

SAE-SAEL

## Suporte com abas exteriores

*O SAE soube impôr-se na construção há alguns anos. A sua utilização abrange um vasto leque de aplicações. As montagens são fiáveis, sem necessidade de maquinaria e contribuem para a fiabilidade da obra.*

## Características

### Matéria

- Aço galvanizado S250GD + Z275 em conformidade com a norma NF EN 10346,
- Espessura : 2 mm.

### Ventagens

- Instalação rápida e simples,
- Larguras à escolha consoante los intervalos indicados.

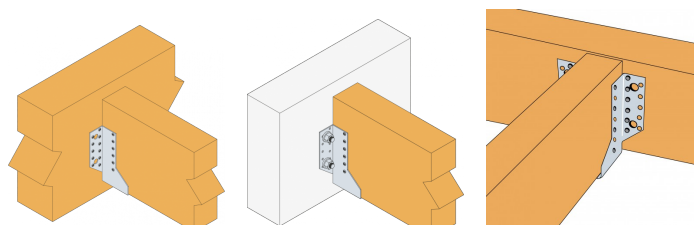
## Aplicações

### Suporte

- **Elemento de suporte** : madeira maciça, aglomerado de madeira, laminada colada, aço, betão,
- **Elemento suportado** : madeira maciça, aglomerado de madeira, laminada colada.

### Áreas de utilização

- Barrotes, madres,
- Vigas lisas e pilar de revestimento de proteção,
- Batentes de varas,
- Reforço de montagens existentes.

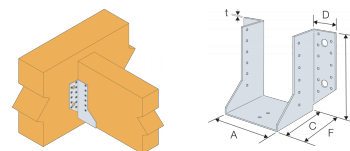


Clouage partiel sur bois

SAE-SAEL  
**Suporte com abas exteriores**

## Dados técnicos

Desenvolvimentos e larguras

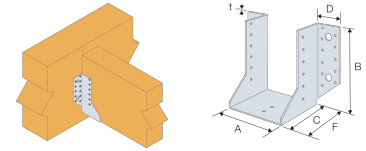


Referência	Blank model [mm]	Larguras [mm]	Depth [mm]	Anchor on the header	Fasteners on the header CNA4.0x50 or CSA5.0x40	Fasteners on the joist CNA4.0x50 or CSA5.0x40
SAE200/2X	200	24 - 80	84	2 Ø10	8	5
SAE250/2X	250	24 - 80	84	2 Ø10	12	7
SAEL300/2X	300	24 - 116	84	4 Ø12	18	10
SAEL340/2X	340	24 - 116	84	4 Ø12	22	12
SAEL380/2X	380	24 - 156	84	4 Ø12	22	12
SAEL440/2X	440	24 - 156	84	4 Ø12	28	15
SAEL500/2X	500	24 - 156	84	6 Ø12	34	15

Para mais informações sobre os valores das cargas em função da largura do suporte, contacte o departamento técnico.

## SAE-SAEL Suporte com abas exteriores

### Dimensões e valores característicos



Referência	Portador [mm]				Dimensões e valores característicos [mm]							Furos portador			Furos suportado
	Larguras		Altura		A	B	C	D	F	t	Ø5	Ø11	Ø13	Ø5	
	Larguras	Máx.	Larguras	Máx.											
SAE200/32/2	30	32	99	126	32	84	84	41.5	86	2	8	2	-	5	
SAE250/32/2	30	32	119	164		109	84	41.5	86	2	12	2	-	7	
SAE300/32/2	30	32	149	201		134	84	41.5	86	2	18	-	4	10	
SAE200/38/2	36	38	96	122	38	81	84	41.5	86	2	8	2	-	5	
SAE250/38/2	36	38	116	159		106	84	41.5	86	2	12	2	-	7	
SAE300/38/2	36	38	146	197		131	84	41.5	86	2	18	-	4	10	
SAE340/38/2	36	38	166	227		151	84	41.5	86	2	22	-	4	12	
SAE440/38/2	36	38	216	302	40	201	84	41.5	86	2	28	-	4	15	
SAE200/40/2	38	40	95	120		80	84	41.5	86	2	8	2	-	5	
SAE250/40/2	38	40	115	158		105	84	41.5	86	2	12	2	-	7	
SAE300/40/2	38	40	145	195		130	84	41.5	86	2	18	-	4	10	
SAE340/40/2	38	40	165	225		150	84	41.5	86	2	22	-	4	12	
SAE200/46/2	44	46	92	116	46	77	84	41.5	86	2	8	2	-	5	
SAE250/46/2	44	46	112	153		102	84	41.5	86	2	12	2	-	7	
SAE340/46/2	44	46	162	221		147	84	41.5	86	2	22	-	4	12	
SAE500/46/2	44	46	242	341		227	84	41.5	86	2	34	-	6	18	
SAE200/50/2	48	50	90	113	50	75	84	41.5	86	2	8	2	-	5	
SAE250/50/2	48	50	110	150		100	84	41.5	86	2	12	2	-	7	
SAE300/50/2	48	50	140	188		125	84	41.5	86	2	18	-	4	10	
SAE340/50/2	48	50	160	218		145	84	41.5	86	2	22	-	4	12	
SAE500/50/2	48	50	240	338		225	84	41.5	86	2	34	-	6	18	
SAE200/60/2	58	60	85	105	60	70	84	41.5	86	2	8	2	-	5	
SAE250/60/2	58	60	105	143		95	84	41.5	86	2	12	2	-	7	
SAE300/60/2	58	60	135	180		120	84	41.5	86	2	18	-	4	10	
SAE340/60/2	58	60	155	210		140	84	41.5	86	2	22	-	4	12	
SAE200/64/2	62	64	83	102	64	68	84	41.5	86	2	8	2	-	5	
SAE250/64/2	62	64	103	140		93	84	41.5	86	2	12	2	-	7	
SAE300/64/2	62	64	133	177		118	84	41.5	86	2	18	-	4	10	
SAE340/64/2	62	64	153	207		138	84	41.5	86	2	22	-	4	12	
SAE380/64/2	62	64	173	237		158	84	41.5	86	2	22	-	4	12	
SAE380/66/2	64	66	172	236	66	157	84	41.5	86	2	22	-	4	12	
SAE440/66/2	64	66	202	281		187	84	41.5	86	2	28	-	4	15	
SAE200/70/2	68	70	80	98		65	84	41.5	86	2	8	2	-	5	
SAE250/70/2	68	70	100	135	70	90	84	41.5	86	2	12	2	-	7	
SAE300/70/2	68	70	130	173		115	84	41.5	86	2	18	-	4	10	
SAE340/70/2	68	70	150	203		135	84	41.5	86	2	22	-	4	12	
SAE380/70/2	68	70	170	233		155	84	41.5	86	2	22	-	4	12	
SAE440/70/2	68	70	200	278		185	84	41.5	86	2	28	-	4	15	
SAEL300/72/2	70	72	129	171	72	114	84	41.5	86	2	16	-	4	8	
SAEL340/72/2	70	72	149	201		134	84	41.5	86	2	20	-	4	10	
SAE380/72/2	70	72	169	231		154	84	41.5	86	2	22	-	4	12	
SAE440/72/2	70	72	199	276		184	84	41.5	86	2	28	-	4	15	
SAE200/76/2	74	76	77	93	76	62	84	41.5	86	2	8	2	-	5	
SAE250/76/2	74	76	97	131		87	84	41.5	86	2	12	2	-	7	

