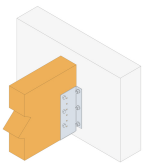
Technical Sheet

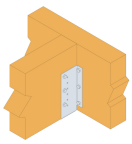
GBE

Suporte grande com abas exteriores para laminada colada

Os grandes suportes GBE foram especialmente desenvolvidos para a laminada colada. Podem ser instalados sobre um elemento de madeira ou de betão, exclusivamente com parafusos. São fabricados principalmente para vigas suportadas de grandes dimensões.









Features

Matéria

- Aço galvanizado S250GD + Z275 em conformidade com a norma NF EN 10346,
- Espessura : 4 mm.

Ventagens

- Instalação rápida e simples com fixação exclusivamente por parafusos,
- Vasto leque de dimensões.

Applications

Suporte

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

Áreas de utilização

- Vigas de madeira maciça,
- Vigas de laminada colada, …

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

Dados técnicos

Desdobrados e larguras

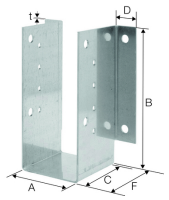
Referência	Dimensões do conector					
	Dimensões e valores caraterísticos[mm]			Furos suportado		Furos portador
	Desdobrado[mm]	A[mm]	t[mm]	Redondo		Redondo
				Ø11	Ø18	Ø18
GBE600/4X	600	75-225	4	6	4	4
GBE750/4X	750	75-225	4	8	4	4
GBE900/4X	900	75-225	4	12	6	6
GBE1050/4X	1050	75-225	4	14	6	6
GBE1200/4X	1200	75-225	4	18	8	8
GBE1350/4X	1350	75-225	4	20	8	8
GBE1500/4X	1500	75-225	4	24	10	10

The articles ending with an X are blanks from wihich the products above are made of and are not products.

