

Buildings Codes for Timber Buildings in Austria



Das Land
Steiermark

Overview

Austrian History (since 2000)

Legal Building Framework

Building Material List ÖA

Technical Requirements

Safety in case of fire

Examples of Timber buildings



Building Codes for Timber Buildings in Austria

History of the building codes in Austria (since 2000)



Building Codes for Timber Buildings in Austria

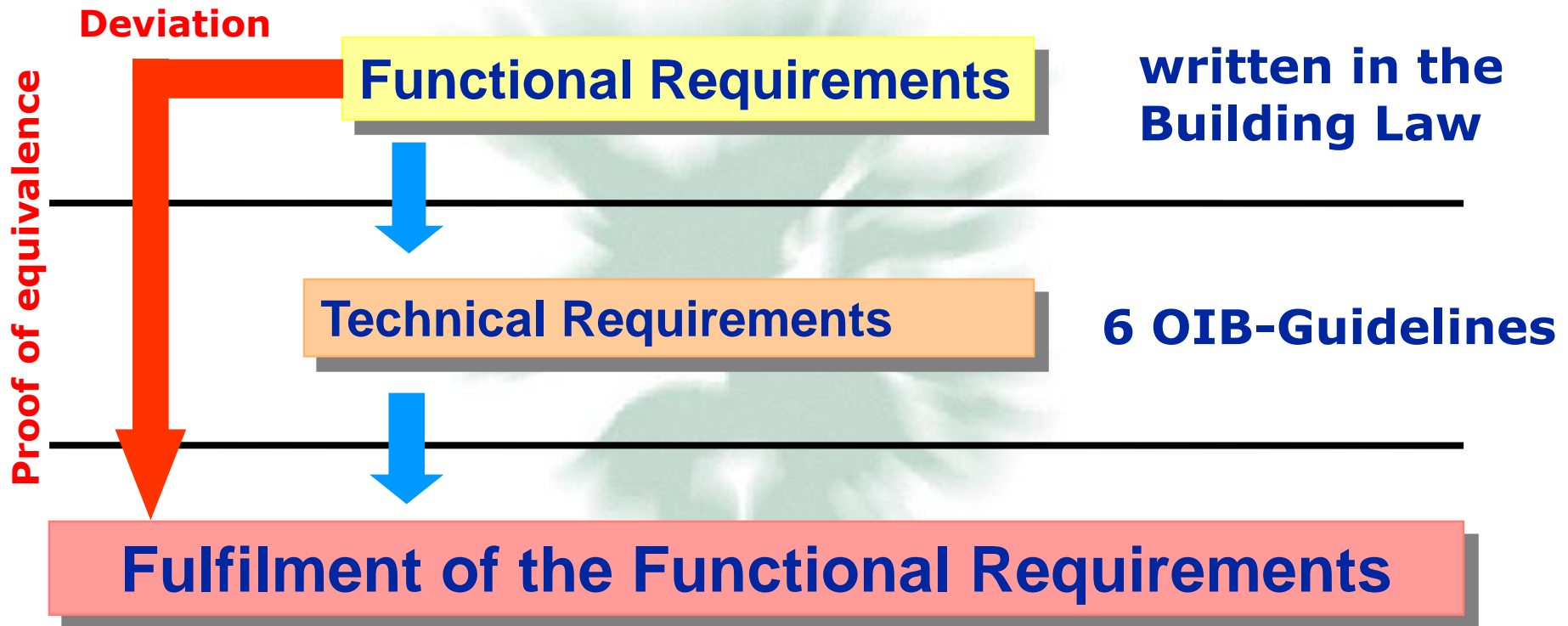


Building Law

Technical Requirements
(OIB-Guidelines)

Building Material List (ÖA)

The Austrian Technical Regulation System



Remark: Alleviation of existing buildings!