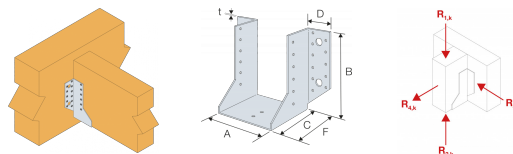
SAE-SAEL

Suporte com abas exteriores

Referência	Portador [mm]				Dimensões e valores característicos [mm]							Furos portador			Furos suportado
	Larguras		Altura		A	B	C	D	F	t	Ø5	Ø11	Ø13	Ø5	
	Larguras	Máx.	Larguras	Máx.											
SAEL300/76/2	74	76	127	168	80	112	84	41.5	86	2	16	-	4	8	
SAEL340/76/2	74	76	147	198		132	84	41.5	86	2	20	-	4	10	
SAE380/76/2	74	76	167	228		152	84	41.5	86	2	22	-	4	12	
SAE440/76/2	74	76	197	273		182	84	41.5	86	2	28	-	4	15	
SAE500/76/2	74	76	227	318		212	84	41.5	86	2	34	-	6	18	
SAE200/80/2	78	80	75	90	80	60	84	41.5	86	2	8	2	-	5	
SAE250/80/2	78	80	95	128		85	84	41.5	86	2	12	2	-	7	
SAEL300/80/2	78	80	125	165		110	84	41.5	86	2	16	-	4	8	
SAEL340/80/2	78	80	145	195		130	84	41.5	86	2	20	-	4	10	
SAE380/80/2	78	80	165	225		150	84	41.5	86	2	22	-	4	12	
SAE440/80/2	78	80	195	270		180	84	41.5	86	2	28	-	4	15	
SAE500/80/2	78	80	225	315		210	84	41.5	86	2	34	-	6	18	
SAE380/90/2	88	90	160	218		90	145	84	41.5	86	2	22	-	4	12
SAE440/90/2	88	90	190	263			175	84	41.5	86	2	28	-	4	15
SAE500/90/2	88	90	220	308			205	84	41.5	86	2	34	-	6	18
SAE380/92/2	90	92	159	216	92	144	84	41.5	86	2	22	-	4	12	
SAE440/95/2	93	95	188	259	95	172.5	84	41.5	86	2	28	-	4	15	
SAE500/95/2	93	95	218	304		202.5	84	41.5	86	2	34	-	6	18	
SAEL300/100/2	98	100	115	150	100	100	84	41.5	86	2	16	-	4	8	
SAE380/100/2	98	100	155	210		140	84	41.5	86	2	22	-	4	12	
SAE440/100/2	98	100	185	255		170	84	41.5	86	2	28	-	4	15	
SAE500/100/2	98	100	215	300		200	84	41.5	86	2	34	-	6	18	
SAEL500/115/2	113	115	208	289	115	192.5	84	41.5	86	2	32	-	6	16	
SAEL380/120/2	118	120	145	195	120	130	84	41.5	86	2	20	-	4	10	
SAEL440/120/2	118	120	175	240		160	84	41.5	86	2	26	-	4	13	
SAEL500/120/2	118	120	205	285		190	84	41.5	86	2	32	-	6	16	
SAEL440/136/2	134	136	167	228	136	152	84	41.5	86	2	26	-	4	13	
SAEL500/140/2	138	140	195	270	140	180	84	41.5	86	2	32	-	6	16	
SAEL500/150/2	148	150	190	263	150	175	84	41.5	86	2	32	-	6	16	

