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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

European Technical Assessment ETA-20/0995 of 2021/02/24

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	STEICOjoist and STEICOwall
Product family to which the above construction product belongs:	Structural timber products/elements and ancillaries
Manufacturer:	STEICO SE Otto-Lilienthal-Ring 30 85622 Feldkirchen Germany Tel: + 49 (0)89 99 1551-0 Fax: + 49 (0)89 99 1551-700 e-mail: info@steico.com website: www.steico.com
Manufacturing plant:	STEICO Sp. z o.o. ul. Przemyslowa 2 64-700 Czarnkow Poland
This European Technical Assessment contains:	59 pages including 4 annex which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	European Assessment document no EAD 130367-00-0304 for Composite wood-based beams and columns
This version replaces:	

1 Technical description of the product

STEICO I-joist products are of composite construction with solid timber or LVL flanges and natural fibreboard or OSB webs.

The web-to-flange connection is made by glueing the web into a groove in the centre of the wide face of the flange. Adhesive in accordance with EN 301, Type I or PU adhesive to EN 15425, Type I is used in the web-to-web and the web-to-flange joint. The components are machine-assembled in one pass.

The illustration and the description of the product are given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

STEICO I-joist products are intended to be used as loadbearing components in building structures, eg construction members or frame elements for walls, roofs, floors, façades and trusses.

Further information is given in Annex B.

The provisions made in this European Technical Assessment are based on an assumed intended working life for the joist of 50 years. The indications given in the working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Bending strength and/or bending moment capacity (edgewise and flatwise) and size effect parameter (edgewise and flatwise)	See Annex C
Tension strength and/or tension capacity parallel to the product and size effect parameter	See Annex C
Tension strength and/or capacity perpendicular to the product	See Annex C
Compression strength and/or capacity parallel to the product	See Annex C
Compression strength perpendicular to the product (edgewise and flatwise) and/or bearing capacity	See Annex C
Shear strength and/or capacity (edgewise and flatwise) and size effect parameter (flatwise)	See Annex C
Modulus of elasticity parallel to the grain	See Annex C
Shear modulus (edgewise and flatwise)	See Annex C
Torsional shear capacity and rigidity	See Annex C
Density	See Annex C
Creep and duration of the load	See Annex C
Dimensional stability	No performance assessed
Corrosion resistance of metal fasteners and other connectors	Not relevant
Bonding quality and durability of bonding strength	See Annex C
Durability	See annex D
Resistance against seismic actions	No performance assessed

3.2 Safety in case of fire (BWR2)

Essential characteristic	Performance
Reaction to fire	D-s2, d0
Resistance to fire	No performance assessed

3.3 Hygiene, health and the environment (BWR3)

According to the manufacturer's declaration, the product specification has been compared with the dangerous substances detailed in Council Directive 76/769/EEC (as amended) and listed on the database established on the EC construction website to verify that it does not contain such substances above the acceptable limits.

The natural fibreboard and OSB webs, and LVL flanges are classified as E1 in accordance with EN 13986 : 2004 and EN 14374 : 2004 respectively, with regard to extractable formaldehyde content. The I-joists do not contain pentachlorophenol and chemical treatment of this product is regulated at national level. If a beam or parts of a beam will be subject to chemical treatment, the effect of the chemical treatment on other properties of the beam (eg structural, durability of fasteners) must be considered by the regulatory authorities in each Member State.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the products falling within its scope (eg transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Regulation (EU, No 305/2011), these requirements also need to be complied with, when and where they apply.

3.6 Energy economy and heat retention (BWR6)

Essential characteristic	Performance
Hygrothermal properties	See Annex D, Table D1

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied with reference to its legal base

In accordance with the decision 97/638/EC of the European Commission (official Journal of the European Communities No L254 of 08.10.1996), as amended, the system(s) of AVCP (see Annex V to Regulation (EU) No. 305/2011) given in the following Table applies.

Product	Intended	Level or Class	System
Light composite wood-based beam and columns	Loadbearing component in building structures	NPD	1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the Assessment and Verification of Constancy of Performance (AVCP) are laid down in the control plan deposited at ETA-Danmark A/S prior to CE marking.

Issued in Copenhagen on 2021-02-24 by

Thomas Bruun

Managing Director, ETA-Danmark A/S

Annexes:

Annex A: Illustration and description of product
Annex B: Specification of intended use
Annex C: Mechanical resistance and stability
Annex D: Hygrothermal properties

ANNEX A ILLUSTRATION AND DESCRIPTION OF PRODUCT

This annex applies to the STEICOjoist and STEICOwall described in the main body of the European Technical Assessment.

A1 **Description of Product**

STEICO I-Joist products [*STEICOjoist* (SJ)] and [*STEICOwall* (SW)] are as shown in Figure A1 and are available in a range of sizes as shown in Tables A1, A2, A3 and A4.

STEICOjoist is also marketed as STEICOtradejoist or SPANOTech I-Joist.

The solid timber flanges are strength class T11 or T22 to EN 338 : 2016 and finger jointed to length in accordance with EN 14080 : 2013. The LVL flanges are class 1.6E or class 2.0E comprising laminated veneers bonded with phenol-formaldehyde adhesive, laid with the grain running parallel. The veneers are oriented perpendicular to the web.

The natural fibreboard web (NFB) is in accordance with EN 622-2 : 2004, type HB.HLA1, and is placed in the beams in sections 1200 mm to 2500 mm long. The OSB/3 and OSB/4 are in accordance with EN 300 : 2006 and the strands of the OSB run perpendicular to the long axis of the I-beam. Web-to-web connections consist of a tongue-and-groove joint.

A2 **Illustration of Product**

Figure A1 Sections (dimensions in mm)

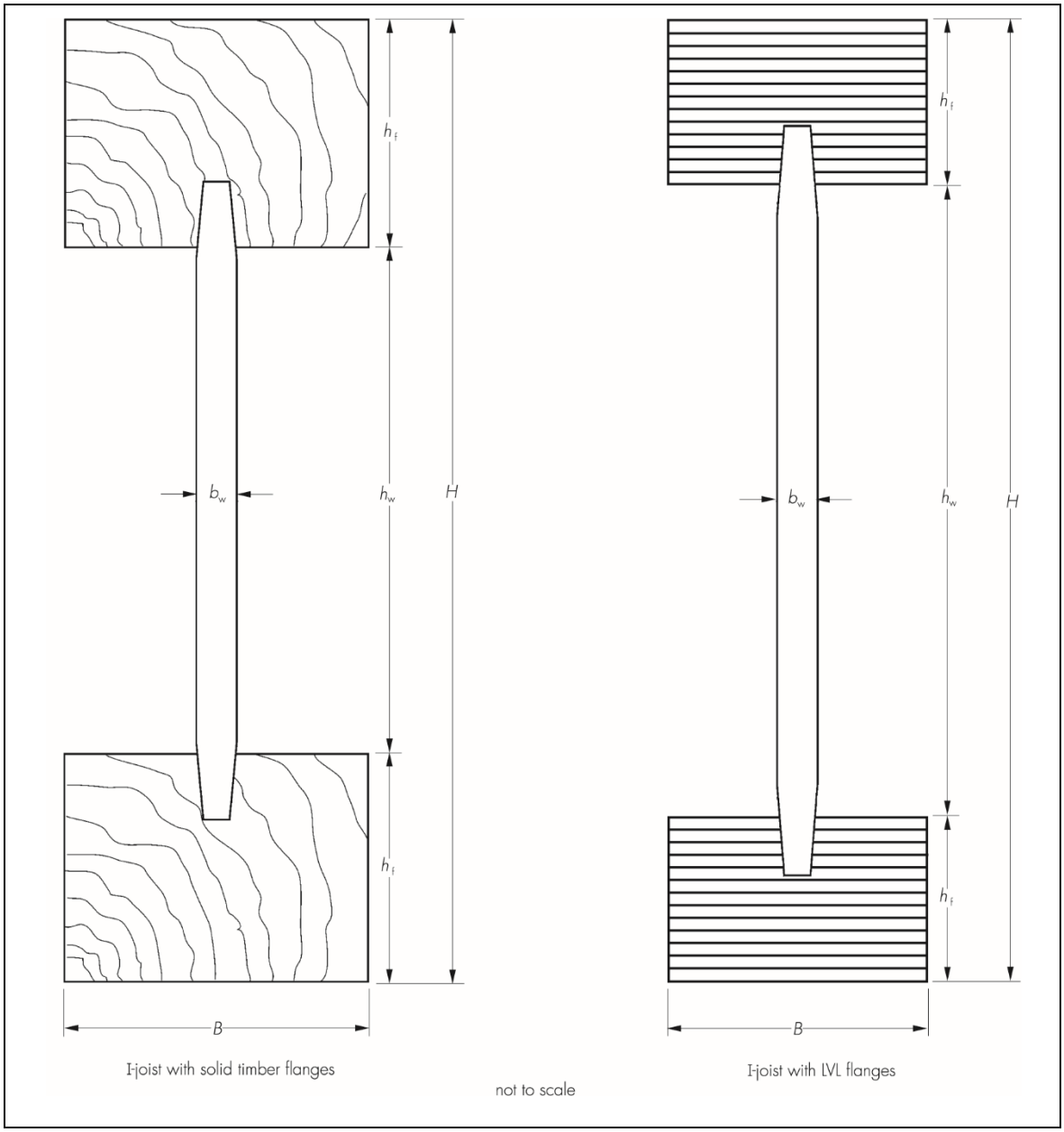

Table A1 Dimensions and information for STEICO I-joist products with solid timber flanges and natural fibreboard web material

Series	Flange width B (mm)	Joist depth H (mm)	Flange depth h_f (mm)	Flange grade	Web thickness b_w (mm)
SJ_{NFB} 45	45	160 to 400	45	T22	8.0
SJ_{NFB} 60	60	160 to 500	45	T22	8.0
SJ_{NFB} 90	90	160 to 500	45	T22	8.0
SW_{NFB}	45 - 90	160 to 500	30 - 45	T11	6.0 or 8.0

Table A2 Dimensions and information for STEICO I-joist products with solid timber flanges and OSB web material

Series	Flange width B (mm)	Joist depth H (mm)	Flange depth h_f (mm)	Flange grade	Web thickness b_w (mm)	
					OSB/3	OSB/4
SJ_{OSB} 45	45	160 to 400	45	T22	10.0	8.5
SJ_{OSB} 60	60	160 to 500	45	T22	10.0	8.5
SJ_{OSB} 90	90	160 to 500	45	T22	10.0	8.5
SW_{OSB}	45 - 90	160 or 500	30 - 45	T11	6.0 or 10.0	6.0 or 8.5

Table A3 Dimensions and information for STEICO I-joist products with LVL flanges and natural fibreboard web material

Series	Flange width B (mm)	Joist depth H (mm)	Flange depth h_f (mm)	Flange grade	Web thickness b_w (mm) HB.HLA1
$SJ_{LVL, NFB}$	45-90	160 to 500	33-39	2.0E LVL	8.0
$SW_{LVL, NFB}$	45-90	160 to 500	27-39	1.6E LVL	6.0 or 8.0

Table A4 Dimensions and information for STEICO I-joist products with LVL flanges and OSB web material

Series	Flange width B (mm)	Joist depth H (mm)	Flange depth h_f (mm)	Flange grade	Web thickness b_w (mm)	
					OSB/3	OSB/4
$SJ_{LVL,OSB}$	45-90	160 or 500	33-39	2.0E LVL	10.0	8.5
$SW_{LVL,OSB}$	45-90	160 or 500	27-39	1.6E LVL	6.0 or 10.0	6.0 or 8.5

Table A5 Manufacturing tolerances (mm)

Description(1)	Tolerances (mm)
Joist depth – *H*	–2 to +1
Joist width – *B*	–2 to +2
Flange depth – h_f	–2 to +2
Web thickness – b_w (160 ≤ H ≤ 300 mm)	–1.3 to +0.8
Web thickness – b_w (300 < H ≤ 500 mm)	–0.8 to +0.8
Joist length – *L*	–0

(1) See Figure A1.

ANNEX B SPECIFICATION OF INTENDED USE

B1 Intended use

The product is intended for use as a loadbearing component in building structures, eg construction members or frame elements for walls, roofs, floors, facades and trusses where Basic Work Requirements 1, 2, 3 and 6 *Mechanical resistance and stability, Safety in case of fire, Hygiene, health and environment and Energy economy and heat retention* respectively apply.

The untreated I-joists are for use in timber structures subject to conditions defined by service classes 1 and 2 of EN 1995-1-1 : 2004 (Eurocode 5) and in Hazard Classes 1 and 2 as specified in EN 335-1 : 2006 for members subject to static or quasi-static loading. They may be exposed directly to the weather for a short time during installation.

The ability of the product to resist loads without undue deflection (serviceability) is dealt with in Clause 3.1: *Mechanical resistance and stability (BWR1)*.

B2 Manufacturing

The product is manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the British Board of Agrément and the notified body and laid down in the technical documentation.

B3 Installation

A joist is deemed fit for its intended use provided:

- it is designed in accordance with Eurocode 5 or an appropriate national code using the design data given in Annex C. Design and detailing of structures should be carried out by a suitably qualified and experienced person in accordance with the manufacturer's instructions and the requirements of this ETA
- verifiable calculation, notes and drawings are prepared, taking account of the loads to be resisted
- the minimum end bearing length for I-joists with LVL flange material must be 35 mm and the minimum intermediate bearing length must be 45 mm
- the minimum end bearing length for I-joists with solid timber flange material must be 45 mm and the minimum intermediate bearing length must be 75 mm.

B4 Criteria

The fitness for use of the joist can be assumed if it is installed correctly in accordance with the following requirements:

- installation is carried out by personnel under the direction of supervisors, all of whom are appropriately qualified for this work
- installation is in accordance with the manufacturer's specifications and drawings prepared for that purpose, and the appropriate tools are used
- the flanges must not be drilled, notched or otherwise altered on site unless it has been written in the manufacturer's literature or specification (Annex C)
- the joists should be handled and installed in a similar manner to solid timber beams. However, the strength and stiffness of joists about their minor axis is less than that of corresponding solid timber sections. Therefore, care must be exercised to ensure that joists are not damaged during handling due to bending about their minor axis. In accordance with normal good practice for timber, they should be protected from wetting during installation
- the characteristic bending moments given in Annex C, Tables C1, C2, C3 and C4 are based on the assumption that lateral bracing to the compression flange (at a spacing not exceeding ten times the flange width) is in place. Alternative bracing will require separate analysis
- the joists should have a moisture content at the time of installation close to that attained in service
- temporary bracing should be provided to keep the joists in a straight and plumb position during installation
- rigid service pipes can be incorporated within the floor, roof or wall void by passing through site-cut holes in accordance with the manufacturer's literature or specification as detailed in Annex C
- attack from insects such as house longhorn beetles, dry wood termites and woodworm may reduce the durability of the product.

B5 Recommendations on packaging, transport and storage

Delivery and site storage must be carried out in accordance with the manufacturer's instructions. During transportation, the joists must be protected from adverse weather. The joists should be stored clear of the ground and stacked vertically (within the plane of the spans). Precautions should be taken to minimise changes in moisture content due to the weather. Full cover, which permits free passage of air, should be provided.

B6 Recommendations on use, maintenance and repair

Should repair prove necessary, an assessment must be made in each case. It is the responsibility of the manufacturer to ensure that the information on the specific conditions noted in Sections 3, A1, B3, B4 and Annex C is given to those concerned. This information may be obtained from the respective parts of this European Technical Assessment.

ANNEX C MECHANICAL RESISTANCE AND STABILITY

The mechanical properties, characteristic load-carrying capacities and modification factors for the product are given in this Annex and have been derived in accordance with EAD 130367-00-0304. Details for incorporation of holes in the web and axial loading are given in Annex C (pages 56 to 58) and should be used for designs in accordance with EN 1995-1-1 : 2004 (Eurocode 5). The load-carrying capacities have been derived by calculation and calculation assisted by test.

Where cyclic design of the structure is required, the product may have the capacity to behave as shear walls. This must be verified by testing or by design, for a full wall system:

- the ductile behaviour of the final construction must be designed to ensure the joints and connections are fit for purpose and installed in accordance with Eurocode 8 and National Annex of Member States
- the dissipated energy in the structure is solely dependent upon the composition of the wall members, connections, the sheeting material (such as OSB, gypsum fibre board, plywood and chipboard) and the assembly of the wall system in the structure
- the connection between the sheeting material and the I-joist flanges may be considered as a connection between the sheeting material and a solid wood section/solid LVL section corresponding to the relevant material used in the I-joist flange.

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{45,NFB}$ 45	160	4.96	10.63	183	1.42
	200	7.09	13.01	327	2.09
	220	8.00	14.16	416	2.42
	240	8.92	15.28	516	2.76
	250	9.38	15.83	571	2.93
	300	11.74	17.61	888	3.77
	350	13.64	18.46	1281	4.61
	360	14.01	18.62	1369	4.78
	400	15.51	19.21	1753	5.45
$SJ_{45,NFB}$ 60	160	6.75	11.24	249	1.42
	200	9.45	13.73	436	2.09
	220	10.66	14.92	554	2.42
	240	11.87	16.08	687	2.76
	250	12.48	16.65	759	2.93
	300	15.57	18.47	1177	3.77
	350	18.03	19.30	1693	4.61
	360	18.52	19.45	1808	4.78
	400	20.45	20.03	2310	5.45
	450	22.83	20.69	3030	6.29
	500	25.20	20.69	3855	7.13
$SJ_{45,NFB}$ 90	160	10.04	12.14	370	1.42
	200	14.13	14.82	651	2.09
	220	15.96	16.09	827	2.42
	240	17.75	17.32	1025	2.76
	250	18.65	17.93	1132	2.93
	300	23.21	19.83	1752	3.77
	350	26.80	20.65	2513	4.61
	360	27.51	20.80	2683	4.78
	400	30.30	21.37	3419	5.45
	450	33.74	22.00	4472	6.29
	500	37.12	22.45	5675	7.13
$SW_{45,NFB}$ 45	160	2.71	8.51	128	1.28
	180	3.15	9.50	174	1.53
	200	3.61	10.46	229	1.78
	220	4.07	11.41	291	2.03
	240	4.53	12.34	362	2.28
	250	4.77	12.79	400	2.41
	260	5.01	13.15	440	2.54
	280	5.49	13.66	528	2.79
	300	5.97	13.77	623	3.04
	350	6.94	12.67	900	3.67
	360	7.14	12.28	962	3.80
	400	7.90	10.97	1233	4.30
	450	8.86	9.69	1624	4.93
	500	9.81	8.69	2075	5.56
$SW_{45,NFB}$ 60	160	3.61	9.00	170	1.28
	180	4.19	10.04	232	1.53
	200	4.79	11.05	304	1.78
	220	5.39	12.04	386	2.03
	240	6.01	13.00	479	2.28
	250	6.32	13.48	530	2.41
	260	6.63	13.95	583	2.54
	280	7.25	14.69	697	2.79
	300	7.89	14.94	823	3.04
	350	9.14	13.43	1185	3.67
	360	9.39	13.02	1266	3.80
	400	10.37	11.62	1618	4.30
	450	11.59	10.27	2125	4.93
	500	12.80	9.22	2706	5.56

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{45,NFB}$ 70	160	4.21	9.25	198	1.28
	180	4.89	10.31	270	1.53
	200	5.58	11.34	354	1.78
	220	6.28	12.35	449	2.03
	240	6.99	13.33	558	2.28
	250	7.35	13.82	616	2.41
	260	7.71	14.30	678	2.54
	280	8.43	15.05	811	2.79
	300	9.16	15.37	956	3.04
	350	10.60	13.81	1375	3.67
	360	10.89	13.39	1468	3.80
	400	12.01	11.95	1875	4.30
	450	13.41	10.56	2458	4.93
	500	14.78	9.48	3127	5.56
$SW_{45,NFB}$ 80	160	4.81	9.50	226	1.28
	180	5.58	10.58	308	1.53
	200	6.37	11.64	404	1.78
	220	7.16	12.67	513	2.03
	240	7.97	13.67	636	2.28
	250	8.38	14.17	703	2.41
	260	8.79	14.66	773	2.54
	280	9.61	15.42	924	2.79
	300	10.44	15.74	1089	3.04
	350	12.06	14.19	1565	3.67
	360	12.39	13.76	1671	3.80
	400	13.66	12.28	2131	4.30
	450	15.23	10.85	2792	4.93
	500	16.77	9.74	3547	5.56
$SW_{45,NFB}$ 90	160	5.40	9.75	254	1.28
	180	6.27	10.86	346	1.53
	200	7.15	11.94	454	1.78
	220	8.05	12.99	576	2.03
	240	8.95	14.02	714	2.28
	250	9.41	14.52	789	2.41
	260	9.87	15.02	868	2.54
	280	10.79	15.80	1037	2.79
	300	11.71	16.12	1222	3.04
	350	13.53	14.57	1754	3.67
	360	13.89	14.13	1873	3.80
	400	15.30	12.61	2388	4.30
	450	17.04	11.14	3125	4.93
	500	18.76	10.00	3968	5.56
$SW_{39,NFB}$ 45	160	2.45	7.88	121	1.58
	180	2.85	8.72	164	1.86
	200	3.25	9.55	214	2.14
	220	3.66	10.36	271	2.43
	240	4.08	11.16	336	2.71
	250	4.29	11.56	371	2.85
	260	4.51	11.95	408	2.99
	280	4.94	12.57	487	3.27
	300	5.38	12.84	574	3.55
	350	6.26	13.46	827	4.25
	360	6.43	13.58	884	4.40
	400	7.13	13.39	1132	4.96
	450	8.01	11.87	1490	5.66
	500	8.89	10.67	1905	6.37