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GBE

Suporte grande com abas exteriores para laminada colada



Dimensões e valores caraterísticos

Referência	Dimensões do conector													
	Secções de madeira[mm]				Dimensões e valores caraterísticos[mm]						Furos portador	Furos suportado		Outro
	Largura		Altura								Redondo	Redondo		
	Larguras[mm]	Máx. [mm]	Larguras[mm]	Máx. [mm]	A[mm]	B[mm]	C[mm]	D[mm]	F[mm]	t[mm]	Ø18	Ø11	Ø18	Peso[kg]
GBE600/90/4	88	90	291	382	90	255	145	54	155	4	4	6	4	3.3
GBE600/104/4	102	104	284	372	104	248	145	54	155	4	4	6	4	3.3
GBE600/114/4	112	114	279	364	114	243	145	54	155	4	4	6	4	3.3
GBE600/138/4	136	138	267	346	138	231	145	54	155	4	4	6	4	3.3
GBE600/162/4	160	162	255	328	162	219	145	54	155	4	4	6	4	3.3
GBE600/186/4	184	186	243	310	186	207	145	54	155	4	4	6	4	3.3
GBE600/210/4	208	210	231	292	210	195	145	54	155	4	4	6	4	3.3
GBE750/90/4	88	90	366	495	90	330	145	54	155	4	4	8	4	4.3
GBE750/104/4	102	104	359	484	104	323	145	54	155	4	4	8	4	4.3
GBE750/114/4	112	114	354	477	114	318	145	54	155	4	4	8	4	4.3
GBE750/138/4	136	138	342	459	138	306	145	54	155	4	4	8	4	4.3
GBE750/162/4	160	162	330	441	162	294	145	54	155	4	4	8	4	4.3
GBE750/186/4	184	186	318	423	186	282	145	54	155	4	4	8	4	4.3
GBE750/210/4	208	210	306	405	210	270	145	54	155	4	4	8	4	4.3
GBE900/90/4	88	90	441	607	90	405	145	54	155	4	6	12	6	5.2
GBE900/104/4	102	104	434	597	104	398	145	54	155	4	6	12	6	5.2
GBE900/114/4	112	114	429	589	114	393	145	54	155	4	6	12	6	5.2
GBE900/138/4	136	138	417	571	138	381	145	54	155	4	6	12	6	5.2
GBE900/162/4	160	162	405	553	162	369	145	54	155	4	6	12	6	5.2
GBE900/186/4	184	186	393	535	186	357	145	54	155	4	6	12	6	5.2
GBE900/210/4	208	210	381	517	210	345	145	54	155	4	6	12	6	5.2
GBE1050/90/4	88	90	516	720	90	480	145	54	155	4	6	14	6	6.1
GBE1050/104/4	102	104	509	709	104	473	145	54	155	4	6	14	6	6.1
GBE1050/114/4	112	114	504	702	114	468	145	54	155	4	6	14	6	6.1
GBE1050/138/4	136	138	492	684	138	456	145	54	155	4	6	14	6	6.1
GBE1050/162/4	160	162	480	666	162	444	145	54	155	4	6	14	6	6.1
GBE1050/186/4	184	186	468	648	186	432	145	54	155	4	6	14	6	6.1
GBE1050/210/4	208	210	456	630	210	420	145	54	155	4	6	14	6	6.1
GBE1200/90/4	88	90	591	832	90	555	145	54	155	4	8	18	8	7
GBE1200/104/4	102	104	584	822	104	548	145	54	155	4	8	18	8	7
GBE1200/114/4	112	114	579	814	114	543	145	54	155	4	8	18	8	7
GBE1200/138/4	136	138	567	796	138	531	145	54	155	4	8	18	8	7
GBE1200/162/4	160	162	555	778	162	519	145	54	155	4	8	18	8	7
GBE1200/186/4	184	186	543	760	186	507	145	54	155	4	8	18	8	7
GBE1200/210/4	208	210	531	742	210	495	145	54	155	4	8	18	8	7
GBE1350/138/4	136	138	642	909	138	606	145	54	155	4	8	20	8	8
GBE1350/162/4	160	162	630	891	162	594	145	54	155	4	8	20	8	8
GBE1350/186/4	184	186	618	873	186	582	145	54	155	4	8	20	8	8
GBE1350/210/4	208	210	606	855	210	570	145	54	155	4	8	20	8	8
GBE1500/138/4	136	138	717	1021	138	681	145	54	155	4	10	24	10	8.9