Grafik OIB

Building Codes for Timber Buildings in Austria



OIB Guidelines

Edition 2015

OIB-GUIDELINES since 2007

OIB Guideline 1: Mechanical resistance and stability

OIB Guideline 2: Safety in case of fire

OIB Guideline 2.1: Safety in case of fire in operational structures

OIB Guideline 2.2: Safety in case of fire in garages, roofed parking spaces, and multi-storey car parks

OIB Guideline 2.3: Safety in case of fire in buildings with a fire escape level in excess of 22 m

OIB Guideline 3: Hygiene, health and preservation of the environment

OIB Guideline 4: Safety in use and accessibility

OIB Guideline 5: Protection against noise

OIB Guideline 6: Energy saving and heat insulation

Building classes (BC) in connection with fire protection

Building category 1 (BC1)

(consisting of two flats or only one business unit)

- free-standing building (at least three sides on its own premises)
- no more than three above ground floors and
- with a fire-escape level of not more than 7 m and
- not more than 400 m² (gross floor)



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Building classes (BC) in connection with fire protection

Building category 2 (BC2)

Building (business etc)

- not more than three above ground floors and
- with a fire-escape level of no more than 7 m and
- not more than 400 m² gross floor area,

Terraced houses

- no more than three above ground floors and
- fire-escape level of no more than 7 m and
- no more than 400 m² gross floor area of each flat or business unit,

Residential buildings

- freestanding buildings,
- accessible on at least three sides
- escape level of not more than 7.00 m and
- not more than 800 m² gross floor



Building classes (BC) in connection with fire protection

Building category 3 (BC3)

- not more than three above ground floors and
- a fire-escape level of no more than 7 m which does not fall into building classes 1 or 2.

Building category 4 (BC4)

- with not more than four above ground floors and
- a fire-escape level of no more than 11 m,
consisting of one flat or business unit without restriction of the floor area, or
consisting of several flats or business units each with a gross floor area of
the above ground floors of no more than 400 m².

or

- with not more than four above-ground floors and
- with an escape level of not more than 11 m
consisting of one apartment or one business unit without limiting the gross
floor area

Building classes (BC) in connection with fire protection

Building category 5 (BC5)

Buildings with an escape level of not more than 22 m, which do not fall within category 1, 2, 3 or 4.



OIB-Guideline: Skyscraper

Safety in case of fire in buildings with a fire escape level in excess of 22 m

Building Codes for Timber Buildings in Austria

Table 1a: General requirements for fire behaviour (example)

	Building classes (BC)	BC 1	BC 2	BC 3	BC 4	BC 5 ≤ 6	BC 5 > 6
1	Facades						
1.1	External wall thermal insulation composite systems	E	D	D	C-d1	C-d1	C-d1
1.2	Façade systems, ventilated curtain, ventilated or non-ventilated						
1.2.	Classified overall system or	E	D-d1	D-d1	B-d1 ⁽¹⁾	B-d1 ⁽¹⁾	B-d1
1.2.	Classified individual components						
	- External layer	E	D	D	A2-d1 ⁽²⁾	A2-d1 ⁽²⁾	A2-d1 ⁽³⁾
	- Substructure - rod-shaped / punctiform	E / E	D / D	D / A2	D / A2	D / A2	C / A2
	- Insulation layer or thermal insulation	E	D	D	B ⁽²⁾	B ⁽²⁾	B ⁽³⁾

(1) Wood and wood materials may also be allowed in D if the total system satisfies class D-d0;

(2) For an insulation layer / heat insulation in A2, an outer layer in B-d1 or of wood and wood materials in D is permissible;

(3) For an insulation layer / heat insulation in A2, an outer layer in B-d1 is permissible;

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Table 1b: General requirements for the fire resistance of components

Building classes (BC)	BC 1	BC 2	BC 3	BC 4	BC 5 ≤ 6	BC 5 > 6
1 Load-bearing components (with the exception of ceilings and fire compartment-forming walls)						
1.1 In the top floor		- R 30	R 30	R 30	R 60	R 60
1.2 In other floors above ground	R 30	R 30	R 60	R 60	R 90	R 90 and A2
1.3 In underground floors	R 60	R 60	R 90 and A2	R 90 and A2	R 90 and A2	R 90 and A2
2 Partition walls (with the exception of walls of staircases)						
2.1 In the top floor	----	REI 30 EI 30	REI 30 EI 30	REI 60 EI 60	REI 60 EI 60	REI 60 EI 60
2.2 In floors above ground	----	REI 30 EI 30	REI 60 EI 60	REI 60 EI 60	REI 90 EI 90	REI 90 and A2 EI 90 and A2
2.3 In underground floors	----	REI 60 EI 60	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2
2.4 Between flats or business units in terraced houses	----	REI 60 EI 60	Not applicable	REI 60 EI 60	Not applicable	Not applicable