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{39,NFB}$ 60	160	3.26	8.33	161	1.58
	180	3.78	9.20	218	1.86
	200	4.31	10.06	284	2.14
	220	4.85	10.90	359	2.43
	240	5.39	11.72	443	2.71
	250	5.67	12.13	489	2.85
	260	5.94	12.53	537	2.99
	280	6.50	13.16	641	3.27
	300	7.07	13.42	755	3.55
	350	8.19	14.01	1083	4.25
	360	8.42	14.13	1157	4.40
	400	9.30	14.19	1476	4.96
	450	10.41	12.58	1936	5.66
	500	11.51	11.31	2466	6.37
$SW_{39,NFB}$ 70	160	3.79	8.55	188	1.58
	180	4.40	9.44	254	1.86
	200	5.01	10.31	330	2.14
	220	5.63	11.17	417	2.43
	240	6.26	12.00	515	2.71
	250	6.58	12.42	568	2.85
	260	6.90	12.83	624	2.99
	280	7.55	13.46	744	3.27
	300	8.20	13.72	875	3.55
	350	9.48	14.30	1254	4.25
	360	9.74	14.41	1338	4.40
	400	10.75	14.59	1706	4.96
	450	12.00	12.93	2234	5.66
	500	13.25	11.63	2839	6.37
$SW_{39,NFB}$ 80	160	4.33	8.78	214	1.58
	180	5.02	9.69	289	1.86
	200	5.72	10.58	376	2.14
	220	6.42	11.45	476	2.43
	240	7.14	12.30	587	2.71
	250	7.50	12.72	647	2.85
	260	7.86	13.13	711	2.99
	280	8.59	13.78	847	3.27
	300	9.33	14.03	996	3.55
	350	10.77	14.60	1425	4.25
	360	11.06	14.71	1520	4.40
	400	12.20	14.99	1936	4.96
	450	13.60	13.29	2531	5.66
	500	15.00	11.95	3213	6.37
$SW_{39,NFB}$ 90	160	4.87	9.00	241	1.58
	180	5.64	9.93	325	1.86
	200	6.42	10.84	423	2.14
	220	7.21	11.73	534	2.43
	240	8.01	12.60	659	2.71
	250	8.41	13.02	726	2.85
	260	8.82	13.45	797	2.99
	280	9.63	14.10	950	3.27
	300	10.46	14.35	1116	3.55
	350	12.06	14.93	1595	4.25
	360	12.38	15.03	1702	4.40
	400	13.64	15.40	2165	4.96
	450	15.20	13.65	2828	5.66
	500	16.74	12.27	3587	6.37

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{36,NFB}$ 45	160	2.31	7.62	117	1.67
	180	2.68	8.40	158	1.95
	200	3.06	9.16	205	2.23
	220	3.45	9.92	260	2.51
	240	3.84	10.66	321	2.79
	250	4.04	11.03	354	2.93
	260	4.24	11.40	389	3.07
	280	4.65	11.97	464	3.35
	300	5.06	12.22	546	3.64
	350	5.88	12.78	785	4.34
	360	6.05	12.89	839	4.48
	400	6.71	13.25	1073	5.04
	450	7.54	11.76	1412	5.75
	500	8.37	10.59	1805	6.45
$SW_{36,NFB}$ 60	160	3.07	8.04	156	1.67
	180	3.56	8.85	209	1.95
	200	4.05	9.64	272	2.23
	220	4.56	10.41	343	2.51
	240	5.07	11.18	423	2.79
	250	5.32	11.55	466	2.93
	260	5.58	11.93	512	3.07
	280	6.11	12.51	610	3.35
	300	6.64	12.74	717	3.64
	350	7.69	13.27	1026	4.34
	360	7.90	13.38	1095	4.48
	400	8.73	13.76	1396	5.04
	450	9.76	12.47	1830	5.75
	500	10.80	11.23	2329	6.45
$SW_{36,NFB}$ 70	160	3.57	8.26	181	1.67
	180	4.14	9.08	244	1.95
	200	4.71	9.88	316	2.23
	220	5.29	10.67	398	2.51
	240	5.88	11.44	491	2.79
	250	6.18	11.82	541	2.93
	260	6.48	12.20	594	3.07
	280	7.08	12.78	707	3.35
	300	7.69	13.01	830	3.64
	350	8.89	13.53	1187	4.34
	360	9.13	13.63	1266	4.48
	400	10.07	14.00	1612	5.04
	450	11.25	12.82	2108	5.75
	500	12.42	11.54	2678	6.45
$SW_{36,NFB}$ 80	160	4.08	8.47	207	1.67
	180	4.72	9.31	278	1.95
	200	5.37	10.13	360	2.23
	220	6.03	10.93	454	2.51
	240	6.70	11.71	559	2.79
	250	7.03	12.10	616	2.93
	260	7.37	12.48	676	3.07
	280	8.05	13.07	804	3.35
	300	8.74	13.30	944	3.64
	350	10.09	13.81	1347	4.34
	360	10.36	13.90	1437	4.48
	400	11.42	14.27	1827	5.04
	450	12.73	13.17	2387	5.75
	500	14.04	11.86	3028	6.45

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{36,NFB}$ 90	160	4.58	8.69	232	1.67
	180	5.30	9.54	312	1.95
	200	6.03	10.38	405	2.23
	220	6.77	11.19	510	2.51
	240	7.51	11.99	627	2.79
	250	7.89	12.39	691	2.93
	260	8.27	12.78	758	3.07
	280	9.03	13.37	901	3.35
	300	9.79	13.60	1058	3.64
	350	11.29	14.10	1507	4.34
	360	11.59	14.20	1608	4.48
	400	12.76	14.56	2043	5.04
	450	14.22	13.53	2665	5.75
	500	15.66	12.18	3377	6.45
$SW_{33,NFB}$ 45	160	2.17	7.32	113	1.75
	180	2.51	8.03	151	2.03
	200	2.87	8.74	196	2.31
	220	3.23	9.43	247	2.59
	240	3.59	10.12	304	2.88
	250	3.78	10.46	336	3.02
	260	3.97	10.80	368	3.16
	280	4.35	11.34	439	3.44
	300	4.73	11.55	517	3.72
	350	5.50	12.07	742	4.42
	360	5.66	12.17	792	4.56
	400	6.28	12.56	1013	5.13
	450	7.06	11.66	1332	5.83
	500	7.84	10.51	1702	6.53
$SW_{33,NFB}$ 60	160	2.88	7.72	149	1.75
	180	3.33	8.45	200	2.03
	200	3.79	9.18	259	2.31
	220	4.26	9.89	326	2.59
	240	4.73	10.59	401	2.88
	250	4.97	10.94	441	3.02
	260	5.21	11.29	484	3.16
	280	5.70	11.82	576	3.44
	300	6.19	12.02	676	3.72
	350	7.17	12.50	966	4.42
	360	7.36	12.59	1031	4.56
	400	8.14	12.95	1314	5.13
	450	9.11	12.36	1720	5.83
	500	10.08	11.14	2188	6.53
$SW_{33,NFB}$ 70	160	3.35	7.92	174	1.75
	180	3.87	8.67	233	2.03
	200	4.40	9.40	301	2.31
	220	4.94	10.12	378	2.59
	240	5.49	10.83	465	2.88
	250	5.76	11.18	512	3.02
	260	6.04	11.53	561	3.16
	280	6.60	12.07	667	3.44
	300	7.17	12.26	783	3.72
	350	8.28	12.73	1116	4.42
	360	8.50	12.81	1190	4.56
	400	9.39	13.15	1514	5.13
	450	10.48	12.71	1979	5.83
	500	11.58	11.46	2513	6.53

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{33,NFB}$ 80	160	3.82	8.12	198	1.75
	180	4.41	8.88	265	2.03
	200	5.02	9.63	343	2.31
	220	5.63	10.36	431	2.59
	240	6.25	11.08	529	2.88
	250	6.56	11.44	582	3.02
	260	6.87	11.79	638	3.16
	280	7.50	12.33	758	3.44
	300	8.14	12.52	889	3.72
	350	9.39	12.98	1266	4.42
	360	9.64	13.06	1350	4.56
	400	10.63	13.39	1715	5.13
	450	11.85	13.06	2238	5.83
	500	13.07	11.77	2837	6.53
$SW_{33,NFB}$ 90	160	4.29	8.33	223	1.75
	180	4.96	9.10	298	2.03
	200	5.63	9.87	385	2.31
	220	6.31	10.61	483	2.59
	240	7.00	11.34	593	2.88
	250	7.35	11.70	653	3.02
	260	7.70	12.06	715	3.16
	280	8.40	12.61	849	3.44
	300	9.11	12.80	996	3.72
	350	10.50	13.25	1416	4.42
	360	10.78	13.33	1509	4.56
	400	11.87	13.65	1915	5.13
	450	13.22	13.41	2496	5.83
	500	14.56	12.09	3162	6.53
$SW_{30,NFB}$ 45	160	2.02	6.98	107	1.83
	180	2.34	7.63	144	2.12
	200	2.67	8.27	186	2.40
	220	3.00	8.91	233	2.68
	240	3.34	9.54	287	2.96
	250	3.51	9.86	316	3.10
	260	3.69	10.17	347	3.24
	280	4.04	10.66	413	3.52
	300	4.40	10.86	486	3.80
	350	5.12	11.33	696	4.51
	360	5.26	11.42	743	4.65
	400	5.84	11.77	950	5.21
	450	6.57	11.57	1249	5.92
	500	7.30	10.43	1596	6.62
$SW_{30,NFB}$ 60	160	2.68	7.35	142	1.83
	180	3.09	8.02	190	2.12
	200	3.52	8.67	245	2.40
	220	3.95	9.32	307	2.68
	240	4.39	9.97	377	2.96
	250	4.61	10.28	415	3.10
	260	4.83	10.60	455	3.24
	280	5.28	11.09	540	3.52
	300	5.74	11.27	634	3.80
	350	6.64	11.70	904	4.51
	360	6.83	11.78	964	4.65
	400	7.55	12.10	1228	5.21
	450	8.45	12.26	1607	5.92
	500	9.36	11.06	2044	6.62

Table C1 Characteristic design properties — solid timber flanges and natural fibreboard wood (continued)

Type	Depth (mm)	Characteristic moment capacity (kN·m)	Characteristic shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{30,NFB}$ 70	160	3.11	7.54	165	1.83
	180	3.59	8.21	221	2.12
	200	4.08	8.88	284	2.40
	220	4.58	9.53	356	2.68
	240	5.08	10.18	437	2.96
	250	5.34	10.50	481	3.10
	260	5.59	10.82	526	3.24
	280	6.11	11.31	625	3.52
	300	6.63	11.48	733	3.80
	350	7.66	11.89	1043	4.51
	360	7.87	11.97	1112	4.65
	400	8.69	12.27	1413	5.21
	450	9.70	12.61	1845	5.92
	500	10.72	11.37	2342	6.62
$SW_{30,NFB}$ 80	160	3.55	7.73	189	1.83
	180	4.10	8.41	251	2.12
	200	4.65	9.09	323	2.40
	220	5.21	9.75	405	2.68
	240	5.78	10.41	497	2.96
	250	6.07	10.73	546	3.10
	260	6.36	11.05	598	3.24
	280	6.94	11.54	710	3.52
	300	7.53	11.71	831	3.80
	350	8.68	12.11	1181	4.51
	360	8.91	12.19	1259	4.65
	400	9.83	12.48	1598	5.21
	450	10.96	12.83	2084	5.92
	500	12.09	11.69	2641	6.62
$SW_{30,NFB}$ 90	160	3.99	7.92	212	1.83
	180	4.60	8.62	282	2.12
	200	5.22	9.31	363	2.40
	220	5.85	9.98	454	2.68
	240	6.48	10.65	557	2.96
	250	6.80	10.97	612	3.10
	260	7.12	11.30	670	3.24
	280	7.77	11.79	795	3.52
	300	8.42	11.96	930	3.80
	350	9.70	12.35	1320	4.51
	360	9.96	12.42	1407	4.65
	400	10.96	12.71	1783	5.21
	450	12.21	13.05	2322	5.92
	500	13.46	12.00	2940	6.62

NOTE : The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C2 Characteristic design properties — solid timber flanges and OSB web

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{45,OSB}$ 45	160	4.96	10.17	183	1.21
	200	7.09	12.40	327	1.78
	220	8.00	13.47	416	2.06
	240	8.92	14.51	516	2.35
	250	9.38	15.02	571	2.49
	300	11.74	16.87	888	3.20
	350	13.64	17.87	1281	3.92
	360	14.01	18.06	1369	4.06
	400	15.51	18.76	1753	4.63
$SJ_{45,OSB}$ 60	160	6.75	10.77	249	1.21
	200	9.45	13.11	436	1.78
	220	10.66	14.23	554	2.06
	240	11.87	15.32	687	2.35
	250	12.48	15.85	759	2.49
	300	15.57	17.77	1177	3.20
	350	18.03	18.79	1693	3.92
	360	18.52	18.97	1808	4.06
	400	20.45	19.69	2310	4.63
	450	22.83	20.50	3030	5.35
	500	25.20	20.51	3855	6.06
$SJ_{45,OSB}$ 90	160	10.04	11.64	370	1.21
	200	14.13	14.18	651	1.78
	220	15.96	15.38	827	2.06
	240	17.75	16.55	1025	2.35
	250	18.65	17.12	1132	2.49
	300	23.21	19.15	1752	3.20
	350	26.80	20.21	2513	3.92
	360	27.51	20.40	2683	4.06
	400	30.30	21.14	3419	4.63
	450	33.74	21.97	4472	5.35
	500	37.12	22.25	5675	6.06
$SW_{45,OSB}$ 45	160	2.70	7.39	127	0.99
	180	3.14	8.23	173	1.19
	200	3.59	9.06	227	1.39
	220	4.04	9.86	289	1.58
	240	4.49	10.65	358	1.78
	250	4.72	11.04	396	1.88
	260	4.95	11.42	436	1.98
	280	5.42	12.11	521	2.18
	300	5.89	12.38	614	2.38
	350	6.81	11.19	884	2.87
	360	7.00	10.88	944	2.97
	400	7.72	9.81	1205	3.37
	450	8.62	8.77	1580	3.86
	500	9.50	7.96	2010	4.36
$SW_{45,OSB}$ 60	160	3.60	7.82	169	0.99
	180	4.18	8.71	231	1.19
	200	4.77	9.58	302	1.39
	220	5.36	10.42	384	1.58
	240	5.97	11.24	476	1.78
	250	6.27	11.65	526	1.88
	260	6.57	12.05	578	1.98
	280	7.19	12.76	691	2.18
	300	7.80	13.11	814	2.38
	350	9.01	11.86	1168	2.87
	360	9.25	11.53	1247	2.97
	400	10.19	10.40	1590	3.37
	450	11.35	9.30	2080	3.86
	500	12.49	8.43	2641	4.36

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{45,OSB}$ 70	160	4.20	8.04	198	0.99
	180	4.87	8.95	269	1.19
	200	5.56	9.84	352	1.39
	220	6.25	10.70	447	1.58
	240	6.95	11.54	554	1.78
	250	7.30	11.95	612	1.88
	260	7.65	12.36	673	1.98
	280	8.36	13.09	804	2.18
	300	9.08	13.45	947	2.38
	350	10.47	12.19	1358	2.87
	360	10.75	11.86	1450	2.97
	400	11.83	10.70	1847	3.37
	450	13.17	9.56	2414	3.86
	500	14.47	8.67	3061	4.36
$SW_{45,OSB}$ 80	160	4.80	8.26	226	0.99
	180	5.57	9.19	307	1.19
	200	6.35	10.10	402	1.39
	220	7.13	10.98	511	1.58
	240	7.93	11.84	633	1.78
	250	8.33	12.27	699	1.88
	260	8.73	12.68	768	1.98
	280	9.54	13.43	917	2.18
	300	10.35	13.79	1080	2.38
	350	11.94	12.53	1548	2.87
	360	12.25	12.18	1652	2.97
	400	13.48	10.99	2103	3.37
	450	14.98	9.83	2747	3.86
	500	16.46	8.91	3482	4.36
$SW_{45,OSB}$ 90	160	5.40	8.48	254	0.99
	180	6.26	9.44	346	1.19
	200	7.13	10.37	452	1.39
	220	8.02	11.27	574	1.58
	240	8.91	12.15	711	1.78
	250	9.36	12.58	785	1.88
	260	9.81	13.01	863	1.98
	280	10.72	13.77	1030	2.18
	300	11.63	14.14	1213	2.38
	350	13.40	12.86	1738	2.87
	360	13.75	12.51	1854	2.97
	400	15.12	11.29	2360	3.37
	450	16.80	10.09	3081	3.86
	500	18.45	9.15	3902	4.36
$SW_{39,OSB}$ 45	160	2.44	7.00	121	1.11
	180	2.82	7.73	163	1.31
	200	3.22	8.44	212	1.50
	220	3.61	9.13	268	1.70
	240	4.02	9.81	330	1.90
	250	4.22	10.15	364	2.00
	260	4.42	10.48	400	2.10
	280	4.84	11.08	477	2.30
	300	5.25	11.36	561	2.49
	350	6.07	10.90	802	2.99
	360	6.23	10.61	856	3.09
	400	6.87	9.61	1090	3.48
	450	7.66	8.62	1426	3.98
	500	8.45	7.83	1810	4.47

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{39,OSB}$ 60	160	3.24	7.41	160	1.11
	180	3.75	8.17	216	1.31
	200	4.27	8.91	281	1.50
	220	4.80	9.64	355	1.70
	240	5.33	10.35	438	1.90
	250	5.59	10.69	483	2.00
	260	5.86	11.04	530	2.10
	280	6.40	11.66	631	2.30
	300	6.94	11.94	741	2.49
	350	8.00	11.56	1058	2.99
	360	8.21	11.25	1128	3.09
	400	9.04	10.18	1434	3.48
	450	10.06	9.13	1872	3.98
	500	11.06	8.30	2371	4.47
$SW_{39,OSB}$ 70	160	3.78	7.61	187	1.11
	180	4.37	8.39	252	1.31
	200	4.98	9.15	328	1.50
	220	5.59	9.89	414	1.70
	240	6.20	10.61	510	1.90
	250	6.51	10.97	562	2.00
	260	6.82	11.32	616	2.10
	280	7.44	11.95	734	2.30
	300	8.07	12.24	862	2.49
	350	9.29	11.88	1229	2.99
	360	9.53	11.57	1310	3.09
	400	10.49	10.47	1664	3.48
	450	11.66	9.39	2169	3.98
	500	12.81	8.54	2745	4.47
$SW_{39,OSB}$ 80	160	4.32	7.81	214	1.11
	180	4.99	8.61	288	1.31
	200	5.68	9.39	374	1.50
	220	6.37	10.15	472	1.70
	240	7.07	10.89	582	1.90
	250	7.42	11.25	641	2.00
	260	7.78	11.61	703	2.10
	280	8.49	12.25	837	2.30
	300	9.20	12.54	982	2.49
	350	10.58	12.21	1399	2.99
	360	10.86	11.89	1492	3.09
	400	11.93	10.76	1894	3.48
	450	13.25	9.65	2466	3.98
	500	14.55	8.77	3119	4.47
$SW_{39,OSB}$ 90	160	4.85	8.02	240	1.11
	180	5.61	8.84	324	1.31
	200	6.38	9.63	421	1.50
	220	7.16	10.41	530	1.70
	240	7.95	11.16	653	1.90
	250	8.34	11.53	720	2.00
	260	8.73	11.90	790	2.10
	280	9.53	12.55	939	2.30
	300	10.33	12.85	1103	2.49
	350	11.87	12.54	1570	2.99
	360	12.18	12.20	1674	3.09
	400	13.38	11.05	2123	3.48
	450	14.85	9.91	2764	3.98
	500	16.30	9.01	3493	4.47

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{36,OSB}$ 45	160	2.29	6.76	116	1.17
	180	2.66	7.43	156	1.37
	200	3.02	8.08	203	1.56
	220	3.39	8.72	255	1.76
	240	3.77	9.35	315	1.96
	250	3.96	9.66	347	2.06
	260	4.15	9.96	380	2.16
	280	4.53	10.51	452	2.36
	300	4.92	10.77	531	2.55
	350	5.68	10.77	758	3.05
	360	5.83	10.49	809	3.15
	400	6.43	9.51	1029	3.54
	450	7.17	8.54	1344	4.04
	500	7.91	7.77	1706	4.53
$SW_{36,OSB}$ 60	160	3.05	7.15	155	1.17
	180	3.53	7.85	208	1.37
	200	4.01	8.53	269	1.56
	220	4.50	9.19	339	1.76
	240	4.99	9.85	417	1.96
	250	5.24	10.17	459	2.06
	260	5.49	10.48	503	2.16
	280	5.99	11.05	598	2.36
	300	6.50	11.31	702	2.55
	350	7.48	11.42	999	3.05
	360	7.68	11.12	1065	3.15
	400	8.45	10.08	1352	3.54
	450	9.40	9.05	1762	4.04
	500	10.34	8.24	2230	4.53
$SW_{36,OSB}$ 70	160	3.56	7.34	180	1.17
	180	4.11	8.06	242	1.37
	200	4.67	8.75	313	1.56
	220	5.24	9.43	394	1.76
	240	5.81	10.10	485	1.96
	250	6.10	10.42	534	2.06
	260	6.39	10.75	585	2.16
	280	6.97	11.32	695	2.36
	300	7.55	11.58	815	2.55
	350	8.69	11.74	1160	3.05
	360	8.91	11.43	1236	3.15
	400	9.80	10.37	1567	3.54
	450	10.89	9.31	2040	4.04
	500	11.96	8.47	2580	4.53
$SW_{36,OSB}$ 80	160	4.06	7.54	206	1.17
	180	4.69	8.27	276	1.37
	200	5.33	8.98	358	1.56
	220	5.98	9.67	450	1.76
	240	6.63	10.35	553	1.96
	250	6.95	10.69	609	2.06
	260	7.28	11.01	667	2.16
	280	7.94	11.60	792	2.36
	300	8.60	11.86	929	2.55
	350	9.89	12.06	1320	3.05
	360	10.14	11.75	1407	3.15
	400	11.14	10.65	1783	3.54
	450	12.37	9.57	2319	4.04
	500	13.58	8.70	2929	4.53

