LLENTAB

MORE THAN STEEL BUILDINGS

DETAILED TECHNICAL INFORMATION

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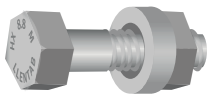
LLENTAB STEEL BUILDINGS

LLENTAB steel constructions are designed from elements made from cold-bent profiles that are screwed together. The profiles are manufactured by means of continuous rolling or bending on press brakes. The elements are made of hot-dip zinc coated steel coils of high-strength steel. The individual pieces are joined with class 8.8 screws (most often M12 or M16).



LLENTAB manufactures all profiles from high-strength steel. Profiles with a material thickness of 1.5 to 7 mm are made from hot-dip zinc coated steel coils. Cold-rolled hot-dip zinc coated profiles guarantee long-term quality and low steel consumption. Profiles with material thickness up to 2 mm are protected by a layer of Z275 zinc (275 g/m^2). From the thickness of 2.5 mm onwards, Z450 zinc coating (450 g/m^2) is used as standard.

The basic shapes of LLENTAB profiles are as follows: **Z-profiles** (for roof purlins and wall purlins), **C-profiles** (for columns, trusses, frame parts), **H-profiles** (for upper and lower chords of truss structures). Mounting holes are pre-formed in all profiles during production.

The structures are designed as frames with a truss bar determining the shape of the roof. The columns are designed as segmented elements with frame connectors or as truss columns. The truss girders are assembled from C-profiles and H-profiles. From the structural perspective, the frames are designed as double-hinged or fixed, or as hinged roof trusses on columns that are fixed (screwed or welded) or restrained in foundation.

All structures are designed to satisfy specific client requirements (dimensions, cladding, loading, windows, doors, gates, etc.). LLENTAB uses a modular system of floor plan dimensions with a span of 300 mm. This span affects the follow-up secondary structures, accessories and standard details. We are open to tailor-made client requirements and designs.

The optimal layout of the frames and the design of the hall structure take into account loading, cladding types and specific hall structure requirements if any. **LLENTAB's technical department we will be happy to prepare basic construction drawings for you free of charge which may be used for the preparation of project documentation.**

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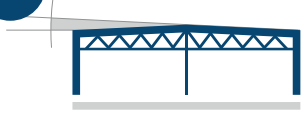
HALL TYPES

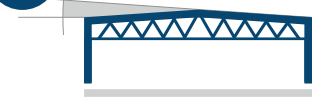
2°


S2HR1


P2HR


MS2HR2

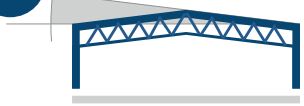
4°


S4HR


P4HR


MS4HR2

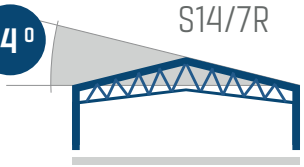
7°


S7PR


P7PR

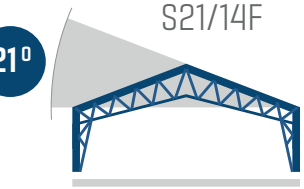

MS7PR1

14°


S14/7R


P14/7R

21°


S21/14F

S	4	H	R	2

ROOF TYPE

S – duo-pitched roof hall
P – mono-pitched roof hall
MS – multi-pitched roof hall

ROOF PITCH (pitch indicated in degrees from the horizontal plane)

1°	2°	3°	4°	6°	7°	11°	14°	17°	21°
1/40	1/32	1/20	1/16	1/10	1/8	3/16	1/4	5/16	3/8

BOTTOM CHORD PITCH (pitch indicated in degrees from the horizontal plane)

H – horizontal
P – perpendicular to top chord: 1°, 2°, 3°, 4°, 6°, 7°, 11°, 14°, 17°, 21°
/ bottom chord pitch: 4°, 6°, 7°, 11°, 14°, 17°

COLUMN TYPE (steel column made from two C-profiles)

R – steel built-up column
F – truss column

NUMBER OF INNER COLUMNS (not specified = no inner columns)

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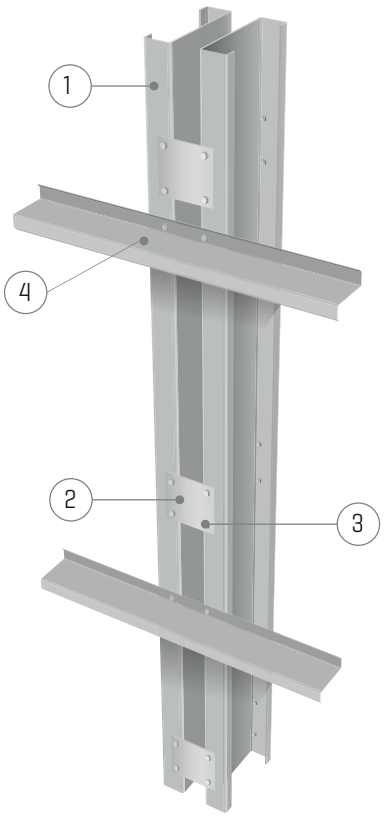
COLUMNS - STANDARD

2xC COLUMN

Column for standard load.

Battened cross-section made of two C-profiles

LLENTAB steel



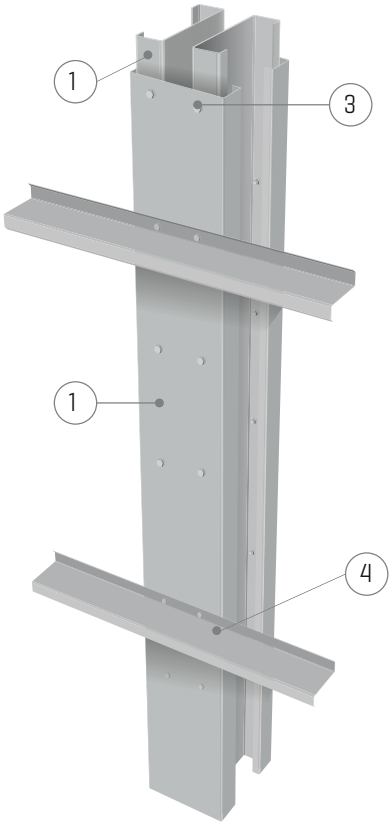
2xC170: thickness 3/4/5/6 mm
2xC250: thickness 3/4/5/6 mm
2xC300: thickness 5/6 mm
2xC360: thickness 4/5/6 mm
2xC380: thickness 6 mm

QUADRO (4xC)

Reinforced column for heavy load and high hall.

Closed assembly made of four separate C-profiles

LLENTAB steel



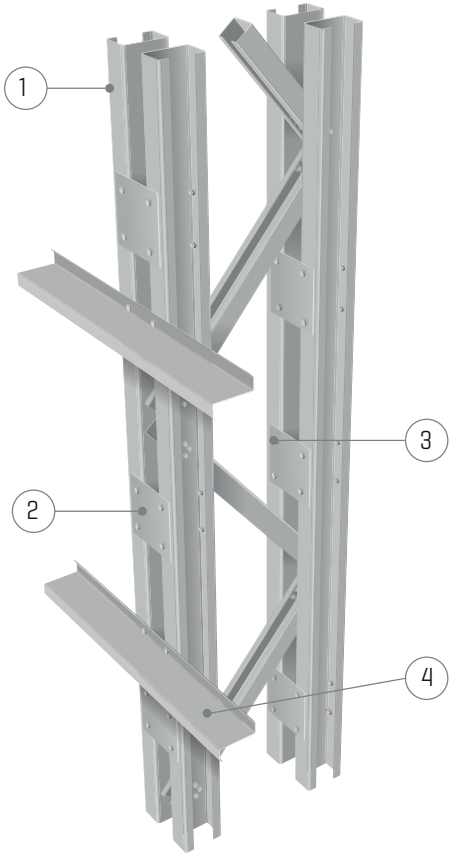
4xC360: thickness 4/5/6 mm

TRUSS

Reinforced column for very high hall.

2x2 C-profiles and diagonals (C-profiles)

LLENTAB steel

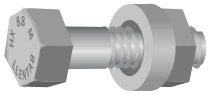


4xC170: thickness 3/4/5/6 mm
4xC250: thickness 3/4/5/6 mm
(+combination 170 mm a 250 mm)