## SAE-SAEL Suporte com abas exteriores

Valores característicos - Madeira/Madeira - pregagem total



Valores característicos - Madeira sobre madeira - pregagem total

Referência	Valores característicos - Madeira sobre madeira - pregagem total										
	A	Fixações		Valores característicos - Madeira classe C24 [kN]							
		Portador	Suportado	R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
		Qdad	Qdad	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAE200/32/2	32	8	5	6.3	-	3.3	-	0.9	-	2.5	-
SAE250/32/2		12	7	9.8	-	6	-	1.5	-	3.7	-
SAE300/32/2		18	10	16.1	-	11.3	-	3.3	-	5.5	-
SAE200/38/2	38	8	5	6	-	3.3	-	0.9	-	2.5	-
SAE250/38/2		12	7	9.4	-	6	-	1.5	-	3.7	-
SAE300/38/2		18	10	15.6	-	11.3	-	3.3	-	5.5	-
SAE340/38/2		22	12	20.2	-	15.6	-	4.3	-	6.7	-
SAE440/38/2		28	15	28.5	-	22.9	-	5	-	8.6	-
SAE200/40/2	40	8	5	5.9	-	3.3	-	0.9	-	2.5	-
SAE250/40/2		12	7	9.3	-	6	-	1.5	-	3.7	-
SAE300/40/2		18	10	15.4	-	11.3	-	3.3	-	5.5	-
SAE340/40/2		22	12	20	-	15.6	-	4.4	-	6.7	-
SAE200/46/2	46	8	5	5.5	-	3.3	-	0.9	-	2.5	-
SAE250/46/2		12	7	8.9	-	6	-	1.5	-	3.7	-
SAE340/46/2		22	12	19.5	-	15.6	-	4.4	-	6.7	-
SAE500/46/2		34	18	33.5	-	30.2	-	6.2	-	10.4	-
SAE200/50/2	50	8	5	5.3	-	3.3	-	0.9	-	2.5	-
SAE250/50/2		12	7	8.6	-	6	-	1.5	-	3.7	-
SAE300/50/2		18	10	14.5	-	11.3	-	3.3	-	5.5	-
SAE340/50/2		22	12	19.1	-	15.6	-	4.4	-	6.7	-
SAE500/50/2		34	18	33.5	-	30.2	-	6.6	-	10.4	-
SAE200/60/2	60	8	5	4.7	7.4	3.3	5.3	0.9	1.3	2.5	3.9
SAE250/60/2		12	7	7.8	12.1	6	9.4	1.5	2.1	3.7	5.9
SAE300/60/2		18	10	13.6	20.8	11.3	17.6	3.3	4.4	5.5	8.8
SAE340/60/2		22	12	18.1	27.4	15.6	24	4.4	5.9	6.7	10.8
SAE200/64/2	64	8	5	4.5	7	3.3	5.3	0.9	1.3	2.5	3.9
SAE250/64/2		12	7	7.5	11.7	6	9.4	1.5	2.1	3.7	5.9
SAE300/64/2		18	10	13.2	20.3	11.3	17.6	3.4	4.4	5.5	8.8
SAE340/64/2		22	12	17.7	26.9	15.6	24	4.5	5.9	6.7	10.8
SAE380/64/2		22	12	21.5	31	15.6	24	3.8	5.1	6.7	10.8
SAE380/66/2	66	22	12	21.3	31	15.6	24	3.8	5.1	6.7	10.8
SAE440/66/2		28	15	28.5	37.7	22.9	33.2	5.5	7.2	8.6	13.7
SAE200/70/2	70	8	5	4.1	6.5	3.3	5.3	0.9	1.3	2.5	3.9
SAE250/70/2		12	7	7.1	11	6	9.4	1.5	2.1	3.7	5.9
SAE300/70/2		18	10	12.7	19.5	11.3	17.6	3.4	4.4	5.5	8.8
SAE340/70/2		22	12	17.1	26	15.6	24	3.8	5.9	6.7	10.8
SAE380/70/2		22	12	21	31	15.6	24	3.8	5.1	6.7	10.8
SAE440/70/2		28	15	28.5	37.7	22.9	33.2	5.5	7.2	8.6	13.7
SAEL300/72/2	72	16	8	12.4	18.9	9.4	14.6	2.6	3.4	4.9	7.8
SAEL340/72/2		20	10	16.7	25.3	13.4	20.7	3.6	4.8	6.1	9.8
SAE380/72/2		22	12	20.8	31	15.6	24	3.8	5.1	6.7	10.8
SAE440/72/2		28	15	28.5	37.7	22.9	33.2	5.5	7.3	8.6	13.7
SAE200/76/2	76	8	5	3.8	5.9	3.3	5.3	0.9	1.4	2.5	3.9

