

SCI A2 | AISI304

COUNTERSUNK SCREW



3 THORNS TIP

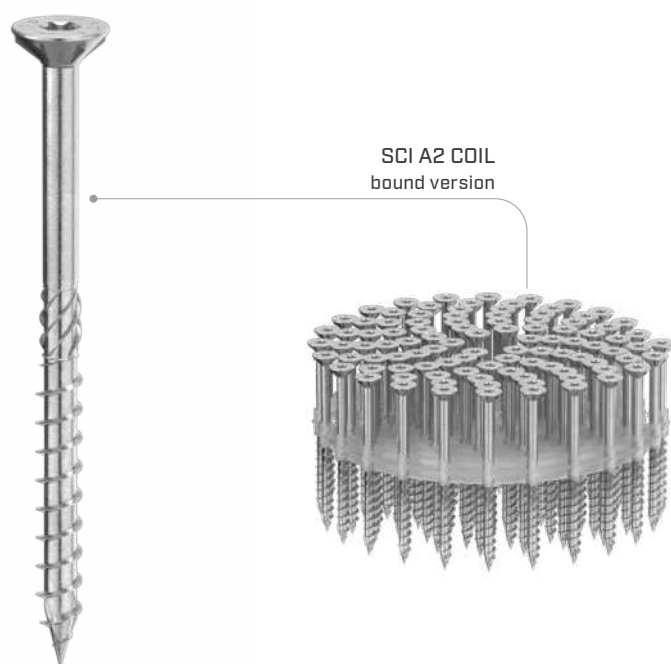
Thanks to the 3 THORNS tip, minimum installation distances are reduced. More screws can be used in less space and larger screws in smaller elements. Costs and time for project implementation are reduced.

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.



DIAMETER [mm]

3,5 8

LENGTH [mm]

20 ☒ 25 ☐ 320 ☐ 320

SERVICE CLASS

☒ SC1 ☒ SC2 ☒ SC3

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
4,5 TX 20	SCI4050	50	30	20	400
	SCI4060	60	35	25	200
	SCI4535	35	24	11	400
	SCI4540	40	24	16	400
5 TX 25	SCI4545	45	30	15	400
	SCI4550	50	30	20	200
	SCI4560	60	35	25	200
	SCI4570	70	40	30	200
5 TX 25	SCI4580	80	40	40	200
	SCI5040	40	20	20	200
	SCI5045	45	24	21	200
	SCI5050	50	24	26	200
5 TX 25	SCI5060	60	30	30	200
	SCI5070	70	35	35	100
	SCI5080	80	40	40	100
	SCI5090	90	45	45	100
5 TX 25	SCI5100	100	50	50	100

(*) Not holding CE marking.

SCI A2 COIL

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

Compatible with KMR 3373 and KMR 3352 for Ø4 and KMR 3372 and KMR 3338 for Ø5. For further information see page 403.

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
8 TX 40	SCI60140	140	75	65	100
	SCI60160	160	75	85	100
	SCI80120	120	60	60	100
	SCI80160	160	80	80	100
8 TX 40	SCI80200	200	80	120	100
	SCI80240	240	80	160	100
	SCI80280	280	80	200	100
	SCI80320	320	80	240	100

RELATED PRODUCTS

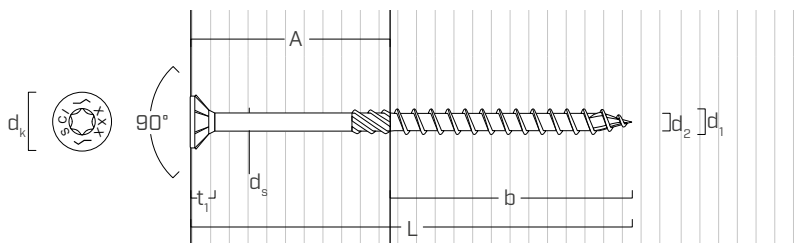


HUS A4
TURNED WASHER

see page 68

d ₁ [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
4 TX 20	SCICOIL4025	25	18	7	3000
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
Thread diameter	d ₂	[mm]	2,25	2,55	2,80	3,40	3,95	5,40
Shank diameter	d ₃	[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

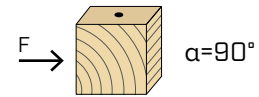
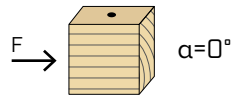
⁽¹⁾ For high density materials, pre-drilled holes are recommended based on the wood specie.