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{36,OSB}$ 90	160	4.57	7.73	232	1.17
	180	5.28	8.48	311	1.37
	200	5.99	9.21	402	1.56
	220	6.71	9.92	505	1.76
	240	7.44	10.61	621	1.96
	250	7.81	10.95	684	2.06
	260	8.18	11.29	749	2.16
	280	8.91	11.89	890	2.36
	300	9.65	12.15	1043	2.55
	350	11.09	12.39	1480	3.05
	360	11.37	12.06	1577	3.15
	400	12.49	10.94	1998	3.54
	450	13.86	9.82	2597	4.04
	500	15.20	8.94	3279	4.53
$SW_{33,OSB}$ 45	160	2.15	6.48	112	1.23
	180	2.48	7.09	149	1.43
	200	2.82	7.69	193	1.62
	220	3.17	8.27	242	1.82
	240	3.52	8.85	298	2.02
	250	3.69	9.13	328	2.12
	260	3.87	9.41	359	2.22
	280	4.22	9.92	427	2.42
	300	4.58	10.14	501	2.61
	350	5.29	10.64	713	3.11
	360	5.43	10.37	760	3.21
	400	5.99	9.42	966	3.60
	450	6.68	8.47	1261	4.10
	500	7.37	7.71	1599	4.59
$SW_{33,OSB}$ 60	160	2.86	6.85	148	1.23
	180	3.30	7.48	198	1.43
	200	3.74	8.10	256	1.62
	220	4.20	8.71	321	1.82
	240	4.65	9.31	394	2.02
	250	4.88	9.60	433	2.12
	260	5.11	9.89	475	2.22
	280	5.58	10.41	563	2.42
	300	6.04	10.64	660	2.61
	350	6.96	11.16	938	3.11
	360	7.14	10.99	999	3.21
	400	7.85	9.98	1267	3.60
	450	8.73	8.98	1649	4.10
	500	9.61	8.18	2085	4.59
$SW_{33,OSB}$ 70	160	3.33	7.03	173	1.23
	180	3.84	7.68	231	1.43
	200	4.36	8.31	298	1.62
	220	4.88	8.93	373	1.82
	240	5.41	9.54	458	2.02
	250	5.68	9.84	504	2.12
	260	5.94	10.13	552	2.22
	280	6.48	10.66	655	2.42
	300	7.02	10.89	767	2.61
	350	8.07	11.41	1087	3.11
	360	8.27	11.30	1159	3.21
	400	9.09	10.26	1467	3.60
	450	10.10	9.23	1908	4.10
	500	11.10	8.41	2410	4.59

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{33,OSB}$ 80	160	3.80	7.22	197	1.23
	180	4.38	7.88	264	1.43
	200	4.97	8.53	340	1.62
	220	5.57	9.16	426	1.82
	240	6.17	9.78	522	2.02
	250	6.47	10.08	574	2.12
	260	6.77	10.38	629	2.22
	280	7.38	10.92	746	2.42
	300	7.99	11.15	873	2.61
	350	9.18	11.67	1237	3.11
	360	9.41	11.61	1318	3.21
	400	10.34	10.55	1668	3.60
	450	11.48	9.49	2166	4.10
	500	12.60	8.64	2734	4.59
$SW_{33,OSB}$ 90	160	4.27	7.41	222	1.23
	180	4.93	8.08	296	1.43
	200	5.59	8.74	382	1.62
	220	6.25	9.39	478	1.82
	240	6.93	10.02	586	2.02
	250	7.26	10.33	645	2.12
	260	7.60	10.64	706	2.22
	280	8.28	11.18	837	2.42
	300	8.97	11.41	979	2.61
	350	10.29	11.94	1387	3.11
	360	10.55	11.93	1477	3.21
	400	11.58	10.83	1868	3.60
	450	12.85	9.74	2425	4.10
	500	14.09	8.87	3059	4.59
$SW_{30,OSB}$ 45	160	2.00	6.17	106	1.29
	180	2.31	6.71	141	1.49
	200	2.62	7.25	182	1.68
	220	2.93	7.79	228	1.88
	240	3.26	8.31	280	2.08
	250	3.42	8.57	308	2.18
	260	3.58	8.83	337	2.28
	280	3.91	9.29	400	2.48
	300	4.24	9.49	468	2.67
	350	4.89	9.97	665	3.17
	360	5.02	10.06	709	3.27
	400	5.54	9.33	900	3.66
	450	6.18	8.40	1174	4.16
	500	6.81	7.66	1489	4.65
$SW_{30,OSB}$ 60	160	2.65	6.51	141	1.29
	180	3.06	7.08	188	1.49
	200	3.47	7.64	241	1.68
	220	3.88	8.19	302	1.88
	240	4.30	8.73	370	2.08
	250	4.51	9.00	406	2.18
	260	4.72	9.26	445	2.28
	280	5.15	9.73	527	2.48
	300	5.58	9.93	616	2.67
	350	6.42	10.40	873	3.17
	360	6.58	10.49	930	3.27
	400	7.24	9.89	1178	3.66
	450	8.06	8.90	1532	4.16
	500	8.86	8.12	1937	4.65

Table C2 Characteristic design properties — solid timber flanges and OSB web (continued)

Type	Depth (mm)	Characteristic Moment capacity (kN·m)	Characteristic Shear capacity (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{30,OSB}$ 70	160	3.09	6.68	164	1.29
	180	3.56	7.26	218	1.49
	200	4.03	7.83	281	1.68
	220	4.52	8.39	351	1.88
	240	5.00	8.94	429	2.08
	250	5.24	9.21	472	2.18
	260	5.49	9.48	516	2.28
	280	5.98	9.96	612	2.48
	300	6.48	10.16	715	2.67
	350	7.44	10.62	1012	3.17
	360	7.63	10.71	1078	3.27
	400	8.38	10.17	1363	3.66
	450	9.31	9.16	1771	4.16
	500	10.23	8.35	2235	4.65
$SW_{30,OSB}$ 80	160	3.52	6.86	187	1.29
	180	4.06	7.45	249	1.49
	200	4.60	8.03	320	1.68
	220	5.15	8.60	400	1.88
	240	5.70	9.16	489	2.08
	250	5.97	9.44	538	2.18
	260	6.25	9.71	588	2.28
	280	6.81	10.19	696	2.48
	300	7.37	10.39	814	2.67
	350	8.46	10.86	1151	3.17
	360	8.67	10.94	1225	3.27
	400	9.52	10.45	1549	3.66
	450	10.57	9.41	2009	4.16
	500	11.60	8.58	2534	4.65
$SW_{30,OSB}$ 90	160	3.96	7.03	211	1.29
	180	4.56	7.64	280	1.49
	200	5.17	8.24	359	1.68
	220	5.78	8.82	449	1.88
	240	6.39	9.39	549	2.08
	250	6.70	9.67	603	2.18
	260	7.01	9.94	660	2.28
	280	7.64	10.44	781	2.48
	300	8.26	10.64	913	2.67
	350	9.48	11.10	1289	3.17
	360	9.71	11.19	1373	3.27
	400	10.66	10.72	1734	3.66
	450	11.82	9.66	2248	4.16
	500	12.97	8.81	2832	4.65

NOTE : The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL39,NFB}$ 45	160	5.90	10.62	195	1.88
	180	6.85	11.83	263	2.22
	200	7.81	13.00	343	2.55
	220	8.79	14.14	433	2.89
	240	9.78	15.26	536	3.23
	250	10.27	15.82	591	3.39
	260	10.78	16.37	649	3.56
	280	11.79	17.23	775	3.90
	300	12.82	17.60	912	4.23
	350	15.43	18.44	1308	5.07
	360	15.96	18.60	1397	5.24
	400	17.75	19.20	1783	5.91
	450	19.85	19.89	2338	6.75
	500	21.94	19.02	2976	7.59
$SJ_{LVL39,NFB}$ 60	160	7.85	11.23	259	1.88
	180	9.10	12.49	350	2.22
	200	10.36	13.71	455	2.55
	220	11.65	14.90	575	2.89
	240	12.94	16.07	709	3.23
	250	13.60	16.64	782	3.39
	260	14.25	17.21	858	3.56
	280	15.58	18.09	1023	3.90
	300	16.91	18.46	1203	4.23
	350	20.30	19.28	1721	5.07
	360	20.98	19.44	1836	5.24
	400	23.61	20.01	2337	5.91
	450	26.48	20.67	3056	6.75
	500	29.34	20.16	3880	7.59
$SJ_{LVL39,NFB}$ 70	160	9.15	11.54	302	1.88
	180	10.60	12.82	407	2.22
	200	12.07	14.07	529	2.55
	220	13.55	15.29	669	2.89
	240	15.05	16.47	825	3.23
	250	15.81	17.05	909	3.39
	260	16.57	17.63	998	3.56
	280	18.10	18.52	1189	3.90
	300	19.64	18.89	1397	4.23
	350	23.54	19.71	1995	5.07
	360	24.33	19.86	2129	5.24
	400	27.50	20.43	2707	5.91
	450	30.88	21.08	3535	6.75
	500	34.25	20.73	4482	7.59
$SJ_{LVL39,NFB}$ 80	160	10.45	11.85	345	1.88
	180	12.10	13.16	465	2.22
	200	13.77	14.44	604	2.55
	220	15.46	15.68	763	2.89
	240	17.16	16.89	940	3.23
	250	18.02	17.48	1037	3.39
	260	18.89	18.07	1138	3.56
	280	20.62	18.98	1354	3.90
	300	22.37	19.34	1591	4.23
	350	26.78	20.17	2270	5.07
	360	27.68	20.32	2421	5.24
	400	31.28	20.88	3077	5.91
	450	35.21	21.52	4014	6.75
	500	39.05	21.30	5084	7.59

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL39,NFB}$ 90	160	11.75	12.16	387	1.88
	180	13.60	13.50	523	2.22
	200	15.47	14.81	679	2.55
	220	17.37	16.08	857	2.89
	240	19.28	17.31	1056	3.23
	250	20.24	17.91	1164	3.39
	260	21.20	18.51	1277	3.56
	280	23.14	19.44	1520	3.90
	300	25.09	19.81	1785	4.23
	350	30.03	20.63	2545	5.07
	360	31.02	20.78	2714	5.24
	400	35.04	21.35	3447	5.91
	450	39.73	21.98	4493	6.75
	500	44.13	21.87	5687	7.59
$SW_{LVL39,NFB}$ 45	160	3.37	8.50	148	1.41
	180	3.91	9.46	200	1.66
	200	4.46	10.40	260	1.92
	220	5.02	11.31	329	2.17
	240	5.58	12.21	406	2.42
	250	5.87	12.65	448	2.55
	260	6.16	13.09	492	2.67
	280	6.74	13.78	587	2.92
	300	7.32	14.03	691	3.18
	350	8.81	12.35	992	3.81
	360	9.12	11.99	1059	3.93
	400	10.13	10.74	1351	4.44
	450	11.33	9.52	1772	5.07
	500	12.53	8.56	2255	5.70
$SW_{LVL39,NFB}$ 60	160	4.49	8.99	196	1.41
	180	5.20	9.99	265	1.66
	200	5.92	10.97	345	1.92
	220	6.65	11.92	436	2.17
	240	7.39	12.85	538	2.42
	250	7.77	13.31	593	2.55
	260	8.14	13.76	651	2.67
	280	8.90	14.47	776	2.92
	300	9.66	14.76	912	3.18
	350	11.59	13.09	1305	3.81
	360	11.99	12.70	1392	3.93
	400	13.48	11.38	1772	4.44
	450	15.12	10.09	2317	5.07
	500	16.76	9.07	2941	5.70
$SW_{LVL39,NFB}$ 70	160	5.23	9.23	229	1.41
	180	6.06	10.26	309	1.66
	200	6.89	11.26	402	1.92
	220	7.74	12.23	507	2.17
	240	8.60	13.17	626	2.42
	250	9.03	13.64	690	2.55
	260	9.47	14.10	757	2.67
	280	10.34	14.82	902	2.92
	300	11.22	15.11	1059	3.18
	350	13.45	13.46	1513	3.81
	360	13.90	13.06	1614	3.93
	400	15.71	11.70	2053	4.44
	450	17.64	10.37	2680	5.07
	500	19.56	9.33	3398	5.70

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL39,NFB}$ 80	160	5.97	9.48	261	1.41
	180	6.91	10.53	353	1.66
	200	7.87	11.55	458	1.92
	220	8.83	12.54	578	2.17
	240	9.81	13.51	713	2.42
	250	10.30	13.98	786	2.55
	260	10.79	14.45	863	2.67
	280	11.78	15.18	1027	2.92
	300	12.78	15.47	1207	3.18
	350	15.30	13.83	1722	3.81
	360	15.81	13.42	1836	3.93
	400	17.86	12.02	2333	4.44
	450	20.11	10.66	3044	5.07
	500	22.30	9.59	3855	5.70
$Sw_{LVL39,NFB}$ 90	160	6.71	9.72	294	1.41
	180	7.77	10.80	396	1.66
	200	8.84	11.85	515	1.92
	220	9.92	12.86	650	2.17
	240	11.01	13.84	801	2.42
	250	11.56	14.33	883	2.55
	260	12.11	14.81	969	2.67
	280	13.22	15.55	1153	2.92
	300	14.34	15.84	1354	3.18
	350	17.15	14.20	1930	3.81
	360	17.72	13.78	2058	3.93
	400	20.01	12.35	2614	4.44
	450	22.69	10.94	3407	5.07
	500	25.20	9.84	4312	5.70
$SJ_{LVL36,NFB}$ 45	160	5.56	10.40	188	1.99
	180	6.45	11.52	253	2.33
	200	7.35	12.62	328	2.66
	220	8.26	13.70	414	3.00
	240	9.18	14.75	511	3.33
	250	9.65	15.27	563	3.50
	260	10.12	15.78	618	3.67
	280	11.07	16.59	736	4.01
	300	12.03	16.93	866	4.34
	350	14.48	17.70	1239	5.18
	360	14.98	17.85	1322	5.35
	400	16.65	18.40	1686	6.02
	450	18.62	19.05	2209	6.86
	500	20.59	18.87	2811	7.70
$SJ_{LVL36,NFB}$ 60	160	7.40	10.99	250	1.99
	180	8.56	12.16	336	2.33
	200	9.74	13.30	435	2.66
	220	10.94	14.42	548	3.00
	240	12.14	15.51	675	3.33
	250	12.75	16.04	744	3.50
	260	13.37	16.57	816	3.67
	280	14.60	17.39	971	4.01
	300	15.84	17.73	1140	4.34
	350	19.01	18.48	1627	5.18
	360	19.65	18.61	1735	5.35
	400	22.10	19.14	2206	6.02
	450	24.79	19.75	2882	6.86
	500	27.47	20.01	3655	7.70

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL36,NFB}$ 70	160	8.62	11.28	291	1.99
	180	9.97	12.48	391	2.33
	200	11.34	13.65	507	2.66
	220	12.72	14.78	638	3.00
	240	14.12	15.89	785	3.33
	250	14.82	16.43	865	3.50
	260	15.53	16.97	948	3.67
	280	16.95	17.80	1127	4.01
	300	18.39	18.13	1323	4.34
	350	22.03	18.87	1885	5.18
	360	22.76	19.01	2010	5.35
	400	25.72	19.53	2553	6.02
	450	28.88	20.12	3330	6.86
	500	32.03	20.57	4218	7.70
$SJ_{LVL36,NFB}$ 80	160	9.84	11.58	332	1.99
	180	11.37	12.81	446	2.33
	200	12.93	14.00	578	2.66
	220	14.50	15.15	727	3.00
	240	16.09	16.28	895	3.33
	250	16.89	16.84	985	3.50
	260	17.69	17.38	1080	3.67
	280	19.31	18.23	1284	4.01
	300	20.93	18.56	1506	4.34
	350	25.05	19.29	2144	5.18
	360	25.88	19.43	2285	5.35
	400	29.23	19.94	2900	6.02
	450	32.90	20.52	3779	6.86
	500	36.49	21.06	4781	7.70
$SJ_{LVL36,NFB}$ 90	160	11.06	11.88	374	1.99
	180	12.78	13.14	502	2.33
	200	14.53	14.35	649	2.66
	220	16.29	15.53	817	3.00
	240	18.07	16.68	1004	3.33
	250	18.96	17.25	1106	3.50
	260	19.86	17.81	1212	3.67
	280	21.66	18.67	1440	4.01
	300	23.48	18.99	1689	4.34
	350	28.07	19.73	2402	5.18
	360	28.99	19.87	2560	5.35
	400	32.73	20.38	3247	6.02
	450	37.11	20.96	4227	6.86
	500	41.20	21.49	5344	7.70
$SW_{LVL36,NFB}$ 45	160	3.18	8.33	143	1.67
	180	3.69	9.24	192	1.95
	200	4.21	10.12	250	2.23
	220	4.73	10.99	315	2.51
	240	5.27	11.84	389	2.79
	250	5.53	12.26	429	2.93
	260	5.81	12.68	471	3.07
	280	6.35	13.33	561	3.35
	300	6.91	13.61	660	3.64
	350	8.33	14.25	946	4.34
	360	8.61	14.37	1010	4.48
	400	9.59	13.25	1289	5.04
	450	10.74	11.76	1691	5.75
	500	11.89	10.59	2154	6.45

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL36,NFB}$ 60	160	4.23	8.80	190	1.67
	180	4.90	9.74	255	1.95
	200	5.58	10.66	331	2.23
	220	6.26	11.56	417	2.51
	240	6.96	12.44	514	2.79
	250	7.31	12.87	566	2.93
	260	7.66	13.30	621	3.07
	280	8.37	13.96	739	3.35
	300	9.09	14.23	868	3.64
	350	10.91	14.85	1240	4.34
	360	11.28	14.97	1323	4.48
	400	12.70	14.05	1684	5.04
	450	14.26	12.47	2201	5.75
	500	15.82	11.23	2795	6.45
$SW_{LVL36,NFB}$ 70	160	4.93	9.04	221	1.67
	180	5.70	10.00	297	1.95
	200	6.49	10.93	385	2.23
	220	7.28	11.85	485	2.51
	240	8.09	12.74	597	2.79
	250	8.49	13.18	657	2.93
	260	8.90	13.61	721	3.07
	280	9.72	14.28	858	3.35
	300	10.54	14.55	1007	3.64
	350	12.64	15.16	1436	4.34
	360	13.06	15.27	1532	4.48
	400	14.77	14.44	1947	5.04
	450	16.60	12.82	2541	5.75
	500	18.43	11.54	3222	6.45
$SW_{LVL36,NFB}$ 80	160	5.63	9.27	252	1.67
	180	6.51	10.26	339	1.95
	200	7.40	11.21	439	2.23
	220	8.30	12.14	553	2.51
	240	9.21	13.05	680	2.79
	250	9.67	13.50	749	2.93
	260	10.13	13.94	821	3.07
	280	11.06	14.62	977	3.35
	300	12.00	14.89	1146	3.64
	350	14.37	15.49	1632	4.34
	360	14.84	15.60	1740	4.48
	400	16.78	14.84	2210	5.04
	450	18.90	13.17	2882	5.75
	500	20.98	11.86	3649	6.45
$Sw_{LVL36,NFB}$ 90	160	6.32	9.51	284	1.67
	180	7.31	10.52	381	1.95
	200	8.31	11.49	493	2.23
	220	9.32	12.44	621	2.51
	240	10.34	13.37	763	2.79
	250	10.85	13.82	840	2.93
	260	11.37	14.27	921	3.07
	280	12.41	14.97	1095	3.35
	300	13.45	15.24	1285	3.64
	350	16.09	15.84	1828	4.34
	360	16.62	15.95	1949	4.48
	400	18.78	15.24	2473	5.04
	450	21.30	13.53	3222	5.75
	500	23.67	12.18	4076	6.45