1 C-profile, hot-dip zinc coating (450 g/m²), pre-formed holes

2 Steel batten, hot-dip zinc coating (450 g/m²), pre-formed holes

3 Galvanized, mounting screw class 8.8 with pad and nut



4 Wall purlin, hot-dip zinc coating (275g/m² or 450 g/m²), Z-profile

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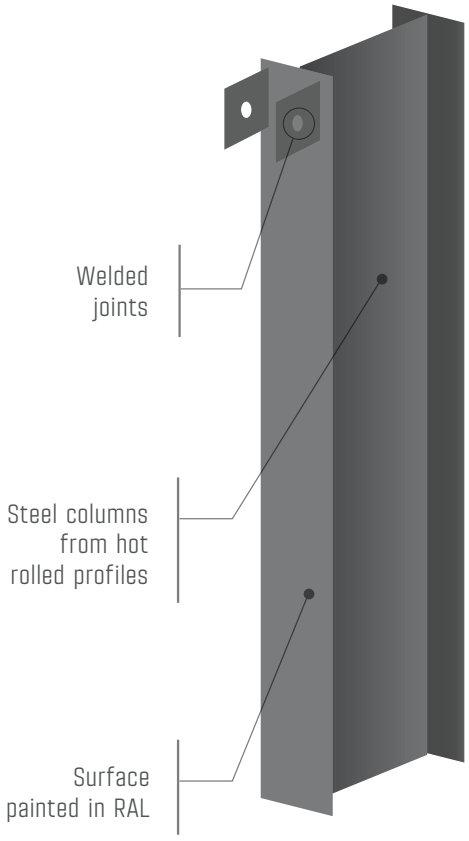
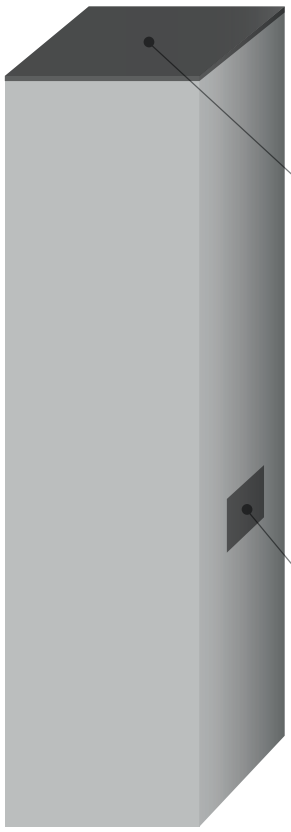
COLUMN - VARIANTS

SIMPLE I/H COLUMN



Designed especially for halls with crane tracks

REINFORCED CONCRETE COLUMN



By request of the builder or depending on the project and other circumstances of the building

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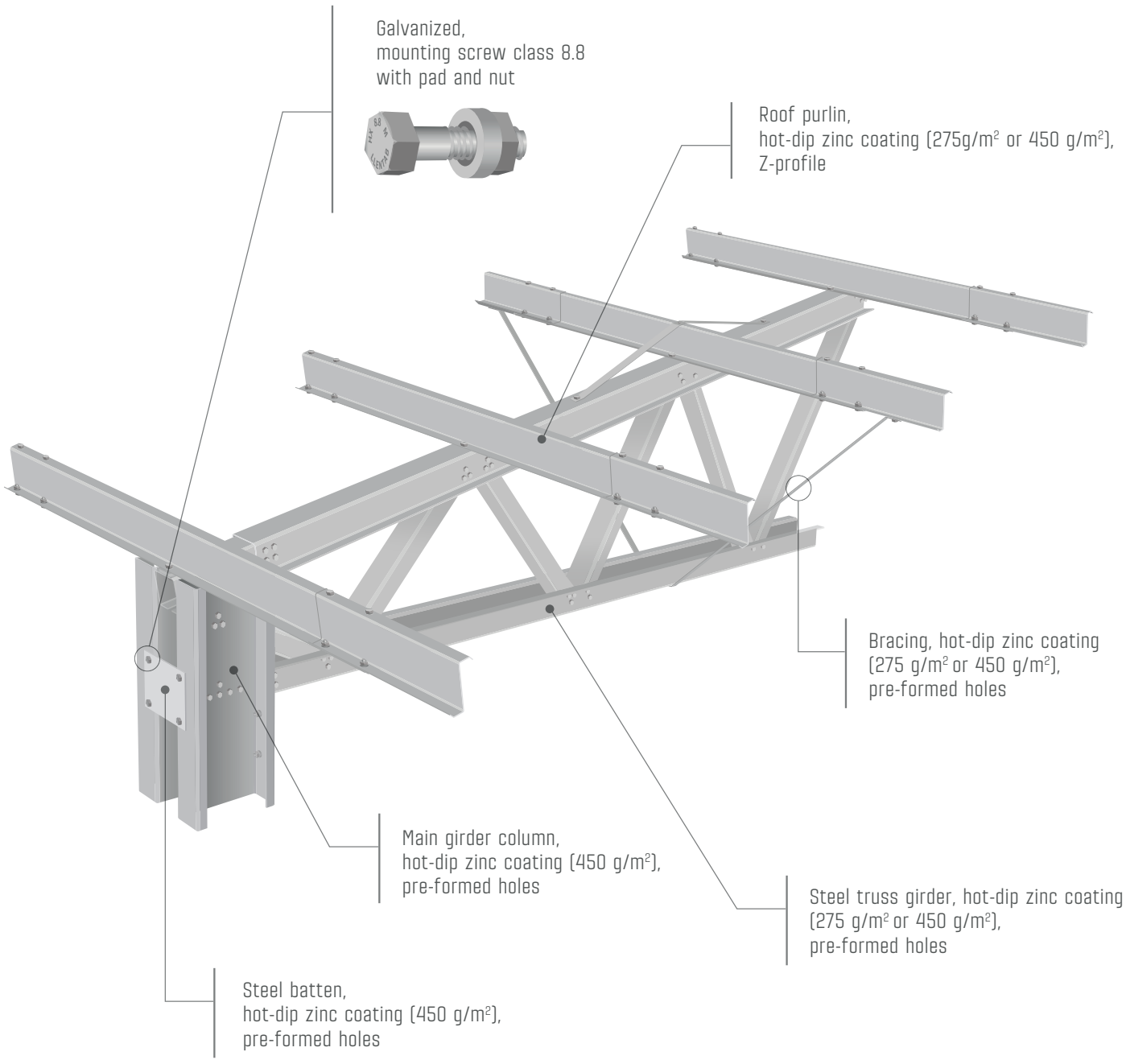
TRUSS GIRDER

Trusses are the primary supporting structure of the hall roof. The truss elements form the upper and lower chord, which are connected by diagonals. The pitch chords are most often made of "omega" shaped profiles or a pair of C-profiles. The diagonals are from one C-profile. The chords can be of different pitch. The pitch of the upper chord determines the resulting pitch of the roof.



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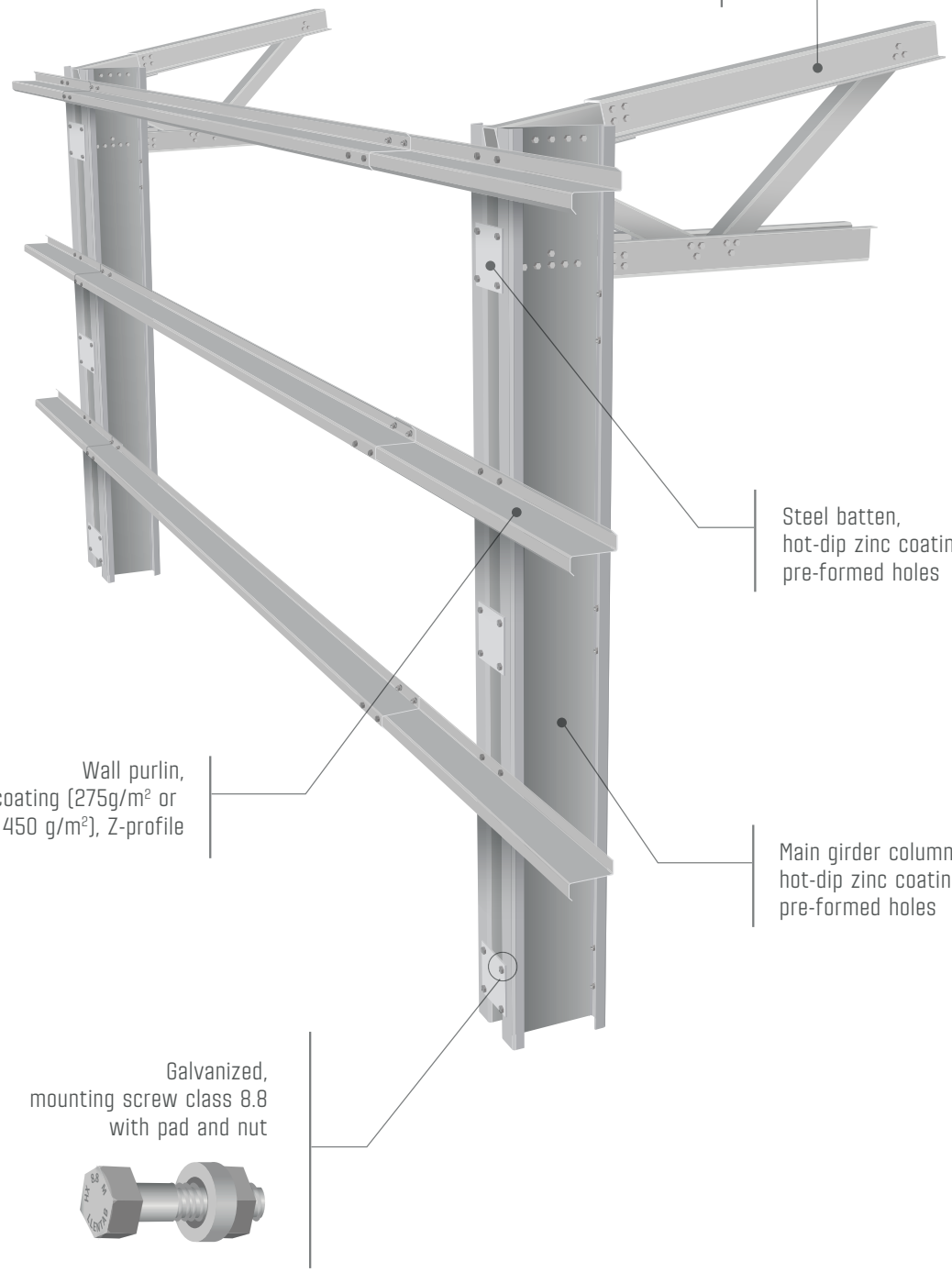
WALL PURLINS

Wall purlins are a secondary supporting structure of the hall wall anchored to the columns. They are horizontal beams that transfer the horizontal wind load from the wall cladding of panels or plates. Wall purlins are usually designed as joined beams. The load from the actual weight of the cladding is transferred to the foundation or plinth sill. Wall purlins are most often made from Z- or C-profiles.