Building Codes for Timber Buildings in Austria

Table 1b: General requirements for the fire resistance of components

Building classes (BC)	BC 1	BC 2	BC 3	BC 4	BC 5 ≤ 6	BC 5 > 6
1 Load-bearing components (with the exception of ceilings and fire compartment forming walls)						
Exception in 4 districts But only with at least three sides on their own grounds or traffic areas for the fire fighting from the outside accessible residential buildings.		- R 30	R 30	R 30	R 60	R 60
		R 30	R 60	R 60	R 60	R 90 and A2
		R 60	R 90 and A2	R 90 and A2	R 90 and A2	R 90 and A2
		walls of staircases)				
		REI 30 EI 30	REI 30 EI 30	REI 60 EI 60	REI 60 EI 60	REI 60 EI 60
		REI 30 EI 30	REI 60 EI 60	REI 60 EI 60	REI 60 R 60	REI 90 and A2 EI 90 and A2
		REI 60 EI 60	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2	REI 90 and A2 EI 90 and A2
2.4 Between flats or business units in terraced houses	-----	REI 60 EI 60	Not applicable	REI 60 EI 60	Not applicable	Not applicable

Building Codes for Timber Buildings in Austria

OIB Code of Practice

Deviations in fire safety and fire safety programmes

The requirements of this OIB Guideline 2 may be waived in accordance with the relevant provisions of national law if the transferee proves that **the same level of protection as in the application of the Directive is achieved**. The OIB guide "**Deviations in fire protection and fire protection concepts**" should be applied.



Deviations in fire protection and fire protection concepts"



Equivalent compliance with the level of protection, as in the case of compliance with the directives, must be demonstrated conclusively, whereby the following statements must be made:

- Points of the Directives, from which is deviated,
- Replacement measures,
- Justification of equivalence.

Quality criteria in timber construction

Building Law (§44)

Construction products

(1) As a basic principle, only construction products that are in compliance with the usability provisions of the Styrian Construction Product Act of 2000 may be installed in construction projects.

Same requirements in all other federal states in Austria

Building Codes for Timber Buildings in Austria

Order of the Austrian Institute for Structural Engineering, on the Building Materials List ÖA

4. Timber construction

- 4.1 Prefabricated wall and floor components (framework construction enclosed on both sides solid, prefabricated, multi-layered, assembled timber building components)
- 4.2 Construction kits for house building involving pre-assembled units
- 4.3 Columns, beams, girders

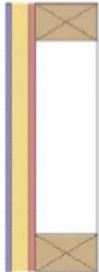
Item no	Construction product	Requirements governing use ¹⁾	
			Edition
4.1	Prefabricated wall and floor components (framework construction enclosed on both sides; solid, prefabricated, multi-layered, assembled timber building components)		
4.1.1	Prefabricated wall and floor components with a wooden supporting structure	Basic Usage Guideline of the Austrian Institute for Structural Engineering entitled "Prefabricated wall and floor components with a wooden supporting structure"	May 2014
4.2	Construction kits for house building involving pre-assembled units		
4.2.1	Construction kits for buildings constructed in timber ²⁾	Building approval	
4.3	Columns, beams, girders		
4.3.1	Lightweight timber construction beams and columns as loadbearing components in buildings ³⁾	Building approval	

