



**A COMBINATION,
THAT CONNECTS**



OBERNDORFER
HYBRID SYSTEMS

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THE OBERNDORFER HYBRID SYSTEM

SUSTAINABLE INNOVATIONS FOR THE FUTURE - WOOD AND CONCRETE IN COMBINATION

As the largest precast concrete element company in Austria, we at OBERNDORFER can look back on more than 100 years of experience in planning, developing and production of precast concrete parts. These competences are still the drive in all our projects. Completely in the sense of our company tradition we are always striving to take new steps, expand our know-how and

incorporate this into future projects. We can offer total solutions for construction projects of all sizes and complexities. In this process we are always discovering new possibilities for the future. The OBERNDORFER Hybrid System is entirely in line with our vision „Through innovation and digitality we make building even easier and safer“.

THE OBERNDORFER HYBRID SYSTEM

SO NATURAL, SO ROBUST A LIFE LONG

DESCRIPTION

With the OBERNDORFER Hybrid Systems, the best material properties and connection solutions of wood and concrete are optimally combined with each other.

The wooden constructions arranged in the lower ceiling section are not only sustainable and at the same time visual eyecatchers, but also have a lot to offer! They take over the tensile forces and thus contribute significantly to the stability of the ceilings. A better indoor climate and the well-being of the users are additional effects.

By the use of thin concrete layers on top the weight per square meter ceiling is reduced by up to 60% compared to other pure mineral systems. They take over the pressure forces, thus improving the load bearing, the sound insulation and the heat storage capacity, compared to purely wooden ceiling systems.

A big step towards material optimization and circular economy

Depending on the requirements, all hybrid systems can be used as ready-to-install elements including all fixtures or as semi-finished parts. With the ready-to-install version, no support on the construction site is necessary.

With a variable degree of prefabrication and individual component design, we offer sustainable and economical precast element solutions for every building project. The shear-resistant connection of the two construction levels is achieved by the OBERNDORFER Hybrid Connector (OHC). This OHC connection not only meets the static requirements, but also fulfills the basic Cradle to Cradle (C2C) requirements.

**SUSTAIN-
ABLE**

**HIGH-
QUALITY**

**TECHNICAL
EFFICIENT**

AREAS OF APPLICATION

OUR HYBRID SYSTEMS IMPRESS WITH THEIR PERFORMANCE IN THE FOLLOWING AREAS:

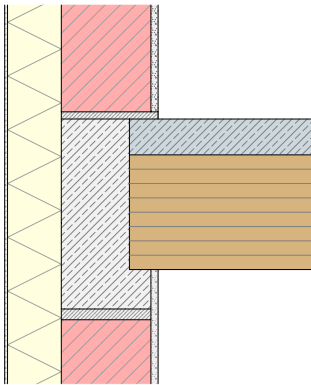


WHAT OUR SYSTEMS ACHIEVE

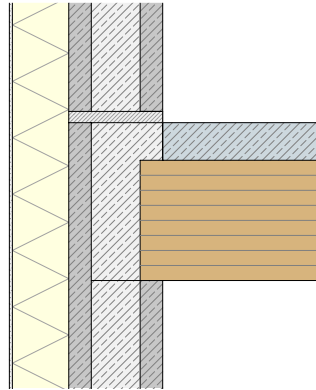
- Good CO₂-balance
- Optimized use of materials in terms of resource conservation
- More balanced room climate thanks to the regulating effect of the wooden layer
- Improved impact sound level
- Optionally a finished wood-surface in visual quality
- Simple and fast assembly
- Reduced risk induced by weathering during installation due to the protective concrete layer
- Large spans with low component thickness
- No restrictions on element geometry, therefore a wide range of component shapes possible
- Very high component accuracy due to prefabrication in an industrial environment
- Dry connection nodes can be realized in the building (without grouting mortar or concrete grouting)
- Joint sealing integrated into the element optionally available

POSSIBLE COMBINATIONS

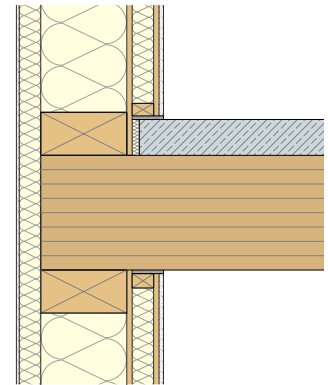
Since pictures speak louder than words, on this page we show you how versatile our Hybrid-Beamslab can be combined in the form of schematic sketches.



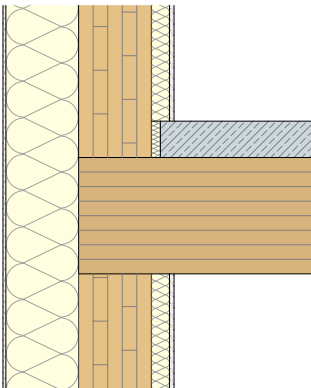
Bricks



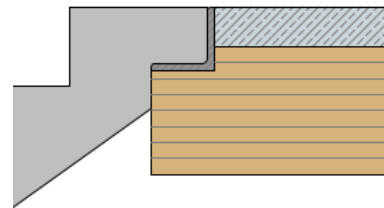
OBERNDORFER double wall



Timber-frame

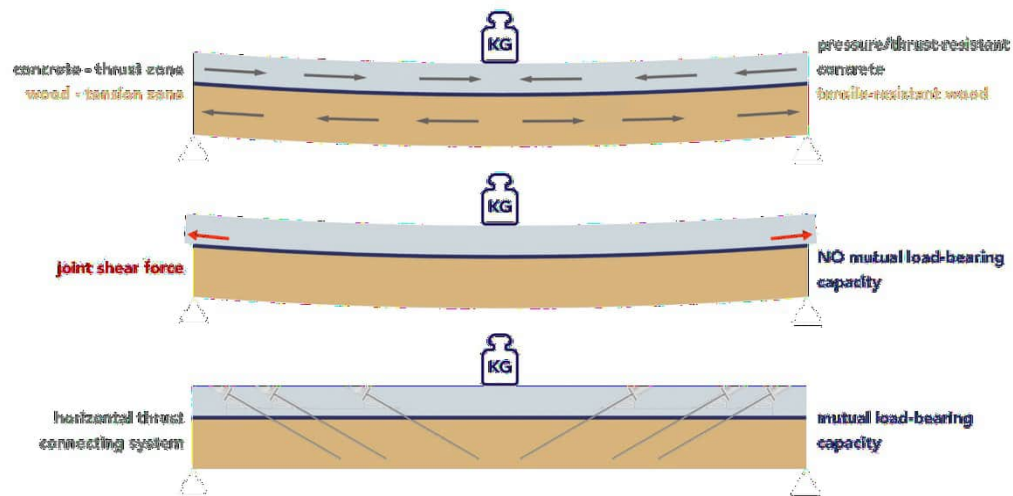


Cross Laminated Timber



Massive Staircase

BASIC STATIC FUNCTIONALITY OF OUR HYBRID SYSTEM



The form-fit connection of the timber material elements with the reinforced concrete component is achieved by using our OBERNDORFER Hybrid Connectors. This creates a mutual load-bearing effect (composite effect) between the two different components. Through this, the advantageous qualities of both building materials can be optimally exploited.

The flexible arrangement of the individual composite screws allows the required stiffness of the individual ceiling elements to be precisely adapted to the respective static requirements. This allows a most resource-efficient construction of the slabs.

