Wood Concrete Composite - System

HASSLACHER
Holzzentrum Gmbh
Feistritz 1
9751 Sachsenburg
AUSTRIA

Tel.:(+43) 04769 / 2249-0
Fax.:(+43) 04769 / 2249-129

e-mail: info@hasslacher.at
www.hasslacher.at

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Content

- Introduction/Aim of WCC-System
- System and Advantages
- Samples of application

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Introduction

In wooden structures there are different systems for ceilings

Besides many advantages, there are also some disadvantages in conventional wooden ceiling systems:

(1) low natural frequency / vibrations

- Compliance with the requirements of the natural frequency in EC 5
- natural frequency is decreasing with increasing span length
- analyse of the natural frequency if deflection ist higher than 6 mm
- calculated natural frequency of ceilings must be higher than 7,22 Hz

(2) low modulus of elasticity in comparison to the strength

- cross sections are often determined because of deflection

(3) noise protection

- required noise protection especially in multi-storey buildings is often only reachable with complicated and expensive constructions.

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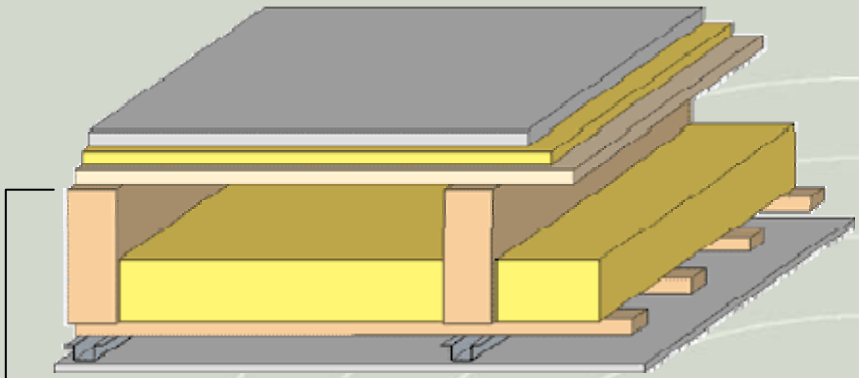
conventional flooring system

fire protection	**F**	30
	REI	30
determination by Holzforschung Austria		
noise protection	**R_w ($C;C_{tr}$)**	63
	$L_{n,w}$ (C_I)	53 (0)



dry screet	25
sound insulation	20
wooden board	22
construction timber	220
with glass wool	100
boards	24
under construction	27
gypsum plasterboard	12,5

Total thickness about 350 mm !

span length: 4 to 6 m
loads: 2 to 2,5 kN/m²

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NEU

With the Wood-Concrete-Connection System it is possible to solve this disadvantages, because of:

- high stiffness of the system
- high eigenfrequency
- low deflection
- high load capacity
- fast assembling

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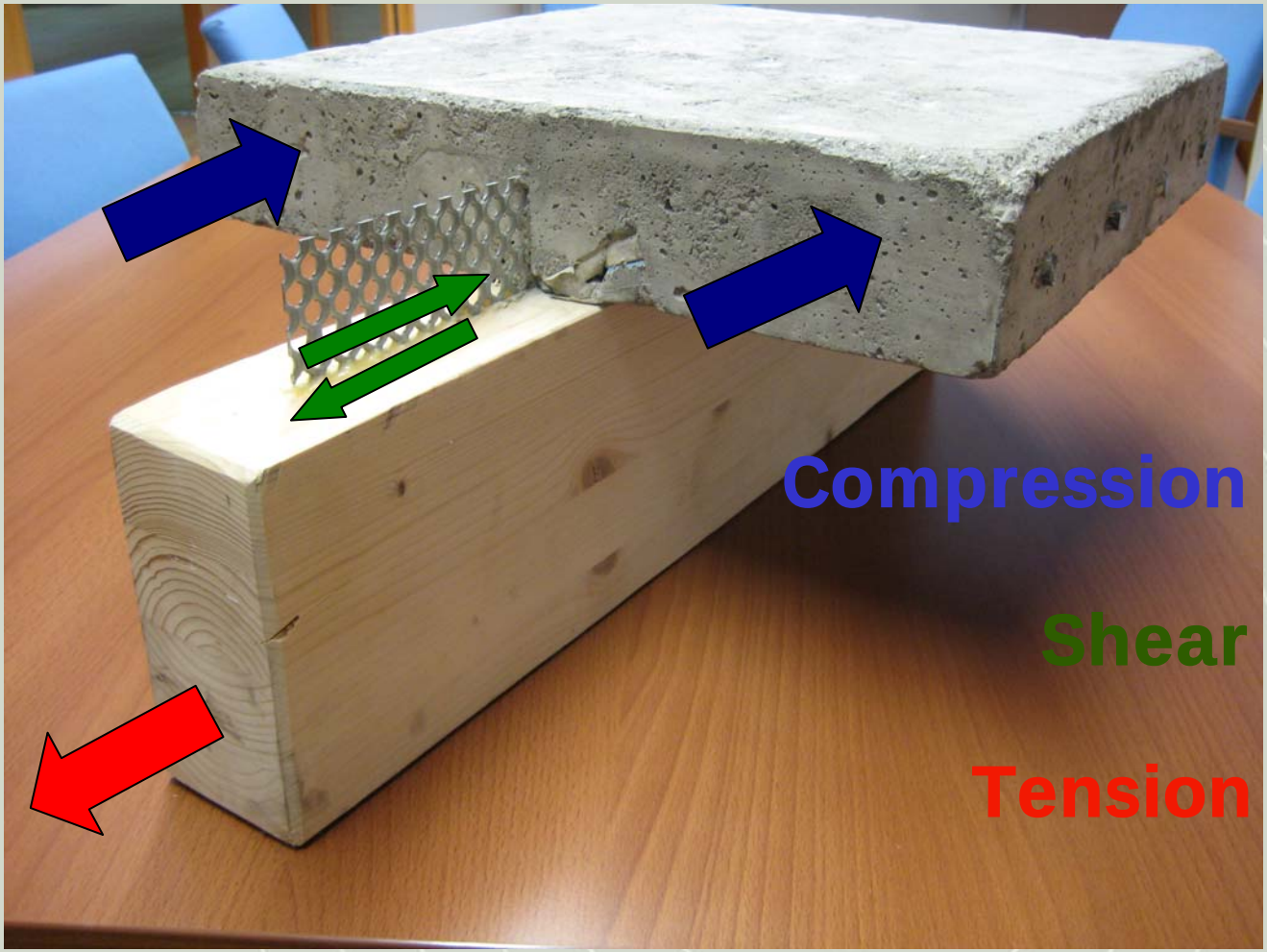
NEW