Building Codes for Timber Buildings in Austria

**Order of the Austrian Institute for Structural Engineering,
on the Building Materials List ÖA**

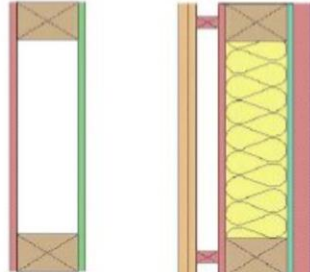
Kein ÜA-Zeichen erforderlich

Einseitig beplanktes Element



ÜA-Zeichen erforderlich

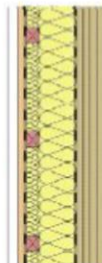
Vorgefertigtes Element



Brettspertholz




Vorgefertigtes Element



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AUSTRIAN INSTITUTE FOR STRUCTURAL ENGINEERING

BASIC USAGE GUIDELINES OF THE AUSTRIAN INSTITUTE FOR STRUCTURAL ENGINEERING

“Prefabricated wall and floor components with wooden bearing structure”

Building Materials List “ÖA”
Item number: 4.1.1

Edition: May 2014



Basic Usage guidelines

Building component	Criterion examined or required	Specification/requirement
External walls, partition walls, walls adjoining attics	Fire protection	Fire resistance class in accordance with ÖNORM EN 13501-2
	Thermal insulation	Thermal transmittance U in accordance with ÖNORM EN ISO 6946
		Nominal value for thermal conductivity in relation to the thermal insulation products λ_D on the basis of a corresponding product standard or in the absence of a product standard as per ÖNORM B 6015
		Storage-specific mass per unit area $m_{w,B,A}$ as per ÖNORM B 8110-3
		Water vapour diffusion behaviour in accordance with ÖNORM B 8110-2
	Sound proofing	Assessed airborne sound insulation index R_w (C_{tr}) or R_w and ($R_w + C_{tr}$) in accordance with ÖNORM B 8115-1

Building Codes for Timber Buildings in Austria

Order of the Austrian Institute for Structural Engineering, on the Building Materials List ÖA

 **BauCert Steiermark**
GZ: ART15-M.22-241/2016-2

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Bautechnik und Gestaltung – BauCert Steiermark
Landhausgasse 7, 8010 Graz
Tel.: +43(0)316/377-4933, Fax: +43(0)316/377-4369
e-mail: bau-cert@steiermark.at
DVR 0087122 • UID ATU37001007

 **Das Land Steiermark**
Abteilung 15

REGISTRIERUNGSBESCHEINIGUNG

Nr.: R-4.1.1-16-7689
I. Neufassung

Hiermit wird gemäß § 7 des Steiermärkischen Bauprodukte- und Marktüberwachungsgesetzes 2013, LGBl. Nr. 83/2013, bestätigt, dass das (die) Bauprodukt(e)

Vorgefertigte Holzbauteile lt. Anhang
Vorgefertigte Wand- und Deckenbauteile mit hölzerner Tragkonstruktion
des Herstellers
Appesbacher Zimmerei.Holzbau.GmbH
Bahnstraße 4, A-5342 Abersee
des(r) Herstellwerke(s)
Appesbacher Zimmerei.Holzbau.GmbH
Bahnstraße 4, A-5342 Abersee

den Bestimmungen des(r) in der Baustoffliste OA, Ausgabe 15. August 2015 (Neufassung 2015)
zu dieser Baustoffliste fortgelegten Regelwerk(e)s

**Verwendungsgrundrutz des OIB „Vorgefertigte Wand- und Deckenbauteile mit
hölzerner Tragkonstruktion“, Ausgabe 2014.05**
entspricht.

Das (Die) Produkt(e) unterliegt (unterliegen) einer werkseigenen Produktionskontrolle und einer
Fremdüberwachung durch
Bautechnische Versuchs- und Forschungsanstalt Salzburg, bvfs
Alpenstraße 157, A-5020 Salzburg
Nummer des Überwachungsvertrages: 693 vom 02.08.2007

Gemäß der nach § 6 Abs. 3 Zif. 3 des Steiermärkischen Bauprodukte- und Marktüberwachungsgesetzes 2013,
LGBl. Nr. 83/2013, zu erfolgenden Festlegung der Geltungsdauer der Produktregistrierung
gilt die Registrierungsbescheinigung bis

22. Oktober 2019

Das (die) oben angeführte(n) Bauprodukt(e) ist (sind) gemäß § 5 Abs. 1 des Steiermärkischen Bauprodukte- und
Marktüberwachungsgesetzes 2013, LGBl. Nr. 83/2013 verwendbar und der Hersteller ist somit berechtigt, das (die)
Bauprodukt(e) mit dem Einbauseichen entsprechend § 9 Abs. 1 des Steiermärkischen Bauprodukte- und
Marktüberwachungsgesetzes 2013, LGBl. Nr. 83/2013, zu kennzeichnen. Die Registrierungsbescheinigung wird von
den Vertragspartnern (Länder) anerkannt.