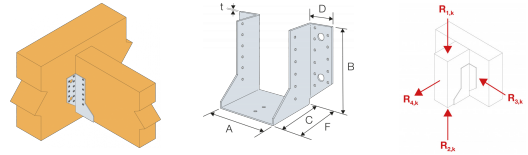
SAE-SAEL

Suporte com abas exteriores

Referência	A	Valores característicos - Madeira sobre madeira - pregagem total									
		Fixações		Valores característicos - Madeira classe C24 [kN]							
		Portador	Suportado	R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
		Qdad	Qdad	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAE250/76/2		12	7	6.6	10.3	6	9.4	1.5	2.1	3.7	5.9
SAEL300/76/2		16	8	12	18.4	9.4	14.6	2.6	3.4	4.9	7.8
SAEL340/76/2		20	10	16.3	24.7	13.4	20.7	3.6	4.8	6.1	9.8
SAE380/76/2		22	12	20.4	30.5	15.6	24	3.8	5.1	6.7	10.8
SAE440/76/2		28	15	28.1	37.7	22.9	33.2	5.5	7.3	8.6	13.7
SAE500/76/2		34	18	33.5	44.3	30.2	39.9	6.6	9.5	10.4	16.7
SAE200/80/2		8	5	3.5	5.6	3.3	5.3	0.9	1.4	2.5	3.9
SAE250/80/2		12	7	6.3	9.9	6	9.4	1.5	2.1	3.7	5.9
SAEL300/80/2		16	8	11.7	17.9	9.4	14.6	2.6	3.4	4.9	7.8
SAEL340/80/2	80	20	10	15.9	24.2	13.4	20.7	3.6	4.8	6.1	9.8
SAE380/80/2		22	12	20	30	15.6	24	3.8	5.1	6.7	10.8
SAE440/80/2		28	15	27.7	37.7	22.9	33.2	5.5	7.3	8.6	13.7
SAE500/80/2		34	18	33.5	44.3	30.2	39.9	6.6	9.5	10.4	16.7
SAE380/90/2		22	12	19.1	28.8	15.6	24	3.8	5.2	6.7	10.8
SAE440/90/2	90	28	15	26.7	37.7	22.9	33.2	5.6	7.3	8.6	13.7
SAE500/90/2		34	18	33.5	44.3	30.2	39.9	6.6	9.6	10.4	16.7
SAE380/92/2	92	22	12	18.9	28.5	15.6	24	3.8	5.2	6.7	10.8
SAE440/95/2		28	15	26.2	37.7	22.9	33.2	5.6	7.4	8.6	13.7
SAE500/95/2	95	34	18	33.5	44.3	30.2	39.9	6.6	9.6	10.4	16.7
SAEL300/100/2		16	8	9.9	15.3	9.4	14.6	2.6	3.5	4.9	7.8
SAE380/100/2		22	12	18.1	27.4	15.6	24	3.8	5.2	6.7	10.8
SAE440/100/2	100	28	15	25.7	37.7	22.9	33.2	5.6	7.4	8.6	13.7
SAE500/100/2		34	18	33.5	44.3	30.2	39.9	6.6	9.6	10.4	16.7
SAEL500/115/2	115	32	16	30.2	39.9	26.8	35.5	6.6	8.5	10.4	15.7
SAEL380/120/2		20	10	15.9	24.2	13.4	20.7	3.8	4.2	6.7	9.8
SAEL440/120/2	120	26	13	23.1	33.2	20.4	28.8	4.7	6.3	8	12.7
SAEL500/120/2		32	16	30.2	39.9	26.8	35.5	6.6	8.5	10.4	15.7
SAEL440/136/2	136	26	13	21.4	32.5	20.4	28.8	4.8	6.3	8	12.7
SAEL500/140/2	140	32	16	29	39.9	26.8	35.5	6.6	8.5	10.4	15.7
SAEL500/150/2	150	32	16	27.8	39.9	26.8	35.5	6.6	8.5	10.4	15.7