CHARACTERISTIC MECHANICAL PARAMETERS

Nominal diameter	d ₁	[mm]	3,5	4	4,5	5	6	8
Tensile strength	f _{tens,k}	[kN]	2,2	3,2	4,4	5,0	6,8	14,1
Yield moment	M _{y,k}	[Nm]	1,3	1,9	2,8	4,4	8,2	17,6
Withdrawal resistance parameter	f _{ax,k}	[N/mm ²]	19,1	17,1	17,2	17,9	11,6	14,8
Associated density	ρ _a	[kg/m ³]	440	410	410	440	420	410
Head-pull-through parameter	f _{head,k}	[N/mm ²]	16,0	13,4	18,0	17,6	12,0	12,5
Associated density	ρ _a	[kg/m ³]	380	390	440	440	440	440

MINIMUM DISTANCES FOR SHEAR LOADS

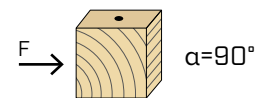
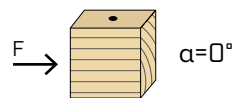
screws inserted **WITHOUT** pre-drilled hole $\rho_k \leq 420 \text{ kg/m}^3$



d_1 [mm]		3,5	4	4,5		5	6	8
a_1 [mm]	10·d	35	40	45	12·d	60	72	96
a_2 [mm]	5·d	18	20	23	5·d	25	30	40
$a_{3,t}$ [mm]	15·d	53	60	68	15·d	75	90	120
$a_{3,c}$ [mm]	10·d	35	40	45	10·d	50	60	80
$a_{4,t}$ [mm]	5·d	18	20	23	5·d	25	30	40
$a_{4,c}$ [mm]	5·d	18	20	23	5·d	25	30	40

d_1 [mm]		3,5	4	4,5		5	6	8
a_1 [mm]	5·d	18	20	23	5·d	25	30	40
a_2 [mm]	5·d	18	20	23	5·d	25	30	40
$a_{3,t}$ [mm]	10·d	35	40	45	10·d	50	60	80
$a_{3,c}$ [mm]	10·d	35	40	45	10·d	50	60	80
$a_{4,t}$ [mm]	7·d	25	28	32	10·d	50	60	80
$a_{4,c}$ [mm]	5·d	18	20	23	5·d	25	30	40

screws inserted **WITH** pre-drilled hole



d_1 [mm]		3,5	4	4,5		5	6	8
a_1 [mm]	5·d	18	20	23	5·d	25	30	40
a_2 [mm]	3·d	11	12	14	3·d	15	18	24
$a_{3,t}$ [mm]	12·d	42	48	54	12·d	60	72	96
$a_{3,c}$ [mm]	7·d	25	28	32	7·d	35	42	56
$a_{4,t}$ [mm]	3·d	11	12	14	3·d	15	18	24
$a_{4,c}$ [mm]	3·d	11	12	14	3·d	15	18	24

d_1 [mm]		3,5	4	4,5		5	6	8
a_1 [mm]	4·d	14	16	18	4·d	20	24	32
a_2 [mm]	4·d	14	16	18	4·d	20	24	32
$a_{3,t}$ [mm]	7·d	25	28	32	7·d	35	42	56
$a_{3,c}$ [mm]	7·d	25	28	32	7·d	35	42	56
$a_{4,t}$ [mm]	5·d	18	20	23	7·d	35	42	56
$a_{4,c}$ [mm]	3·d	11	12	14	3·d	15	18	24

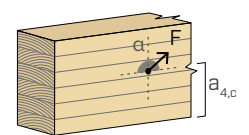
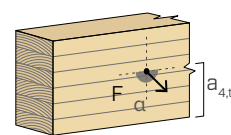
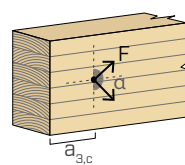
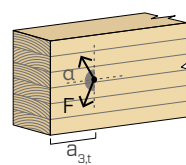
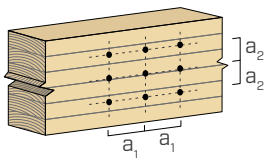
α = load-to-grain angle
 $d = d_1$ = nominal screw diameter

stressed end
 $-90^\circ < \alpha < 90^\circ$

unloaded end
 $90^\circ < \alpha < 270^\circ$

stressed edge
 $0^\circ < \alpha < 180^\circ$

unload edge
 $180^\circ < \alpha < 360^\circ$



MINIMUM DISTANCES

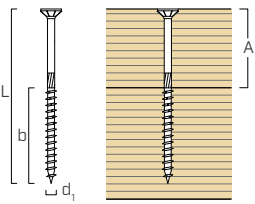
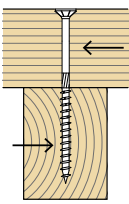
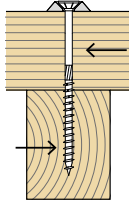
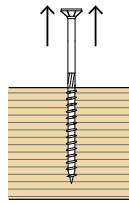
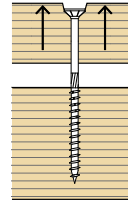
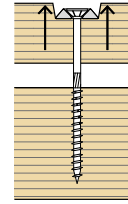
NOTES

- The minimum distances are according to EN 1995:2014 considering a calculation diameter of d = nominal screw diameter.
- The minimum spacing for all steel-to-timber connections (a_1 , a_2) can be multiplied by a coefficient of 0,7.
- The minimum spacing for all panel-to-timber connections (a_1 , a_2) can be multiplied by a coefficient of 0,85.