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL33,NFB}$ 45	160	5.21	9.98	180	2.09
	180	6.03	11.01	242	2.43
	200	6.87	12.02	313	2.76
	220	7.72	13.01	393	3.10
	240	8.58	13.98	484	3.43
	250	9.01	14.45	533	3.60
	260	9.45	14.93	584	3.77
	280	10.33	15.67	695	4.11
	300	11.22	15.97	817	4.44
	350	13.50	16.67	1167	5.28
	360	13.97	16.80	1245	5.45
	400	15.53	17.31	1586	6.12
	450	17.37	17.90	2076	6.96
	500	19.22	18.46	2641	7.80
$SJ_{LVL33,NFB}$ 60	160	6.92	10.54	240	2.09
	180	8.00	11.61	321	2.43
	200	9.10	12.65	414	2.76
	220	10.20	13.67	520	3.10
	240	11.32	14.67	639	3.43
	250	11.89	15.16	703	3.60
	260	12.46	15.65	771	3.77
	280	13.60	16.40	916	4.11
	300	14.76	16.70	1074	4.44
	350	17.69	17.36	1529	5.28
	360	18.29	17.49	1630	5.45
	400	20.57	17.96	2070	6.12
	450	23.07	18.52	2701	6.96
	500	25.57	19.04	3425	7.80
$SJ_{LVL33,NFB}$ 70	160	8.06	10.82	279	2.09
	180	9.31	11.91	373	2.43
	200	10.58	12.97	482	2.76
	220	11.86	14.01	605	3.10
	240	13.16	15.02	742	3.43
	250	13.81	15.52	817	3.60
	260	14.46	16.02	895	3.77
	280	15.78	16.78	1062	4.11
	300	17.11	17.06	1245	4.44
	350	20.49	17.72	1770	5.28
	360	21.17	17.84	1887	5.45
	400	23.92	18.30	2393	6.12
	450	26.85	18.84	3118	6.96
	500	29.78	19.34	3947	7.80
$SJ_{LVL33,NFB}$ 80	160	9.20	11.10	319	2.09
	180	10.63	12.22	426	2.43
	200	12.07	13.30	549	2.76
	220	13.52	14.36	689	3.10
	240	14.99	15.39	846	3.43
	250	15.73	15.90	930	3.60
	260	16.47	16.40	1019	3.77
	280	17.96	17.17	1209	4.11
	300	19.47	17.45	1417	4.44
	350	23.28	18.10	2011	5.28
	360	24.05	18.22	2143	5.45
	400	27.16	18.68	2717	6.12
	450	30.56	19.20	3535	6.96
	500	33.89	19.69	4470	7.80

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL33,NFB}$ 90	160	10.34	11.38	358	2.09
	180	11.94	12.53	478	2.43
	200	13.55	13.63	617	2.76
	220	15.18	14.71	774	3.10
	240	16.82	15.76	949	3.43
	250	17.65	16.28	1044	3.60
	260	18.48	16.79	1143	3.77
	280	20.14	17.57	1356	4.11
	300	21.82	17.86	1588	4.44
	350	26.07	18.50	2253	5.28
	360	26.93	18.62	2400	5.45
	400	30.39	19.08	3040	6.12
	450	34.44	19.59	3952	6.96
	500	38.24	20.07	4993	7.80
$SW_{LVL33,NFB}$ 45	160	2.98	8.00	137	1.75
	180	3.46	8.83	184	2.03
	200	3.94	9.64	238	2.31
	220	4.42	10.44	299	2.59
	240	4.92	11.23	369	2.88
	250	5.17	11.61	406	3.02
	260	5.42	12.00	445	3.16
	280	5.93	12.60	530	3.44
	300	6.45	12.85	623	3.72
	350	7.77	13.43	891	4.42
	360	8.04	13.54	952	4.56
	400	8.95	13.12	1213	5.13
	450	10.03	11.66	1591	5.83
	500	11.11	10.51	2026	6.53
$SW_{LVL33,NFB}$ 60	160	3.96	8.44	182	1.75
	180	4.58	9.30	244	2.03
	200	5.21	10.14	315	2.31
	220	5.85	10.97	396	2.59
	240	6.49	11.77	486	2.88
	250	6.82	12.17	535	3.02
	260	7.14	12.56	587	3.16
	280	7.80	13.18	697	3.44
	300	8.47	13.41	818	3.72
	350	10.17	13.97	1166	4.42
	360	10.51	14.07	1244	4.56
	400	11.83	13.91	1581	5.13
	450	13.28	12.36	2065	5.83
	500	14.74	11.14	2621	6.53
$SW_{LVL33,NFB}$ 70	160	4.61	8.66	212	1.75
	180	5.33	9.54	284	2.03
	200	6.06	10.40	366	2.31
	220	6.79	11.23	460	2.59
	240	7.54	12.05	565	2.88
	250	7.91	12.45	621	3.02
	260	8.29	12.85	681	3.16
	280	9.05	13.47	809	3.44
	300	9.82	13.70	948	3.72
	350	11.76	14.24	1349	4.42
	360	12.16	14.34	1438	4.56
	400	13.74	14.30	1826	5.13
	450	15.44	12.71	2381	5.83
	500	17.14	11.46	3017	6.53

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL33,NFB}$ 80	160	5.26	8.89	242	1.75
	180	6.08	9.78	323	2.03
	200	6.91	10.66	417	2.31
	220	7.74	11.51	524	2.59
	240	8.58	12.34	643	2.88
	250	9.01	12.75	707	3.02
	260	9.44	13.15	775	3.16
	280	10.30	13.78	920	3.44
	300	11.16	14.01	1078	3.72
	350	13.36	14.54	1532	4.42
	360	13.80	14.64	1633	4.56
	400	15.60	14.70	2071	5.13
	450	17.57	13.06	2698	5.83
	500	19.50	11.77	3414	6.53
$Sw_{LVL33,NFB}$ 90	160	5.92	9.12	272	1.75
	180	6.83	10.03	363	2.03
	200	7.76	10.92	469	2.31
	220	8.69	11.79	588	2.59
	240	9.63	12.64	721	2.88
	250	10.11	13.05	794	3.02
	260	10.58	13.46	869	3.16
	280	11.54	14.10	1032	3.44
	300	12.51	14.33	1208	3.72
	350	14.95	14.86	1715	4.42
	360	15.45	14.96	1828	4.56
	400	17.44	15.09	2316	5.13
	450	19.79	13.41	3014	5.83
	500	21.98	12.09	3810	6.53
$SW_{LVL30,NFB}$ 45	160	2.78	7.62	131	1.83
	180	3.21	8.38	174	2.12
	200	3.66	9.12	225	2.40
	220	4.11	9.85	282	2.68
	240	4.57	10.57	347	2.96
	250	4.80	10.92	382	3.10
	260	5.03	11.28	419	3.24
	280	5.50	11.83	498	3.52
	300	5.98	12.05	584	3.80
	350	7.21	12.58	835	4.51
	360	7.46	12.68	891	4.65
	400	8.30	13.00	1135	5.21
	450	9.31	11.57	1488	5.92
	500	10.32	10.43	1894	6.62
$SW_{LVL30,NFB}$ 60	160	3.68	8.03	173	1.83
	180	4.25	8.81	231	2.12
	200	4.83	9.58	297	2.40
	220	5.42	10.33	372	2.68
	240	6.01	11.06	457	2.96
	250	6.31	11.43	502	3.10
	260	6.61	11.79	550	3.24
	280	7.22	12.34	653	3.52
	300	7.84	12.55	766	3.80
	350	9.40	13.04	1089	4.51
	360	9.72	13.13	1161	4.65
	400	10.95	13.49	1475	5.21
	450	12.29	12.26	1925	5.92
	500	13.65	11.06	2442	6.62

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL30,NFB}$ 70	160	4.29	8.24	202	1.83
	180	4.95	9.03	268	2.12
	200	5.61	9.81	345	2.40
	220	6.29	10.57	433	2.68
	240	6.98	11.31	530	2.96
	250	7.32	11.68	583	3.10
	260	7.67	12.05	638	3.24
	280	8.37	12.60	757	3.52
	300	9.07	12.81	886	3.80
	350	10.87	13.28	1258	4.51
	360	11.23	13.37	1341	4.65
	400	12.70	13.72	1701	5.21
	450	14.27	12.61	2216	5.92
	500	15.85	11.37	2807	6.62
$SW_{LVL30,NFB}$ 80	160	4.89	8.45	230	1.83
	180	5.64	9.26	306	2.12
	200	6.40	10.05	394	2.40
	220	7.17	10.82	493	2.68
	240	7.94	11.58	603	2.96
	250	8.33	11.95	663	3.10
	260	8.72	12.32	726	3.24
	280	9.51	12.88	860	3.52
	300	10.31	13.09	1007	3.80
	350	12.33	13.55	1428	4.51
	360	12.74	13.64	1521	4.65
	400	14.40	13.97	1927	5.21
	450	16.21	12.95	2508	5.92
	500	18.00	11.69	3172	6.62
$Sw_{LVL30,NFB}$ 90	160	5.49	8.66	258	1.83
	180	6.33	9.49	344	2.12
	200	7.18	10.30	442	2.40
	220	8.04	11.08	553	2.68
	240	8.90	11.85	677	2.96
	250	9.34	12.23	743	3.10
	260	9.78	12.60	814	3.24
	280	10.66	13.17	964	3.52
	300	11.55	13.38	1128	3.80
	350	13.79	13.84	1597	4.51
	360	14.25	13.92	1702	4.65
	400	16.09	14.25	2154	5.21
	450	18.25	13.30	2800	5.92
	500	20.28	12.00	3537	6.62
$SW_{LVL27,NFB}$ 45	160	2.56	7.19	123	1.92
	180	2.96	7.87	164	2.20
	200	3.37	8.55	211	2.48
	220	3.78	9.21	264	2.76
	240	4.20	9.86	324	3.04
	250	4.41	10.19	356	3.19
	260	4.63	10.51	390	3.33
	280	5.06	11.02	464	3.61
	300	5.50	11.21	544	3.89
	350	6.64	11.68	776	4.59
	360	6.87	11.77	827	4.73
	400	7.65	12.13	1054	5.30
	450	8.58	11.47	1381	6.00
	500	9.52	10.36	1759	6.70

Table C3 Characteristic design properties —LVL flanges and natural fibreboard web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL27,NFB}$ 60	160	3.39	7.57	163	1.92
	180	3.91	8.27	217	2.20
	200	4.44	8.96	278	2.48
	220	4.98	9.64	348	2.76
	240	5.52	10.30	425	3.04
	250	5.79	10.63	468	3.19
	260	6.07	10.96	512	3.33
	280	6.63	11.46	607	3.61
	300	7.19	11.65	710	3.89
	350	8.63	12.08	1008	4.59
	360	8.92	12.16	1075	4.73
	400	10.05	12.48	1364	5.30
	450	11.29	12.16	1780	6.00
	500	12.54	10.98	2258	6.70
$SW_{LVL27,NFB}$ 70	160	3.95	7.76	190	1.92
	180	4.55	8.47	252	2.20
	200	5.16	9.17	323	2.48
	220	5.77	9.85	403	2.76
	240	6.40	10.53	493	3.04
	250	6.71	10.86	542	3.19
	260	7.03	11.19	593	3.33
	280	7.67	11.69	702	3.61
	300	8.31	11.87	821	3.89
	350	9.96	12.29	1164	4.59
	360	10.29	12.36	1240	4.73
	400	11.64	12.67	1571	5.30
	450	13.08	12.51	2046	6.00
	500	14.53	11.29	2591	6.70
$SW_{LVL27,NFB}$ 80	160	4.50	7.96	217	1.92
	180	5.18	8.68	287	2.20
	200	5.87	9.39	368	2.48
	220	6.57	10.08	459	2.76
	240	7.28	10.76	561	3.04
	250	7.63	11.10	616	3.19
	260	7.99	11.43	674	3.33
	280	8.71	11.94	797	3.61
	300	9.44	12.11	932	3.89
	350	11.29	12.52	1319	4.59
	360	11.66	12.60	1405	4.73
	400	13.18	12.89	1778	5.30
	450	14.84	12.85	2312	6.00
	500	16.48	11.60	2923	6.70
$SW_{LVL27,NFB}$ 90	160	5.05	8.15	243	1.92
	180	5.82	8.89	322	2.20
	200	6.59	9.61	412	2.48
	220	7.37	10.32	515	2.76
	240	8.16	11.01	629	3.04
	250	8.55	11.35	690	3.19
	260	8.95	11.69	755	3.33
	280	9.75	12.20	893	3.61
	300	10.56	12.37	1043	3.89
	350	12.61	12.77	1474	4.59
	360	13.03	12.85	1570	4.73
	400	14.71	13.14	1985	5.30
	450	16.69	13.19	2578	6.00
	500	18.55	11.91	3256	6.70

NOTE : The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C4 Characteristic design properties —LVL flanges and OSB web

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL39,OSB}$ 45	160	5.88	10.23	194	1.60
	180	6.82	11.37	262	1.88
	200	7.76	12.48	341	2.16
	220	8.72	13.56	430	2.44
	240	9.69	14.61	531	2.72
	250	10.18	15.13	585	2.86
	260	10.67	15.64	642	3.00
	280	11.65	16.56	765	3.28
	300	12.65	17.01	900	3.56
	350	15.17	18.03	1286	4.26
	360	15.68	18.22	1372	4.40
	400	17.37	18.95	1745	4.96
	450	19.36	19.79	2280	5.67
	500	21.32	19.65	2892	6.37
$SJ_{LVL39,OSB}$ 60	160	7.83	10.82	258	1.60
	180	9.07	12.02	348	1.88
	200	10.32	13.18	453	2.16
	220	11.58	14.31	571	2.44
	240	12.85	15.41	704	2.72
	250	13.50	15.95	776	2.86
	260	14.14	16.48	852	3.00
	280	15.43	17.44	1014	3.28
	300	16.74	17.90	1191	3.56
	350	20.03	18.93	1698	4.26
	360	20.70	19.13	1811	4.40
	400	23.23	19.85	2300	4.96
	450	25.98	20.69	2998	5.67
	500	28.71	20.82	3795	6.37
$SJ_{LVL39,OSB}$ 70	160	9.13	11.12	301	1.60
	180	10.57	12.35	406	1.88
	200	12.02	13.54	527	2.16
	220	13.49	14.69	665	2.44
	240	14.97	15.81	820	2.72
	250	15.71	16.37	903	2.86
	260	16.46	16.91	991	3.00
	280	17.96	17.88	1179	3.28
	300	19.46	18.34	1385	3.56
	350	23.27	19.39	1973	4.26
	360	24.04	19.58	2103	4.40
	400	27.12	20.31	2670	4.96
	450	30.38	21.15	3477	5.67
	500	33.60	21.41	4397	6.37
$SJ_{LVL39,OSB}$ 80	160	10.43	11.42	344	1.60
	180	12.07	12.68	464	1.88
	200	13.72	13.90	602	2.16
	220	15.39	15.08	759	2.44
	240	17.08	16.22	936	2.72
	250	17.92	16.79	1031	2.86
	260	18.77	17.34	1131	3.00
	280	20.48	18.34	1345	3.28
	300	22.19	18.80	1579	3.56
	350	26.52	19.86	2248	4.26
	360	27.39	20.06	2396	4.40
	400	30.89	20.79	3040	4.96
	450	34.70	21.64	3956	5.67
	500	38.40	22.00	5000	6.37

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL39,OSB}$ 90	160	11.73	11.72	387	1.60
	180	13.57	13.01	521	1.88
	200	15.43	14.26	677	2.16
	220	17.30	15.47	853	2.44
	240	19.19	16.64	1051	2.72
	250	20.14	17.21	1158	2.86
	260	21.09	17.78	1270	3.00
	280	23.00	18.80	1511	3.28
	300	24.92	19.27	1773	3.56
	350	29.76	20.34	2523	4.26
	360	30.74	20.54	2689	4.40
	400	34.65	21.29	3410	4.96
	450	39.22	22.14	4435	5.67
	500	43.25	22.59	5602	6.37
$SW_{LVL39,OSB}$ 45	160	3.37	8.50	148	1.41
	180	3.91	9.46	200	1.66
	200	4.46	10.40	260	1.92
	220	5.02	11.31	329	2.17
	240	5.58	12.21	406	2.42
	250	5.87	12.65	448	2.55
	260	6.16	13.09	492	2.67
	280	6.74	13.78	587	2.92
	300	7.32	14.03	691	3.18
	350	8.81	12.35	992	3.81
	360	9.12	11.99	1059	3.93
	400	10.13	10.74	1351	4.44
	450	11.33	9.52	1772	5.07
	500	12.53	8.56	2255	5.70
$SW_{LVL39,OSB}$ 60	160	4.49	8.99	196	1.41
	180	5.20	9.99	265	1.66
	200	5.92	10.97	345	1.92
	220	6.65	11.92	436	2.17
	240	7.39	12.85	538	2.42
	250	7.77	13.31	593	2.55
	260	8.14	13.76	651	2.67
	280	8.90	14.47	776	2.92
	300	9.66	14.76	912	3.18
	350	11.59	13.09	1305	3.81
	360	11.99	12.70	1392	3.93
	400	13.48	11.38	1772	4.44
	450	15.12	10.09	2317	5.07
	500	16.76	9.07	2941	5.70
$SW_{LVL39,OSB}$ 70	160	5.23	9.23	229	1.41
	180	6.06	10.26	309	1.66
	200	6.89	11.26	402	1.92
	220	7.74	12.23	507	2.17
	240	8.60	13.17	626	2.42
	250	9.03	13.64	690	2.55
	260	9.47	14.10	757	2.67
	280	10.34	14.82	902	2.92
	300	11.22	15.11	1059	3.18
	350	13.45	13.46	1513	3.81
	360	13.90	13.06	1614	3.93
	400	15.71	11.70	2053	4.44
	450	17.64	10.37	2680	5.07
	500	19.56	9.33	3398	5.70

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL39,OSB}$ 80	160	5.97	9.48	261	1.41
	180	6.91	10.53	353	1.66
	200	7.87	11.55	458	1.92
	220	8.83	12.54	578	2.17
	240	9.81	13.51	713	2.42
	250	10.30	13.98	786	2.55
	260	10.79	14.45	863	2.67
	280	11.78	15.18	1027	2.92
	300	12.78	15.47	1207	3.18
	350	15.30	13.83	1722	3.81
	360	15.81	13.42	1836	3.93
	400	17.86	12.02	2333	4.44
	450	20.11	10.66	3044	5.07
	500	22.30	9.59	3855	5.70
$SW_{LVL39,OSB}$ 90	160	6.71	9.72	294	1.41
	180	7.77	10.80	396	1.66
	200	8.84	11.85	515	1.92
	220	9.92	12.86	650	2.17
	240	11.01	13.84	801	2.42
	250	11.56	14.33	883	2.55
	260	12.11	14.81	969	2.67
	280	13.22	15.55	1153	2.92
	300	14.34	15.84	1354	3.18
	350	17.15	14.20	1930	3.81
	360	17.72	13.78	2058	3.93
	400	20.01	12.35	2614	4.44
	450	22.69	10.94	3407	5.07
	500	25.20	9.84	4312	5.70
$SJ_{LVL36,OSB}$ 45	160	5.54	9.87	187	1.68
	180	6.41	10.92	252	1.96
	200	7.29	11.94	326	2.24
	220	8.19	12.94	411	2.52
	240	9.09	13.91	505	2.81
	250	9.54	14.39	557	2.95
	260	10.00	14.86	610	3.09
	280	10.92	15.71	726	3.37
	300	11.84	16.11	852	3.65
	350	14.19	17.04	1215	4.35
	360	14.67	17.21	1296	4.49
	400	16.25	17.88	1646	5.05
	450	18.11	18.65	2148	5.75
	500	19.94	19.37	2723	6.45
$SJ_{LVL36,OSB}$ 60	160	7.37	10.44	249	1.68
	180	8.52	11.54	335	1.96
	200	9.69	12.61	433	2.24
	220	10.86	13.65	545	2.52
	240	12.05	14.66	670	2.81
	250	12.64	15.16	738	2.95
	260	13.24	15.65	809	3.09
	280	14.45	16.53	961	3.37
	300	15.66	16.94	1127	3.65
	350	18.72	17.87	1603	4.35
	360	19.34	18.04	1708	4.49
	400	21.70	18.70	2167	5.05
	450	24.27	19.47	2821	5.75
	500	26.81	20.17	3567	6.45

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL36,OSB}$ 70	160	8.59	10.73	290	1.68
	180	9.93	11.85	390	1.96
	200	11.28	12.95	504	2.24
	220	12.65	14.01	634	2.52
	240	14.02	15.04	780	2.81
	250	14.71	15.54	858	2.95
	260	15.41	16.05	941	3.09
	280	16.80	16.94	1117	3.37
	300	18.20	17.35	1310	3.65
	350	21.74	18.29	1861	4.35
	360	22.46	18.46	1983	4.49
	400	25.32	19.13	2514	5.05
	450	28.35	19.89	3269	5.75
	500	31.36	20.59	4130	6.45
$SJ_{LVL36,OSB}$ 80	160	9.81	11.01	332	1.68
	180	11.34	12.17	445	1.96
	200	12.88	13.28	576	2.24
	220	14.43	14.37	724	2.52
	240	16.00	15.42	889	2.81
	250	16.78	15.94	979	2.95
	260	17.57	16.45	1073	3.09
	280	19.15	17.36	1274	3.37
	300	20.75	17.78	1493	3.65
	350	24.76	18.73	2119	4.35
	360	25.57	18.90	2258	4.49
	400	28.83	19.57	2861	5.05
	450	32.37	20.33	3718	5.75
	500	35.81	21.03	4693	6.45
$SJ_{LVL36,OSB}$ 90	160	11.04	11.30	373	1.68
	180	12.75	12.48	500	1.96
	200	14.47	13.63	647	2.24
	220	16.22	14.74	813	2.52
	240	17.97	15.81	999	2.81
	250	18.85	16.34	1099	2.95
	260	19.73	16.86	1205	3.09
	280	21.51	17.79	1430	3.37
	300	23.29	18.22	1676	3.65
	350	27.78	19.18	2378	4.35
	360	28.69	19.35	2534	4.49
	400	32.33	20.03	3207	5.05
	450	36.57	20.79	4166	5.75
	500	40.32	21.50	5256	6.45
$SW_{LVL36,OSB}$ 45	160	3.18	8.33	143	1.67
	180	3.69	9.24	192	1.95
	200	4.21	10.12	250	2.23
	220	4.73	10.99	315	2.51
	240	5.27	11.84	389	2.79
	250	5.53	12.26	429	2.93
	260	5.81	12.68	471	3.07
	280	6.35	13.33	561	3.35
	300	6.91	13.61	660	3.64
	350	8.33	14.25	946	4.34
	360	8.61	14.37	1010	4.48
	400	9.59	13.25	1289	5.04
	450	10.74	11.76	1691	5.75
	500	11.89	10.59	2154	6.45