## SAE-SAEL Suporte com abas exteriores

Valores característicos - Madeira/madeira - Pregagem parcial



Referência	Characteristic capacities - Timber to timber - Partial nailing -									
	Fixações		Valores característicos - Madeira classe C24 [kN]							
	Portador	Suportado	R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
	Qdad	Qdad	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAE200/32/2	4	4	3.7	-	1.8	-	0.4	-	1.2	-
SAE250/32/2	6	4	5.8	-	2.5	-	0.8	-	1.8	-
SAE300/32/2	10	6	9.1	-	6.5	-	1.1	-	3.1	-
SAE200/38/2	4	4	3.5	-	1.8	-	0.5	-	1.2	-
SAE250/38/2	6	4	5.6	-	2.5	-	0.8	-	1.8	-
SAE300/38/2	10	6	8.8	-	6.5	-	1.1	-	3.1	-
SAE340/38/2	12	6	11.9	-	8.7	-	1.8	-	3.7	-
SAE440/38/2	14	8	16.8	-	11	-	1.9	-	4.3	-
SAE200/40/2	4	4	3.5	-	1.8	-	0.5	-	1.2	-
SAE250/40/2	6	4	5.6	-	2.5	-	0.8	-	1.8	-
SAE300/40/2	10	6	8.7	-	6.5	-	1.1	-	3.1	-
SAE340/40/2	12	6	11.8	-	8.7	-	1.9	-	3.7	-
SAE200/46/2	4	4	3.3	-	1.8	-	0.5	-	1.2	-
SAE250/46/2	6	4	5.4	-	2.5	-	0.8	-	1.8	-
SAE340/46/2	12	6	11.5	-	8.7	-	2.1	-	3.7	-
SAE500/46/2	18	10	20.1	-	16.8	-	2.3	-	5.5	-
SAE200/50/2	4	4	3.2	-	1.8	-	0.5	-	1.2	-
SAE250/50/2	6	4	5.2	-	2.5	-	0.8	-	1.8	-
SAE300/50/2	10	6	8.2	-	6.5	-	1.1	-	3.1	-
SAE340/50/2	12	6	11.3	-	8.7	-	2.2	-	3.7	-
SAE500/50/2	18	10	20.1	-	16.8	-	2.5	-	5.5	-
SAE200/60/2	4	4	2.9	4.5	1.8	2.8	0.5	0.7	1.2	2
SAE250/60/2	6	4	4.9	7.4	2.5	3.9	0.8	1.1	1.8	2.9
SAE300/60/2	10	6	7.7	11.7	6.5	10	1.2	1.5	3.1	4.9
SAE340/60/2	12	6	10.8	16.2	8.7	13.3	2.5	3.6	3.7	5.9
SAE200/64/2	4	4	2.8	4.3	1.8	2.8	0.5	0.7	1.2	2
SAE250/64/2	6	4	4.7	7.2	2.5	3.9	0.8	1.1	1.8	2.9
SAE300/64/2	10	6	7.4	11.4	6.5	10	1.2	1.5	3.1	4.9
SAE340/64/2	12	6	10.5	15.9	8.7	13.3	2.6	3.7	3.7	5.9
SAE380/64/2	12	6	12.6	17.7	8.7	13.3	2.4	3.2	3.7	5.9
SAE380/66/2	12	6	12.5	17.7	8.7	13.3	2.4	3.2	3.7	5.9
SAE440/66/2	14	8	15.9	22.2	11	16.8	2.8	3.7	4.3	6.9
SAE200/70/2	4	4	2.6	4.1	1.8	2.8	0.5	0.7	1.2	2
SAE250/70/2	6	4	4.5	6.9	2.5	3.9	0.8	1.1	1.8	2.9
SAE300/70/2	10	6	7.1	10.9	6.5	10	1.2	1.5	3.1	4.9
SAE340/70/2	12	6	10.2	15.4	8.7	13.3	2.7	3.7	3.7	5.9
SAE380/70/2	12	6	12.3	17.7	8.7	13.3	2.4	3.2	3.7	5.9
SAE440/70/2	14	8	15.7	22.2	11	16.8	2.8	3.7	4.3	6.9
SAEL300/72/2	8	4	7.5	11.2	4.6	7.1	1.3	1.8	2.5	3.9

Os valores indicados na tabela acima são válidos para vigota sobre viga e vigota sobre pilar, desde que respeitados os planos de cravação parcial específicos para cada configuração dada em nossa ETE-06/0270 página 17.

## SAE-SAEL Suporte com abas exteriores

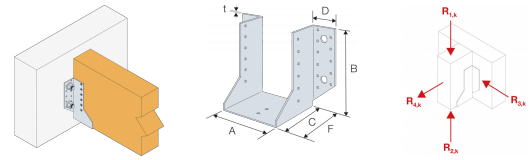
Referência	Characteristic capacities - Timber to timber - Partial nailing -									
	Fixações		Valores característicos - Madeira classe C24 [kN]							
	Portador	Suportado	R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
	Qdad	Qdad	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAEL340/72/2	10	6	9.5	14.2	6.4	10	1.9	2.5	3.1	4.9
SAE380/72/2	12	6	12.2	17.7	8.7	13.3	2.4	3.2	3.7	5.9
SAE440/72/2	14	8	15.6	22.2	11	16.8	2.8	3.7	4.3	6.9
SAE200/76/2	4	4	2.5	3.8	1.8	2.8	0.5	0.7	1.2	2
SAE250/76/2	6	4	4.2	6.5	2.5	3.9	0.8	1.1	1.8	2.9
SAEL300/76/2	8	4	7.3	10.9	4.6	7.1	1.3	1.8	2.5	3.9
SAEL340/76/2	10	6	9.3	14	6.4	10	1.9	2.5	3.1	4.9
SAE380/76/2	12	6	12	17.7	8.7	13.3	2.4	3.2	3.7	5.9
SAE440/76/2	14	8	15.4	22.2	11	16.8	2.8	3.7	4.3	6.9
SAE500/76/2	18	10	20.1	26.6	16.8	22.2	3.2	4.3	5.5	8.8
SAE200/80/2	4	4	2.3	3.6	1.8	2.8	0.6	0.7	1.2	2
SAE250/80/2	6	4	4.1	6.3	2.5	3.9	0.8	1.1	1.8	2.9
SAEL300/80/2	8	4	7.1	10.7	4.6	7.1	1.4	1.8	2.5	3.9
SAEL340/80/2	10	6	9.1	13.7	6.4	10	1.9	2.5	3.1	4.9
SAE380/80/2	12	6	11.8	17.5	8.7	13.3	2.4	3.2	3.7	5.9
SAE440/80/2	14	8	15.2	22.2	11	16.8	2.8	3.8	4.3	6.9
SAE500/80/2	18	10	20.1	26.6	16.8	22.2	3.3	4.3	5.5	8.8
SAE380/90/2	12	6	11.3	16.9	8.7	13.3	2.5	3.2	3.7	5.9
SAE440/90/2	14	8	14.8	21.7	11	16.8	2.9	3.8	4.3	6.9
SAE500/90/2	18	10	20.1	26.6	16.8	22.2	3.3	4.3	5.5	8.8
SAE380/92/2	12	6	11.2	16.7	8.7	13.3	2.5	3.3	3.7	5.9
SAE440/95/2	14	8	14.5	21.4	11	16.8	2.9	3.8	4.3	6.9
SAE500/95/2	18	10	20.1	26.6	16.8	22.2	3.3	4.4	5.5	8.8
SAEL300/100/2	8	4	6.2	9.5	4.6	7.1	1.4	1.8	2.5	3.9
SAE380/100/2	12	6	10.8	16.2	8.7	13.3	2.5	3.3	3.7	5.9
SAE440/100/2	14	8	14.2	21.1	11	16.8	2.9	3.8	4.3	6.9
SAE500/100/2	18	10	20	26.6	16.8	22.2	3.3	4.4	5.5	8.8
SAEL500/115/2	16	8	16.8	22.2	13.4	17.7	3.3	4.4	4.9	7.8
SAEL380/120/2	10	6	9.1	13.7	6.4	10	1.6	2.2	3.1	4.9
SAEL440/120/2	12	8	12.4	18.3	11.1	16.7	2	2.7	3.7	5.9
SAEL500/120/2	16	8	16.8	22.2	13.4	17.7	3.3	4.4	4.9	7.8
SAEL440/136/2	12	8	11.7	17.3	11.1	16.7	2.1	2.7	3.7	5.9
SAEL500/140/2	16	8	16.1	22.2	13.4	17.7	3.3	4.4	4.9	7.8
SAEL500/150/2	16	8	15.5	22.2	13.4	17.7	3.3	4.4	4.9	7.8