STRUCTURAL VALUES

NOTES

- The characteristic timber-to-timber shear strengths were evaluated by considering an angle ϵ of 90° between the grains of the second element and the connector.
- The characteristic thread withdrawal strengths were evaluated by considering an angle ϵ of 90° between the grains of the timber element and the connector.
- For the calculation process a timber characteristic density $\rho_k = 385 \text{ kg/m}^3$ has been considered.
 For different ρ_k values, the strength values in the table can be converted by the k_{dens} coefficient (see page 42).
- For a row of n screws arranged parallel to the direction of the grain at a distance a_1 , the characteristic effective shear bearing capacity $R_{ef,V,k}$ can be calculated by means of the effective number n_{ef} (see page 42).

				SHEAR		TENSION		
geometry				timber-to-timber	timber-to-timber with washer	thread withdrawal	head pull-through	head pull-through with washer
								
d ₁ [mm]	L [mm]	b [mm]	A [mm]	R _{V,k} [kN]	R _{V,k} [kN]	R _{ax,k} [kN]	R _{head,k} [kN]	R _{head,k} [kN]
3,5	25	18	7	0,41	-	1,08	0,79	-
	30	18	12	0,55	-	1,08	0,79	-
	35	18	17	0,63	-	1,08	0,79	-
	40	18	22	0,64	-	1,08	0,79	-
4	30	18	12	0,62	-	1,17	0,85	-
	35	18	17	0,68	-	1,17	0,85	-
	40	24	16	0,69	-	1,56	0,85	-
	45	30	15	0,67	-	1,95	0,85	-
	50	30	20	0,76	-	1,95	0,85	-
4,5	60	35	25	0,78	-	2,28	0,85	-
	35	24	11	0,76	-	1,77	1,31	-
	40	24	16	0,88	-	1,77	1,31	-
	45	30	15	0,87	-	2,21	1,31	-
	50	30	20	0,95	-	2,21	1,31	-
	60	35	25	1,04	-	2,58	1,31	-
	70	40	30	1,04	-	2,94	1,31	-
	80	40	40	1,04	-	2,94	1,31	-
5	40	20	20	1,04	-	1,61	1,58	-
	45	24	21	1,13	-	1,93	1,58	-
	50	24	26	1,21	-	1,93	1,58	-
	60	30	30	1,35	-	2,41	1,58	-
	70	35	35	1,35	-	2,82	1,58	-
	80	40	40	1,35	-	3,22	1,58	-
	90	45	45	1,35	-	3,62	1,58	-
	100	50	50	1,35	-	4,02	1,58	-
6	60	30	30	1,48	1,44	1,95	1,55	4,31
	80	40	40	1,77	1,92	2,60	1,55	4,31
	100	50	50	1,77	2,13	3,25	1,55	4,31
	120	60	60	1,77	2,29	3,90	1,55	4,31
	140	75	65	1,77	2,46	4,87	1,55	4,31
8	160	75	85	1,77	2,46	4,87	1,55	4,31
	120	60	60	2,83	3,79	6,76	2,36	7,02
	160	80	80	2,83	4,00	9,01	2,36	7,02
	200	80	120	2,83	4,00	9,01	2,36	7,02
	240	80	160	2,83	4,00	9,01	2,36	7,02
	280	80	200	2,83	4,00	9,01	2,36	7,02
	320	80	240	2,83	4,00	9,01	2,36	7,02

GENERAL PRINCIPLES

- Characteristic values are consistent with EN 1995:2014 and in accordance with EN 14592.
- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k \cdot k_{mod}}{\gamma_M}$$

The coefficients γ_M and k_{mod} should be taken according to the current regulations used for the calculation.

- Mechanical strength values and screw geometry comply with CE marking according to EN 14592.
- Dimensioning and verification of the timber elements must be carried out separately.

- The characteristic shear resistances are calculated for screws inserted without pre-drilling hole. In the case of screws inserted with pre-drilling hole, greater resistance values can be obtained.
- The screws must be positioned in accordance with the minimum distances.
- The thread withdrawal characteristic strength has been evaluated considering a fixing length equal to b.
- The characteristic resistance to head pull-through was calculated using timber elements.
- The characteristic timber-to-timber shear strengths with washer were evaluated considering the actual thread length in the second element.