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL36,OSB}$ 60	160	4.23	8.80	190	1.67
	180	4.90	9.74	255	1.95
	200	5.58	10.66	331	2.23
	220	6.26	11.56	417	2.51
	240	6.96	12.44	514	2.79
	250	7.31	12.87	566	2.93
	260	7.66	13.30	621	3.07
	280	8.37	13.96	739	3.35
	300	9.09	14.23	868	3.64
	350	10.91	14.85	1240	4.34
	360	11.28	14.97	1323	4.48
	400	12.70	14.05	1684	5.04
	450	14.26	12.47	2201	5.75
	500	15.82	11.23	2795	6.45
$SW_{LVL36,OSB}$ 70	160	4.93	9.04	221	1.67
	180	5.70	10.00	297	1.95
	200	6.49	10.93	385	2.23
	220	7.28	11.85	485	2.51
	240	8.09	12.74	597	2.79
	250	8.49	13.18	657	2.93
	260	8.90	13.61	721	3.07
	280	9.72	14.28	858	3.35
	300	10.54	14.55	1007	3.64
	350	12.64	15.16	1436	4.34
	360	13.06	15.27	1532	4.48
	400	14.77	14.44	1947	5.04
	450	16.60	12.82	2541	5.75
	500	18.43	11.54	3222	6.45
$SW_{LVL36,OSB}$ 80	160	5.63	9.27	252	1.67
	180	6.51	10.26	339	1.95
	200	7.40	11.21	439	2.23
	220	8.30	12.14	553	2.51
	240	9.21	13.05	680	2.79
	250	9.67	13.50	749	2.93
	260	10.13	13.94	821	3.07
	280	11.06	14.62	977	3.35
	300	12.00	14.89	1146	3.64
	350	14.37	15.49	1632	4.34
	360	14.84	15.60	1740	4.48
	400	16.78	14.84	2210	5.04
	450	18.90	13.17	2882	5.75
	500	20.98	11.86	3649	6.45
$SW_{LVL36,OSB}$ 90	160	6.32	9.51	284	1.67
	180	7.31	10.52	381	1.95
	200	8.31	11.49	493	2.23
	220	9.32	12.44	621	2.51
	240	10.34	13.37	763	2.79
	250	10.85	13.82	840	2.93
	260	11.37	14.27	921	3.07
	280	12.41	14.97	1095	3.35
	300	13.45	15.24	1285	3.64
	350	16.09	15.84	1828	4.34
	360	16.62	15.95	1949	4.48
	400	18.78	15.24	2473	5.04
	450	21.30	13.53	3222	5.75
	500	23.67	12.18	4076	6.45

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL33,OSB}$ 45	160	5.19	9.46	180	1.77
	180	5.99	10.42	240	2.05
	200	6.81	11.35	310	2.33
	220	7.64	12.26	389	2.61
	240	8.47	13.16	478	2.89
	250	8.89	13.59	526	3.03
	260	9.31	14.03	576	3.17
	280	10.17	14.81	684	3.45
	300	11.02	15.17	802	3.73
	350	13.21	16.00	1141	4.43
	360	13.65	16.16	1216	4.57
	400	15.12	16.76	1544	5.13
	450	16.84	17.47	2012	5.83
	500	18.55	18.13	2549	6.54
$SJ_{LVL33,OSB}$ 60	160	6.90	10.00	239	1.77
	180	7.96	11.01	319	2.05
	200	9.04	11.98	411	2.33
	220	10.12	12.93	516	2.61
	240	11.22	13.85	633	2.89
	250	11.77	14.31	696	3.03
	260	12.32	14.76	762	3.17
	280	13.44	15.56	905	3.45
	300	14.56	15.92	1059	3.73
	350	17.39	16.76	1503	4.43
	360	17.97	16.91	1601	4.57
	400	20.15	17.51	2028	5.13
	450	22.53	18.20	2638	5.83
	500	24.88	18.85	3333	6.54
$SJ_{LVL33,OSB}$ 70	160	8.04	10.27	278	1.77
	180	9.27	11.30	372	2.05
	200	10.52	12.29	479	2.33
	220	11.78	13.26	601	2.61
	240	13.05	14.20	736	2.89
	250	13.69	14.67	810	3.03
	260	14.33	15.12	887	3.17
	280	15.62	15.94	1051	3.45
	300	16.91	16.31	1231	3.73
	350	20.19	17.14	1744	4.43
	360	20.85	17.30	1858	4.57
	400	23.50	17.89	2352	5.13
	450	26.30	18.58	3055	5.83
	500	29.08	19.22	3855	6.54
$SJ_{LVL33,OSB}$ 80	160	9.18	10.55	318	1.77
	180	10.59	11.60	424	2.05
	200	12.01	12.61	547	2.33
	220	13.44	13.60	685	2.61
	240	14.88	14.56	840	2.89
	250	15.61	15.04	923	3.03
	260	16.34	15.50	1011	3.17
	280	17.80	16.33	1198	3.45
	300	19.27	16.70	1402	3.73
	350	22.98	17.54	1985	4.43
	360	23.73	17.70	2115	4.57
	400	26.74	18.30	2675	5.13
	450	30.01	18.98	3472	5.83
	500	33.19	19.62	4378	6.54

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SJ_{LVL33,OSB}$ 90	160	10.32	10.82	357	1.77
	180	11.90	11.89	477	2.05
	200	13.49	12.94	614	2.33
	220	15.10	13.95	770	2.61
	240	16.72	14.93	943	2.89
	250	17.53	15.41	1037	3.03
	260	18.34	15.89	1135	3.17
	280	19.98	16.73	1345	3.45
	300	21.62	17.11	1574	3.73
	350	25.77	17.96	2227	4.43
	360	26.61	18.12	2371	4.57
	400	29.97	18.72	2998	5.13
	450	33.89	19.41	3888	5.83
	500	37.35	20.04	4901	6.54
$SW_{LVL33,OSB}$ 45	160	2.98	8.00	137	1.75
	180	3.46	8.83	184	2.03
	200	3.94	9.64	238	2.31
	220	4.42	10.44	299	2.59
	240	4.92	11.23	369	2.88
	250	5.17	11.61	406	3.02
	260	5.42	12.00	445	3.16
	280	5.93	12.60	530	3.44
	300	6.45	12.85	623	3.72
	350	7.77	13.43	891	4.42
	360	8.04	13.54	952	4.56
	400	8.95	13.12	1213	5.13
	450	10.03	11.66	1591	5.83
	500	11.11	10.51	2026	6.53
$SW_{LVL33,OSB}$ 60	160	3.96	8.44	182	1.75
	180	4.58	9.30	244	2.03
	200	5.21	10.14	315	2.31
	220	5.85	10.97	396	2.59
	240	6.49	11.77	486	2.88
	250	6.82	12.17	535	3.02
	260	7.14	12.56	587	3.16
	280	7.80	13.18	697	3.44
	300	8.47	13.41	818	3.72
	350	10.17	13.97	1166	4.42
	360	10.51	14.07	1244	4.56
	400	11.83	13.91	1581	5.13
	450	13.28	12.36	2065	5.83
	500	14.74	11.14	2621	6.53
$SW_{LVL33,OSB}$ 70	160	4.61	8.66	212	1.75
	180	5.33	9.54	284	2.03
	200	6.06	10.40	366	2.31
	220	6.79	11.23	460	2.59
	240	7.54	12.05	565	2.88
	250	7.91	12.45	621	3.02
	260	8.29	12.85	681	3.16
	280	9.05	13.47	809	3.44
	300	9.82	13.70	948	3.72
	350	11.76	14.24	1349	4.42
	360	12.16	14.34	1438	4.56
	400	13.74	14.30	1826	5.13
	450	15.44	12.71	2381	5.83
	500	17.14	11.46	3017	6.53

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL33,OSB}$ 80	160	5.26	8.89	242	1.75
	180	6.08	9.78	323	2.03
	200	6.91	10.66	417	2.31
	220	7.74	11.51	524	2.59
	240	8.58	12.34	643	2.88
	250	9.01	12.75	707	3.02
	260	9.44	13.15	775	3.16
	280	10.30	13.78	920	3.44
	300	11.16	14.01	1078	3.72
	350	13.36	14.54	1532	4.42
	360	13.80	14.64	1633	4.56
	400	15.60	14.70	2071	5.13
	450	17.57	13.06	2698	5.83
	500	19.50	11.77	3414	6.53
$SW_{LVL33,OSB}$ 90	160	5.92	9.12	272	1.75
	180	6.83	10.03	363	2.03
	200	7.76	10.92	469	2.31
	220	8.69	11.79	588	2.59
	240	9.63	12.64	721	2.88
	250	10.11	13.05	794	3.02
	260	10.58	13.46	869	3.16
	280	11.54	14.10	1032	3.44
	300	12.51	14.33	1208	3.72
	350	14.95	14.86	1715	4.42
	360	15.45	14.96	1828	4.56
	400	17.44	15.09	2316	5.13
	450	19.79	13.41	3014	5.83
	500	21.98	12.09	3810	6.53
$SW_{LVL30,OSB}$ 45	160	2.78	7.62	131	1.83
	180	3.21	8.38	174	2.12
	200	3.66	9.12	225	2.40
	220	4.11	9.85	282	2.68
	240	4.57	10.57	347	2.96
	250	4.80	10.92	382	3.10
	260	5.03	11.28	419	3.24
	280	5.50	11.83	498	3.52
	300	5.98	12.05	584	3.80
	350	7.21	12.58	835	4.51
	360	7.46	12.68	891	4.65
	400	8.30	13.00	1135	5.21
	450	9.31	11.57	1488	5.92
	500	10.32	10.43	1894	6.62
$SW_{LVL30,OSB}$ 60	160	3.68	8.03	173	1.83
	180	4.25	8.81	231	2.12
	200	4.83	9.58	297	2.40
	220	5.42	10.33	372	2.68
	240	6.01	11.06	457	2.96
	250	6.31	11.43	502	3.10
	260	6.61	11.79	550	3.24
	280	7.22	12.34	653	3.52
	300	7.84	12.55	766	3.80
	350	9.40	13.04	1089	4.51
	360	9.72	13.13	1161	4.65
	400	10.95	13.49	1475	5.21
	450	12.29	12.26	1925	5.92
	500	13.65	11.06	2442	6.62

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL30,OSB}$ 70	160	4.29	8.24	202	1.83
	180	4.95	9.03	268	2.12
	200	5.61	9.81	345	2.40
	220	6.29	10.57	433	2.68
	240	6.98	11.31	530	2.96
	250	7.32	11.68	583	3.10
	260	7.67	12.05	638	3.24
	280	8.37	12.60	757	3.52
	300	9.07	12.81	886	3.80
	350	10.87	13.28	1258	4.51
	360	11.23	13.37	1341	4.65
	400	12.70	13.72	1701	5.21
	450	14.27	12.61	2216	5.92
	500	15.85	11.37	2807	6.62
$SW_{LVL30,OSB}$ 80	160	4.89	8.45	230	1.83
	180	5.64	9.26	306	2.12
	200	6.40	10.05	394	2.40
	220	7.17	10.82	493	2.68
	240	7.94	11.58	603	2.96
	250	8.33	11.95	663	3.10
	260	8.72	12.32	726	3.24
	280	9.51	12.88	860	3.52
	300	10.31	13.09	1007	3.80
	350	12.33	13.55	1428	4.51
	360	12.74	13.64	1521	4.65
	400	14.40	13.97	1927	5.21
	450	16.21	12.95	2508	5.92
	500	18.00	11.69	3172	6.62
$SW_{LVL30,OSB}$ 90	160	5.49	8.66	258	1.83
	180	6.33	9.49	344	2.12
	200	7.18	10.30	442	2.40
	220	8.04	11.08	553	2.68
	240	8.90	11.85	677	2.96
	250	9.34	12.23	743	3.10
	260	9.78	12.60	814	3.24
	280	10.66	13.17	964	3.52
	300	11.55	13.38	1128	3.80
	350	13.79	13.84	1597	4.51
	360	14.25	13.92	1702	4.65
	400	16.09	14.25	2154	5.21
	450	18.25	13.30	2800	5.92
	500	20.28	12.00	3537	6.62
$SW_{LVL27,OSB}$ 45	160	2.56	7.19	123	1.92
	180	2.96	7.87	164	2.20
	200	3.37	8.55	211	2.48
	220	3.78	9.21	264	2.76
	240	4.20	9.86	324	3.04
	250	4.41	10.19	356	3.19
	260	4.63	10.51	390	3.33
	280	5.06	11.02	464	3.61
	300	5.50	11.21	544	3.89
	350	6.64	11.68	776	4.59
	360	6.87	11.77	827	4.73
	400	7.65	12.13	1054	5.30
	450	8.58	11.47	1381	6.00
	500	9.52	10.36	1759	6.70

Table C4 Characteristic design properties —LVL flanges and OSB web (continued)

Type	Depth (mm)	Characteristic bending moment (kN·m)	Characteristic vertical shear (kN)	Bending stiffness EI_{joist} ($N \cdot mm^2 \times 10^9$)	Shear stiffness GA_{joist} (MN)
$SW_{LVL27,OSB}$ 60	160	3.39	7.57	163	1.92
	180	3.91	8.27	217	2.20
	200	4.44	8.96	278	2.48
	220	4.98	9.64	348	2.76
	240	5.52	10.30	425	3.04
	250	5.79	10.63	468	3.19
	260	6.07	10.96	512	3.33
	280	6.63	11.46	607	3.61
	300	7.19	11.65	710	3.89
	350	8.63	12.08	1008	4.59
	360	8.92	12.16	1075	4.73
	400	10.05	12.48	1364	5.30
	450	11.29	12.16	1780	6.00
	500	12.54	10.98	2258	6.70
$SW_{LVL27,OSB}$ 70	160	3.95	7.76	190	1.92
	180	4.55	8.47	252	2.20
	200	5.16	9.17	323	2.48
	220	5.77	9.85	403	2.76
	240	6.40	10.53	493	3.04
	250	6.71	10.86	542	3.19
	260	7.03	11.19	593	3.33
	280	7.67	11.69	702	3.61
	300	8.31	11.87	821	3.89
	350	9.96	12.29	1164	4.59
	360	10.29	12.36	1240	4.73
	400	11.64	12.67	1571	5.30
	450	13.08	12.51	2046	6.00
	500	14.53	11.29	2591	6.70
$SW_{LVL27,OSB}$ 80	160	4.50	7.96	217	1.92
	180	5.18	8.68	287	2.20
	200	5.87	9.39	368	2.48
	220	6.57	10.08	459	2.76
	240	7.28	10.76	561	3.04
	250	7.63	11.10	616	3.19
	260	7.99	11.43	674	3.33
	280	8.71	11.94	797	3.61
	300	9.44	12.11	932	3.89
	350	11.29	12.52	1319	4.59
	360	11.66	12.60	1405	4.73
	400	13.18	12.89	1778	5.30
	450	14.84	12.85	2312	6.00
	500	16.48	11.60	2923	6.70
$SW_{LVL27,OSB}$ 90	160	5.05	8.15	243	1.92
	180	5.82	8.89	322	2.20
	200	6.59	9.61	412	2.48
	220	7.37	10.32	515	2.76
	240	8.16	11.01	629	3.04
	250	8.55	11.35	690	3.19
	260	8.95	11.69	755	3.33
	280	9.75	12.20	893	3.61
	300	10.56	12.37	1043	3.89
	350	12.61	12.77	1474	4.59
	360	13.03	12.85	1570	4.73
	400	14.71	13.14	1985	5.30
	450	16.69	13.19	2578	6.00
	500	18.55	11.91	3256	6.70

NOTE : The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C5 Characteristic bearing resistance — solid timber flanges and natural fibreboard web

Type (mm)	Joist depth (mm)	End bearing capacity (kN)				Intermediate bearing capacity (kN)			
		45 mm stiffeners		89 mm stiffeners		75 mm stiffeners		89 mm stiffeners	
		without	with	without	with	without	with	without	with
$SJ_{45,NFB}$ 45	160	8.1	9.1	8.7	10.1	17.8	20.9	20.1	21.2
	200	8.1	9.7	8.7	10.7	17.8	21.5	20.1	21.8
	220	8.1	10.0	8.7	11.0	17.8	21.8	20.1	22.1
	240	8.1	10.3	8.7	11.3	17.8	22.1	20.1	22.4
	250	8.1	10.5	8.7	11.5	17.8	22.2	20.1	22.5
	300	8.1	11.2	8.7	12.2	17.8	23.0	20.1	23.3
	350	8.1	12.0	8.7	13.0	17.8	23.7	20.1	24.0
	360	8.1	12.1	8.7	13.1	17.8	23.9	20.1	24.2
	400	8.1	12.7	8.7	13.7	17.8	24.5	20.1	24.8
$SJ_{45,NFB}$ 60	160	12.0	12.1	12.6	13.6	19.9	20.7	21.6	22.4
	200	12.0	12.7	12.6	14.2	19.9	21.3	21.6	23.0
	220	12.0	13.0	12.6	14.5	19.9	21.6	21.6	23.3
	240	12.0	13.3	12.6	14.8	19.9	21.9	21.6	23.6
	250	12.0	13.5	12.6	15.0	19.9	22.1	21.6	23.8
	300	12.0	14.2	12.6	15.7	19.9	22.8	21.6	24.5
	350	12.0	15.0	12.6	16.5	19.9	23.6	21.6	25.3
	360	12.0	15.1	12.6	16.6	19.9	23.7	21.6	25.4
	400	12.0	15.7	12.6	17.2	19.9	24.3	21.6	26.0
	450	10.8	16.5	11.4	18.0	18.7	25.1	20.4	26.8
	500	9.5	17.2	10.1	18.7	17.4	25.8	19.1	27.5
$SJ_{45,NFB}$ 90	160	12.9	13.2	15.3	14.8	27.1	31.0	29.3	35.3
	200	12.9	13.8	15.3	15.4	27.1	31.6	29.3	35.9
	220	12.9	14.1	15.3	15.7	27.1	31.9	29.3	36.2
	240	12.9	14.4	15.3	16.0	27.1	32.2	29.3	36.5
	250	12.9	14.6	15.3	16.2	27.1	32.3	29.3	36.7
	300	12.9	15.3	15.3	16.9	27.1	33.1	29.3	37.4
	350	12.9	16.1	15.3	17.7	27.1	33.8	29.3	38.2
	360	12.9	16.2	15.3	17.8	27.1	34.0	29.3	38.3
	400	12.9	16.8	15.3	18.4	27.1	34.6	29.3	38.9
	450	11.7	17.6	14.1	19.2	25.8	35.3	28.1	39.7
	500	10.4	18.3	12.8	19.9	24.6	36.1	26.8	40.4

NOTE: The characteristics for beams within the depth range not listed in the Table can be calculated by linear interpolation.

Table C6 Characteristic bearing resistance — solid timber flanges and OSB web

Type (mm)	Joist depth (mm)	End bearing capacity (kN)				Intermediate bearing capacity (kN)			
		45 mm stiffeners		89 mm stiffeners		75 mm stiffeners		89 mm stiffeners	
		without	with	without	with	without	with	without	with
$SJ_{45,OSB}$ 45	160	8.1	9.1	8.7	10.1	17.8	20.9	20.1	21.2
	200	8.1	9.7	8.7	10.7	17.8	21.5	20.1	21.8
	220	8.1	10.0	8.7	11.0	17.8	21.8	20.1	22.1
	240	8.1	10.3	8.7	11.3	17.8	22.1	20.1	22.4
	250	8.1	10.5	8.7	11.5	17.8	22.2	20.1	22.5
	300	8.1	11.2	8.7	12.2	17.8	23.0	20.1	23.3
	350	8.1	12.0	8.7	13.0	17.8	23.7	20.1	24.0
	360	8.1	12.1	8.7	13.1	17.8	23.9	20.1	24.2
	400	8.1	12.7	8.7	13.7	17.8	24.5	20.1	24.8
$SJ_{45,OSB}$ 60	160	12.0	12.1	12.6	13.6	19.9	20.7	21.6	22.4
	200	12.0	12.7	12.6	14.2	19.9	21.3	21.6	23.0
	220	12.0	13.0	12.6	14.5	19.9	21.6	21.6	23.3
	240	12.0	13.3	12.6	14.8	19.9	21.9	21.6	23.6
	250	12.0	13.5	12.6	15.0	19.9	22.1	21.6	23.8
	300	12.0	14.2	12.6	15.7	19.9	22.8	21.6	24.5
	350	12.0	15.0	12.6	16.5	19.9	23.6	21.6	25.3
	360	12.0	15.1	12.6	16.6	19.9	23.7	21.6	25.4
	400	12.0	15.7	12.6	17.2	19.9	24.3	21.6	26.0
	450	10.8	16.5	11.4	18.0	18.7	25.1	20.4	26.8
	500	9.5	17.2	10.1	18.7	17.4	25.8	19.1	27.5
$SJ_{45,OSB}$ 90	160	12.9	13.2	15.3	14.8	27.1	31.0	29.3	35.3
	200	12.9	13.8	15.3	15.4	27.1	31.6	29.3	35.9
	220	12.9	14.1	15.3	15.7	27.1	31.9	29.3	36.2
	240	12.9	14.4	15.3	16.0	27.1	32.2	29.3	36.5
	250	12.9	14.6	15.3	16.2	27.1	32.3	29.3	36.7
	300	12.9	15.3	15.3	16.9	27.1	33.1	29.3	37.4
	350	12.9	16.1	15.3	17.7	27.1	33.8	29.3	38.2
	360	12.9	16.2	15.3	17.8	27.1	34.0	29.3	38.3
	400	12.9	16.8	15.3	18.4	27.1	34.6	29.3	38.9
	450	11.7	17.6	14.1	19.2	25.8	35.3	28.1	39.7
	500	10.4	18.3	12.8	19.9	24.6	36.1	26.8	40.4

NOTE: The characteristics for beams within the depth range not listed in the Table can be calculated by linear interpolation.