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

Referência	Dimensões do conector													
	Secções de madeira[mm]				Dimensões e valores caraterísticos[mm]						Furos portador	Furos suportado		Outro
	Largura		Altura								Redondo	Redondo		
	Larguras[mm]	Máx. [mm]	Larguras[mm]	Máx. [mm]	A[mm]	B[mm]	C[mm]	D[mm]	F[mm]	t[mm]	Ø18	Ø11	Ø18	Peso[kg]
GBE1500/162/4	160	162	705	1003	162	669	145	54	155	4	10	24	10	8.9
GBE1500/186/4	184	186	693	985	186	657	145	54	155	4	10	24	10	8.9
GBE1500/210/4	208	210	681	967	210	645	145	54	155	4	10	24	10	8.9
GBE600/100/4	98	100	286	375	100	250	145	54	155	4	4	6	4	3.3
GBE600/120/4	118	120	276	360	120	240	145	54	155	4	4	6	4	3.3
GBE600/140/4	138	140	266	345	140	230	145	54	155	4	4	6	4	3.3
GBE600/160/4	158	160	256	330	160	220	145	54	155	4	4	6	4	3.3
GBE600/180/4	178	180	246	315	180	210	145	54	155	4	4	6	4	3.3
GBE600/200/4	198	200	236	300	200	200	145	54	155	4	4	6	4	3.3
GBE600/220/4	218	220	226	285	220	190	145	54	155	4	4	6	4	3.3
GBE750/100/4	98	100	361	487	100	325	145	54	155	4	4	8	4	4.3
GBE750/120/4	118	120	351	472	120	315	145	54	155	4	4	8	4	4.3
GBE750/140/4	138	140	341	457	140	305	145	54	155	4	4	8	4	4.3
GBE750/160/4	158	160	331	442	160	295	145	54	155	4	4	8	4	4.3
GBE750/180/4	178	180	321	427	180	285	145	54	155	4	4	8	4	4.3
GBE750/200/4	198	200	311	412	200	275	145	54	155	4	4	8	4	4.3
GBE750/220/4	218	220	301	397	220	265	145	54	155	4	4	8	4	4.3
GBE900/100/4	98	100	436	600	100	400	145	54	155	4	6	12	6	5.2
GBE900/120/4	118	120	426	585	120	390	145	54	155	4	6	12	6	5.2
GBE900/140/4	138	140	416	570	140	380	145	54	155	4	6	12	6	5.2
GBE900/160/4	158	160	406	555	160	370	145	54	155	4	6	12	6	5.2
GBE900/180/4	178	180	396	540	180	360	145	54	155	4	6	12	6	5.2
GBE900/200/4	198	200	386	525	200	350	145	54	155	4	6	12	6	5.2
GBE900/220/4	218	220	376	510	220	340	145	54	155	4	6	12	6	5.2
GBE1050/100/4	98	100	511	712	100	475	145	54	155	4	6	14	6	6.1
GBE1050/120/4	118	120	501	697	120	465	145	54	155	4	6	14	6	6.1
GBE1050/140/4	138	140	491	682	140	455	145	54	155	4	6	14	6	6.1
GBE1050/160/4	158	160	481	667	160	445	145	54	155	4	6	14	6	6.1
GBE1050/180/4	178	180	471	652	180	435	145	54	155	4	6	14	6	6.1
GBE1050/200/4	198	200	461	637	200	425	145	54	155	4	6	14	6	6.1
GBE1050/220/4	218	220	451	622	220	415	145	54	155	4	6	14	6	6.1
GBE1200/100/4	98	100	586	825	100	550	145	54	155	4	8	18	8	7
GBE1200/120/4	118	120	576	810	120	540	145	54	155	4	8	18	8	7
GBE1200/140/4	138	140	566	795	140	530	145	54	155	4	8	18	8	7
GBE1200/160/4	158	160	556	780	160	520	145	54	155	4	8	18	8	7
GBE1200/180/4	178	180	546	765	180	510	145	54	155	4	8	18	8	7
GBE1200/200/4	198	200	536	750	200	500	145	54	155	4	8	18	8	7
GBE1200/220/4	218	220	526	735	220	490	145	54	155	4	8	18	8	7
GBE1350/100/4	-	-	-	-	100	625	145	54	155	4	8	18	8	8
GBE1350/120/4	-	-	-	-	120	615	145	54	155	4	8	18	8	8
GBE1350/140/4	138	140	641	907	140	605	145	54	155	4	8	20	8	8
GBE1350/160/4	158	160	631	892	160	595	145	54	155	4	8	20	8	8
GBE1350/180/4	178	180	621	877	180	585	145	54	155	4	8	20	8	8
GBE1350/200/4	198	200	611	862	200	575	145	54	155	4	8	20	8	8
GBE1350/220/4	-	-	-	-	220	565	145	54	155	4	8	20	8	8
GBE1500/100/4	-	-	-	-	100	700	145	54	155	4	10	24	10	8.9
GBE1500/120/4	-	-	-	-	120	690	145	54	155	4	10	24	10	8.9

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GBE

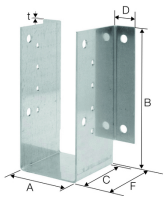
Suporte grande com abas exteriores para laminada colada