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CZ0145 A.S.A. Úholičky

BUILDING SIZE	918 m²
CATEGORY	Storage building
INSULATION	No
ROOF SLOOPE	7°
HEIGHT	8.5 m
LENGHT	37.3 m
WIDTH	24.6 m
COUNTY	Czech Republic
CITY	Úholičky

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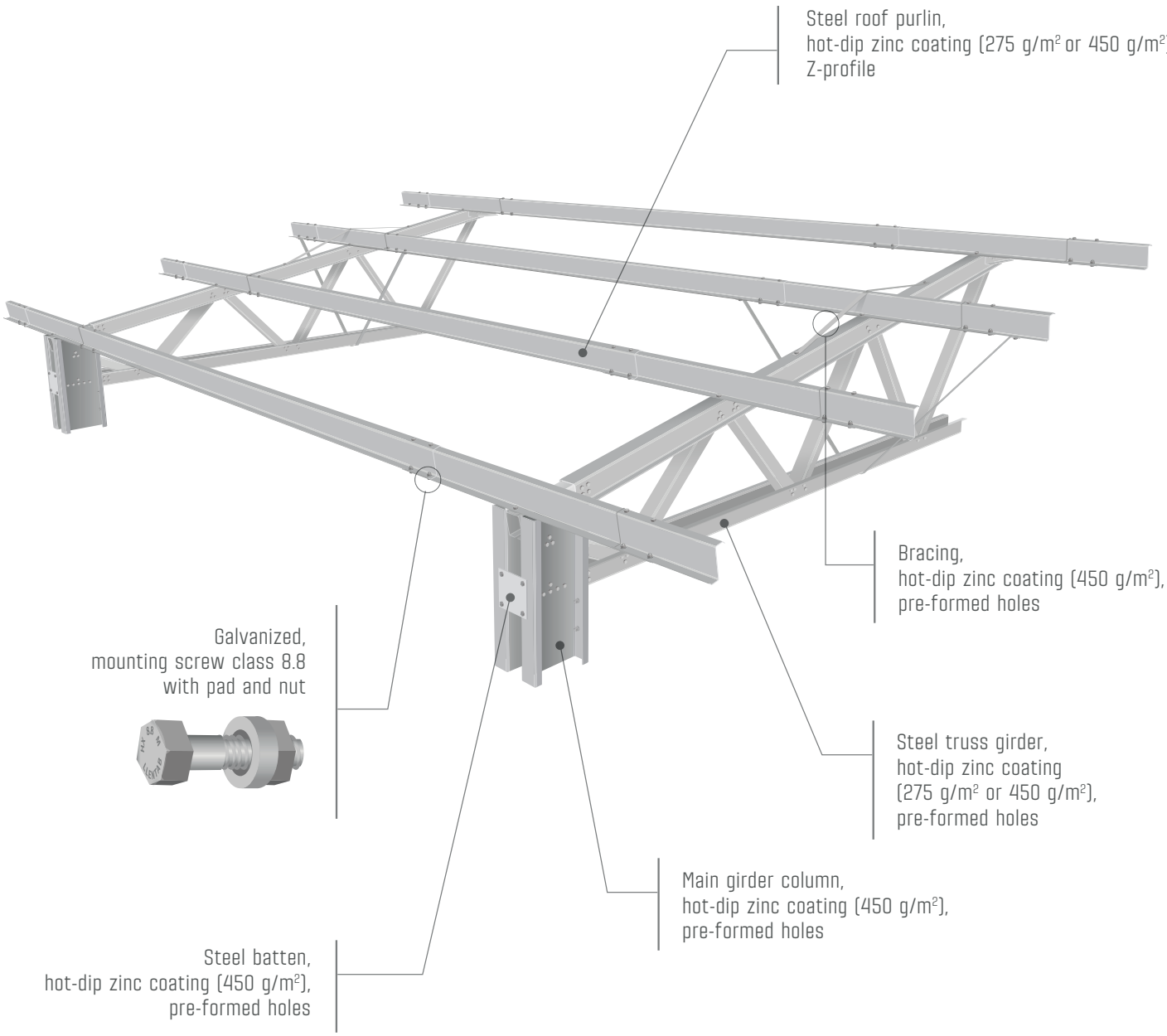
ROOF PURLINS

Roof purlins are a secondary supporting structure of the hall roof anchored to the trusses. These profiles carry the vertical wind load from the roof cladding. Roof purlins are usually designed as continuous beams and are also part of the roof reinforcement and stabilize the upper girder chord against buckling. Z-profiles are most often used for the roof purlins.



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CZ0757 VONDRÁČEK

BUILDING SIZE	5 370 m²
CATEGORY	Storage building
INSULATION	Yes
ROOF SLOPE	4°
HEIGHT	8.3 m
LENGTH	157.0 m
WIDTH	34.2 m
COUNTRY	Czech Republic
CITY	Háje

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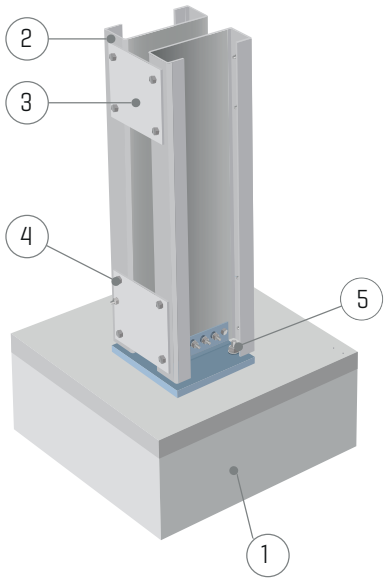
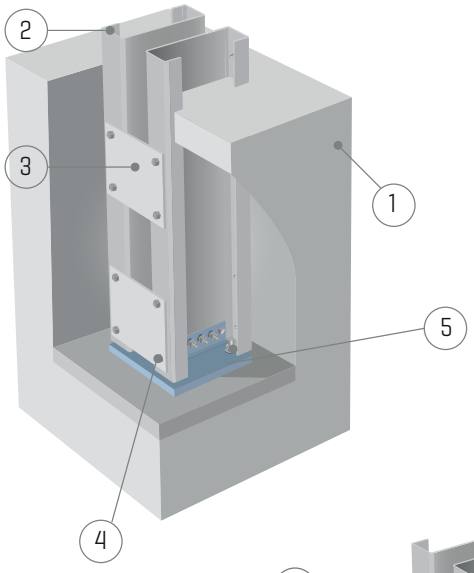
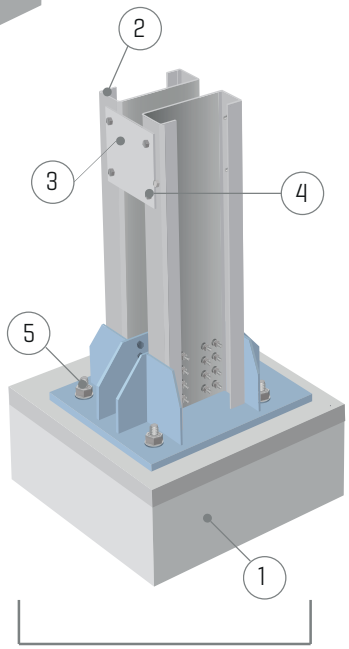
COLUMNS - FOUNDATION CONNECTION