Os valores indicados na tabela acima são válidos para vigota sobre viga e vigota sobre pilar, desde que respeitados os planos de cravação parcial específicos para cada configuração dada em nossa ETE-06/0270 página 17.



## SAE-SAEL Suporte com abas exteriores

Valores característicos Descendente (em kN) –  
Elemento rígido – Perno WA



Referência	Valores característicos - Madeira sobre betão ou aço											
	Fixações				Valores característicos - Madeira classe C24 [kN]							
	Portador		Suportado		R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
	Qdad	Tipo	Qdad	Tipo	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAE200/32/2	2	Ø10*	5	CNA**	11.7	-	8.4	-	2.1	-	5	-
SAE250/32/2	2	Ø10*	7	CNA**	15.1	-	11.7	-	2.8	-	5	-
SAE300/32/2	4	Ø12*	10	CNA**	20.1	-	16.8	-	3.6	-	10	-
SAE200/38/2	2	Ø10*	5	CNA**	11.7	-	8.4	-	2.2	-	5	-
SAE250/38/2	2	Ø10*	7	CNA**	15.1	-	11.7	-	3	-	5	-
SAE300/38/2	4	Ø12*	10	CNA**	20.1	-	16.8	-	4	-	10	-
SAE340/38/2	4	Ø12*	12	CNA**	23.5	-	20.1	-	4.5	-	10	-
SAE440/38/2	4	Ø12*	15	CNA**	28.5	-	25.1	-	5	-	10	-
SAE200/40/2	2	Ø10*	5	CNA**	11.7	-	8.4	-	2.3	-	5	-
SAE250/40/2	2	Ø10*	7	CNA**	15.1	-	11.7	-	3.1	-	5	-
SAE300/40/2	4	Ø12*	10	CNA**	20.1	-	16.8	-	4.1	-	10	-
SAE340/40/2	4	Ø12*	12	CNA**	23.5	-	20.1	-	4.6	-	10	-
SAE200/46/2	2	Ø10*	5	CNA**	11.7	-	8.4	-	2.4	-	5	-
SAE250/46/2	2	Ø10*	7	CNA**	15.1	-	11.7	-	3.3	-	5	-
SAE340/46/2	4	Ø12*	12	CNA**	23.5	-	20.1	-	5	-	10	-
SAE500/46/2	4	Ø12*	18	CNA**	33.5	-	30.2	-	6.2	-	10	-
SAE200/50/2	2	Ø10*	5	CNA**	11.7	-	8.4	-	2.5	-	5	-
SAE250/50/2	2	Ø10*	7	CNA**	15.1	-	11.7	-	3.4	-	5	-
SAE300/50/2	4	Ø12*	10	CNA**	20.1	-	16.8	-	4.6	-	10	-
SAE340/50/2	4	Ø12*	12	CNA**	23.5	-	20.1	-	5.2	-	10	-
SAE500/50/2	4	Ø12*	18	CNA**	33.5	-	30.2	-	6.6	-	10	-
SAE200/60/2	2	Ø10*	5	CNA**	11.7	15.5	8.4	11.1	2.6	4	5	5
SAE250/60/2	2	Ø10*	7	CNA**	15.1	19	11.7	15.5	3.6	5.4	5	5
SAE300/60/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	4.9	7.3	10	10
SAE340/60/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	5.7	8.3	10	10
SAE200/64/2	2	Ø10*	5	CNA**	11.7	15.5	8.4	11.1	2.7	4.1	5	5
SAE250/64/2	2	Ø10*	7	CNA**	15.1	19	11.7	15.5	3.7	5.6	5	5
SAE300/64/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5	7.5	10	10
SAE340/64/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	5.8	8.6	10	10
SAE380/64/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	5.8	8.6	10	10
SAE380/66/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	5.9	8.7	10	10
SAE440/66/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	6.9	10.1	10	10
SAE200/70/2	2	Ø10*	5	CNA**	11.7	15.5	8.4	11.1	2.7	4.2	5	5
SAE250/70/2	2	Ø10*	7	CNA**	15.1	19	11.7	15.5	3.8	5.7	5	5
SAE300/70/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5.2	7.8	10	10
SAE340/70/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6	8.9	10	10

\* Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions depend on the concrete type, spacing and edge distances. The values in this table are given for an installation in the middle of a concrete slab. In other installation condition (close to the edge,...), the designer must check the anchor separately (Our free software Anchor Designer is available for download on our website).