FIRE PROTECTION

The lowest level of our hybrid slabs is formed by the wooden structures. When burning from below, a layer of charcoal develops, which slows down further burning. The average burning rate of wooden constructions is 0.65 - 0.75 mm per minute, which corresponds to a burning rate of 4.0 - 4.5 cm per hour.

With our flat- and beamslabs, the usually required fire resistances of R30 - R90 can be achieved economically by optimizing the position of the connectors, screw length and quantity. The dowelteeslabs achieve R60 from a wood thickness of 10 cm and can be classified with R90 from a wood thickness of 12 cm.

AIRBORNE SOUND

Is the most common type of sound that travels through the air. It includes conversations, music, traffic, noise from household appliances and more. In construction, it is interesting to know how much of the airborne sound is absorbed by the ceiling or wall.

IMPACT SOUND

The sound caused mainly by people walking. Other everyday noises also fall into this category, such as moving furniture. Impact sound is transmitted directly to the building structure, usually the ceiling, and travels through the building components into the surrounding rooms.

THE TECHNOLOGY BEHIND IT

It is important to ensure that the individual components do not vibrate together and are separated by springs that absorb the sound. The components themselves should have relatively high masses in order to block the sound as well as possible. In this way, a particularly good sound insulation value can be achieved.

ADVANTAGEOUS COMBINATION OF MATERIALS

CONCRETE

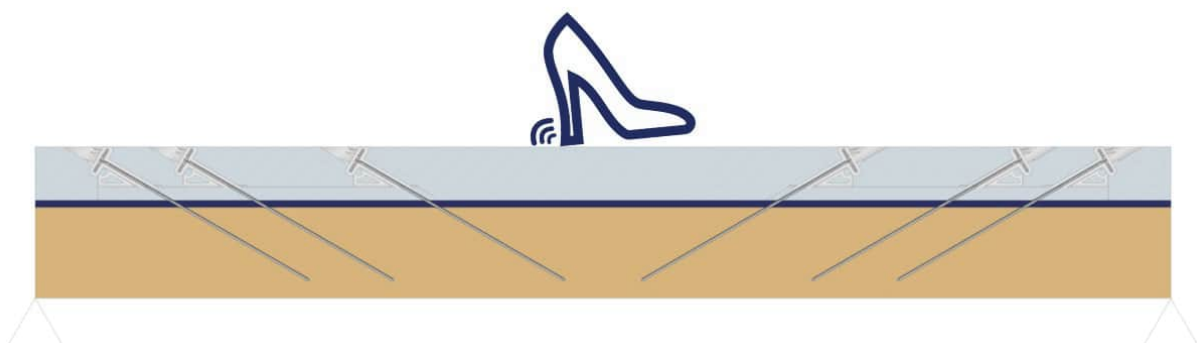
Due to its high mass, concrete has a positive effect on reducing the impact sound level.

WOOD

Due to its low mass, a pure wooden ceiling tends to vibrate when subjected to impact from above. The tendency to vibrate and sound transmission to the room below can be reduced by using different floor structures on the wooden ceiling.

HYBRID

By combining wood and concrete with our connection solution, the impact sound level is significantly reduced in addition to the increased load-bearing capacity. The impact sound level can be further reduced in combination with various floor structures.



GWP – GLOBAL WARMING POTENTIAL OF OUR HYBRID SYSTEMS

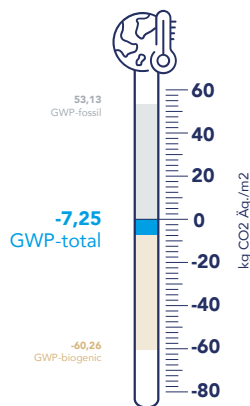
The OBERNDORFER Hybrid Systems have a negative GWP - Global Warming Potential. The global warming potential provides information about the contribution of a substance to global warming, relative to carbon dioxide (GWP = 1.0 kg CO₂ eq./kg). As a rule, a period of 100 years is considered. The total greenhouse potential is shown in the GWP-total indicator, which is made up of the indicators GWP-fossil and GWP-biogenic. GWP-fossil includes fossil carbon from greenhouse gas emissions (e.g. combustion) and -binding (e.g. carbonation). In contrast, the GWP-biogenic takes into account the amount of CO₂ absorbed and bound during the life cycle.

The use of wood in our Hybrid Systems results in a negative global warming potential of the products.

The calculation of the global warming potential of the OBERNDORFER Hybrid Systems is carried out with the IBO guideline values 2020 and for a time horizon of 100 years. The global warming potential of the individual components (cross laminated timber/ wooden beams/doweltree, connectors, reinforcement) per m² of floor. The greenhouse gases produced during production or transport are not taken into account.

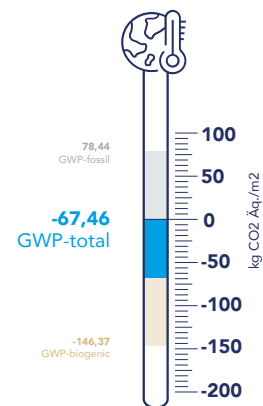
HYBRID-BEAMSLAB

B2/q=3,0 kN | span 7,00 m | concrete thickness 100 mm



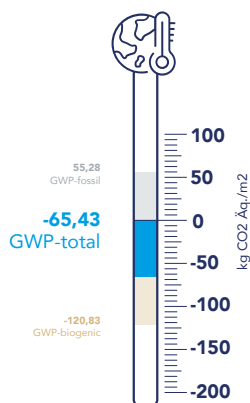
HYBRID-FLATSLAB

B2/q=3,0 kN | span 7,10 m | concrete thickness 100 mm



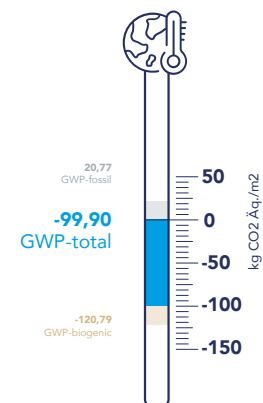
HYBRID-DOWELTREESLAB

B2/q=3,0 kN | span 6,95 m | concrete thickness 100 mm

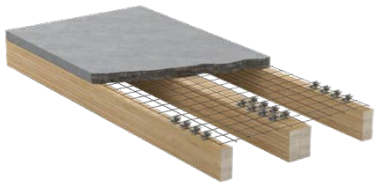


HYBRID-DOWELTREESLAB PURE

B2/q=3,0 kN | span 6,95 m | concrete thickness 100 mm

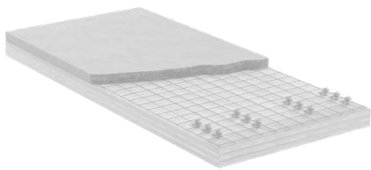


OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

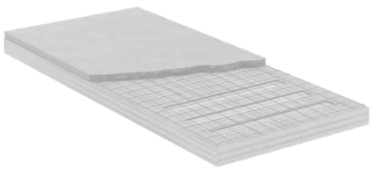


HYBRID-BEAMSLAB / HYB-B

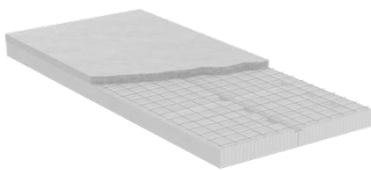
SMART
COOL
COOL II



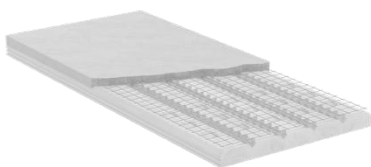
HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK



HYBRID-FLATSLAB BSH / HYB-F-BSH



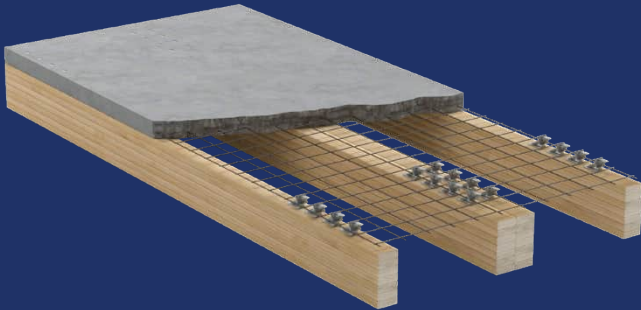
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

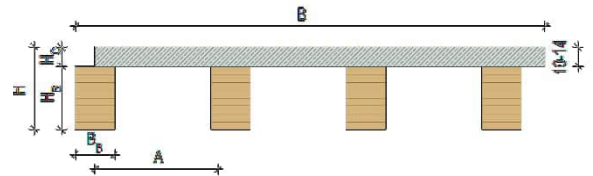
OBERNDORFER HYBRID-BEAMSLAB / HYB-B



The Hybrid-Beamslab (HYB-B) is composed of the concrete level above and the wooden beams below. The beams can be made of glulam, solid structural timber, building beech or laminated veneer lumber in a wide range of visual qualities. This combination allows the beamslab to be economically spanned up to 9.00 m with an element width of up to 3.00 m.

HYBRID-BEAMSLAB KEY DATA

B	up to 300,00 cm
A	variable
H	element height
HB, BB	beam height, beam width
HC	concrete thickness variable
Wood quality	GL24h - GL32h
Concrete quality	C30/37



HYBRID-BEAMSLAB / SPREADSHEET AUSTRIA AND GERMANY

e.g. single span girder, B=250,00 cm, H_B= 10,00 cm, concrete C30/37, wood quality GL24h, A= 83,33 cm

utilisation class, load and partition wall surcharge	span [m]	beam dimension [cm] B _R /H _R	total thickness[cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	7,00	24/24	34,00	280,00
	7,50	24/28	38,00	285,00
	8,00	24/32	42,00	290,00
	8,50	24/36	46,00	295,00
	9,00	28/36	46,00	300,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	7,00	24/24	34,00	280,00
	7,50	24/28	38,00	285,00
	8,00	24/32	42,00	290,00
	8,50	24/36	46,00	295,00
	9,00	28/36	46,00	300,00

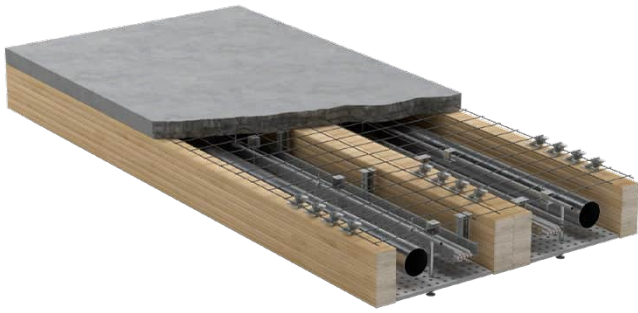
IMPLEMENTATION



CHARACTERISTICS

- Cradle to Cradle requirements are fulfilled
- Can be installed without support underneath
- Quick & dry assembly
- selectable visual qualities
- Reduced risk of weathering during installation, due to the protective concrete level
- Building services can be integrated

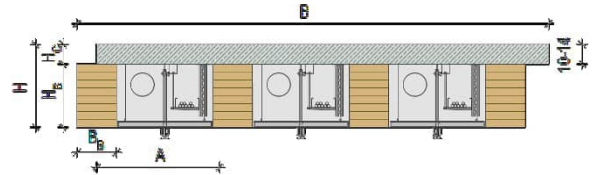
SMART



The Hybrid-Beamslab (HYB-B) SMART is built up of the concrete layer above and wooden beams below. Between the beams, the building services can be pre-assembled at the factory in an industrial environment. On the construction site, only the interfaces have to be connected.

HYBRID-BEAMSLAB / HYB-B SMART KEY DATA

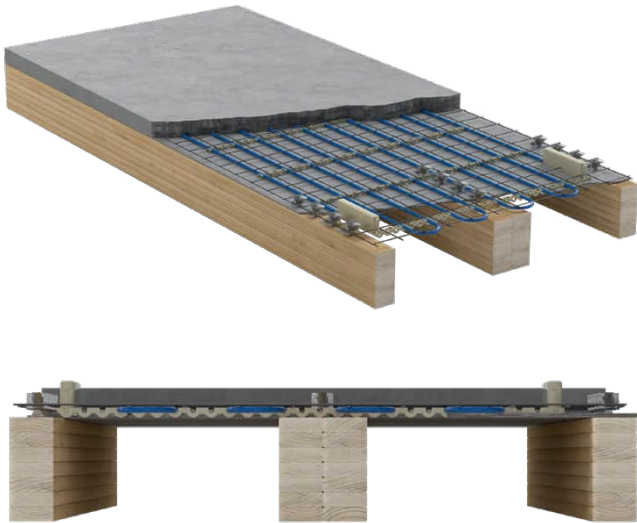
B	element width up to 300,00 cm
A	beam distance (center-to-center) variable
H	element height
HB, BB	beam height, beam width
HC	concrete thickness variable
Wood quality	GL24h - GL32h
Concrete quality	C30/37



INSTALLATION LEVEL

Element width [m]	Beam height [cm]	Beam width [cm]	Installation width [cm]	Installation height [cm]
2,50-2,95	28-36	16	90-115	28-36
2,50	28	16	90	28
2,50	36	16	90	36
2,70	28	16	105	28
2,70	36	16	105	36
2,95	28	16	115	28
2,95	36	16	115	36

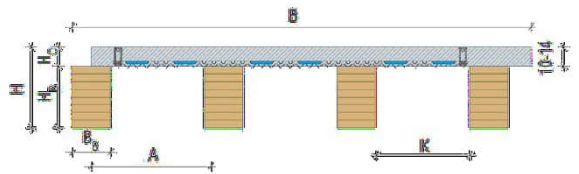
COOL



The Hybrid-Beamslab (HYB-B) COOL is built up of the concrete layer above and wooden beams below. Cooling and heating pipes are already installed in the concrete level at the factory. These are simply joined together on site via a junction box integrated in the element.