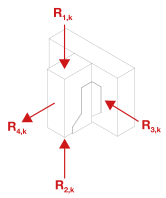
Referência	Dimensões do conector													
	Secções de madeira[mm]				Dimensões e valores caraterísticos[mm]						Furos portador	Furos suportado		Outro
	Largura		Altura		A[mm]	B[mm]	C[mm]	D[mm]	F[mm]	t[mm]	Redondo	Redondo		
	Larguras[mm]	Máx. [mm]	Larguras[mm]	Máx. [mm]							Ø18	Ø11	Ø18	Peso[kg]
GBE1500/140/4	-	-	-	-	140	680	145	54	155	4	10	24	10	8.9
GBE1500/160/4	158	160	706	1005	160	670	145	54	155	4	10	24	10	8.9
GBE1500/180/4	178	180	696	990	180	660	145	54	155	4	10	24	10	8.9
GBE1500/200/4	198	200	686	975	200	650	145	54	155	4	10	24	10	8.9
GBE1500/220/4	218	220	676	960	220	640	145	54	155	4	10	24	10	8.9

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada





Valores caraterísticos em suportes laminada colada GL24

Referência	Capacidade do suporte										Dimensões do conector
	Valores característicos - Madeira sobre madeira - pregagem total		Valores Característicos - Madeira sobre madeira								Dimensões e valores caraterísticos[mm]
	Fixacões		Characteristic capacity - Timber GL24[kN]								A[mm]
	Portador	Suportado	$R_{3,k}$		$R_{2,k}$		$R_{1,k}$		R4,k		
	Qdad	Qdad	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE600/90/4	4.0	2.0	12.9	12.9	19.3	20.1	34.5	34.5	25.6	25.6	90
GBE600/104/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	104
GBE600/114/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	114
GBE600/138/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	138
GBE600/162/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	162
GBE600/186/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	186
GBE600/210/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	210
GBE750/90/4	4.0	2.0	12.9	12.9	29.4	29.4	38.2	41.7	36.3	36.3	90
GBE750/104/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	104
GBE750/114/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	114
GBE750/138/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	138
GBE750/162/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	162
GBE750/186/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	186
GBE750/210/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	210
GBE900/90/4	6.0	3.0	12.9	12.9	43.5	43.5	69.6	75	47	47	90
GBE900/104/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	104
GBE900/114/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	114
GBE900/138/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	138
GBE900/162/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	162
GBE900/186/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	186
GBE900/210/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	210
GBE1050/90/4	6.0	3.0	12.9	12.9	49.8	49.8	69.6	76	57.7	57.7	90
GBE1050/104/4	6.0	3.0	12.9	12.9	53.7	57.5	69.6	76	57.7	57.7	104
GBE1050/114/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	114
GBE1050/138/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	138
GBE1050/162/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	162
GBE1050/186/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	186
GBE1050/210/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	210
GBE1200/90/4	8.0	4.0	12.9	12.9	67.3	67.3	98.8	98.8	68.4	68.4	90
GBE1200/104/4	8.0	4.0	12.9	12.9	72.8	77.8	103.7	109.3	68.4	68.4	104
GBE1200/114/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	114

As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira da classe GL24.
Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.
O suporte considerado tem uma espessura de 210 mm.