\*\* Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities vary depending on fastener type used.

## SAE-SAEL Suporte com abas exteriores

Referência	Valores característicos - Madeira sobre betão ou aço											
	Fixações				Valores característicos - Madeira classe C24 [kN]							
	Portador		Suportado		R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
	Qdad	Tipo	Qdad	Tipo	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50	CNA4,0x35	CNA4,0x50
SAE380/70/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6	8.9	10	10
SAE440/70/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.1	10.4	10	10
SAEL300/72/2	4	Ø12*	8	CNA**	16.8	22.2	13.4	17.7	4.2	6.4	10	10
SAEL340/72/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5.1	7.7	10	10
SAE380/72/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.1	9	10	10
SAE440/72/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.1	10.5	10	10
SAE200/76/2	2	Ø10*	5	CNA**	11.7	15.5	8.4	11.1	2.8	4.3	5	5
SAE250/76/2	2	Ø10*	7	CNA**	15.1	19	11.7	15.5	3.8	5.9	5	5
SAEL300/76/2	4	Ø12*	8	CNA**	16.8	22.2	13.4	17.7	4.3	6.5	10	10
SAEL340/76/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5.2	7.8	10	10
SAE380/76/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.2	9.2	10	10
SAE440/76/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.3	10.8	10	10
SAE500/76/2	4	Ø12*	18	CNA**	33.5	38	30.2	37.6	8.2	12	10	10
SAE200/80/2	2	Ø10*	5	CNA**	11.7	15.5	8.4	11.1	2.8	4.3	5	5
SAE250/80/2	2	Ø10*	7	CNA**	15.1	19	11.7	15.5	3.9	5.9	5	5
SAEL300/80/2	4	Ø12*	8	CNA**	16.8	22.2	13.4	17.7	4.3	6.6	10	10
SAEL340/80/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5.3	8	10	10
SAE380/80/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.2	9.4	10	10
SAE440/80/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.4	11	10	10
SAE500/80/2	4	Ø12*	18	CNA**	33.5	38	30.2	37.7	8.4	12.3	10	10
SAE380/90/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.4	9.8	10	10
SAE440/90/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.7	11.6	10	10
SAE500/90/2	4	Ø12*	18	CNA**	33.5	38	30.2	37.7	8.8	13.1	10	10
SAE380/92/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.5	9.8	10	10
SAE440/95/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.8	11.8	10	10
SAE500/95/2	4	Ø12*	18	CNA**	33.5	38	30.2	37.7	9	13.4	10	10
SAEL300/100/2	4	Ø12*	8	CNA**	16.8	22.2	13.4	17.7	4.5	7	10	10
SAE380/100/2	4	Ø12*	12	CNA**	23.5	31	20.1	26.6	6.6	10.1	10	10
SAE440/100/2	4	Ø12*	15	CNA**	28.5	37.7	25.1	33.2	7.9	12	10	10
SAE500/100/2	4	Ø12*	18	CNA**	33.5	38	30.2	37.7	9.1	13.7	10	10
SAEL500/115/2	4	Ø12*	16	CNA**	30.2	38	26.8	35.5	8.6	13	10	10
SAEL380/120/2	4	Ø12*	10	CNA**	20.1	26.6	16.8	22.2	5.7	8.9	10	10
SAEL440/120/2	4	Ø12*	13	CNA**	25.1	33.2	21.8	28.8	7.2	11.1	10	10
SAEL500/120/2	4	Ø12*	16	CNA**	30.2	38	26.8	35.5	8.6	13.2	10	10
SAEL440/136/2	4	Ø12*	13	CNA**	25.1	33.2	21.8	28.8	7.4	11.4	10	10
SAEL500/140/2	4	Ø12*	16	CNA**	30.2	38	26.8	35.5	8.9	13.7	10	10
SAEL500/150/2	4	Ø12*	16	CNA**	30.2	38	26.8	35.5	9	13.9	10	10

\* Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions depend on the concrete type, spacing and edge distances. The values in this table are given for an installation in the middle of a concrete slab. In other installation condition (close to the edge,...), the designer must check the anchor separately (Our free software Anchor Designer is available for download on our website).

\*\* Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities vary depending on fastener type used.