HYBRID-BEAMSLAB / HYB-B COOL KEY DATA

B	element width up to 300,00 cm
A	beam distance (center-to-center) variable
H	element height
HB, BB	beam height, beam width
HC	concrete thickness variable
K	active cooling surface
Wood quality	GL24h - GL32h
Concrete quality	C30/37



CEILING COOLING

installation spacing [mm]	room temperature [°C]	cooling performance [W/m ²]	supply temperature [°C]	return temperature [°C]
100	25	68	15	19
150	25	59	15	19

CEILING HEATING

installation spacing [mm]	room temperature [°C]	heating performance [W/m ²]	supply temperature [°C]	return temperature [°C]
100	22	86	40	35
150	22	78	40	35

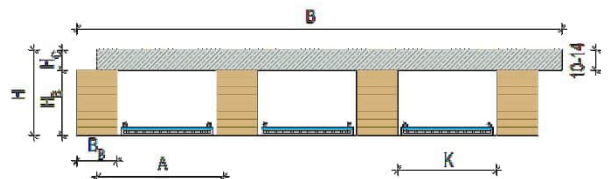
COOL II



The Hybrid-Beamslab (HYB-B) COOL II is built up of the concrete layer above and wooden beams below. Between the beams the cooling elements of the company Abaton are placed. The specially formulated porous mortar can quickly and hygienically absorb and buffer the moisture inside the panels. This makes it possible to stay below the dew point.

HYBRID-BEAMSLAB / HYB-B COOL II KEY DATA

B	element width up to 300,00 cm
A	beam distance (center-to-center) variable
H	element height
HB, BB	beam height, beam width
HC	concrete thickness variable
K	active cooling surface
Wood quality	GL24h - GL32h
Concrete quality	C30/37



CEILING COOLING

room temperature [°C]	cooling performance [W/m ²]	supply temperature [°C]	return temperature [°C]
26	85	15	17

CEILING HEATING

room temperature [°C]	heating performance [W/m ²]	supply temperature [°C]	return temperature [°C]
20	97,5	36	34

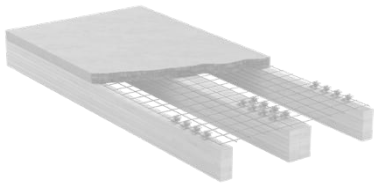
IMPLEMENTATION



CHARACTERISTICS

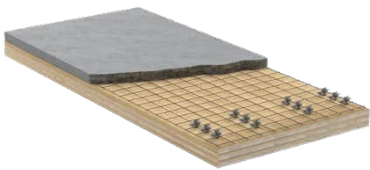
- Cradle to Cradle requirements fulfilled
- Low element weight –
- more m² on 1 truck
- Building services can be integrated
- Can be moved without support
- Reduced Weather risk
- Fast assembly
- Dry assembly
- Selectable visibility qualities (industrial to residential)

OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

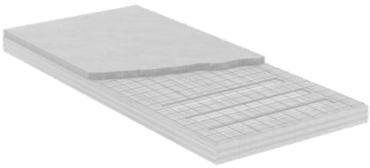


HYBRID-BEAMSLAB / HYB-B

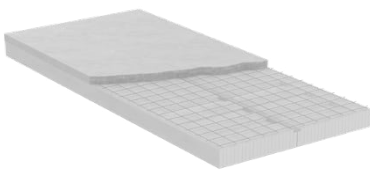
SMART
COOL
COOL II



HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK

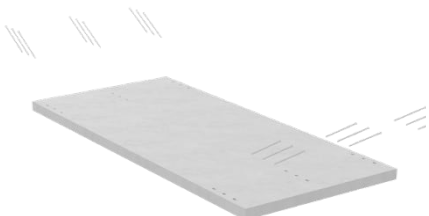


HYBRID-FLATSLAB BSH / HYB-F-BSH



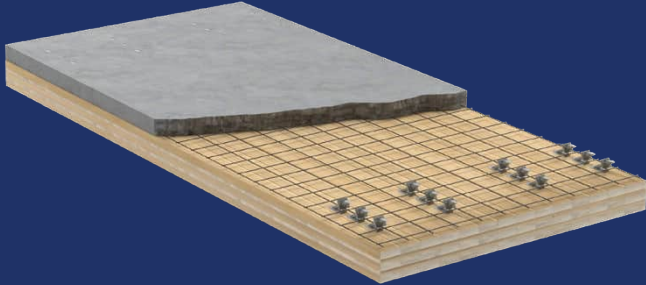
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

OBERNDORFER HYBRID-FLATSLAB / HYB-FS

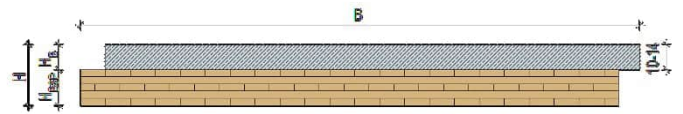


The Hybrid-Flatslab (HYB-FS) with screw connection consists of the concrete level above and the cross laminated timber surface below. This cross laminated timber surface can be produced in a wide range of visual qualities. Depending on the building requirements, a wide variety of cross-layer structures are possible within the cross laminated timber level.

This combination allows the flat slab to be stretched up to 8.20 m with a panel width of up to 3.00 m.

HYBRID-FLATSLAB KEY DATA

B	element width up to 300,00 cm
H	element height
HBSP	cross-laminated timber height variable
HB	concrete thickness variable
Concrete quality	C30/37



HYBRID-FLATSLAB / SPREADSHEET AUSTRIA

e.g. single span girder, B=250,00 cm, concrete C30/37, H_B= 10,00 cm

utilisation class, load and partition wall surcharge	span [m]	CLT-thickness [cm] H _{BSP}	CLT-layers	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,55	16	5	26,00	330,00
	6,80	18	5	28,00	340,00
	7,10	20	5	30,00	350,00
	7,70	22	7	32,00	360,00
	8,10	24	7	34,00	370,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,65	16	5	26,00	330,00
	6,90	18	5	28,00	340,00
	7,20	20	5	30,00	350,00
	7,80	22	7	32,00	360,00
	8,20	24	7	34,00	370,00

HYBRID-FLATSLAB / SPREADSHEET GERMANY

e.g. single span girder, B=250,00 cm, concrete C30/37, H_B= 10,00 cm

utilisation class, load and partition wall surcharge	span [m]	CLT-thickness [cm] H _{BSP}	CLT-layers	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,35	16	5	26,00	330,00
	6,70	18	5	28,00	340,00
	7,10	20	5	30,00	350,00
	7,60	22	7	32,00	360,00
	8,00	24	7	34,00	370,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,40	16	5	26,00	330,00
	6,80	18	5	28,00	340,00
	7,15	20	5	30,00	350,00
	7,65	22	7	32,00	360,00
	8,10	24	7	34,00	370,00

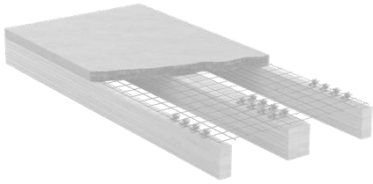
IMPLEMENTATION



CHARACTERISTICS

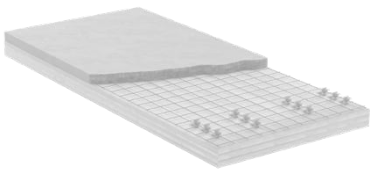
- Cradle to Cradle requirements fulfilled
- Low element weight – more m² on 1 truck
- Building services can be integrated
- Can be moved without support
- Reduced Weather risk
- Fast assembly
- Dry assembly
- Selectable visibility qualities (industrial to residential)

OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

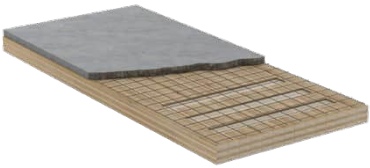


HYBRID-BEAMSLAB / HYB-B

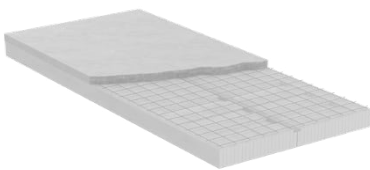
SMART
COOL
COOL II



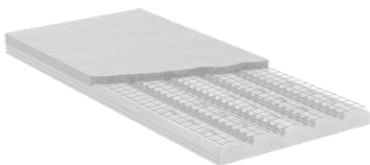
HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK

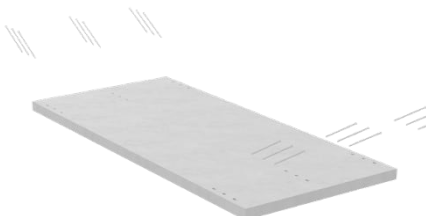


HYBRID-FLATSLAB BSH / HYB-F-BSH



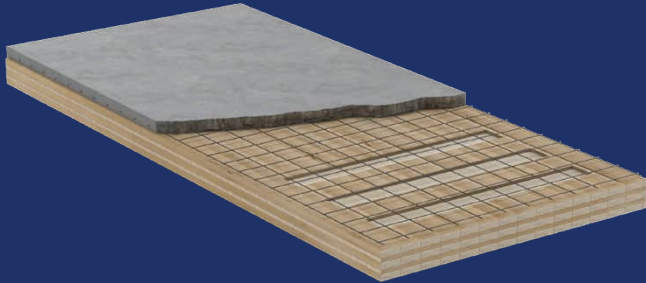
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

OBERNDORFER HYBRID-FLATSLAB / HYB-FK

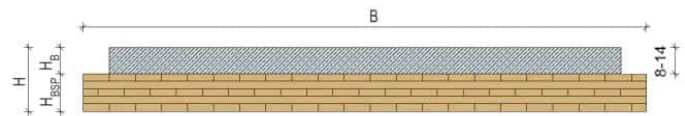


The Hybrid-Flatslab (HYB-FK) with notch connection consists of the concrete level above and the cross laminated timber surface below. This cross laminated timber surface can be produced in a wide range of visual qualities. Depending on the building requirements, a wide variety of cross-layer structures are possible within the cross laminated timber level.

This combination allows the flat slab to be stretched up to 8.20 m with a panel width of up to 3.00 m.

HYBRID-FLATSLAB KEY DATA

B	element width up to 300,00 cm
H	element height
HBSP	cross-laminated timber height variable
HB	concrete thickness variable
Concrete quality	C30/37



HYBRID-FLATSLAB / SPREADSHEET AUSTRIA

e.g. single span girder, B=250,00 cm, concrete C30/37, H_b= 10,00 cm

utilisation class, load and partition wall surcharge	span [m]	CLT-thickness [cm] H _{BSP}	CLT-layers	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN)	5,50	12	8	20,00	250,00
	5,95	14	8	22,00	260,00
inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,50	16	8	24,00	270,00
	6,90	18	8	26,00	275,00
residential building/hotel (utilisation class: A1/q=2,0 kN)	5,45	12	8	20,00	250,00
	6,05	14	8	22,00	260,00
inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,60	16	8	24,00	270,00
	7,00	18	8	26,00	275,00
	5,80	12	10	22,00	300,00

HYBRID-FLATSLAB / SPREADSHEET GERMANY

e.g. single span girder, B=250,00 cm, concrete C30/37, H_b= 10,00 cm

utilisation class, load and partition wall surcharge	span [m]	CLT-thickness [cm] H _{BSP}	CLT-layers	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN)	5,05	12	8	20,00	250,00
	5,55	14	8	22,00	260,00
inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	6,10	16	8	24,00	270,00
	6,50	18	8	26,00	275,00
residential building/hotel (utilisation class: A1/q=2,0 kN)	5,35	12	10	22,00	300,00
	5,10	12	8	20,00	250,00
inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,60	14	8	22,00	260,00
	6,15	16	8	24,00	270,00
	6,55	18	8	26,00	275,00
	5,40	12	10	22,00	300,00

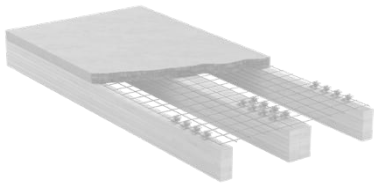
IMPLEMENTATION



CHARACTERISTICS

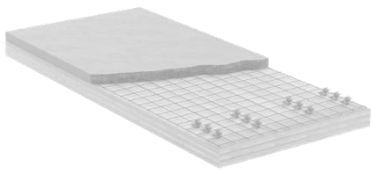
- Cradle to Cradle requirements are fulfilled
- Can be installed without support underneath
- Quick & dry assembly
- Selectable visual qualities
- Reduced risk of weathering during installation, due to the protective concrete level
- Building services can be integrated

OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

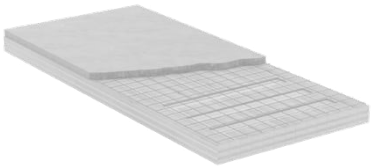


HYBRID-BEAMSLAB / HYB-B

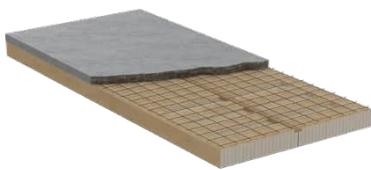
SMART
COOL
COOL II



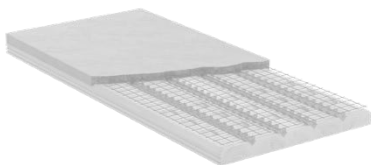
HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK



HYBRID-FLATSLAB BSH / HYB-F-BSH



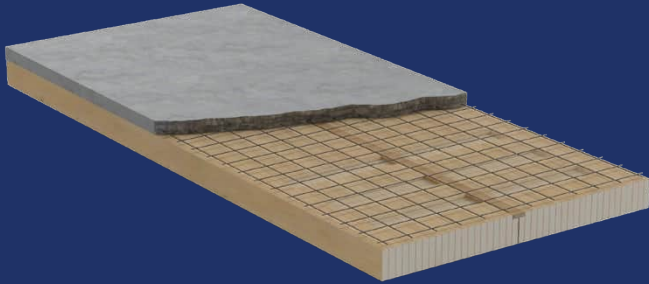
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

OBERNDORFER HYBRID-FLATSLAB / HYB-F-BSH

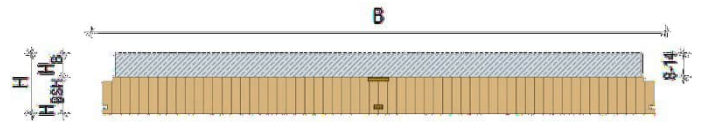


The Hybrid-Flatslab (HYB-F-BSH) consists of the concrete level above and the glulam floorboards below. With this Hybrid-Flatslab solution, the shear bond between the two materials is created linearly by means of notches in the wood. This also ensures that the concrete takes on the load distribution in the transverse direction, giving the floor a biaxial load-bearing effect.

This type of connection offers an economically interesting solution with a low timber component thickness. This combination allows the flat slab to be stretched up to 8.50 m with a panel width of up to 2.40 m.