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

Referência	Capacidade do suporte										Dimensões do conector
	Valores característicos - Madeira sobre madeira - pregagem total		Valores Característicos - Madeira sobre madeira								Dimensões e valores caraterísticos[mm]
	Fixacões		Characteristic capacity - Timber GL24[kN]								
	Portador	Suportado	$R_{3,k}$		$R_{2,k}$		$R_{1,k}$		R4,k		A[mm]
	Qdad	Qdad	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE1200/138/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	138
GBE1200/162/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	162
GBE1200/186/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	186
GBE1200/210/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	210
GBE1350/138/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	138
GBE1350/162/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	162
GBE1350/186/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	186
GBE1350/210/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	210
GBE1500/138/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	138
GBE1500/162/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	162
GBE1500/186/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	186
GBE1500/210/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	210
GBE600/100/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	100
GBE600/120/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	120
GBE600/140/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	140
GBE600/160/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	160
GBE600/180/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	180
GBE600/200/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	200
GBE600/220/4	4.0	2.0	12.9	12.9	19.3	21.2	34.5	34.5	25.6	25.6	220
GBE750/100/4	4.0	2.0	12.9	12.9	30.8	32.6	38.2	41.7	36.3	36.3	100
GBE750/120/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	120
GBE750/140/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	140
GBE750/160/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	160
GBE750/180/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	180
GBE750/200/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	200
GBE750/220/4	4.0	2.0	12.9	12.9	30.8	33.6	38.2	41.7	36.3	36.3	220
GBE900/100/4	6.0	3.0	12.9	12.9	45.4	48.3	69.6	76	47	47	100
GBE900/120/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	120
GBE900/140/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	140
GBE900/160/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	160
GBE900/180/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	180
GBE900/200/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	200
GBE900/220/4	6.0	3.0	12.9	12.9	45.4	49.6	69.6	76	47	47	220
GBE1050/100/4	6.0	3.0	12.9	12.9	53.7	55.3	69.6	76	57.7	57.7	100
GBE1050/120/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	120
GBE1050/140/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	140
GBE1050/160/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	160

As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira da classe GL24.
Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.
O suporte considerado tem uma espessura de 210 mm.

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

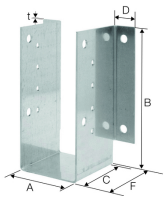
Referência	Capacidade do suporte										Dimensões do conector
	Valores característicos - Madeira sobre madeira - pregagem total		Valores Característicos - Madeira sobre madeira								Dimensões e valores caraterísticos[mm]
	Fixacões		Characteristic capacity - Timber GL24[kN]								
	Portador	Suportado	$R_{3,k}$		$R_{2,k}$		$R_{1,k}$		R4,k		A[mm]
	Qdad	Qdad	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE1050/180/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	180
GBE1050/200/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	200
GBE1050/220/4	6.0	3.0	12.9	12.9	53.7	58.6	69.6	76	57.7	57.7	220
GBE1200/100/4	8.0	4.0	12.9	12.9	72.8	74.8	103.7	106.3	68.4	68.4	100
GBE1200/120/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	120
GBE1200/140/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	140
GBE1200/160/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	160
GBE1200/180/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	180
GBE1200/200/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	200
GBE1200/220/4	8.0	4.0	12.9	12.9	72.8	79.5	103.7	111	68.4	68.4	220
GBE1350/100/4	8.0	4.0	12.9	12.9	79.4	80.4	103.7	111.9	79.1	79.1	100
GBE1350/120/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	120
GBE1350/140/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	140
GBE1350/160/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	160
GBE1350/180/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	180
GBE1350/200/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	200
GBE1350/220/4	8.0	4.0	12.9	12.9	79.4	86.8	103.7	113.2	79.1	79.1	220
GBE1500/100/4	10.0	5.0	12.9	12.9	101.1	102	129.6	133.5	89.9	89.9	100
GBE1500/120/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	120
GBE1500/140/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	140
GBE1500/160/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	160
GBE1500/180/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	180
GBE1500/200/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	200
GBE1500/220/4	10.0	5.0	12.9	12.9	101.1	110.5	129.6	141.5	89.9	89.9	220

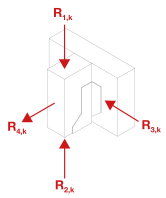
As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira da classe GL24.
Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.
O suporte considerado tem uma espessura de 210 mm.