HINGED

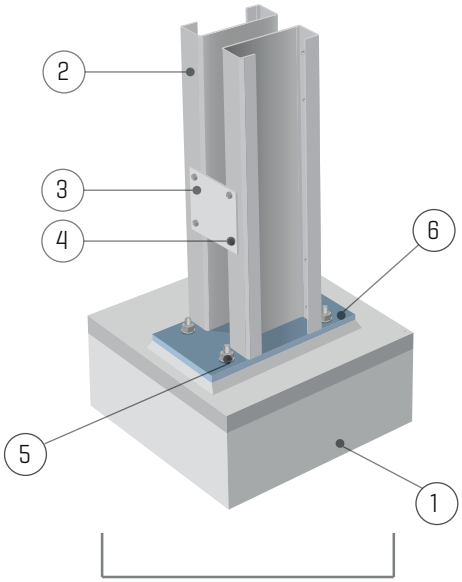


RESTRAINED IN FOUNDATION





FIXED - SCREWED



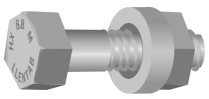
FIXED - WELDED

1 Footing

2 Main girder column, with hot-dip zinc coating (450 g/m2), pre-formed holes

3 Batten

4 Galvanized, mounting screw class 8.8 with pad and nut



5 Injectable anchors or cast-in anchors

6 Foot plate welded to the column

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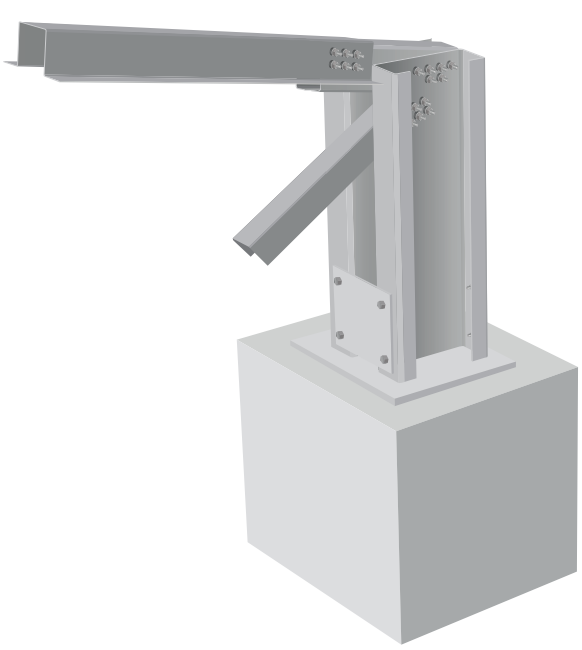
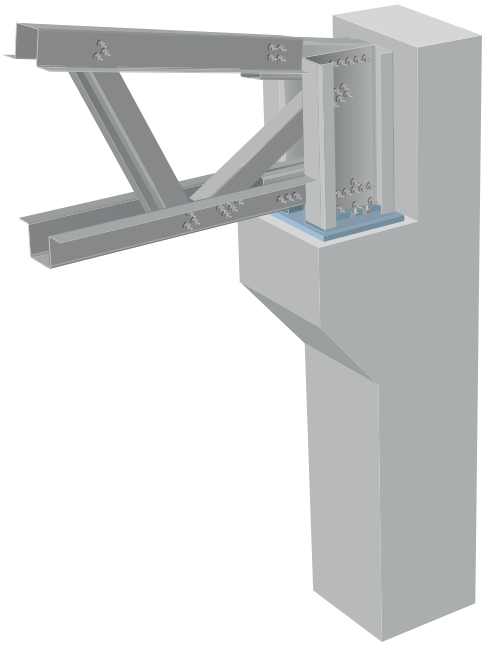
COLUMN – TRUSS GIRDER
connection

RIGID CONNECTION TO STEEL COLUMN

HINGED CONNECTION TO STEEL COLUMN

HINGED CONNECTION TO REINFORCED CONCRETE COLUMN





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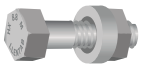
CONSTRUCTION
with load-bearing gable wall

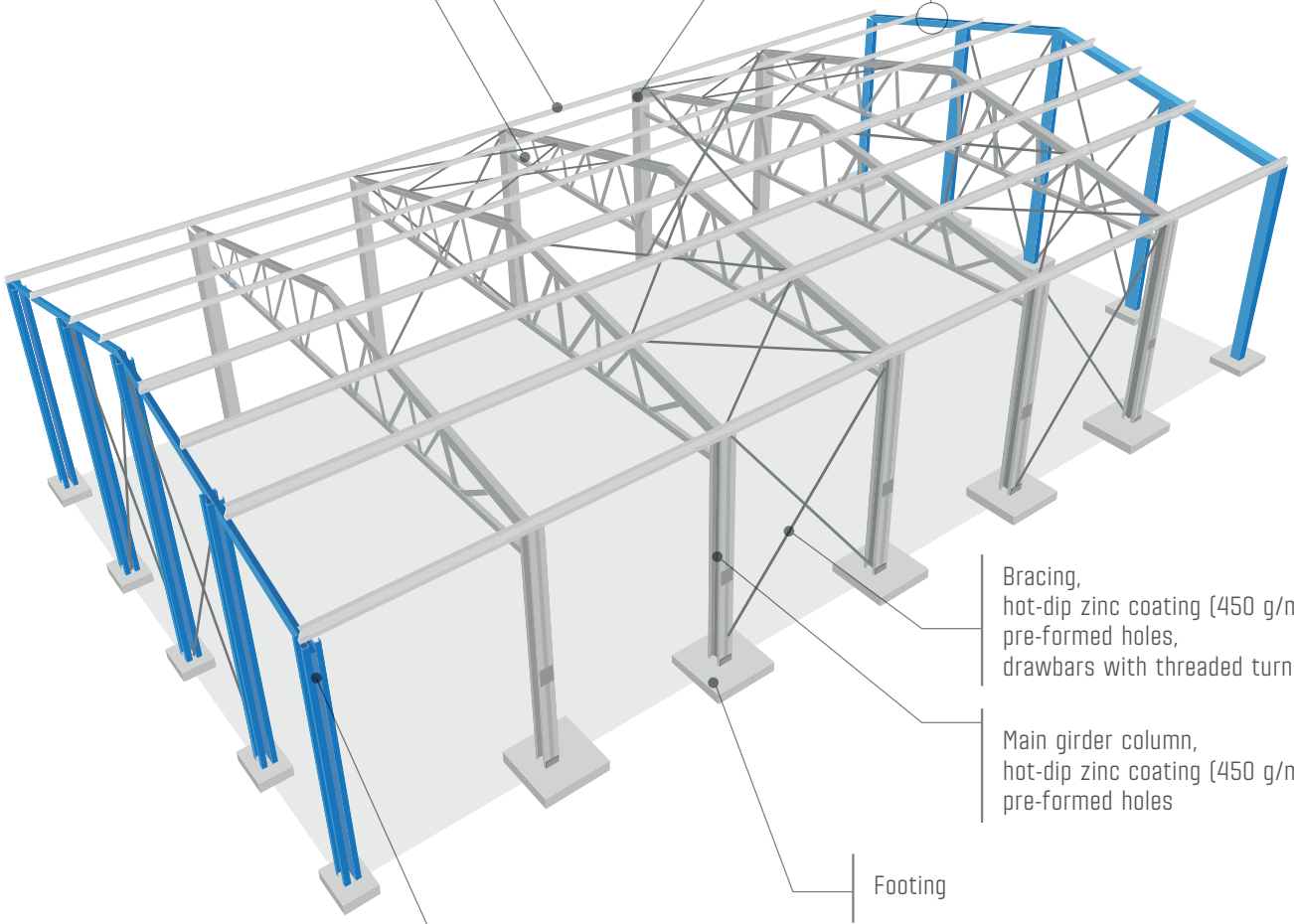
Steel roof purlin,
hot-dip zinc coating
(275 g/m² or 450 g/m²),
pre-formed holes, Z-profile

Screwed, steel truss girder,
hot-dip zinc coating
(275 g/m² or 450 g/m²),
pre-formed holes

Galvanized, mounting screw
class 8.8 with pad and nut



Load-bearing gable wall,
hot-dip zinc coating
(275 g/m² or 450 g/m²),
pre-formed holes



Bracing,
hot-dip zinc coating (450 g/m²),
pre-formed holes,
drawbars with threaded turnbuckle

Main girder column,
hot-dip zinc coating (450 g/m²),
pre-formed holes

Footing

Load-bearing gable, steel column,
hot-dip zinc coating (450 g/m²),
pre-formed holes

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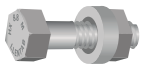
CONSTRUCTION
with standard gable wall (overhang)

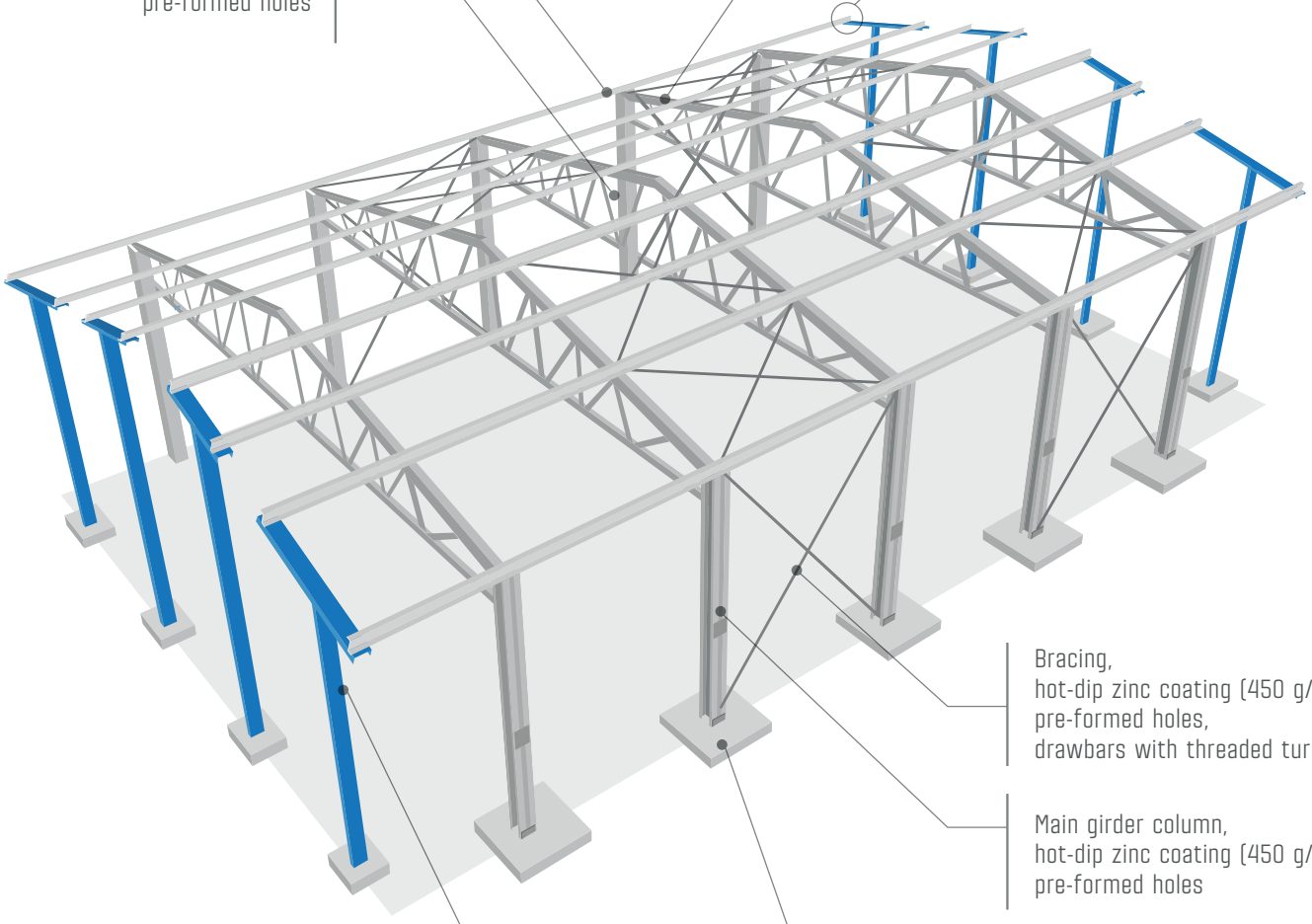
Steel roof purlin, hot-dip zinc coating (275 g/m² or 450 g/m²), pre-formed holes, Z-profile