HYBRID-FLATSLAB KEY DATA

B	element width up to 240,00 cm
H	element height
HBSH	glulam floorboards height variabel
HB	concrete thickness variable
Concrete quality	C30/37



HYBRID-FLATSLAB / SPREADSHEET AUSTRIA

e.g. single span girder, B=240,00 cm, concrete C30/37

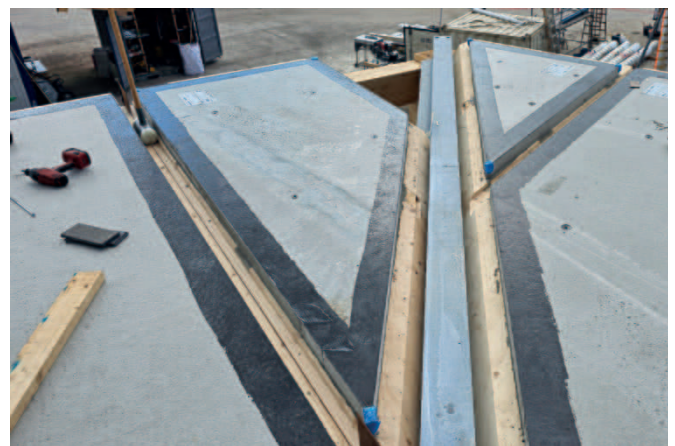
utilisation class, load and partition wall surcharge	span [m]	BSH-thickness [cm]	concrete-thickness [cm]	total thickness [cm]	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,80	12	8	20,00	250,00
	6,50	14	10	24,00	310,00
	7,45	16	12	28,00	370,00
	8,00	18	12	30,00	375,00
	8,80	20	14	34,00	430,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,75	12	8	20,00	250,00
	6,60	14	10	24,00	310,00
	7,55	16	12	28,00	370,00
	8,10	18	12	30,00	375,00
	8,90	20	14	34,00	430,00

HYBRID-FLATSLAB / SPREADSHEET GERMANY

e.g. single span girder, B=240,00 cm, concrete C30/37

utilisation class, load and partition wall surcharge	span [m]	BSH-thickness [cm]	concrete-thickness [cm]	total thickness [cm]	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,60	12	10	22,00	300,00
	6,50	14	12	26,00	360,00
	7,00	16	12	28,00	370,00
	7,80	18	14	32,00	420,00
	8,30	20	14	34,00	430,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,70	12	10	22,00	300,00
	6,50	14	12	26,00	360,00
	7,00	16	12	28,00	370,00
	8,30	20	14	34,00	430,00

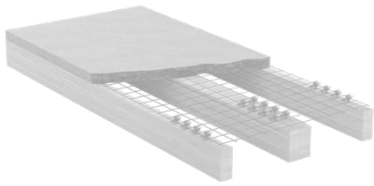
IMPLEMENTATION



CHARACTERISTICS

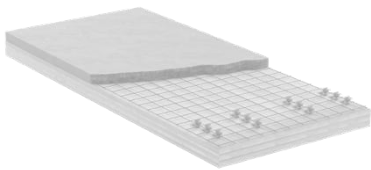
- Ideal connections to concrete
- Low element weight - more m² on 1 truck
- Building services can be integrated
- Can be moved without support
- Reduced weather risk
- Fast assembly
- Dry assembly

OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

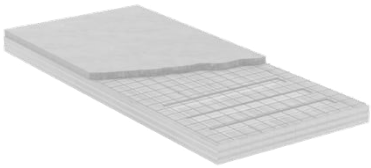


HYBRID-BEAMSLAB / HYB-B

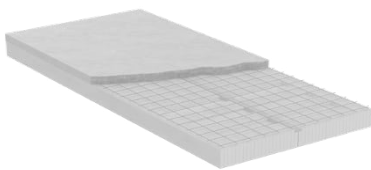
SMART
COOL
COOL II



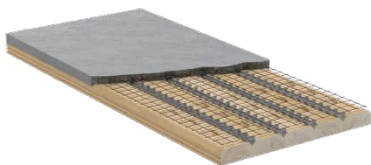
HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK



HYBRID-FLATSLAB BSH / HYB-F-BSH



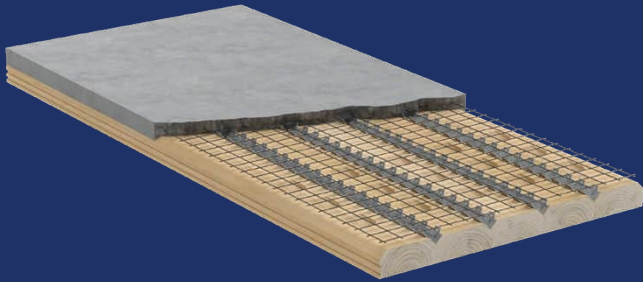
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

OBERNDORFER HYBRID-DOWELTREESLAB / HYB-D



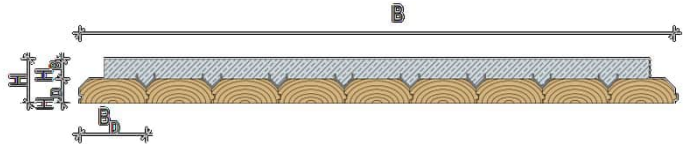
The Hybrid-Doweltreeslab (HYB-D) is composed of the concrete level above and the solid wood dowel-beams below. Two dowel-beams are sawn from each tree trunk, then dried and profiled. Depending on the requirements of the structure, different heights and widths of dowel-beams are available and are offered in a wide variety of qualities and types of wood.

The shear-resistant connection between the elements occurs via a patented system of a connection profile in combination with notches, which together guarantee the high load-bearing capacity of the system!

Due to the patented construction, the Hybrid-Doweltreeslab can be stretched up to 9.00 m with an element width of up to 3.00 m.

HYBRID-DOWELTREESLAB KEY DATA

B	element width up to 300,00 cm
H	element height
HD, BD	doweltree height, doweltree width
HB	concrete thickness variable
Wood quality	C24
Concrete quality	C30/37



HYBRID-DOWELTREESLAB / SPREADSHEET AUSTRIA

e.g. single span girder, B=243,00 cm, concrete C30/37

utilisation class, load and partition wall surcharge	span [m]	doweltree dimension [cm] B _D /H _D	concrete thickness [mm] H _B	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,05	27/10	85	18,50	260,00
	6,40	27/14	100	24,00	315,00
	7,35	27/16	120	28,00	375,00
	8,35	27/20	120	32,00	395,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,15	27/10	85	18,50	260,00
	6,50	27/14	100	24,00	315,00
	7,40	27/16	120	28,00	375,00
	8,45	27/20	120	32,00	395,00

HYBRID-DOWELTREESLAB / SPREADSHEET GERMANY

e.g. single span girder, B=243,00 cm, concrete C30/37

utilisation class, load and partition wall surcharge	span [m]	doweltree dimension [cm] B _D /H _D	concrete thickness [mm] H _B	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,45	27/12	85	20,50	270,00
	6,25	27/14	100	24,00	315,00
	7,25	27/16	120	28,00	375,00
	8,25	27/20	120	32,00	395,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,55	27/12	85	20,50	270,00
	6,35	27/14	100	24,00	315,00
	7,30	27/16	120	28,00	375,00
	8,35	27/20	120	32,00	395,00

IMPLEMENTATION



CHARACTERISTICS

- Can be mounted without support underneath
- Quick & dry assembly
- Selectable visual qualities
- Building services can be integrated
- Reduced risk of weathering during installation
- Glue-free ceiling construction
- Building services can be integrated

Maximum use of raw materials with minimum residual wood and absolute freedom from glue are additional features of this product.