Technical Sheet

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Suporte grande com abas exteriores para laminada colada





Valores caraterísticos em elemento de betão

Referência	Capacidade do suporte												Dimensões do conector
	Valores característicos - Madeira sobre betão ou aço												Dimensões e valores caraterísticos[mm]
	Fixacões				Characteristic capacity - Timber GL24[kN]								A[mm]
	Portador		Suportado		$R_{1,k}$		$R_{2,k}$		R4,k		$R_{3,k}$		
	Qdad	Tipo	Qdad	Tipo	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE600/90/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	20.1	25.6	25.6	12.9	12.9	90
GBE600/104/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	104
GBE600/114/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	114
GBE600/138/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	138
GBE600/162/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	162
GBE600/186/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	186
GBE600/210/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	210
GBE750/90/4	4.0	Ø16*	2.0	Ø16**	58	58	29.4	29.4	36.3	36.3	12.9	12.9	90
GBE750/104/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	104
GBE750/114/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	114
GBE750/138/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	138
GBE750/162/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	162
GBE750/186/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	186
GBE750/210/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	210
GBE900/90/4	6.0	Ø16*	3.0	Ø16**	75	75	43.5	43.5	47	47	12.9	12.9	90
GBE900/104/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	104
GBE900/114/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	114
GBE900/138/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	138
GBE900/162/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	162
GBE900/186/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	186
GBE900/210/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	210
GBE1050/90/4	6.0	Ø16*	3.0	Ø16**	81.3	81.3	49.8	49.8	57.7	57.7	12.9	12.9	90
GBE1050/104/4	6.0	Ø16*	3.0	Ø16**	85.2	89	53.7	57.5	57.7	57.7	12.9	12.9	104
GBE1050/114/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	114
GBE1050/138/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	138
GBE1050/162/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	162
GBE1050/186/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	186
GBE1050/210/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	210
GBE1200/90/4	8.0	Ø16*	4.0	Ø16**	98.8	98.8	67.3	67.3	68.4	68.4	12.9	12.9	90
GBE1200/104/4	8.0	Ø16*	4.0	Ø16**	104.3	109.3	72.8	77.8	68.4	68.4	12.9	12.9	104

As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira suportada da classe GL24.
**Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.

Deve verificar-se a resistência das ancoragens no elemento de betão.

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

Referência	Capacidade do suporte												Dimensões do conector
	Valores característicos - Madeira sobre betão ou aço												Dimensões e valores caraterísticos[mm]
	Fixacões				Characteristic capacity - Timber GL24[kN]								
	Portador		Suportado		$R_{1,k}$		$R_{2,k}$		R4,k		$R_{3,k}$		A[mm]
	Qdad	Tipo	Qdad	Tipo	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE1200/114/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	114
GBE1200/138/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	138
GBE1200/162/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	162
GBE1200/186/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	186
GBE1200/210/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	210
GBE1350/138/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	138
GBE1350/162/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	162
GBE1350/186/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	186
GBE1350/210/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	210
GBE1500/138/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	138
GBE1500/162/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	162
GBE1500/186/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	186
GBE1500/210/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	210
GBE600/100/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	100
GBE600/120/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	120
GBE600/140/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	140
GBE600/160/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	160
GBE600/180/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	180
GBE600/200/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	200
GBE600/220/4	4.0	Ø16*	2.0	Ø16**	34.5	34.5	19.3	21.2	25.6	25.6	12.9	12.9	220
GBE750/100/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	32.6	36.3	36.3	12.9	12.9	100
GBE750/120/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	120
GBE750/140/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	140
GBE750/160/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	160
GBE750/180/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	180
GBE750/200/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	200
GBE750/220/4	4.0	Ø16*	2.0	Ø16**	58	58	30.8	33.6	36.3	36.3	12.9	12.9	220
GBE900/100/4	6.0	Ø16*	3.0	Ø16**	76.9	79.8	45.4	48.3	47	47	12.9	12.9	100
GBE900/120/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	120
GBE900/140/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	140
GBE900/160/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	160
GBE900/180/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	180
GBE900/200/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	200
GBE900/220/4	6.0	Ø16*	3.0	Ø16**	76.9	81.1	45.4	49.6	47	47	12.9	12.9	220
GBE1050/100/4	6.0	Ø16*	3.0	Ø16**	85.2	86.8	53.7	55.3	57.7	57.7	12.9	12.9	100
GBE1050/120/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	120

As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira suportada da classe GL24.
**Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.