Table C7 Characteristic bearing resistance — LVL flanges and natural fibreboard web

Type	Joist depth	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
(mm)	*H* (mm)	without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL39,NFB}$ 45	160	8.1	14.0	9.1	16.0	11.3	17.9	15.9	20.8	17.9	21.3	21.2	25.2
	180	8.1	14.3	9.1	16.3	11.3	18.2	15.9	21.1	17.9	21.6	21.2	25.5
	200	8.1	14.6	9.1	16.6	11.3	18.5	15.9	21.4	17.9	21.9	21.2	25.8
	220	8.1	14.9	9.1	16.9	11.3	18.8	15.9	21.7	17.9	22.2	21.2	26.1
	240	8.1	15.2	9.1	17.2	11.3	19.1	15.9	22.0	17.9	22.5	21.2	26.4
	250	8.1	15.3	9.1	17.4	11.3	19.2	15.9	22.2	17.9	22.7	21.2	26.6
	260	8.1	15.5	9.1	17.5	11.3	19.4	15.9	22.3	17.9	22.8	21.2	26.7
	280	8.1	15.8	9.1	17.8	11.3	19.7	15.9	22.6	17.9	23.1	21.2	27.0
	300	8.1	16.1	9.1	18.1	11.3	20.0	15.9	22.9	17.9	23.4	21.2	27.3
	350	8.1	16.8	9.1	18.9	11.3	20.7	15.9	23.7	17.9	24.2	21.2	28.1
	360	8.1	17.0	9.1	19.0	11.3	20.9	15.9	23.8	17.9	24.3	21.2	28.2
	400	8.1	17.6	9.1	19.6	11.3	21.5	15.9	24.4	17.9	24.9	21.2	28.8
	450	6.9	16.4	7.9	18.4	10.1	20.3	14.7	23.2	16.7	23.7	20.0	27.6
	500	5.6	15.1	6.6	17.1	8.8	19.0	13.4	21.9	15.4	22.4	18.7	26.3
$SJ_{LVL39,NFB}$ 60	160	9.5	16.3	12.2	17.1	14.3	17.6	18.9	28.8	22.5	31.0	25.3	34.5
	180	9.5	16.6	12.2	17.4	14.3	17.9	18.9	29.1	22.5	31.3	25.3	34.8
	200	9.5	16.9	12.2	17.7	14.3	18.2	18.9	29.4	22.5	31.6	25.3	35.1
	220	9.5	17.2	12.2	18.0	14.3	18.5	18.9	29.7	22.5	31.9	25.3	35.4
	240	9.5	17.5	12.2	18.3	14.3	18.8	18.9	30.0	22.5	32.2	25.3	35.7
	250	9.5	17.7	12.2	18.4	14.3	18.9	18.9	30.2	22.5	32.3	25.3	35.8
	260	9.5	17.8	12.2	18.6	14.3	19.1	18.9	30.3	22.5	32.5	25.3	36.0
	280	9.5	18.1	12.2	18.9	14.3	19.4	18.9	30.6	22.5	32.8	25.3	36.3
	300	9.5	18.4	12.2	19.2	14.3	19.7	18.9	30.9	22.5	33.1	25.3	36.6
	350	9.5	19.2	12.2	19.9	14.3	20.4	18.9	31.7	22.5	33.8	25.3	37.3
	360	9.5	19.3	12.2	20.1	14.3	20.6	18.9	31.8	22.5	34.0	25.3	37.5
	400	9.5	19.9	12.2	20.7	14.3	21.2	18.9	32.4	22.5	34.6	25.3	38.1
	450	8.3	18.7	10.9	21.4	13.0	21.9	17.7	31.2	21.3	35.3	24.0	38.8
	500	7.0	17.4	9.7	22.2	11.8	22.7	16.4	29.9	20.0	36.1	22.8	39.6
$SJ_{LVL39,NFB}$ 70	160	10.0	17.8	13.3	19.2	15.0	19.5	20.3	31.5	24.0	33.4	27.3	37.2
	180	10.0	18.1	13.3	19.5	15.0	19.8	20.3	31.8	24.0	33.7	27.3	37.5
	200	10.0	18.4	13.3	19.8	15.0	20.1	20.3	32.1	24.0	34.0	27.3	37.8
	220	10.0	18.7	13.3	20.1	15.0	20.4	20.3	32.4	24.0	34.3	27.3	38.1
	240	10.0	19.0	13.3	20.4	15.0	20.7	20.3	32.7	24.0	34.5	27.3	38.4
	250	10.0	19.2	13.3	20.6	15.0	20.8	20.3	32.9	24.0	34.7	27.3	38.5
	260	10.0	19.4	13.3	20.7	15.0	21.0	20.3	33.0	24.0	34.9	27.3	38.6
	280	10.0	19.7	13.3	21.0	15.0	21.3	20.3	33.3	24.0	35.2	27.3	38.9
	300	10.0	19.9	13.3	21.3	15.0	21.6	20.3	33.6	24.0	35.5	27.3	39.3
	350	10.0	20.7	13.3	22.1	15.0	22.3	20.3	34.4	24.0	36.2	27.3	40.0
	360	10.0	20.8	13.3	22.2	15.0	22.5	20.3	34.5	24.0	36.4	27.3	40.2
	400	10.0	21.4	13.3	22.8	15.0	23.1	20.3	35.1	24.0	37.0	27.3	40.8
	450	8.8	20.2	12.1	23.6	13.8	23.8	19.1	33.8	22.8	37.7	26.0	41.5
	500	7.5	18.9	10.8	24.3	12.5	24.6	17.8	32.6	21.5	38.5	24.8	42.3
$SJ_{LVL39,NFB}$ 80	160	10.6	19.4	14.5	21.4	15.8	21.5	21.7	34.1	25.6	35.8	29.3	39.8
	180	10.6	19.7	14.5	21.7	15.8	21.8	21.7	34.4	25.6	36.1	29.3	40.1
	200	10.6	20.0	14.5	22.0	15.8	22.1	21.7	34.7	25.6	36.4	29.3	40.4
	220	10.6	20.3	14.5	22.3	15.8	22.4	21.7	35.0	25.6	36.7	29.3	40.7
	240	10.6	20.6	14.5	22.6	15.8	22.7	21.7	35.3	25.6	36.8	29.3	41.0
	250	10.6	20.8	14.5	22.7	15.8	22.8	21.7	35.5	25.6	37.2	29.3	41.1
	260	10.6	20.9	14.5	22.9	15.8	22.9	21.7	35.7	25.6	37.3	29.3	41.3
	280	10.6	21.2	14.5	23.2	15.8	23.2	21.7	36.0	25.6	37.6	29.3	41.6
	300	10.6	21.5	14.5	23.5	15.8	23.6	21.7	36.2	25.6	37.9	29.3	41.9
	350	10.6	22.3	14.5	24.2	15.8	24.3	21.7	37.0	25.6	38.7	29.3	42.6
	360	10.6	22.4	14.5	24.4	15.8	24.5	21.7	37.1	25.6	38.8	29.3	42.8
	400	10.6	23.0	14.5	25.0	15.8	25.1	21.7	37.7	25.6	39.4	29.3	43.4
	450	9.3	21.7	13.2	25.7	14.5	25.8	20.5	36.5	24.3	40.2	28.1	44.1
	500	8.1	20.5	12.0	26.5	13.3	26.6	19.2	35.2	23.1	40.9	26.8	44.9

Table C7 Characteristic bearing resistance — LVL flanges and natural fibreboard web (continued)

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL39,NFB}$ 90	160	11.1	20.9	15.6	23.5	16.5	23.4	23.1	36.8	27.1	38.2	31.3	42.5
	180	11.1	21.2	15.6	23.8	16.5	23.7	23.1	37.1	27.1	38.5	31.3	42.8
	200	11.1	21.5	15.6	24.1	16.5	24.0	23.1	37.4	27.1	38.8	31.3	43.1
	220	11.1	21.8	15.6	24.4	16.5	24.3	23.1	37.7	27.1	39.1	31.3	43.4
	240	11.1	22.1	15.6	24.7	16.5	24.6	23.1	38.0	27.1	39.1	31.3	43.7
	250	11.1	22.3	15.6	24.9	16.5	24.7	23.1	38.2	27.1	39.6	31.3	43.8
	260	11.1	22.4	15.6	25.0	16.5	24.9	23.1	38.3	27.1	39.7	31.3	44.0
	280	11.1	22.7	15.6	25.3	16.5	25.2	23.1	38.6	27.1	40.0	31.3	44.3
	300	11.1	23.0	15.6	25.6	16.5	25.5	23.1	38.9	27.1	40.3	31.3	44.6
	350	11.1	23.8	15.6	26.4	16.5	26.2	23.1	39.7	27.1	41.1	31.3	45.3
	360	11.1	23.9	15.6	26.5	16.5	26.4	23.1	39.8	27.1	41.2	31.3	45.5
	400	11.1	24.5	15.6	27.1	16.5	27.0	23.1	40.4	27.1	41.8	31.3	46.1
	450	9.9	23.3	14.4	27.9	15.3	27.7	21.9	39.2	25.8	42.6	30.1	46.8
	500	8.6	22.0	13.1	28.6	14.0	28.5	20.6	37.9	24.6	43.3	28.8	47.6
$SJ_{LVL36,NFB}$ 45	160	7.9	13.7	8.9	15.7	11.1	17.5	15.6	20.4	17.5	20.9	20.8	24.7
	180	7.9	14.0	8.9	16.0	11.1	17.8	15.6	20.7	17.5	21.2	20.8	25.0
	200	7.9	14.3	8.9	16.3	11.1	18.1	15.6	21.0	17.5	21.5	20.8	25.3
	220	7.9	14.6	8.9	16.6	11.1	18.4	15.6	21.3	17.5	21.8	20.8	25.6
	240	7.9	14.9	8.9	16.9	11.1	18.7	15.6	21.6	17.5	22.1	20.8	25.9
	250	7.9	15.0	8.9	17.1	11.1	18.8	15.6	21.8	17.5	22.2	20.8	26.1
	260	7.9	15.2	8.9	17.2	11.1	19.0	15.6	21.9	17.5	22.4	20.8	26.2
	280	7.9	15.5	8.9	17.5	11.1	19.3	15.6	22.2	17.5	22.7	20.8	26.5
	300	7.9	15.8	8.9	17.7	11.1	19.6	15.6	22.4	17.5	22.9	20.8	26.8
	350	7.9	16.5	8.9	18.5	11.1	20.3	15.6	23.2	17.5	23.7	20.8	27.5
	360	7.9	16.7	8.9	18.6	11.1	20.5	15.6	23.3	17.5	23.8	20.8	27.6
	400	7.9	17.2	8.9	19.2	11.1	21.1	15.6	23.9	17.5	24.4	20.8	28.2
	450	6.7	16.0	7.7	18.0	9.8	19.8	14.4	22.7	16.3	23.2	19.6	27.0
	500	5.5	14.8	6.5	16.8	8.6	18.6	13.1	21.5	15.1	22.0	18.3	25.8
$SJ_{LVL36,NFB}$ 60	160	9.3	16.0	12.0	16.8	14.0	17.2	18.5	28.2	22.1	30.4	24.8	33.8
	180	9.3	16.3	12.0	17.1	14.0	17.5	18.5	28.5	22.1	30.7	24.8	34.1
	200	9.3	16.6	12.0	17.3	14.0	17.8	18.5	28.8	22.1	31.0	24.8	34.4
	220	9.3	16.9	12.0	17.6	14.0	18.1	18.5	29.1	22.1	31.3	24.8	34.7
	240	9.3	17.2	12.0	17.9	14.0	18.4	18.5	29.4	22.1	31.6	24.8	35.0
	250	9.3	17.3	12.0	18.0	14.0	18.5	18.5	29.6	22.1	31.7	24.8	35.1
	260	9.3	17.5	12.0	18.2	14.0	18.7	18.5	29.7	22.1	31.8	24.8	35.2
	280	9.3	17.8	12.0	18.5	14.0	19.0	18.5	30.0	22.1	32.1	24.8	35.6
	300	9.3	18.0	12.0	18.8	14.0	19.3	18.5	30.3	22.1	32.4	24.8	35.9
	350	9.3	18.8	12.0	19.5	14.0	20.0	18.5	31.1	22.1	33.1	24.8	36.6
	360	9.3	18.9	12.0	19.7	14.0	20.2	18.5	31.2	22.1	33.3	24.8	36.8
	400	9.3	19.5	12.0	20.3	14.0	20.8	18.5	31.8	22.1	33.9	24.8	37.3
	450	8.1	18.3	10.7	21.0	12.7	21.5	17.3	30.5	20.9	34.6	23.5	38.0
	500	6.9	17.1	9.5	21.8	11.6	22.2	16.1	29.3	19.6	35.4	22.3	38.8
$SJ_{LVL36,NFB}$ 70	160	9.8	17.5	13.1	18.8	14.7	19.1	19.9	30.8	23.5	32.7	26.8	36.4
	180	9.8	17.8	13.1	19.1	14.7	19.4	19.9	31.1	23.5	33.0	26.8	36.7
	200	9.8	18.1	13.1	19.4	14.7	19.7	19.9	31.4	23.5	33.3	26.8	37.0
	220	9.8	18.4	13.1	19.7	14.7	20.0	19.9	31.7	23.5	33.6	26.8	37.3
	240	9.8	18.6	13.1	20.0	14.7	20.3	19.9	32.0	23.5	33.8	26.8	37.6
	250	9.8	18.8	13.1	20.1	14.7	20.4	19.9	32.2	23.5	34.0	26.8	37.7
	260	9.8	19.0	13.1	20.3	14.7	20.6	19.9	32.3	23.5	34.2	26.8	37.8
	280	9.8	19.3	13.1	20.6	14.7	20.9	19.9	32.6	23.5	34.5	26.8	38.2
	300	9.8	19.5	13.1	20.9	14.7	21.2	19.9	32.9	23.5	34.8	26.8	38.5
	350	9.8	20.3	13.1	21.6	14.7	21.9	19.9	33.7	23.5	35.5	26.8	39.2
	360	9.8	20.4	13.1	21.8	14.7	22.1	19.9	33.8	23.5	35.7	26.8	39.4
	400	9.8	21.0	13.1	22.4	14.7	22.7	19.9	34.4	23.5	36.3	26.8	39.9
	450	8.6	19.8	11.8	23.1	13.5	23.4	18.7	33.1	22.3	37.0	25.5	40.6
	500	7.4	18.6	10.6	23.8	12.3	24.1	17.4	31.9	21.1	37.7	24.3	41.4

Table C7 Characteristic bearing resistance — LVL flanges and natural fibreboard web (continued)

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL36,NFB}$ 80	160	10.3	19.0	14.2	20.9	15.4	21.0	21.3	33.4	25.0	35.1	28.7	39.0
	180	10.3	19.3	14.2	21.2	15.4	21.3	21.3	33.7	25.0	35.4	28.7	39.3
	200	10.3	19.6	14.2	21.5	15.4	21.6	21.3	34.0	25.0	35.7	28.7	39.6
	220	10.3	19.9	14.2	21.8	15.4	21.9	21.3	34.3	25.0	36.0	28.7	39.9
	240	10.3	20.1	14.2	22.1	15.4	22.2	21.3	34.6	25.0	36.1	28.7	40.2
	250	10.3	20.3	14.2	22.3	15.4	22.3	21.3	34.8	25.0	36.4	28.7	40.3
	260	10.3	20.5	14.2	22.4	15.4	22.5	21.3	35.0	25.0	36.6	28.7	40.5
	280	10.3	20.8	14.2	22.7	15.4	22.8	21.3	35.2	25.0	36.8	28.7	40.8
	300	10.3	21.0	14.2	23.0	15.4	23.1	21.3	35.5	25.0	37.1	28.7	41.1
	350	10.3	21.8	14.2	23.7	15.4	23.8	21.3	36.3	25.0	37.9	28.7	41.8
	360	10.3	21.9	14.2	23.9	15.4	24.0	21.3	36.4	25.0	38.0	28.7	42.0
	400	10.3	22.5	14.2	24.5	15.4	24.6	21.3	37.0	25.0	38.6	28.7	42.6
	450	9.1	21.3	13.0	25.2	14.2	25.2	20.0	35.8	23.8	39.4	27.5	43.2
	500	7.9	20.1	11.7	25.9	13.0	26.0	18.8	34.5	22.6	40.1	26.3	44.0
$SJ_{LVL36,NFB}$ 90	160	10.9	20.5	15.3	23.0	16.2	22.9	22.6	36.1	26.6	37.4	30.7	41.7
	180	10.9	20.8	15.3	23.3	16.2	23.2	22.6	36.4	26.6	37.7	30.7	41.9
	200	10.9	21.1	15.3	23.6	16.2	23.5	22.6	36.7	26.6	38.0	30.7	42.2
	220	10.9	21.4	15.3	23.9	16.2	23.8	22.6	36.9	26.6	38.3	30.7	42.5
	240	10.9	21.7	15.3	24.2	16.2	24.1	22.6	37.2	26.6	38.3	30.7	42.8
	250	10.9	21.9	15.3	24.4	16.2	24.2	22.6	37.4	26.6	38.8	30.7	42.9
	260	10.9	22.0	15.3	24.5	16.2	24.4	22.6	37.6	26.6	38.9	30.7	43.1
	280	10.9	22.3	15.3	24.8	16.2	24.7	22.6	37.8	26.6	39.2	30.7	43.4
	300	10.9	22.5	15.3	25.1	16.2	25.0	22.6	38.1	26.6	39.5	30.7	43.7
	350	10.9	23.3	15.3	25.9	16.2	25.7	22.6	38.9	26.6	40.3	30.7	44.4
	360	10.9	23.4	15.3	26.0	16.2	25.9	22.6	39.0	26.6	40.4	30.7	44.6
	400	10.9	24.0	15.3	26.6	16.2	26.5	22.6	39.6	26.6	41.0	30.7	45.2
	450	9.7	22.8	14.1	27.3	15.0	27.1	21.4	38.4	25.3	41.7	29.5	45.9
	500	8.4	21.6	12.8	28.0	13.7	27.9	20.2	37.1	24.1	42.4	28.2	46.6
$SJ_{LVL33,NFB}$ 45	160	7.8	13.4	8.7	15.4	10.8	17.2	15.3	20.0	17.2	20.4	20.4	24.2
	180	7.8	13.7	8.7	15.6	10.8	17.5	15.3	20.3	17.2	20.7	20.4	24.5
	200	7.8	14.0	8.7	15.9	10.8	17.8	15.3	20.5	17.2	21.0	20.4	24.8
	220	7.8	14.3	8.7	16.2	10.8	18.0	15.3	20.8	17.2	21.3	20.4	25.1
	240	7.8	14.6	8.7	16.5	10.8	18.3	15.3	21.1	17.2	21.6	20.4	25.3
	250	7.8	14.7	8.7	16.7	10.8	18.4	15.3	21.3	17.2	21.8	20.4	25.5
	260	7.8	14.8	8.7	16.8	10.8	18.6	15.3	21.4	17.2	21.9	20.4	25.7
	280	7.8	15.1	8.7	17.1	10.8	18.9	15.3	21.7	17.2	22.2	20.4	25.9
	300	7.8	15.5	8.7	17.4	10.8	19.2	15.3	22.0	17.2	22.5	20.4	26.2
	350	7.8	16.1	8.7	18.1	10.8	19.9	15.3	22.8	17.2	23.2	20.4	27.0
	360	7.8	16.3	8.7	18.2	10.8	20.1	15.3	22.8	17.2	23.3	20.4	27.1
	400	7.8	16.9	8.7	18.8	10.8	20.6	15.3	23.4	17.2	23.9	20.4	27.6
	450	6.6	15.7	7.5	17.6	9.6	19.4	14.1	22.2	16.0	22.7	19.2	26.4
	500	5.4	14.5	6.3	16.4	8.4	18.2	12.9	21.0	14.8	21.5	18.0	25.2
$SJ_{LVL33,NFB}$ 60	160	9.1	15.6	11.7	16.4	13.7	16.9	18.1	27.6	21.6	29.8	24.3	33.1
	180	9.1	15.9	11.7	16.7	13.7	17.2	18.1	27.9	21.6	30.0	24.3	33.4
	200	9.1	16.2	11.7	17.0	13.7	17.5	18.1	28.2	21.6	30.3	24.3	33.7
	220	9.1	16.5	11.7	17.3	13.7	17.8	18.1	28.5	21.6	30.6	24.3	34.0
	240	9.1	16.8	11.7	17.6	13.7	18.0	18.1	28.8	21.6	30.9	24.3	34.3
	250	9.1	17.0	11.7	17.7	13.7	18.1	18.1	29.0	21.6	31.0	24.3	34.4
	260	9.1	17.1	11.7	17.8	13.7	18.3	18.1	29.1	21.6	31.2	24.3	34.5
	280	9.1	17.4	11.7	18.1	13.7	18.6	18.1	29.4	21.6	31.5	24.3	34.8
	300	9.1	17.7	11.7	18.4	13.7	18.9	18.1	29.7	21.6	31.8	24.3	35.1
	350	9.1	18.4	11.7	19.1	13.7	19.6	18.1	30.4	21.6	32.4	24.3	35.8
	360	9.1	18.5	11.7	19.3	13.7	19.8	18.1	30.5	21.6	32.6	24.3	36.0
	400	9.1	19.1	11.7	19.9	13.7	20.4	18.1	31.1	21.6	33.2	24.3	36.6
	450	7.9	17.9	10.5	20.5	12.5	21.0	16.9	29.9	20.4	33.9	23.0	37.2
	500	6.7	16.7	9.3	21.3	11.3	21.8	15.7	28.7	19.2	34.7	21.9	38.0