UTILIZATION OF RAW MATERIALS

At first glance, the doweltrees are unusually shaped, but there is a reason for this. This shape gives them the optimal geometry to get the maximum out of each tree. Up to 80% of the original tree ends up in the ceiling. This naturally results in a minimum of residual wood.

In addition, our doweltrees are only sawn and dried, no gluing with complex industrial equipment is required. The manufacturing process is therefore very short and low in emissions.

OBERNDORFER HYBRID-DOWELTREESLAB / HYB-D PURE

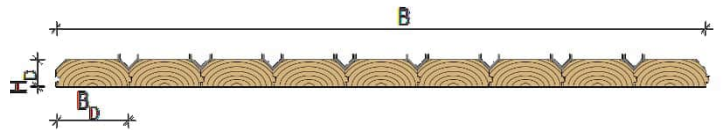


The Hybrid-Doweltreeslab (HYB-D) PURE consists of the prefabricated solid wood dowel-tree-construction.

The patented connecting profiles are attached to the PURE version of the HYB-D. The reinforcement can simply be clipped in on the building site and the concrete layer can then be applied directly. This procedure reduces the necessary transport considerably. The Hybrid-Doweltreeslab PURE can be stretched up to 9.00 m with an element width of up to 3.00 m.

HYBRID-DOWELTREESLAB PURE KEY DATA

B	element width up to 300,00 cm
HD, BD	doweltree height, doweltree width
Wood quality	C24



HYBRID-DOWELTREESLAB PURE / SPREADSHEET AUSTRIA

e.g. single span girder, B=243,00 cm, concrete C30/37

utilisation class, load and partition wall surcharge	span [m]	doweltree dimension [cm] B _D /H _D	concrete thickness [mm] H _B	total thickness [cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	5,05	27/10	85	18,50	260,00
	5,60	27/12	85	20,50	270,00
	6,15	27/14	85	22,50	280,00
	6,40	27/14	100	24,00	315,00
	6,95	27/16	100	26,00	325,00
	7,35	27/16	120	28,00	375,00
	7,85	27/18	120	30,00	385,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	8,35	27/20	120	32,00	395,00
	5,15	27/10	85	18,50	260,00
	5,70	27/12	85	20,50	270,00
	6,25	27/14	85	22,50	280,00
	6,50	27/14	100	24,00	315,00
	7,05	27/16	100	26,00	325,00
	7,40	27/16	120	28,00	375,00
7,90	27/18	120	30,00	385,00	
8,45	27/20	120	32,00	395,00	

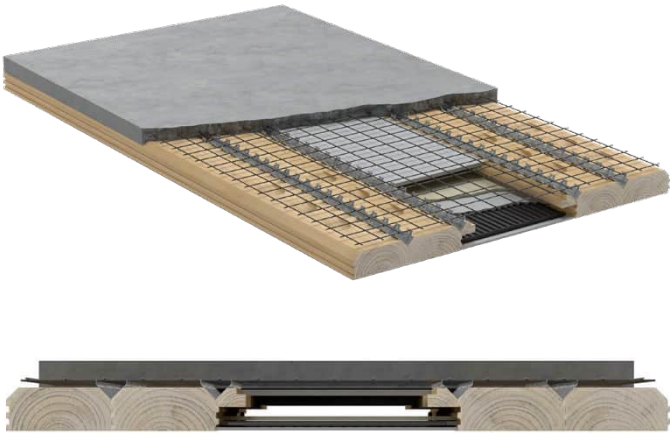
IMPLEMENTATION



CHARACTERISTICS

- Ideal connections to concrete
- Low element weight – more m² on 1 truck
- Building services can be integrated
- Glue-free

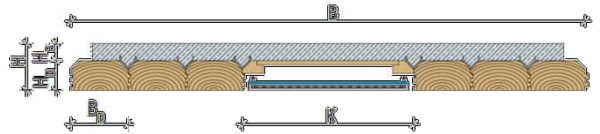
HYB-D COOL II



The Hybrid-Doweltreeslab (HYB-D) COOL II is composed of the concrete level above and the solid wood dowel tree and cooling elements below. A number of doweltrees are installed, and Abaton cooling elements are placed between the groups of doweltrees. The Hybrid-Doweltreeslab COOL II can be stretched up to 9.00 m with an element width of up to 3.00 m. The specially formulated porous mortar can quickly and hygienically absorb and buffer the moisture inside the panels. This makes it possible to stay below the dew point.

HYBRID-DOWELTREESLAB / HYB-D COOL II KEY DATA

B	element width up to 300,00 cm
H	element height
HD, BD	doweltree height, doweltree width
HB	concrete thickness variable
K	active cooling surface
Wood quality	C24
Concrete quality	C30/37



CEILING COOLING

room temperature [°C]	cooling performance [W/m ²]	supply temperature [°C]	return temperature [°C]
26	85	15	17

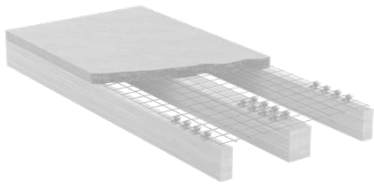
CEILING HEATING

room temperature [°C]	heating performance [W/m ²]	supply temperature [°C]	return temperature [°C]
20	97,5	36	34

CHARACTERISTICS

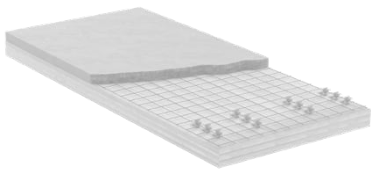
- Low element weight – more m² on 1 truck
- Building services can be integrated
- Glue-free
- Can be moved without support
- Reduced Weather risk
- Fast assembly
- Dry assembly

OUR HYBRID SYSTEM SOLUTIONS AT A GLANCE

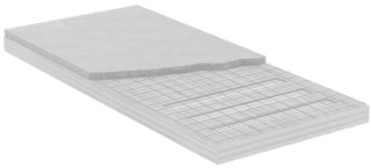


HYBRID-BEAMSLAB / HYB-B

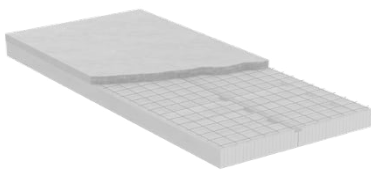
SMART
COOL
COOL II



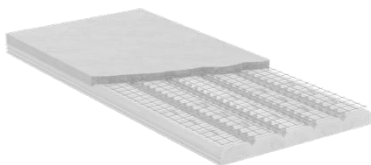
HYBRID-FLATSLAB WITH SCREWED CONNECTION /
HYB-FS