SAE-SAEL

**Suporte com abas exteriores**

Valores característicos - Madeira/Madeira - com parafuso SSH para conexões

Referência	Valores característicos - Madeira/madeira - com parafuso SSH para conexões											
	Fixações				Valores característicos - Madeira C24 [kN]							
	Portador		Suportado		R <sub>1,k</sub>		R <sub>2,k</sub>		R <sub>3,k</sub>		R <sub>4,k</sub>	
	Qdad	Tipo	Qdad	Tipo	CNA4.0x35	CNA4.0x50	CNA4.0x35	CNA4.0x50	CNA4.0x35	CNA4.0x50	CNA4.0x35	CNA4.0x50
SAE200/2X	2	SSH10.0x40	5	CNA*	5.6	6.3	5.7	6.4	2.1	3.6	5	5
SAE250/2X	2	SSH10.0x40	7	CNA*	7	7.2	6.9	7.2	2	2.7	5	5
SAE300	2	SSH12.0x60	10	CNA*	11.4	11.5	11.4	11.5	3.4	4.1	5	5
SAEL300/2X	2	SSH12.0x60	8	CNA*	10.7	11.4	10.8	11.4	3	4.1	5	5
SAE340	4	SSH12.0x60	12	CNA*	18.4	21	18.4	21	3.8	6.4	10	10
SAEL340/2X	4	SSH12.0x60	10	CNA*	15.3	19.1	15.3	19.7	3.4	6.2	10	10
SAE380	4	SSH12.0x60	12	CNA*	18.4	21	18.4	21	3.8	5.6	10	10
SAEL380/2X	4	SSH12.0x60	10	CNA*	15.3	19.1	15.3	19.7	3.4	5.6	10	10
SAE440	4	SSH12.0x60	15	CNA*	22	23	22	23	4.2	5.3	10	10
SAEL440/2X	4	SSH12.0x60	13	CNA*	19.9	22.7	20	22.8	4	5.3	10	10
SAE500	6	SSH12.0x60	18	CNA*	27.7	33.4	27.7	33.4	4.5	6.5	15	15
SAEL500/2X	6	SSH12.0x60	16	CNA*	24.6	31.7	24.6	32.2	4.3	6.5	15	15

*A tensão transversal deve ser verificada pelo utilizador e pode reger.*

*A espessura mínima da viga principal para a utilização de um parafuso SSH Ø10x40 é de 38 mm e para SSH Ø12x60 é de 73 mm*

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**Suporte com abas exteriores**

## Execução

### Fixações

#### **Em elemento suportado :**

- Pregos canelados CNA Ø4,0 x 50 mm,
- Pregos canelados CNA Ø4,0 x 35 mm para espessuras inferiores a 64 mm,
- Parafuso CSA Ø5,0 x 40 mm,
- Parafuso CSA Ø5,0 x 35 mm para espessuras inferiores a 60 mm.

#### **Em elemento de suporte :**

##### **Elemento de madeira :**

- Pregos canelados CNA Ø4,0 x 50 mm,
- Pregos canelados CNA Ø4,0 x 35 mm para espessuras inferiores a 64 mm,
- Parafuso CSA Ø5,0 x 40 mm,
- Parafuso CSA Ø5,0 x 35 mm para espessuras inferiores a 60 mm.

##### **Elemento de aço :**

- Parafusos Ø12 ou Ø10 mm conforme o desenvolvimento (o diâmetro do parafuso não pode ser inferior ao do furo em mais de 2 mm).

##### **Elemento de betão :**

- Cavilha mecânica : perno WA M10-78/5 (para os SAE200 e 250) e tipo WA M12-104/5 (para os SAE300, 340, 380, 440 e 500),
- Ancoragem química : resina AT-HP com haste roscada LMAS M10-120/25 (para os SAE200 e 250) e LMAS M12-150/35 (para os SAE300, 340, 380, 440 e 500).

##### **Elemento de alvenaria de blocos ocós (verificar as capacidades de cargas das ancoragens) :**

- Ancoragem química Ø 10 resina AT-HP ou POLY-GP + haste roscada LMAS M10-120/25 + peneira SH M16-130 (para os SAE200 e 250),
- Resina AT-HP ou POLY-GP + haste roscada LMAS M12-150/35 + peneira SH M20-85 (para os SAE300, 340, 380, 440 e 500).

### Instalação

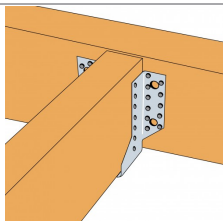
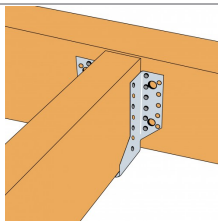
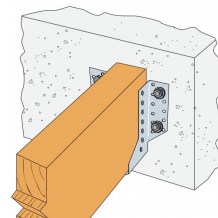
#### **Em madeira :**

1. Traçar a localização da viga suportada sobre a viga.
2. Posicionar o suporte e pré-fixar as abas de cada lado.
3. Ajustar o suporte relativamente aos traçados. O suporte deve estar ligeiramente mais aberto em cima do que em baixo para facilitar a instalação da viga suportada.
4. Finalizar a fixação de cada aba.
5. Posicionar a viga no suporte.
6. Posicionar a viga suportada no suporte.
7. Em madeira, há dois tipos de pregagem total ou parcial.

#### **Em betão :**

1. Método 1 : Traçar a localização dos furos com a ajuda do quadro de posições dos furos, disponível na ficha técnica.
2. Método 2 : Traçar a localização da viga sobre o elemento, posicionar o suporte e identificar o centro dos furos.
3. Perfurar o elemento com uma broca adaptada.
4. Posicionar o suporte e fixar o elemento com pernos de ancoragem.
5. Posicionar a viga suportada no suporte.
6. Fixar a viga sobre o suporte.

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**Suporte com abas exteriores***Clouage total sur bois**Clouage partiel sur bois*

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