Table C7 Characteristic bearing resistance — LVL flanges and natural fibreboard web (continued)

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL33,NFB}$ 70	160	9.6	17.1	12.8	18.5	14.4	18.7	19.5	30.2	23.1	32.1	26.2	35.7
	180	9.6	17.4	12.8	18.7	14.4	19.0	19.5	30.5	23.1	32.4	26.2	36.0
	200	9.6	17.7	12.8	19.0	14.4	19.3	19.5	30.8	23.1	32.6	26.2	36.2
	220	9.6	18.0	12.8	19.3	14.4	19.6	19.5	31.1	23.1	32.9	26.2	36.5
	240	9.6	18.3	12.8	19.6	14.4	19.9	19.5	31.4	23.1	33.1	26.2	36.8
	250	9.6	18.5	12.8	19.7	14.4	20.0	19.5	31.5	23.1	33.3	26.2	36.9
	260	9.6	18.6	12.8	19.9	14.4	20.2	19.5	31.7	23.1	33.5	26.2	37.1
	280	9.6	18.9	12.8	20.2	14.4	20.5	19.5	31.9	23.1	33.8	26.2	37.4
	300	9.6	19.1	12.8	20.5	14.4	20.8	19.5	32.2	23.1	34.1	26.2	37.7
	350	9.6	19.9	12.8	21.2	14.4	21.4	19.5	33.0	23.1	34.8	26.2	38.4
	360	9.6	20.0	12.8	21.3	14.4	21.6	19.5	33.1	23.1	34.9	26.2	38.6
	400	9.6	20.6	12.8	21.9	14.4	22.2	19.5	33.7	23.1	35.5	26.2	39.1
	450	8.4	19.4	11.6	22.6	13.2	22.9	18.3	32.5	21.9	36.2	25.0	39.8
	500	7.2	18.2	10.4	23.4	12.0	23.6	17.1	31.3	20.7	37.0	23.8	40.6
$SJ_{LVL33,NFB}$ 80	160	10.1	18.6	13.9	20.5	15.1	20.6	20.8	32.8	24.5	34.4	28.1	38.2
	180	10.1	18.9	13.9	20.8	15.1	20.9	20.8	33.1	24.5	34.7	28.1	38.5
	200	10.1	19.2	13.9	21.1	15.1	21.2	20.8	33.3	24.5	34.9	28.1	38.8
	220	10.1	19.4	13.9	21.4	15.1	21.5	20.8	33.6	24.5	35.2	28.1	39.1
	240	10.1	19.7	13.9	21.7	15.1	21.8	20.8	33.9	24.5	35.3	28.1	39.4
	250	10.1	19.9	13.9	21.8	15.1	21.8	20.8	34.1	24.5	35.7	28.1	39.5
	260	10.1	20.1	13.9	22.0	15.1	22.0	20.8	34.2	24.5	35.8	28.1	39.6
	280	10.1	20.3	13.9	22.2	15.1	22.3	20.8	34.5	24.5	36.1	28.1	39.9
	300	10.1	20.6	13.9	22.5	15.1	22.6	20.8	34.8	24.5	36.4	28.1	40.3
	350	10.1	21.4	13.9	23.3	15.1	23.3	20.8	35.5	24.5	37.1	28.1	40.9
	360	10.1	21.5	13.9	23.4	15.1	23.5	20.8	35.6	24.5	37.2	28.1	41.1
	400	10.1	22.0	13.9	24.0	15.1	24.1	20.8	36.2	24.5	37.8	28.1	41.7
	450	8.9	20.8	12.7	24.7	13.9	24.7	19.6	35.0	23.3	38.6	26.9	42.4
	500	7.7	19.6	11.5	25.4	12.7	25.5	18.4	33.8	22.1	39.3	25.7	43.1
$SJ_{LVL33,NFB}$ 90	160	10.7	20.1	15.0	22.6	15.8	22.5	22.2	35.3	26.0	36.7	30.0	40.8
	180	10.7	20.4	15.0	22.8	15.8	22.8	22.2	35.6	26.0	37.0	30.0	41.1
	200	10.7	20.6	15.0	23.1	15.8	23.0	22.2	35.9	26.0	37.2	30.0	41.4
	220	10.7	20.9	15.0	23.4	15.8	23.3	22.2	36.2	26.0	37.5	30.0	41.7
	240	10.7	21.2	15.0	23.7	15.8	23.6	22.2	36.5	26.0	37.5	30.0	42.0
	250	10.7	21.4	15.0	23.9	15.8	23.7	22.2	36.7	26.0	38.0	30.0	42.0
	260	10.7	21.5	15.0	24.0	15.8	23.9	22.2	36.8	26.0	38.2	30.0	42.2
	280	10.7	21.8	15.0	24.3	15.8	24.2	22.2	37.1	26.0	38.4	30.0	42.5
	300	10.7	22.1	15.0	24.6	15.8	24.5	22.2	37.3	26.0	38.7	30.0	42.8
	350	10.7	22.8	15.0	25.3	15.8	25.2	22.2	38.1	26.0	39.5	30.0	43.5
	360	10.7	22.9	15.0	25.4	15.8	25.3	22.2	38.2	26.0	39.6	30.0	43.7
	400	10.7	23.5	15.0	26.0	15.8	25.9	22.2	38.8	26.0	40.1	30.0	44.3
	450	9.5	22.3	13.8	26.8	14.7	26.6	21.0	37.6	24.8	40.9	28.9	44.9
	500	8.3	21.1	12.6	27.5	13.4	27.4	19.8	36.4	23.6	41.6	27.6	45.7

NOTE: The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C8 Characteristic bearing resistance — LVL flanges and OSB web

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL39,OSB}$ 45	160	8.1	14.0	9.1	16.0	11.3	17.9	15.9	20.8	17.9	21.3	21.2	25.2
	180	8.1	14.3	9.1	16.3	11.3	18.2	15.9	21.1	17.9	21.6	21.2	25.5
	200	8.1	14.6	9.1	16.6	11.3	18.5	15.9	21.4	17.9	21.9	21.2	25.8
	220	8.1	14.9	9.1	16.9	11.3	18.8	15.9	21.7	17.9	22.2	21.2	26.1
	240	8.1	15.2	9.1	17.2	11.3	19.1	15.9	22.0	17.9	22.5	21.2	26.4
	250	8.1	15.3	9.1	17.4	11.3	19.2	15.9	22.2	17.9	22.7	21.2	26.6
	260	8.1	15.5	9.1	17.5	11.3	19.4	15.9	22.3	17.9	22.8	21.2	26.7
	280	8.1	15.8	9.1	17.8	11.3	19.7	15.9	22.6	17.9	23.1	21.2	27.0
	300	8.1	16.1	9.1	18.1	11.3	20.0	15.9	22.9	17.9	23.4	21.2	27.3
	350	8.1	16.8	9.1	18.9	11.3	20.7	15.9	23.7	17.9	24.2	21.2	28.1
	360	8.1	17.0	9.1	19.0	11.3	20.9	15.9	23.8	17.9	24.3	21.2	28.2
	400	8.1	17.6	9.1	19.6	11.3	21.5	15.9	24.4	17.9	24.9	21.2	28.8
	450	6.9	16.4	7.9	18.4	10.1	20.3	14.7	23.2	16.7	23.7	20.0	27.6
	500	5.6	15.1	6.6	17.1	8.8	19.0	13.4	21.9	15.4	22.4	18.7	26.3
$SJ_{LVL39,OSB}$ 60	160	9.5	16.3	12.2	17.1	14.3	17.6	18.9	28.8	22.5	31.0	25.3	34.5
	180	9.5	16.6	12.2	17.4	14.3	17.9	18.9	29.1	22.5	31.3	25.3	34.8
	200	9.5	16.9	12.2	17.7	14.3	18.2	18.9	29.4	22.5	31.6	25.3	35.1
	220	9.5	17.2	12.2	18.0	14.3	18.5	18.9	29.7	22.5	31.9	25.3	35.4
	240	9.5	17.5	12.2	18.3	14.3	18.8	18.9	30.0	22.5	32.2	25.3	35.7
	250	9.5	17.7	12.2	18.4	14.3	18.9	18.9	30.2	22.5	32.3	25.3	35.8
	260	9.5	17.8	12.2	18.6	14.3	19.1	18.9	30.3	22.5	32.5	25.3	36.0
	280	9.5	18.1	12.2	18.9	14.3	19.4	18.9	30.6	22.5	32.8	25.3	36.3
	300	9.5	18.4	12.2	19.2	14.3	19.7	18.9	30.9	22.5	33.1	25.3	36.6
	350	9.5	19.2	12.2	19.9	14.3	20.4	18.9	31.7	22.5	33.8	25.3	37.3
	360	9.5	19.3	12.2	20.1	14.3	20.6	18.9	31.8	22.5	34.0	25.3	37.5
	400	9.5	19.9	12.2	20.7	14.3	21.2	18.9	32.4	22.5	34.6	25.3	38.1
	450	8.3	18.7	10.9	21.4	13.0	21.9	17.7	31.2	21.3	35.3	24.0	38.8
	500	7.0	17.4	9.7	22.2	11.8	22.7	16.4	29.9	20.0	36.1	22.8	39.6
$SJ_{LVL39,OSB}$ 70	160	10.0	17.8	13.3	19.2	15.0	19.5	20.3	31.5	24.0	33.4	27.3	37.2
	180	10.0	18.1	13.3	19.5	15.0	19.8	20.3	31.8	24.0	33.7	27.3	37.5
	200	10.0	18.4	13.3	19.8	15.0	20.1	20.3	32.1	24.0	34.0	27.3	37.8
	220	10.0	18.7	13.3	20.1	15.0	20.4	20.3	32.4	24.0	34.3	27.3	38.1
	240	10.0	19.0	13.3	20.4	15.0	20.7	20.3	32.7	24.0	34.5	27.3	38.4
	250	10.0	19.2	13.3	20.6	15.0	20.8	20.3	32.9	24.0	34.7	27.3	38.5
	260	10.0	19.4	13.3	20.7	15.0	21.0	20.3	33.0	24.0	34.9	27.3	38.6
	280	10.0	19.7	13.3	21.0	15.0	21.3	20.3	33.3	24.0	35.2	27.3	38.9
	300	10.0	19.9	13.3	21.3	15.0	21.6	20.3	33.6	24.0	35.5	27.3	39.3
	350	10.0	20.7	13.3	22.1	15.0	22.3	20.3	34.4	24.0	36.2	27.3	40.0
	360	10.0	20.8	13.3	22.2	15.0	22.5	20.3	34.5	24.0	36.4	27.3	40.2
	400	10.0	21.4	13.3	22.8	15.0	23.1	20.3	35.1	24.0	37.0	27.3	40.8
	450	8.8	20.2	12.1	23.6	13.8	23.8	19.1	33.8	22.8	37.7	26.0	41.5
	500	7.5	18.9	10.8	24.3	12.5	24.6	17.8	32.6	21.5	38.5	24.8	42.3
$SJ_{LVL39,OSB}$ 80	160	10.6	19.4	14.5	21.4	15.8	21.5	21.7	34.1	25.6	35.8	29.3	39.8
	180	10.6	19.7	14.5	21.7	15.8	21.8	21.7	34.4	25.6	36.1	29.3	40.1
	200	10.6	20.0	14.5	22.0	15.8	22.1	21.7	34.7	25.6	36.4	29.3	40.4
	220	10.6	20.3	14.5	22.3	15.8	22.4	21.7	35.0	25.6	36.7	29.3	40.7
	240	10.6	20.6	14.5	22.6	15.8	22.7	21.7	35.3	25.6	36.8	29.3	41.0
	250	10.6	20.8	14.5	22.7	15.8	22.8	21.7	35.5	25.6	37.2	29.3	41.1
	260	10.6	20.9	14.5	22.9	15.8	22.9	21.7	35.7	25.6	37.3	29.3	41.3
	280	10.6	21.2	14.5	23.2	15.8	23.2	21.7	36.0	25.6	37.6	29.3	41.6
	300	10.6	21.5	14.5	23.5	15.8	23.6	21.7	36.2	25.6	37.9	29.3	41.9
	350	10.6	22.3	14.5	24.2	15.8	24.3	21.7	37.0	25.6	38.7	29.3	42.6
	360	10.6	22.4	14.5	24.4	15.8	24.5	21.7	37.1	25.6	38.8	29.3	42.8
	400	10.6	23.0	14.5	25.0	15.8	25.1	21.7	37.7	25.6	39.4	29.3	43.4
	450	9.3	21.7	13.2	25.7	14.5	25.8	20.5	36.5	24.3	40.2	28.1	44.1
	500	8.1	20.5	12.0	26.5	13.3	26.6	19.2	35.2	23.1	40.9	26.8	44.9

Table C8 Characteristic bearing resistance — LVL flanges and OSB web (continued)

Type	Joist depth	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
(mm)	*H* (mm)	without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL39,OSB}$ 90	160	11.1	20.9	15.6	23.5	16.5	23.4	23.1	36.8	27.1	38.2	31.3	42.5
	180	11.1	21.2	15.6	23.8	16.5	23.7	23.1	37.1	27.1	38.5	31.3	42.8
	200	11.1	21.5	15.6	24.1	16.5	24.0	23.1	37.4	27.1	38.8	31.3	43.1
	220	11.1	21.8	15.6	24.4	16.5	24.3	23.1	37.7	27.1	39.1	31.3	43.4
	240	11.1	22.1	15.6	24.7	16.5	24.6	23.1	38.0	27.1	39.1	31.3	43.7
	250	11.1	22.3	15.6	24.9	16.5	24.7	23.1	38.2	27.1	39.6	31.3	43.8
	260	11.1	22.4	15.6	25.0	16.5	24.9	23.1	38.3	27.1	39.7	31.3	44.0
	280	11.1	22.7	15.6	25.3	16.5	25.2	23.1	38.6	27.1	40.0	31.3	44.3
	300	11.1	23.0	15.6	25.6	16.5	25.5	23.1	38.9	27.1	40.3	31.3	44.6
	350	11.1	23.8	15.6	26.4	16.5	26.2	23.1	39.7	27.1	41.1	31.3	45.3
	360	11.1	23.9	15.6	26.5	16.5	26.4	23.1	39.8	27.1	41.2	31.3	45.5
	400	11.1	24.5	15.6	27.1	16.5	27.0	23.1	40.4	27.1	41.8	31.3	46.1
	450	9.9	23.3	14.4	27.9	15.3	27.7	21.9	39.2	25.8	42.6	30.1	46.8
	500	8.6	22.0	13.1	28.6	14.0	28.5	20.6	37.9	24.6	43.3	28.8	47.6
$SJ_{LVL36,OSB}$ 45	160	7.9	13.7	8.9	15.7	11.1	17.5	15.6	20.4	17.5	20.9	20.8	24.7
	180	7.9	14.0	8.9	16.0	11.1	17.8	15.6	20.7	17.5	21.2	20.8	25.0
	200	7.9	14.3	8.9	16.3	11.1	18.1	15.6	21.0	17.5	21.5	20.8	25.3
	220	7.9	14.6	8.9	16.6	11.1	18.4	15.6	21.3	17.5	21.8	20.8	25.6
	240	7.9	14.9	8.9	16.9	11.1	18.7	15.6	21.6	17.5	22.1	20.8	25.9
	250	7.9	15.0	8.9	17.1	11.1	18.8	15.6	21.8	17.5	22.2	20.8	26.1
	260	7.9	15.2	8.9	17.2	11.1	19.0	15.6	21.9	17.5	22.4	20.8	26.2
	280	7.9	15.5	8.9	17.5	11.1	19.3	15.6	22.2	17.5	22.7	20.8	26.5
	300	7.9	15.8	8.9	17.7	11.1	19.6	15.6	22.4	17.5	22.9	20.8	26.8
	350	7.9	16.5	8.9	18.5	11.1	20.3	15.6	23.2	17.5	23.7	20.8	27.5
	360	7.9	16.7	8.9	18.6	11.1	20.5	15.6	23.3	17.5	23.8	20.8	27.6
	400	7.9	17.2	8.9	19.2	11.1	21.1	15.6	23.9	17.5	24.4	20.8	28.2
	450	6.7	16.0	7.7	18.0	9.8	19.8	14.4	22.7	16.3	23.2	19.6	27.0
	500	5.5	14.8	6.5	16.8	8.6	18.6	13.1	21.5	15.1	22.0	18.3	25.8
$SJ_{LVL36,OSB}$ 60	160	9.3	16.0	12.0	16.8	14.0	17.2	18.5	28.2	22.1	30.4	24.8	33.8
	180	9.3	16.3	12.0	17.1	14.0	17.5	18.5	28.5	22.1	30.7	24.8	34.1
	200	9.3	16.6	12.0	17.3	14.0	17.8	18.5	28.8	22.1	31.0	24.8	34.4
	220	9.3	16.9	12.0	17.6	14.0	18.1	18.5	29.1	22.1	31.3	24.8	34.7
	240	9.3	17.2	12.0	17.9	14.0	18.4	18.5	29.4	22.1	31.6	24.8	35.0
	250	9.3	17.3	12.0	18.0	14.0	18.5	18.5	29.6	22.1	31.7	24.8	35.1
	260	9.3	17.5	12.0	18.2	14.0	18.7	18.5	29.7	22.1	31.8	24.8	35.2
	280	9.3	17.8	12.0	18.5	14.0	19.0	18.5	30.0	22.1	32.1	24.8	35.6
	300	9.3	18.0	12.0	18.8	14.0	19.3	18.5	30.3	22.1	32.4	24.8	35.9
	350	9.3	18.8	12.0	19.5	14.0	20.0	18.5	31.1	22.1	33.1	24.8	36.6
	360	9.3	18.9	12.0	19.7	14.0	20.2	18.5	31.2	22.1	33.3	24.8	36.8
	400	9.3	19.5	12.0	20.3	14.0	20.8	18.5	31.8	22.1	33.9	24.8	37.3
	450	8.1	18.3	10.7	21.0	12.7	21.5	17.3	30.5	20.9	34.6	23.5	38.0
	500	6.9	17.1	9.5	21.8	11.6	22.2	16.1	29.3	19.6	35.4	22.3	38.8
$SJ_{LVL36,OSB}$ 70	160	9.8	17.5	13.1	18.8	14.7	19.1	19.9	30.8	23.5	32.7	26.8	36.4
	180	9.8	17.8	13.1	19.1	14.7	19.4	19.9	31.1	23.5	33.0	26.8	36.7
	200	9.8	18.1	13.1	19.4	14.7	19.7	19.9	31.4	23.5	33.3	26.8	37.0
	220	9.8	18.4	13.1	19.7	14.7	20.0	19.9	31.7	23.5	33.6	26.8	37.3
	240	9.8	18.6	13.1	20.0	14.7	20.3	19.9	32.0	23.5	33.8	26.8	37.6
	250	9.8	18.8	13.1	20.1	14.7	20.4	19.9	32.2	23.5	34.0	26.8	37.7
	260	9.8	19.0	13.1	20.3	14.7	20.6	19.9	32.3	23.5	34.2	26.8	37.8
	280	9.8	19.3	13.1	20.6	14.7	20.9	19.9	32.6	23.5	34.5	26.8	38.2
	300	9.8	19.5	13.1	20.9	14.7	21.2	19.9	32.9	23.5	34.8	26.8	38.5
	350	9.8	20.3	13.1	21.6	14.7	21.9	19.9	33.7	23.5	35.5	26.8	39.2
	360	9.8	20.4	13.1	21.8	14.7	22.1	19.9	33.8	23.5	35.7	26.8	39.4
	400	9.8	21.0	13.1	22.4	14.7	22.7	19.9	34.4	23.5	36.3	26.8	39.9
	450	8.6	19.8	11.8	23.1	13.5	23.4	18.7	33.1	22.3	37.0	25.5	40.6
	500	7.4	18.6	10.6	23.8	12.3	24.1	17.4	31.9	21.1	37.7	24.3	41.4

Table C8 Characteristic bearing resistance — LVL flanges and OSB web (continued)