HYBRID-FLATSLAB WITH NOTCH CONNECTION /
HYB-FK

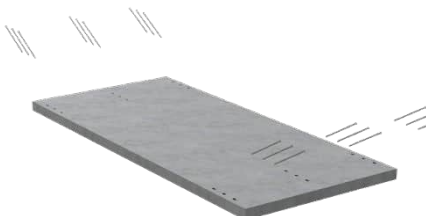


HYBRID-FLATSLAB BSH / HYB-F-BSH



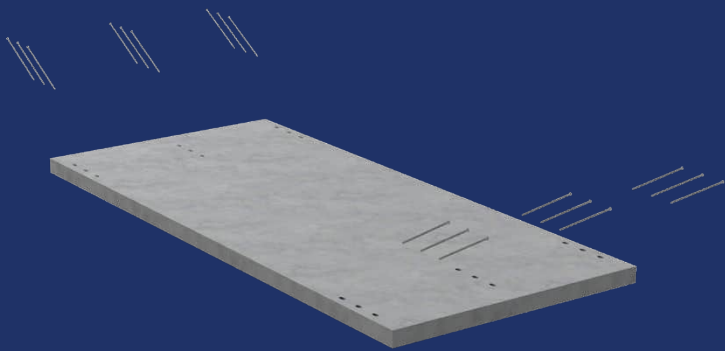
HYBRID-DOWEL TREESLAB / HYB-D

PURE
COOL II



HYBRID-CONCRETESLAB / HYB-C

OBERNDORFER HYBRID-CONCRETESLAB / HYB-C

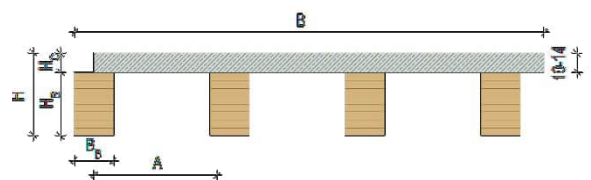


The Hybrid-Concreteslab is attached to a wooden substructure using OHC-screws.

The matching OHC-connectors are already installed in the concrete. The two layers are screwed together on site. This creates a mutual load-bearing effect and a shear-resistant connection between the timber construction and the concreteslab.

HYBRID-BEAMSLAB KEY DATA

B	up to 300,00 cm
A	variable
H	element height
HB, BB	beam height, beam width
HC	concrete thickness variable
Wood quality	GL24h - GL32h
Concrete quality	C30/37



HYBRID-CONCRETESLAB / SPREADSHEET AUSTRIA AND GERMANY

e.g. single span girder, $B=250,00$ cm, $H_B= 10,00$ cm, concrete C30/37, wood quality GL24h, $A= 83,33$ cm

utilisation class, load and partition wall surcharge	span [m]	beam dimension [cm] B_R/H_R	total thickness[cm] H	mass per unit area [kg/m ²]
office building (utilisation class: B2/q=3,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	7,00	24/24	34,00	280,00
	7,50	24/28	38,00	285,00
	8,00	24/32	42,00	290,00
	8,50	24/36	46,00	295,00
	9,00	28/36	46,00	300,00
residential building/hotel (utilisation class: A1/q=2,0 kN) inkl. 2,0 kN floor construction and 1,0 kN partition wall surcharge	7,00	24/24	34,00	280,00
	7,50	24/28	38,00	285,00
	8,00	24/32	42,00	290,00
	8,50	24/36	46,00	295,00
	9,00	28/36	46,00	300,00

IMPLEMENTATION



CHARACTERISTICS

- Dry assembly
- Fast construction progress
- Staggered joints possible
- With integrated OHC-connectors
- Incl. all necessary connection details
- Support of the raw beam ceiling required

THE OBERNDORFER HYBRID SYSTEM

THIS IS NOT THE RIGHT PLACE FOR YOUR IDEAS...

You better get in touch with us!

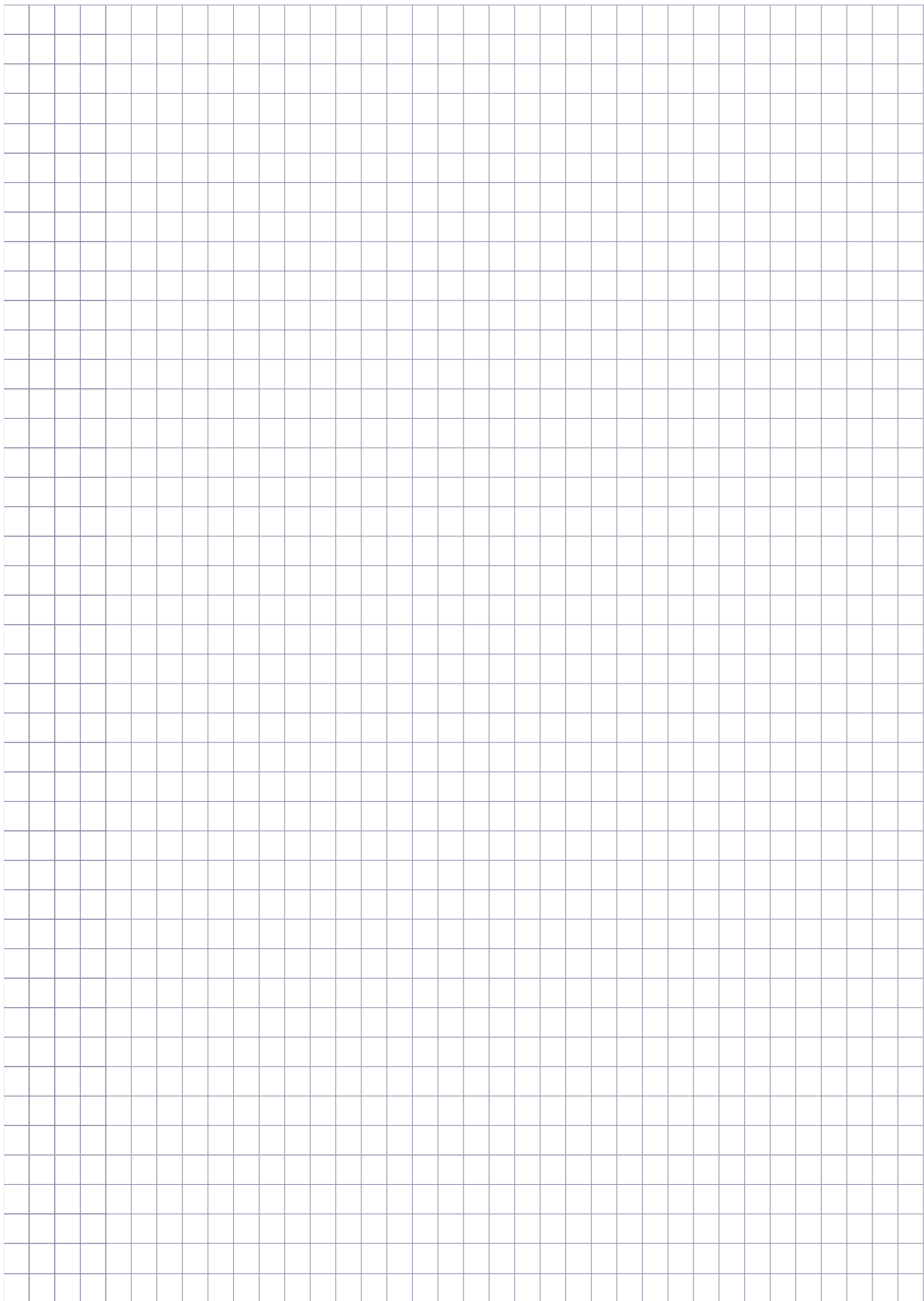
Together we talk about your ideas and our solutions for your project.
We look forward to your enquiry!



T +43 2985 30 922 - 2300

E office@oberndorfer-hybrid.com

**YOU ARE ALSO WELCOME TO SCAN THE QR-CODE AND INFORM YOURSELF
ON OUR WEBSITE.**





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