Screwed, steel truss girder, hot-dip zinc coating (275 g/m² or 450 g/m²), pre-formed holes

Galvanized, mounting screw class 8.8 with pad and nut



Overhang from 0,8 to 2,3 m



Bracing, hot-dip zinc coating (450 g/m²), pre-formed holes, drawbars with threaded turnbuckle

Main girder column, hot-dip zinc coating (450 g/m²), pre-formed holes

Footing

Curtain gable wall column, hot-dip zinc coating (450 g/m²), pre-formed holes

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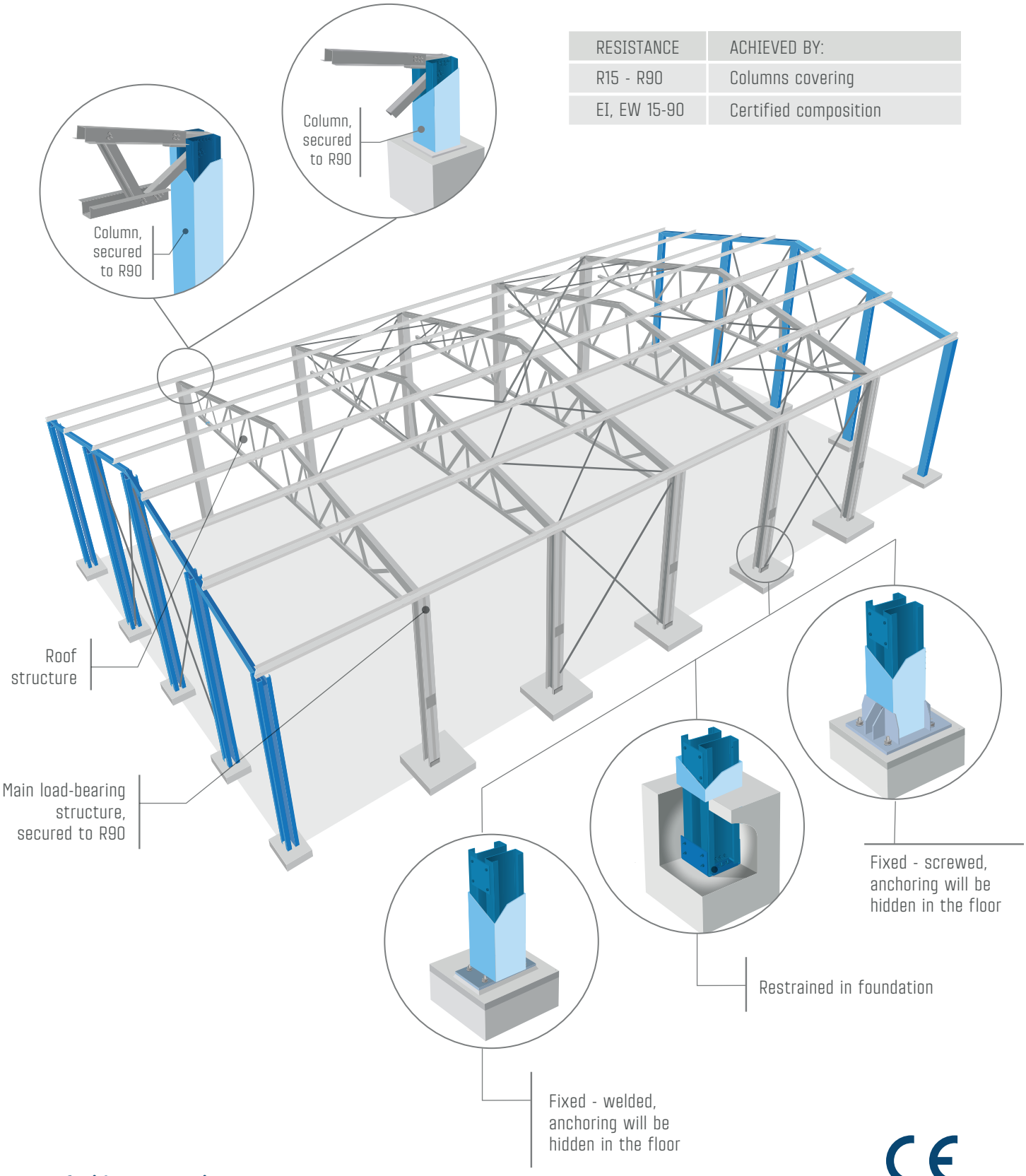
FIRE RESISTANCE
walls - construction protection*

RESISTANCE	ACHIEVED BY:
R15 - R90	Columns covering
EI, EW 15-90	Certified composition



*** roof without protection, walls keep standing after the roof has burnt**

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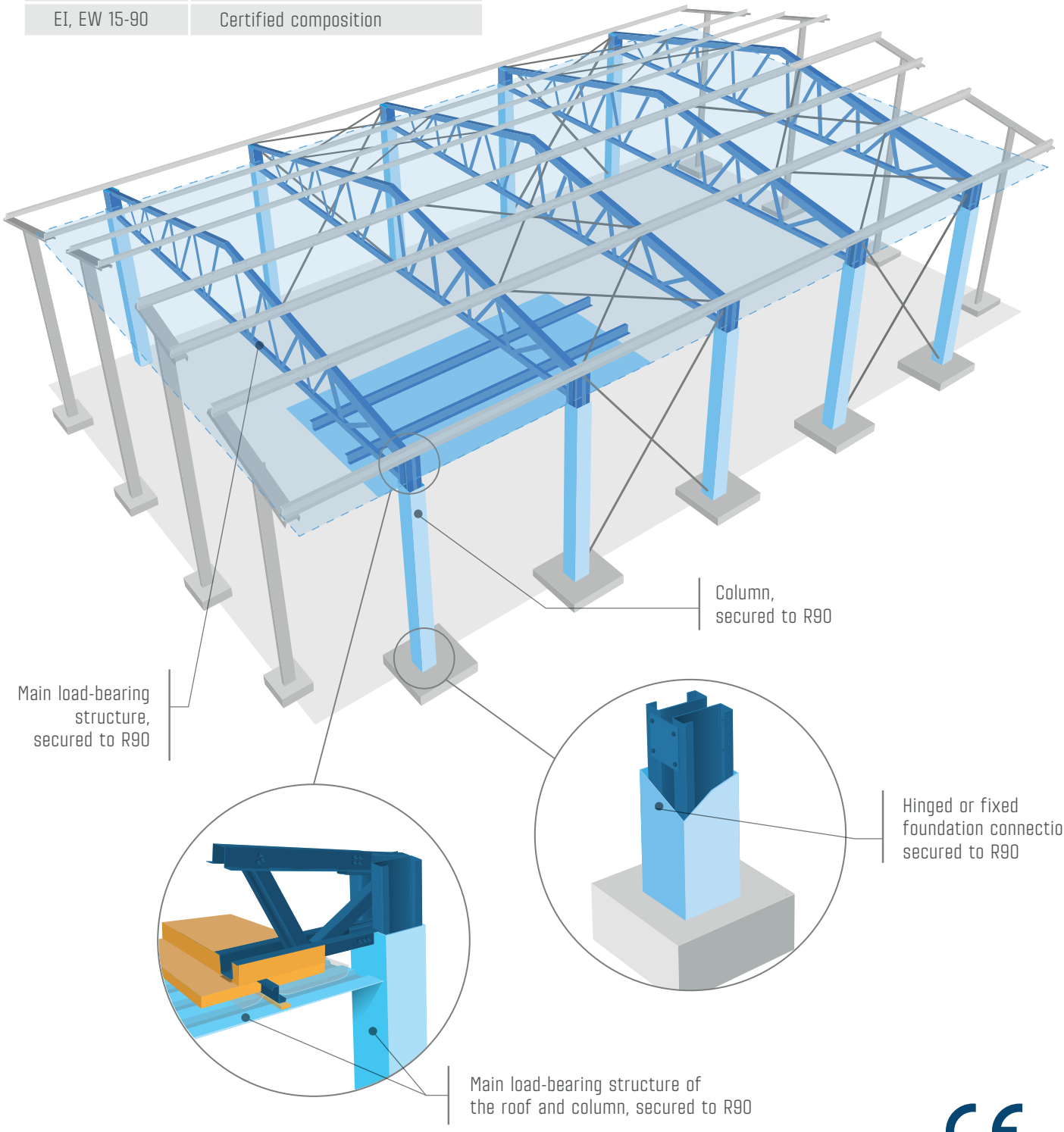
FIRE RESITANCE
walls/roof - construction protection