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL36,OSB}$ 80	160	10.3	19.0	14.2	20.9	15.4	21.0	21.3	33.4	25.0	35.1	28.7	39.0
	180	10.3	19.3	14.2	21.2	15.4	21.3	21.3	33.7	25.0	35.4	28.7	39.3
	200	10.3	19.6	14.2	21.5	15.4	21.6	21.3	34.0	25.0	35.7	28.7	39.6
	220	10.3	19.9	14.2	21.8	15.4	21.9	21.3	34.3	25.0	36.0	28.7	39.9
	240	10.3	20.1	14.2	22.1	15.4	22.2	21.3	34.6	25.0	36.1	28.7	40.2
	250	10.3	20.3	14.2	22.3	15.4	22.3	21.3	34.8	25.0	36.4	28.7	40.3
	260	10.3	20.5	14.2	22.4	15.4	22.5	21.3	35.0	25.0	36.6	28.7	40.5
	280	10.3	20.8	14.2	22.7	15.4	22.8	21.3	35.2	25.0	36.8	28.7	40.8
	300	10.3	21.0	14.2	23.0	15.4	23.1	21.3	35.5	25.0	37.1	28.7	41.1
	350	10.3	21.8	14.2	23.7	15.4	23.8	21.3	36.3	25.0	37.9	28.7	41.8
	360	10.3	21.9	14.2	23.9	15.4	24.0	21.3	36.4	25.0	38.0	28.7	42.0
	400	10.3	22.5	14.2	24.5	15.4	24.6	21.3	37.0	25.0	38.6	28.7	42.6
	450	9.1	21.3	13.0	25.2	14.2	25.2	20.0	35.8	23.8	39.4	27.5	43.2
	500	7.9	20.1	11.7	25.9	13.0	26.0	18.8	34.5	22.6	40.1	26.3	44.0
$SJ_{LVL36,OSB}$ 90	160	10.9	20.5	15.3	23.0	16.2	22.9	22.6	36.1	26.6	37.4	30.7	41.7
	180	10.9	20.8	15.3	23.3	16.2	23.2	22.6	36.4	26.6	37.7	30.7	41.9
	200	10.9	21.1	15.3	23.6	16.2	23.5	22.6	36.7	26.6	38.0	30.7	42.2
	220	10.9	21.4	15.3	23.9	16.2	23.8	22.6	36.9	26.6	38.3	30.7	42.5
	240	10.9	21.7	15.3	24.2	16.2	24.1	22.6	37.2	26.6	38.3	30.7	42.8
	250	10.9	21.9	15.3	24.4	16.2	24.2	22.6	37.4	26.6	38.8	30.7	42.9
	260	10.9	22.0	15.3	24.5	16.2	24.4	22.6	37.6	26.6	38.9	30.7	43.1
	280	10.9	22.3	15.3	24.8	16.2	24.7	22.6	37.8	26.6	39.2	30.7	43.4
	300	10.9	22.5	15.3	25.1	16.2	25.0	22.6	38.1	26.6	39.5	30.7	43.7
	350	10.9	23.3	15.3	25.9	16.2	25.7	22.6	38.9	26.6	40.3	30.7	44.4
	360	10.9	23.4	15.3	26.0	16.2	25.9	22.6	39.0	26.6	40.4	30.7	44.6
	400	10.9	24.0	15.3	26.6	16.2	26.5	22.6	39.6	26.6	41.0	30.7	45.2
	450	9.7	22.8	14.1	27.3	15.0	27.1	21.4	38.4	25.3	41.7	29.5	45.9
	500	8.4	21.6	12.8	28.0	13.7	27.9	20.2	37.1	24.1	42.4	28.2	46.6
$SJ_{LVL33,OSB}$ 45	160	7.8	13.4	8.7	15.4	10.8	17.2	15.3	20.0	17.2	20.4	20.4	24.2
	180	7.8	13.7	8.7	15.6	10.8	17.5	15.3	20.3	17.2	20.7	20.4	24.5
	200	7.8	14.0	8.7	15.9	10.8	17.8	15.3	20.5	17.2	21.0	20.4	24.8
	220	7.8	14.3	8.7	16.2	10.8	18.0	15.3	20.8	17.2	21.3	20.4	25.1
	240	7.8	14.6	8.7	16.5	10.8	18.3	15.3	21.1	17.2	21.6	20.4	25.3
	250	7.8	14.7	8.7	16.7	10.8	18.4	15.3	21.3	17.2	21.8	20.4	25.5
	260	7.8	14.8	8.7	16.8	10.8	18.6	15.3	21.4	17.2	21.9	20.4	25.7
	280	7.8	15.1	8.7	17.1	10.8	18.9	15.3	21.7	17.2	22.2	20.4	25.9
	300	7.8	15.5	8.7	17.4	10.8	19.2	15.3	22.0	17.2	22.5	20.4	26.2
	350	7.8	16.1	8.7	18.1	10.8	19.9	15.3	22.8	17.2	23.2	20.4	27.0
	360	7.8	16.3	8.7	18.2	10.8	20.1	15.3	22.8	17.2	23.3	20.4	27.1
	400	7.8	16.9	8.7	18.8	10.8	20.6	15.3	23.4	17.2	23.9	20.4	27.6
	450	6.6	15.7	7.5	17.6	9.6	19.4	14.1	22.2	16.0	22.7	19.2	26.4
	500	5.4	14.5	6.3	16.4	8.4	18.2	12.9	21.0	14.8	21.5	18.0	25.2
$SJ_{LVL33,OSB}$ 60	160	9.1	15.6	11.7	16.4	13.7	16.9	18.1	27.6	21.6	29.8	24.3	33.1
	180	9.1	15.9	11.7	16.7	13.7	17.2	18.1	27.9	21.6	30.0	24.3	33.4
	200	9.1	16.2	11.7	17.0	13.7	17.5	18.1	28.2	21.6	30.3	24.3	33.7
	220	9.1	16.5	11.7	17.3	13.7	17.8	18.1	28.5	21.6	30.6	24.3	34.0
	240	9.1	16.8	11.7	17.6	13.7	18.0	18.1	28.8	21.6	30.9	24.3	34.3
	250	9.1	17.0	11.7	17.7	13.7	18.1	18.1	29.0	21.6	31.0	24.3	34.4
	260	9.1	17.1	11.7	17.8	13.7	18.3	18.1	29.1	21.6	31.2	24.3	34.5
	280	9.1	17.4	11.7	18.1	13.7	18.6	18.1	29.4	21.6	31.5	24.3	34.8
	300	9.1	17.7	11.7	18.4	13.7	18.9	18.1	29.7	21.6	31.8	24.3	35.1
	350	9.1	18.4	11.7	19.1	13.7	19.6	18.1	30.4	21.6	32.4	24.3	35.8
	360	9.1	18.5	11.7	19.3	13.7	19.8	18.1	30.5	21.6	32.6	24.3	36.0
	400	9.1	19.1	11.7	19.9	13.7	20.4	18.1	31.1	21.6	33.2	24.3	36.6
	450	7.9	17.9	10.5	20.5	12.5	21.0	16.9	29.9	20.4	33.9	23.0	37.2
	500	6.7	16.7	9.3	21.3	11.3	21.8	15.7	28.7	19.2	34.7	21.9	38.0

Table C8 Characteristic bearing resistance — LVL flanges and OSB web (continued)

Type (mm)	Joist depth *H* (mm)	End bearing capacity (kN)						Intermediate bearing capacity (kN)					
		35 mm stiffener		45 mm stiffener		89 mm stiffener		45 mm stiffener		75 mm stiffener		89 mm stiffener	
		without	with	without	with	without	with	without	with	without	with	without	with
$SJ_{LVL33,OSB}$ 70	160	9.6	17.1	12.8	18.5	14.4	18.7	19.5	30.2	23.1	32.1	26.2	35.7
	180	9.6	17.4	12.8	18.7	14.4	19.0	19.5	30.5	23.1	32.4	26.2	36.0
	200	9.6	17.7	12.8	19.0	14.4	19.3	19.5	30.8	23.1	32.6	26.2	36.2
	220	9.6	18.0	12.8	19.3	14.4	19.6	19.5	31.1	23.1	32.9	26.2	36.5
	240	9.6	18.3	12.8	19.6	14.4	19.9	19.5	31.4	23.1	33.1	26.2	36.8
	250	9.6	18.5	12.8	19.7	14.4	20.0	19.5	31.5	23.1	33.3	26.2	36.9
	260	9.6	18.6	12.8	19.9	14.4	20.2	19.5	31.7	23.1	33.5	26.2	37.1
	280	9.6	18.9	12.8	20.2	14.4	20.5	19.5	31.9	23.1	33.8	26.2	37.4
	300	9.6	19.1	12.8	20.5	14.4	20.8	19.5	32.2	23.1	34.1	26.2	37.7
	350	9.6	19.9	12.8	21.2	14.4	21.4	19.5	33.0	23.1	34.8	26.2	38.4
	360	9.6	20.0	12.8	21.3	14.4	21.6	19.5	33.1	23.1	34.9	26.2	38.6
	400	9.6	20.6	12.8	21.9	14.4	22.2	19.5	33.7	23.1	35.5	26.2	39.1
	450	8.4	19.4	11.6	22.6	13.2	22.9	18.3	32.5	21.9	36.2	25.0	39.8
	500	7.2	18.2	10.4	23.4	12.0	23.6	17.1	31.3	20.7	37.0	23.8	40.6
$SJ_{LVL33,OSB}$ 80	160	10.1	18.6	13.9	20.5	15.1	20.6	20.8	32.8	24.5	34.4	28.1	38.2
	180	10.1	18.9	13.9	20.8	15.1	20.9	20.8	33.1	24.5	34.7	28.1	38.5
	200	10.1	19.2	13.9	21.1	15.1	21.2	20.8	33.3	24.5	34.9	28.1	38.8
	220	10.1	19.4	13.9	21.4	15.1	21.5	20.8	33.6	24.5	35.2	28.1	39.1
	240	10.1	19.7	13.9	21.7	15.1	21.8	20.8	33.9	24.5	35.3	28.1	39.4
	250	10.1	19.9	13.9	21.8	15.1	21.8	20.8	34.1	24.5	35.7	28.1	39.5
	260	10.1	20.1	13.9	22.0	15.1	22.0	20.8	34.2	24.5	35.8	28.1	39.6
	280	10.1	20.3	13.9	22.2	15.1	22.3	20.8	34.5	24.5	36.1	28.1	39.9
	300	10.1	20.6	13.9	22.5	15.1	22.6	20.8	34.8	24.5	36.4	28.1	40.3
	350	10.1	21.4	13.9	23.3	15.1	23.3	20.8	35.5	24.5	37.1	28.1	40.9
	360	10.1	21.5	13.9	23.4	15.1	23.5	20.8	35.6	24.5	37.2	28.1	41.1
	400	10.1	22.0	13.9	24.0	15.1	24.1	20.8	36.2	24.5	37.8	28.1	41.7
	450	8.9	20.8	12.7	24.7	13.9	24.7	19.6	35.0	23.3	38.6	26.9	42.4
	500	7.7	19.6	11.5	25.4	12.7	25.5	18.4	33.8	22.1	39.3	25.7	43.1
$SJ_{LVL33,OSB}$ 90	160	10.7	20.1	15.0	22.6	15.8	22.5	22.2	35.3	26.0	36.7	30.0	40.8
	180	10.7	20.4	15.0	22.8	15.8	22.8	22.2	35.6	26.0	37.0	30.0	41.1
	200	10.7	20.6	15.0	23.1	15.8	23.0	22.2	35.9	26.0	37.2	30.0	41.4
	220	10.7	20.9	15.0	23.4	15.8	23.3	22.2	36.2	26.0	37.5	30.0	41.7
	240	10.7	21.2	15.0	23.7	15.8	23.6	22.2	36.5	26.0	37.5	30.0	42.0
	250	10.7	21.4	15.0	23.9	15.8	23.7	22.2	36.7	26.0	38.0	30.0	42.0
	260	10.7	21.5	15.0	24.0	15.8	23.9	22.2	36.8	26.0	38.2	30.0	42.2
	280	10.7	21.8	15.0	24.3	15.8	24.2	22.2	37.1	26.0	38.4	30.0	42.5
	300	10.7	22.1	15.0	24.6	15.8	24.5	22.2	37.3	26.0	38.7	30.0	42.8
	350	10.7	22.8	15.0	25.3	15.8	25.2	22.2	38.1	26.0	39.5	30.0	43.5
	360	10.7	22.9	15.0	25.4	15.8	25.3	22.2	38.2	26.0	39.6	30.0	43.7
	400	10.7	23.5	15.0	26.0	15.8	25.9	22.2	38.8	26.0	40.1	30.0	44.3
	450	9.5	22.3	13.8	26.8	14.7	26.6	21.0	37.6	24.8	40.9	28.9	44.9
	500	8.3	21.1	12.6	27.5	13.4	27.4	19.8	36.4	23.6	41.6	27.6	45.7

NOTE: The characteristics for beam types within the product range (see Annex A) not listed in the table can be calculated by linear interpolation.

Table C9 Values of k_{mod} to be used with Eurocode 5 when designing STEICO I-joist products

Duration of load	Bending and axial resistance		Shear resistance				Bearing resistance	
	Service Class 1	Service Class 2	Service Class 1		Service Class 2		Service Class 1	Service Class 2
			NFB[1]	OSB	NFB[1]	OSB		
Permanent	0.60	0.60	0.30	0.40	0.20	0.30	0.60	0.60
Long term	0.70	0.70	0.45	0.50	0.30	0.40	0.70	0.70
Medium term	0.80	0.80	0.65	0.70	0.45	0.55	0.80	0.80
Short term	0.90	0.90	0.85	0.90	0.60	0.70	0.90	0.90
Instantaneous	1.10	1.10	1.10	1.10	0.80	0.90	1.10	1.10

(1) NFB – Natural fibreboard web

Table C10 Values of k_{def} to be used with Eurocode 5 when designing STEICO I-joist products

Duration of load	Bending and axial deformation		Shear deformation			
	Service Class 1	Service Class 2	Service Class 1		Service Class 2	
			NFB	OSB	NFB	OSB
Permanent	0.60	0.80	2.25	1.50	3.00	2.25

Table C11 Recommended values of γ_M to be used with Eurocode 5 when designing STEICO I-joist products in absence of nationally determined parameters

Combination	Bending and axial resistance	Shear resistance	Bearing resistance
Fundamental	1.2	1.3	1.2
Accidental	1.0	1.0	1.0

Design recommendations for holes cut in web

The characteristic shear capacity for STEICO I-joist products with holes in the web can be calculated as follows:

$$V_{hole,k} = V_k \cdot k_{hole}$$

where:

V_k characteristic shear capacity for STEICO I-joist products without holes in the web

k_{hole} hole strength reduction factor.

Round holes reduction factor:

$$k_{hole} = \frac{H_{Beam} - h_f - 0.9 \cdot D}{H - h_f}$$

where:

H_{Beam} depth of the beam

h_f depth of the flange

D diameter of the hole $D \leq H - 2.1 \cdot h_f \leq 200$ mm.

This reduction in shear must not be considered for round holes with diameter ≤ 38 mm.

Rectangular holes reduction factor:

$$k_{hole} = \min\left\{0.30 \cdot \left(\frac{H_{Beam}}{h_{hole}}\right)^{0.1} \cdot \left(\frac{H_{Beam}}{l_{hole}}\right)^{0.18} \cdot \left(\frac{h_{hole}}{l_{hole}}\right)^{0.2} \cdot k_{depth}; 0.9\right\}$$

where:

H_{Beam} depth of the beam

h_{hole} height of the hole $h_{hole} \leq H - 2.1 \cdot h_f \leq 200$ mm

l_{hole} length of the hole $l_{hole} \leq 300$ mm.

k_{depth} depth factor

For beams with 200 mm $\leq H_{\text{Beam}} \leq$ 400 mm:

$$k_{\text{depth}} \left(\frac{280}{H_{\text{Beam}}}\right)^{0.8}$$

For beams with 400 mm < $H_{\text{Beam}} \leq$ 500 mm

$$k_{\text{depth}} \left(\frac{H_{\text{Beam}}}{500}\right)^{1.3}$$

Notes:

(a) The length-to-height ratio for rectangular holes must be between 0.5 and 2.0.

(b) Rectangular hole equations to be used with length and height > 20 mm.

(c) Reduction in shear should not be considered for rectangular holes with maximum size of 15 mm x 40 mm.

Guidance for holes without design

Natural fibreboard web:

Table C12 Holes without the need for individual design in natural fibreboard web

Hole Type	Number of holes in one row(1)	Minimal distance between hole edges (mm)	Location in web	Minimal beam height (mm)	Shear capacity (%)(2)
Round:					
D up to 25 mm	5	25	Anywhere	200	100
Round:					
D from 26 mm to 38 mm	3	2 x *D*	Beam axis	200	100
Rectangular:					
H x *l* $\leq$ 14 mm x 40 mm	1	–	Anywhere	200	100

(1) 'in one row' means a group of holes which are placed within minimal distance. The distance between the rows of holes should be greater than or equal to the depth of the joist.

(2) 100% means no reduction of the shear capacity required $V_{\text{hole,k}} = V_{\text{k}}$.

OSB web:

Table C13 Holes without the need for individual design in OSB web

Hole Type	Number of holes in one row(1)	Minimal distance between hole edges (mm)	Location in web	Minimal beam height (mm)	Shear capacity (%)(2)
Round:					
D up to 25 mm	5	25	Anywhere	200	90
	3	50	Anywhere	220	100
Round:					
D from 26 mm to 38 mm	3	2 x *D*	Beam axis	200	80
	2	2 x *D*	Beam axis	220	100
Rectangular:					
H x *l* $\leq$ 14 mm x 40 mm	1	–	Anywhere	200	100

(1) 'in one row' means a group of holes which are placed within minimal distance. The distance between the rows of holes should be greater than or equal to the depth of the joist.

(2) 100% means no reduction of the shear capacity required: $V_{\text{hole,k}} = V_{\text{k}}$
90% means a reduction of the shear capacity of 10%: $V_{\text{hole,k}} = 0.9 \times V_{\text{k}}$
80% means a reduction of the shear capacity of 20%: $V_{\text{hole,k}} = 0.8 \times V_{\text{k}}$.

Axially loaded members

The axial load-bearing capacity of STEICO I-joist products should be calculated in accordance with the procedures given in Eurocode 5. The capacity for axially loaded members should be derived from the cross-section of the I-beams as given in Annex A and the characteristic values for LVL flange material as given in Table C14 and characteristic values for the web material as given in Table C15. The characteristic values for solid timber flange material should be taken from EN 338 : 2016 for strength classes T11 and T22. In the case of combined actions (eg compression and bending), the relevant interaction equations given in Eurocode 5 should be used.

Table C14 Characteristic values for LVL flange material in N·mm^{-2} and kg·m^{-3}

Property	Symbol	Unit	2.0E LVL	1.6E LVL
Bending strength parallel to grain	$f_{m,0,k}$	N/mm²	48	26
Tension strength parallel to grain	$f_{t,0,k}$	N/mm²	36	16
Compression strength parallel to grain	$f_{c,0,k}$	N/mm²	36	22
Mean modulus of elasticity parallel to grain	$E_{0,mean}$	N/mm²	13800	11000
Characteristic modulus of elasticity parallel to grain	$E_{0,05}$	kg/m³	11600	10000
Characteristic density	ρ_k	kg/m³	480	480

NOTE: Alternatively, the values given in the declarations of performance for the used flange material can be used.

The characteristic values for the HB.HLA1 natural fibreboard and OSB for designs in accordance with Eurocode 5 are given in Table C15.

Table C15 Characteristic values for HB.HLA1 and OSB web material in N·mm^{-2} and kg·m^{-3}

Property	Symbol	Unit	HB.HLA 1	OSB/3	OSB/4
Bending strength parallel to grain	$f_{m,0,k}$	N/mm²	31	7.2	11
Shear strength edgewise	$f_{v,0,k}$	N/mm²	14	6.8	6.9
Tension strength of the web parallel to beam	$f_{t,0,k}$	N/mm²	20	7.2	8.5
Compression strength of the web parallel to beam	$f_{c,0,k}$	N/mm²	21	12.9	14.3
Mean modulus of elasticity parallel to grain	$E_{0,mean}$	N/mm²	5300	3000	3200
Shear modulus of rigidity	$G_{0,mean}$	N/mm²	2100	1080	1090
Characteristic density	ρ_k	kg/m³	900	550	555
Shear strength of web-flange joint	$f_{v,joint,k}$	N/mm²	2.4	2.2	2.2

Design recommendations for notches into LVL flanges

The characteristic moment capacity of the I-joist with notches on the side of the flanges can be calculated as:

$$M_{notch,k} = M_k \cdot k_{notch}$$

where:

$M_{notch,k}$ characteristic moment capacity for STEICO I-joist product with notches on the side of the flanges

M_k characteristic moment capacity for STEICO I-joist product without notches.

$$k_{notch} = \frac{b_{flange} - t_{notch}}{b_{flange}}$$

where:

b_{flange} flange width

t_{notch} depth of the notch $\leq 0.25 \cdot b_{flange}$.

The maximal width of the notch parallel to the beam length is up to $2 \cdot b_{flange}$.

ANNEX D HYGROTHERMAL PROPERTIES

Hygrothermal properties in accordance with EN ISO 10456 : 2007 are given in Table D1. The natural variation of the materials has been accounted for in these values.

Table D1 Hygrothermal properties

Material	**Density[1] (mean)** P_m **(kg·m^{-3})**	**Design thermal conductivity** λ **(W·m^{-1}·K^{-1})**	**Specific heat capacity** C_P **(J·kg^{-1}·K^{-1}) dry**	**Water vapour resistance factor[2]** μ	
				dry	**wet**
LVL flanges	500	0.13	1600	200	70
Solid timber flanges	450	0.12	1600	50	20
Natural fibreboard webs	900	0.14[3]	1700	35	24
OSB webs	600	0.13	1700	250	200

(1) The density for timber- and wood-based products is the density in equilibrium with 20°C and 65% relative humidity.

(2) Water vapour resistance factors are given as dry cup and wet cup values (see EN ISO 12572 : 2016).

(3) Based on test results.