Die wesentlichen Produktdatenwerte sind im Anhang zu dieser Registrierungsbescheinigung dargestellt. Die
Registrierungsbescheinigung umfasst inklusive Anhang 35 Seiten.

Hinweis: Diese Registrierungsbescheinigung verleiht bei Änderung der ihr zugrunde liegenden Regelwerke nach Ablauf der in der Baustoffliste OA
enthaltene Übergangsfrist die Gültigkeit und der Hersteller die Berechtigung zur Anbringung des Einbauseichens.


Für das Steiermärkische Bauordnungsamt
Leitung der Bauaufsichtsstelle
Dipl.-Ing. Robert Jansche, MPA



Building Codes for Timber Buildings in Austria

Anhang zu
 Nr.: R-4.1.1-16-7689
 1. Neufassung

Vorgefertigte Wand- und Deckenbauteile mit hölzerner Tragkonstruktion
PRODUKTKENNWERTE

Hersteller	Herstellwerk
Appesbacher Zimmerei Holzbau GmbH Bahnstraße 4, A-5342 Abersee	Appesbacher Zimmerei Holzbau GmbH Bahnstraße 4, A-5342 Abersee

Außenwand

AW03 MW 120-320

Horizontalschnitt:



außen

innen

Bauphysikalische Kennwerte des Halbfabrikates (Rohbauteils)

NICHT BEWERTET

Die Verwendbarkeit des Bauproduktes ist abhängig von allfällig zu ergänzenden Baustoffen. Die bauphysikalischen Kennwerte des fertig gestellten Bauteils sind im Rahmen des behördlichen Bauverfahrens nachzuweisen.

Konstruktionsaufbau:

Baustoff	Dimension	Anmerkung
1 DHF-Platte	13-15 mm	
2a Riegel 60/120-320 mm	120-320 mm	$s \leq 675$ mm; Wandstärke variabel
2b Mineralwolle	120-320 mm	$\lambda_D \leq 0,040$ W/mK; Euroklasse A1
3 OSB-Platte	15-18 mm	Stöße verklebt (als Dampfsperre)
4 Holzwole-Platte	50 mm	$\lambda_D \leq 0,090$ W/mK; Euroklasse B-s1, d0

Befestigungsmittel:

Baustoff	Bezeichnung/Art	Dimension/Abstand	Anmerkung
DHF-Platte	Vakuumm Stahlnägeln	1,6x33 mm 2,6x70 mm	
Riegel	Schrauben	6,0x120-4,0x400 mm	
OSB-Platte	Vakuumm Stahlnägeln	1,6x33 mm 2,6x70 mm	
Holzwole-Platte	Kompositbauschrauben	5,0x90 mm	

Anmerkungen:

Der Nachweis der Standsicherheit ist nicht Gegenstand der Registrierungsbescheinigung.



**Marking on
the component**

Building Codes for Timber Buildings in Austria

Multi-storey residential building



Building Codes for Timber Buildings in Austria

Multi-storey residential building



Building Codes for Timber Buildings in Austria

Multi-storey Dorm



Building Codes for Timber Buildings in Austria

Multi-storey Dorm



Building Codes for in Aus

Multi-storey Dorm



Building Codes for Timber Buildings in Austria

Hospice, Nursing home



Building Codes for Timber Buildings in Austria

Hospice, Nursing home



Building Codes for Timber Buildings in Austria

Hospice, Nursing home



Building Codes for Timber Buildings in Austria

Hospice, Nursing home



Building Codes for Timber in Austria

School



Building Codes for Timber Buildings in Austria

School



Building Codes for Timber Buildings in Austria

School



Building Codes for Timber Buildings in Austria

School



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Thank you for your attention