RESISTANCE	ACHIEVED BY:
R15 - R90	Columns covering Fire soffit
EI, EW 15-90	Certified composition



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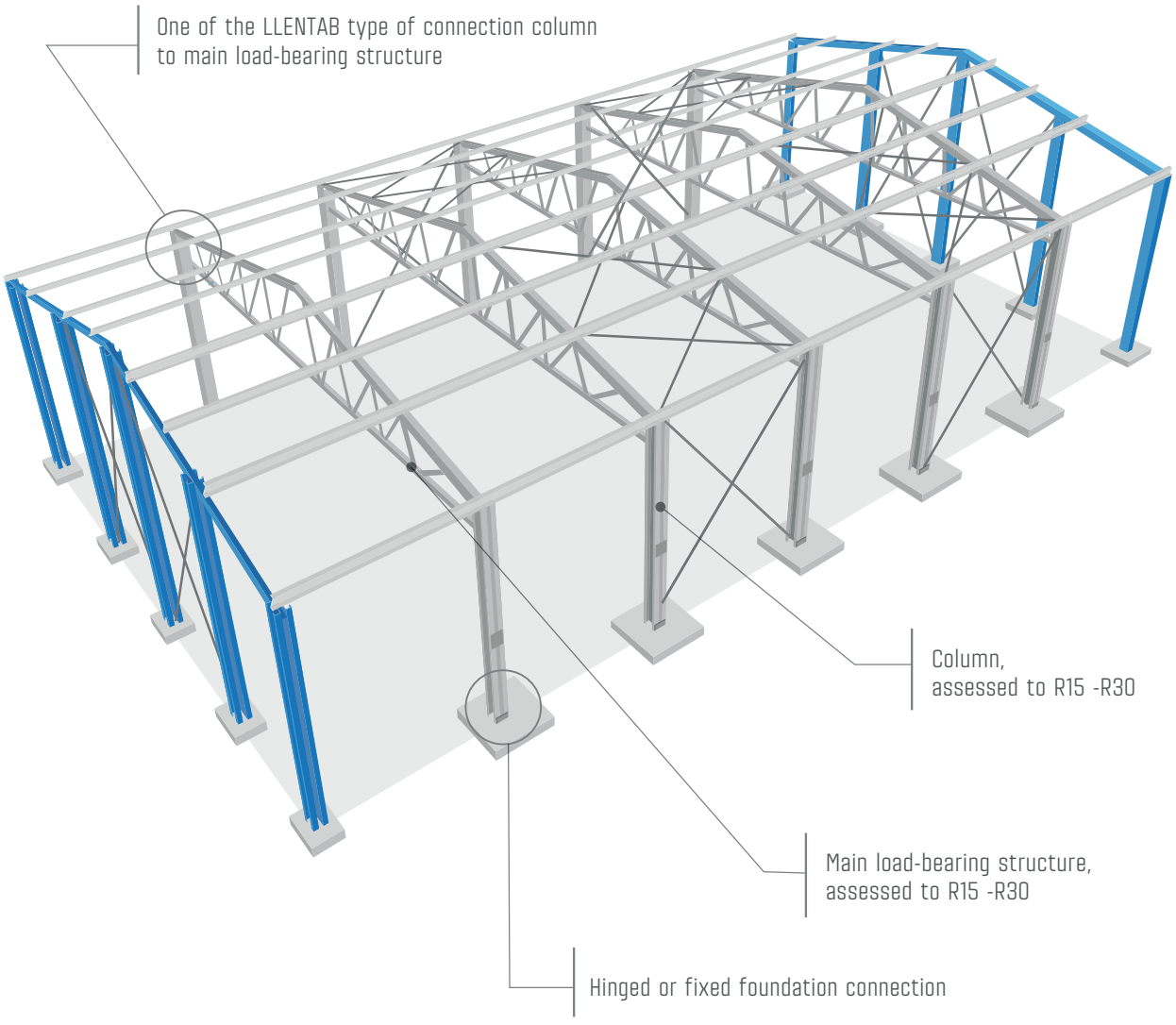
FIRE RESISTANCE

walls/roof - calculated according to Eurocode

RESISTANCE	ACHIEVED BY:
R15	Calculated according to the standard curve or in the case of fitting sprinklers or smoke extraction, an expert opinion being made
R30	In the case of sprinklers or smoke extraction, carry out an expert opinion
EI, EW 15-30	Certified composition



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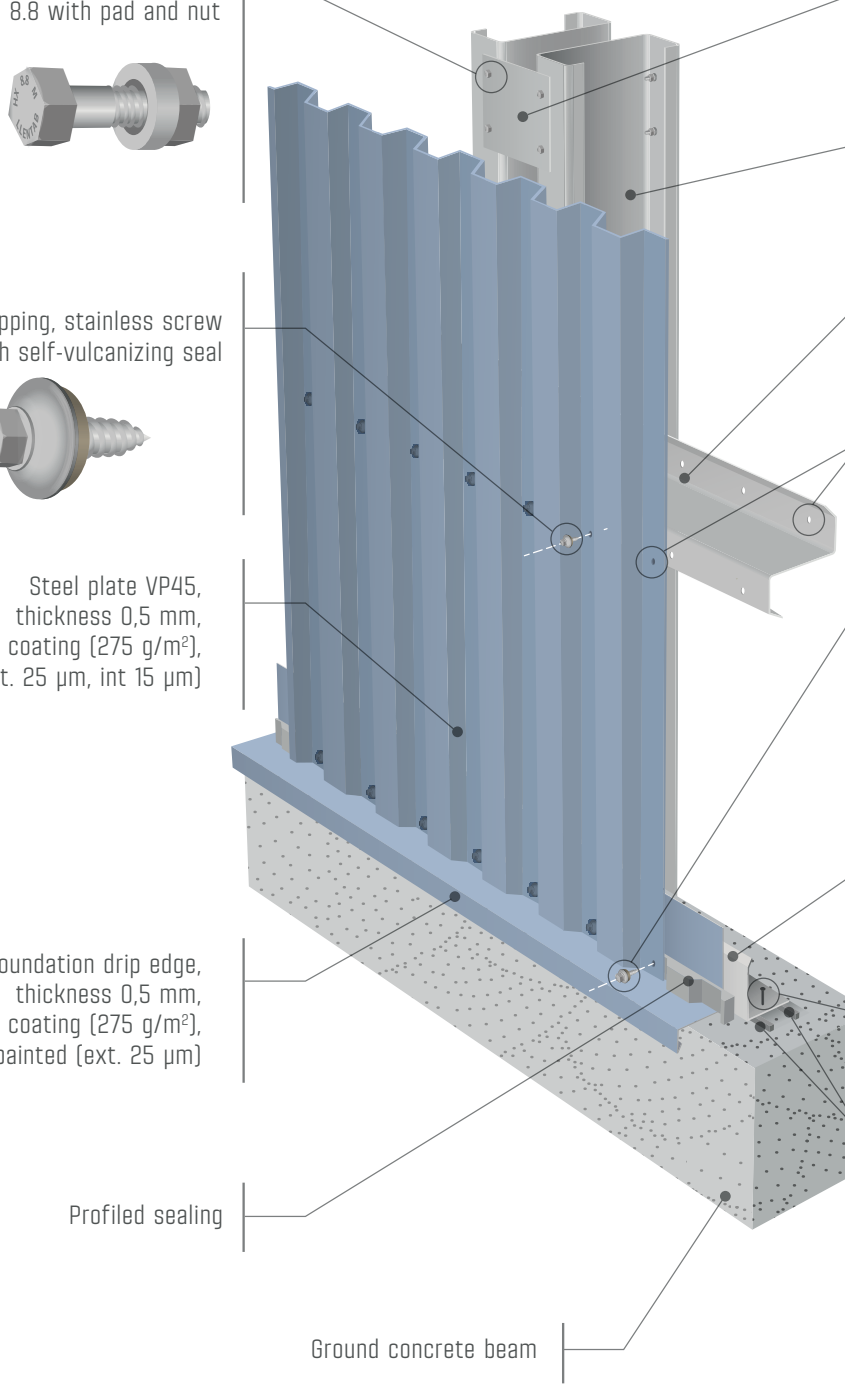
WALL - TYPE 0
Uninsulated



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CZ0712 SKLAD HNOJIV

BUILDING SIZE	1 348 m²
CATEGORY	Agriculture building
INSULATION	No
ROOF SLOPE	11°
HEIGHT	5.8 m
LENGTH	66.1 m
WIDTH	20.4 m
COUNTRY	Czech Republic
CITY	Hostouň

