimum of the three governs.
- Not all screw lengths satisfy the required embedment depth in either the side member ($4d_F$) or the main member ($8d_F$). Engineering discretion and judgment should be applied to evaluate the potential impact of reduced penetration on the connection's load-carrying capacity.
- SCI A2 screws must be positioned in accordance with the minimum distances.
- G is the mean relative density according to CSA O86:24 Table A12. Most common wood species are assumed such as Northern species (G = 0.35), Spruce-Pine-Fir (G = 0.42), Douglas Fir (G = 0.49), and Southern Pine (G = 0.55).
- The tabulated lateral design values are based on both wood members having the same specific gravity G.
- As part of the connection design, the designer must size and verify both the structural wood members and the steel plates separately.
- Combined shear and tensile stresses shall comply with the interaction criteria outlined in CSA O86:24 Clause 12.12.11.

NOTES

(1) Factored withdrawal resistances were calculated with the entire threaded portion of the screw, b (in millimeters), minus the tip length, L_{tip}. The length of the tip is equal to the nominal diameter of the respective fasteners, d_1, as specified in the ELC-4645 report. Factor for fastener axis-to-grain angle, J_α, and the factor for dowel bearing effect for laterally loaded connections, J_w, varies according to connection geometry. The factored tensile resistance of the connector (P_{rt}) is governed by the lower value between the withdrawal resistance (P_{rw}), head pull-through resistance (P_{pt}) and the steel strength (T_{rs}).

(2) The angle between the fastener axis and the grain direction of the wood member, α, is taken as zero for the end grain calculations. Self-tapping screws installed perpendicular to the panel edge of CLT are assumed to be installed in the end grain of member.

(3) SCI A2 screws installed in the end grain may not meet the minimum penetration requirement for withdrawal ($20d_1$) specified in CSA O86:24 Clause 12.12.6.1. Discretion and engineering judgment must be exercised to evaluate the impact of reduced penetration on the connection's capacity.

(4) Lateral resistances are factored and according to CSA O86:24 Clause 12.12.10. Values apply to dry service conditions and are representative of a single screw.