Deve verificar-se a resistência das ancoragens no elemento de betão.

Technical Sheet

GBE

Suporte grande com abas exteriores para laminada colada

Referência	Capacidade do suporte												Dimensões do conector
	Valores característicos - Madeira sobre betão ou aço												Dimensões e valores caraterísticos[mm]
	Fixacões				Characteristic capacity - Timber GL24[kN]								
	Portador		Suportado		$R_{1,k}$		$R_{2,k}$		R4,k		$R_{3,k}$		A[mm]
	Qdad	Tipo	Qdad	Tipo	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	Parafuso Ø16 - Class 4.6	Parafuso Ø16 - Class 5.8	
GBE1050/140/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	140
GBE1050/160/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	160
GBE1050/180/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	180
GBE1050/200/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	200
GBE1050/220/4	6.0	Ø16*	3.0	Ø16**	85.2	90.2	53.7	58.6	57.7	57.7	12.9	12.9	220
GBE1200/100/4	8.0	Ø16*	4.0	Ø16**	104.3	106.3	72.8	74.8	68.4	68.4	12.9	12.9	100
GBE1200/120/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	120
GBE1200/140/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	140
GBE1200/160/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	160
GBE1200/180/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	180
GBE1200/200/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	200
GBE1200/220/4	8.0	Ø16*	4.0	Ø16**	104.3	111	72.8	79.5	68.4	68.4	12.9	12.9	220
GBE1350/100/4	8.0	Ø16*	4.0	Ø16**	110.9	111.9	79.4	80.4	79.1	79.1	12.9	12.9	100
GBE1350/120/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	120
GBE1350/140/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	140
GBE1350/160/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	160
GBE1350/180/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	180
GBE1350/200/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	200
GBE1350/220/4	8.0	Ø16*	4.0	Ø16**	110.9	118.3	79.4	86.8	79.1	79.1	12.9	12.9	220
GBE1500/100/4	10.0	Ø16*	5.0	Ø16**	132.6	133.5	101.1	102	89.9	89.9	12.9	12.9	100
GBE1500/120/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	120
GBE1500/140/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	140
GBE1500/160/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	160
GBE1500/180/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	180
GBE1500/200/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	200
GBE1500/220/4	10.0	Ø16*	5.0	Ø16**	132.6	142	101.1	110.5	89.9	89.9	12.9	12.9	220

As dimensões apresentadas na tabela acima são, meramente, exemplos. É possível fabricar e justificar outras dimensões a nível das cargas.
Os valores caraterísticos publicados correspondem a madeira suportada da classe GL24.
**Os parafusos utilizados são os de Ø 16 mm da classe 4.6 e 5.8.

Deve verificar-se a resistência das ancoragens no elemento de betão.

Execução

Fixações

Em elemento suportado :

- Parafusos Ø 16 mm.

Em elemento de suporte :
Elemento de madeira :

- Parafusos Ø 16 mm.

Elemento de betão :

- Cavilha mecânica : Ø 16 mm, por exemplo um perno FM 753 EVO M16x110/5.

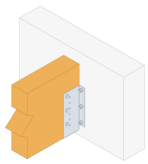
Instalação

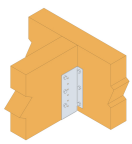
Em madeira :

1. Delinear a localização da viga suportada no suporte.
2. Posicionar o suporte e fixar previamente as abas de cada lado.
3. Ajustar o suporte relativamente aos traçados.
4. Concluir a fixação por aparafusamento em cada aba.
5. Posicionar a viga suportada no suporte e fixá-la através de aparafusamento ou tira-fundos.

Em betão :

1. Método 1 : Delinear a localização dos furos, aplicando o suporte no elemento.
2. Método 2 : Delinear a localização da viga no 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 antes de fixar através de aparafusamento ou tira-fundos.





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