HASSLACHER-WCC-Ceiling System



Compression → CONCRETE

Shear → ELEMENT

Tension → TIMBER

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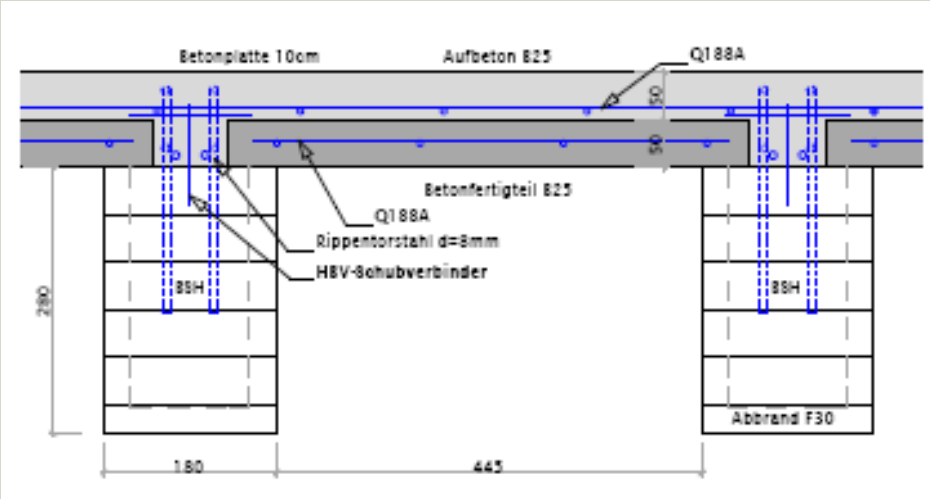
NEW

fire protection	**F**	30
	REI	30
determination of Holzforschung Austria		
noise protection	**R_w ($C;C_{tr}$)**	**54**
	$L_{n,w}$ (C_I)	**56**



Thickness of construction 360 mm !