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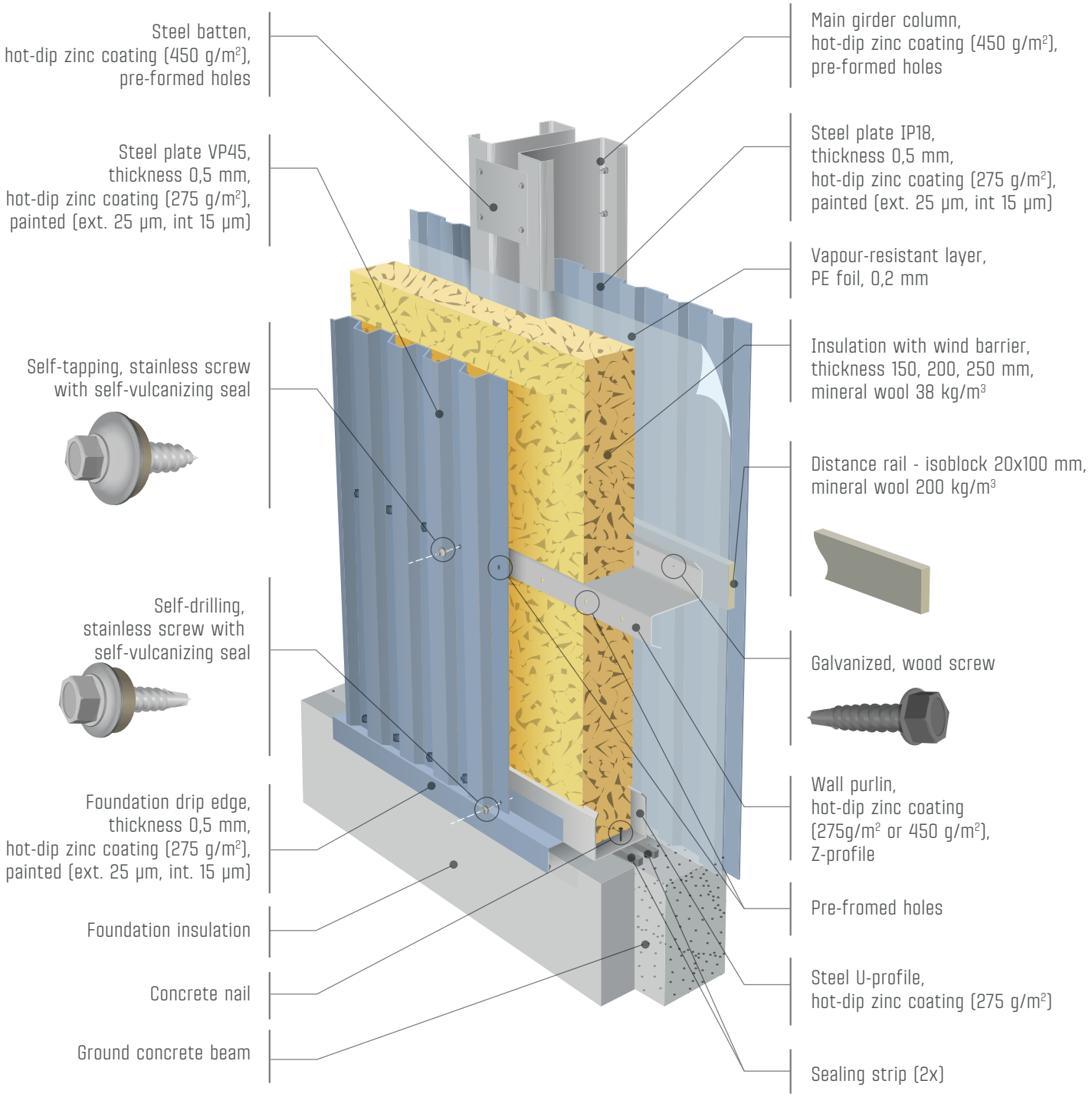
WALL - TYPE 4F
wall insulation - compound cladding



INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_n VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
150	U = 0,30	compliant	-	-
200	U = 0,23	compliant	compliant	-
250	U = 0,18	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance. Filling - mineral wool, λ = 0,039W/mK), ρ = 50-90 kg/m³.

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CZ0757 VONDRÁČEK

BUILDING SIZE	5 370 m²	**HEIGHT**	8.3 m
CATEGORY	Storage building	**LENGTH**	157.0 m
INSULATION	Yes	**WIDTH**	34.2 m
ROOF SLOPE	4°	**COUNTRY**	Czech Republic
		CITY	Háje

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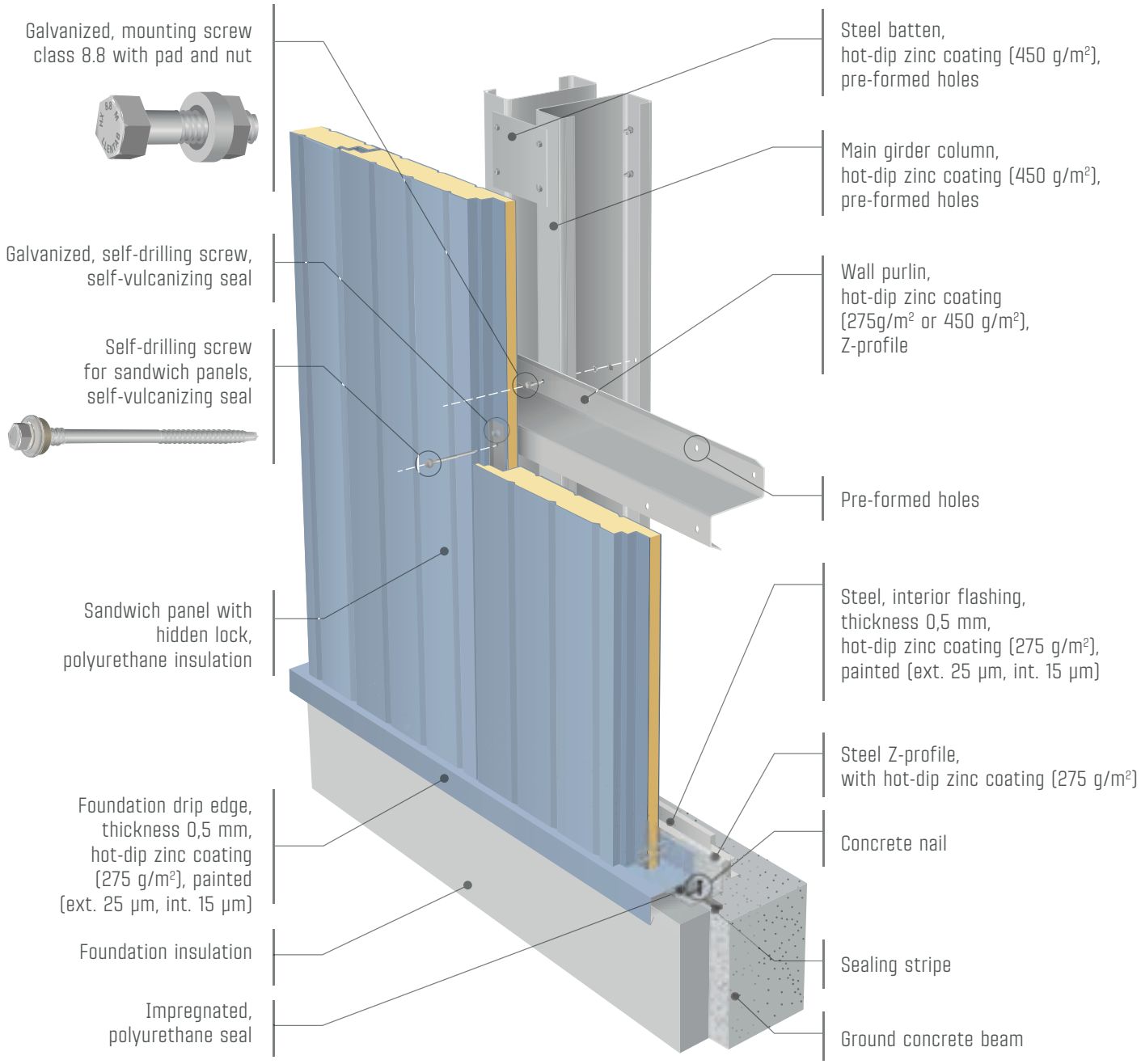
WALL - TYPE 6

wall insulation - PUR sandwich panels (vertically placed)



PANEL VALUES - IPN/PUR FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
100	U = 0,22	compliant	compliant	-
120	U = 0,19	compliant	compliant	compliant
150	U = 0,15	compliant	compliant	compliant
200	U = 0,11	compliant	compliant	compliant

Note: Filling - IPN λ = 0,024W/(m.K), ρ = 37 kg/m³.