span length: 9 m
load capacity: 5 kN/m²

Quelle: ASO 4 Schule Linz 850 m2 verlegt

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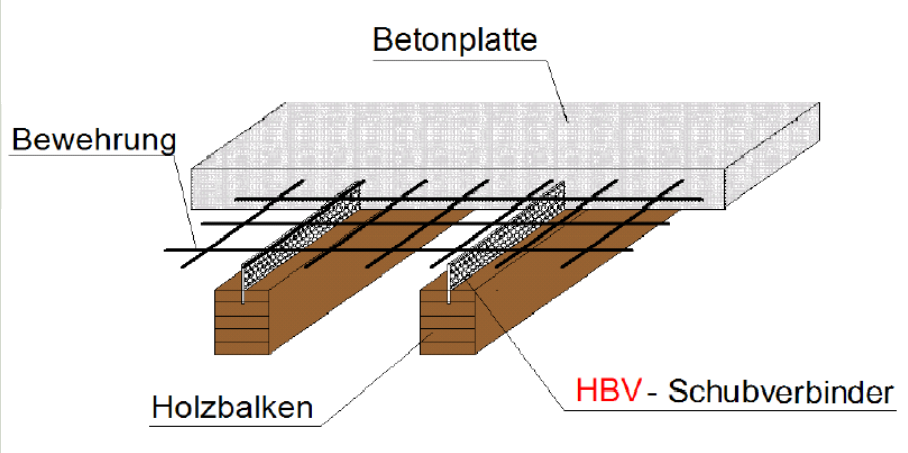
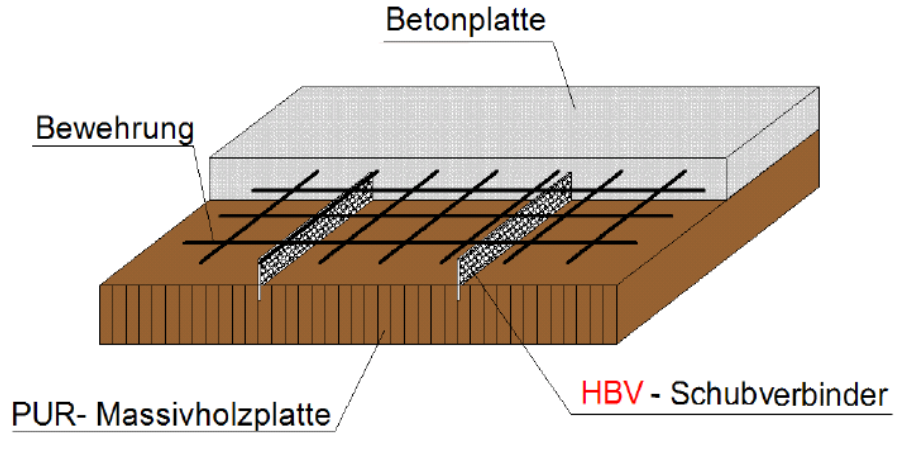
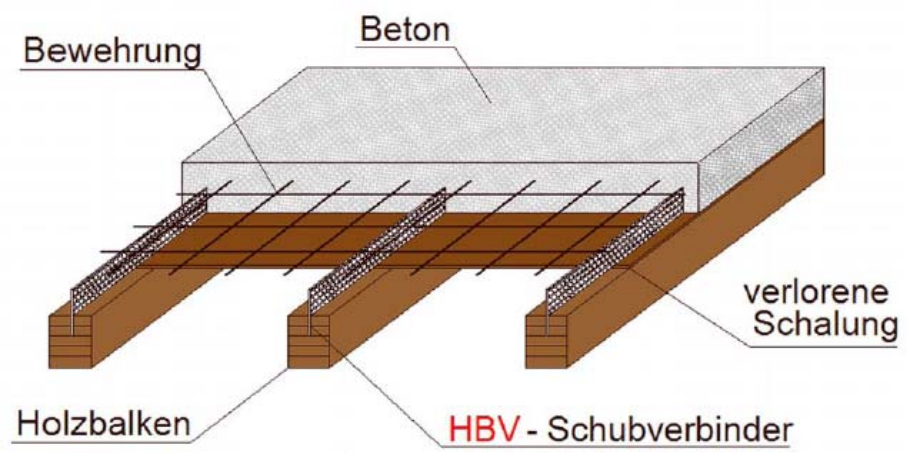
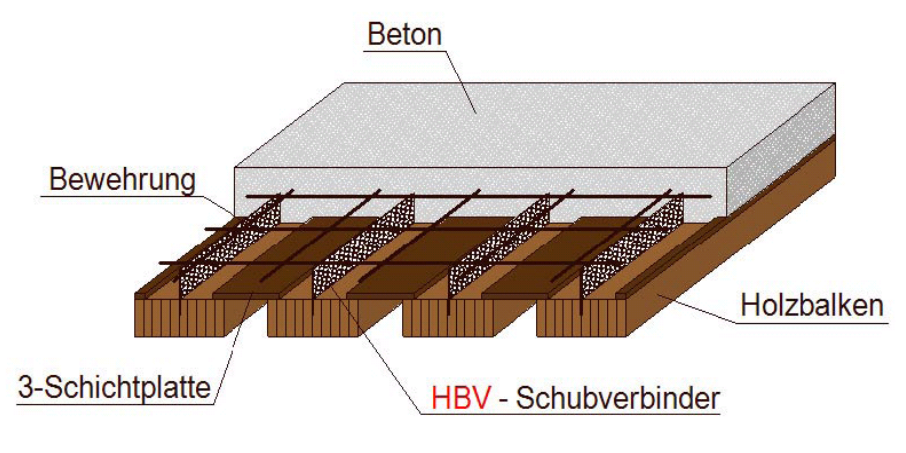
different possibilities









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Reference examples

- **ASO 4 –school Linz 2008**

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- **ASO 4 –school Linz 2008**

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Reference examples

Unido Bridge Purkersdorf NÖ 2007

Reference examples

- **Hasslacher Terminal 2008**

Reference examples

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Reference examples

- **pre-fabricated TT-element 2008**

TT-industrial ceiling

TT-Decke with wooden soffit

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Contact

Andreas Gatterer
Management and Head of Hasslacher Holzzentrum GmbH
A-9751 Sachsenburg
Feistritz 1
E: andreas.gatterer@hasslacher.at
M: +43 676 844120216

DI Georg Jeitler
technical sales / R & D
A-8504 Preding
Preding 225
E: georg.jeitler@hasslacher.at
M: +43 664 8365670

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