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CZ0561 PNEU PROCHÁZKA

BUILDING SIZE	766 m²
CATEGORY	Storage building
INSULATION	Yes
ROOF SLOPE	7°
HEIGHT	7.0 m
LENGTH	30.4 m
WIDTH	25.2 m
COUNTRY	Czech Republic
CITY	Dobrovíz

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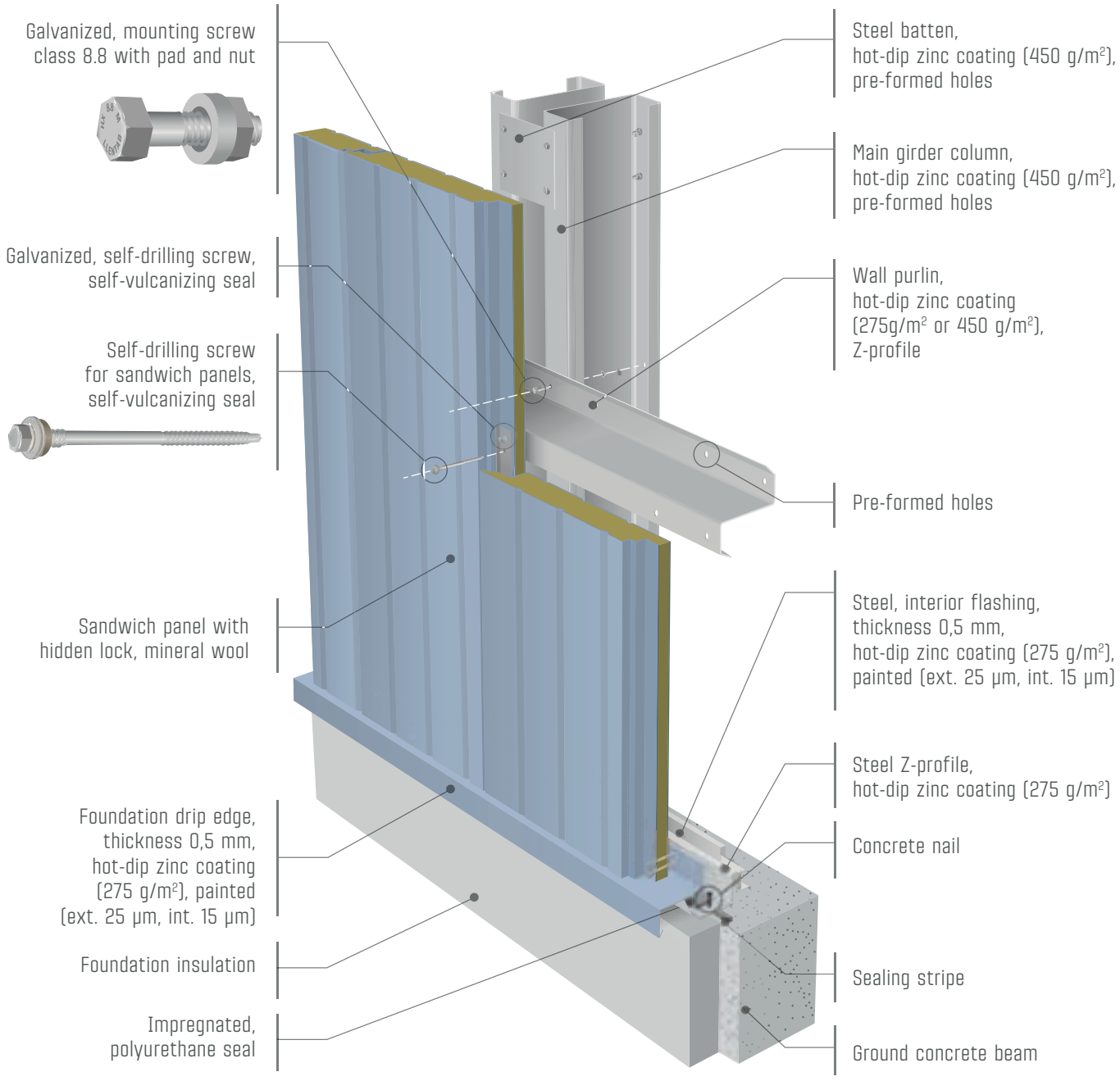
WALL - TYPE 6

wall insulation - mineral wool sandwich panels (vertical arrangement)



LLENTAB PANEL VALUES - MINERAL WOOL FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
120	U = 0,32	compliant	-	-
150	U = 0,27	compliant	compliant	-
240	U = 0,18	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance. Filling - mineral wool λ = 0,040W/mK, ρ = 85 kg/m³. Panels from other manufacturers can also be used with other fillings, e.g. PUR.

CE

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SK0120 JL ARÉNA

BUILDING SIZE	1 800 m²
CATEGORY	Sport building
INSULATION	Yes
ROOF SLOPE	14°
HEIGHT	3.1 m
LENGTH	60.0 m
WIDTH	30.0 m
COUNTRY	Slovakia
CITY	Liptovský Mikuláš

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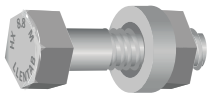
WALL - TYPE 6W

wall insulation - PUR sandwich panels (inner vertical arrangement)

Galvanized, mounting screw class 8.8 with pad and nut



Sandwich panel with visible lock, polyurethane insulation

Self-drilling screw for sandwich panel, self-vulcanizing seal, sleeve and end cup (for cold stores)

Wall purlin, hot-dip zinc coating (275g/m^2 or 450 g/m^2), Z-profile

Main girder column, hot-dip zinc coating (450 g/m^2), pre-formed holes

Steel batten, hot-dip zinc coating (450 g/m^2), pre-formed holes

Steel flashing, thickness 0,5 mm, hot-dip zinc coating (275 g/m^2), painted (ext. 25 µm, int. 15 µm)

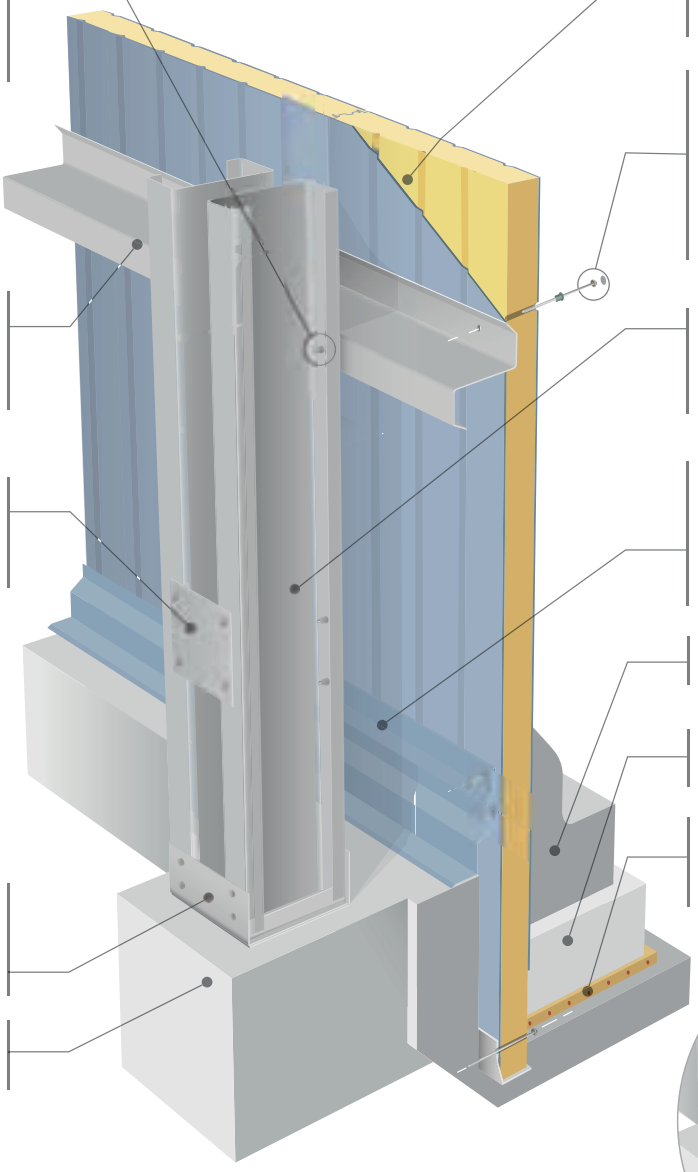
Concrete floor

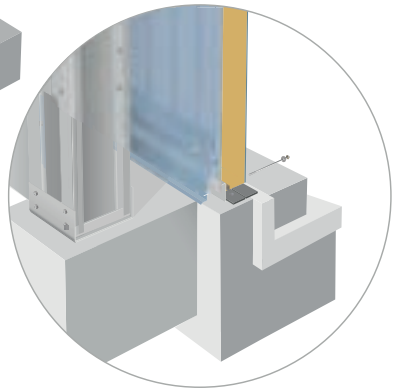
Insulation

Thermal insulation (for cold storage and freezing plants)

Steel column base, hot-dip zinc coating (450 g/m^2), pre-formed holes

Footing





Alternative solution

PANEL VALUES - IPN/PUR FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km^2)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
100	U = 0,22	compliant	compliant	-
120	U = 0,19	compliant	compliant	compliant
150	U = 0,15	compliant	compliant	compliant
200	U = 0,11	compliant	compliant	compliant

Note: Filling - IPN λ = 0,024W/(m.K), ρ = 37 kg/m^3.

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CZ0482 FROSTFOOD

BULDING SIZE	873 m²
CATEGORY	Production building
INSULATION	Yes
ROOF SLOPE	11°
HEIGHT	11.5 m
LENGTH	37.8 m
WIDTH	23.1 m
COUNTRY	Czech Republic
CITY	Rokytnice

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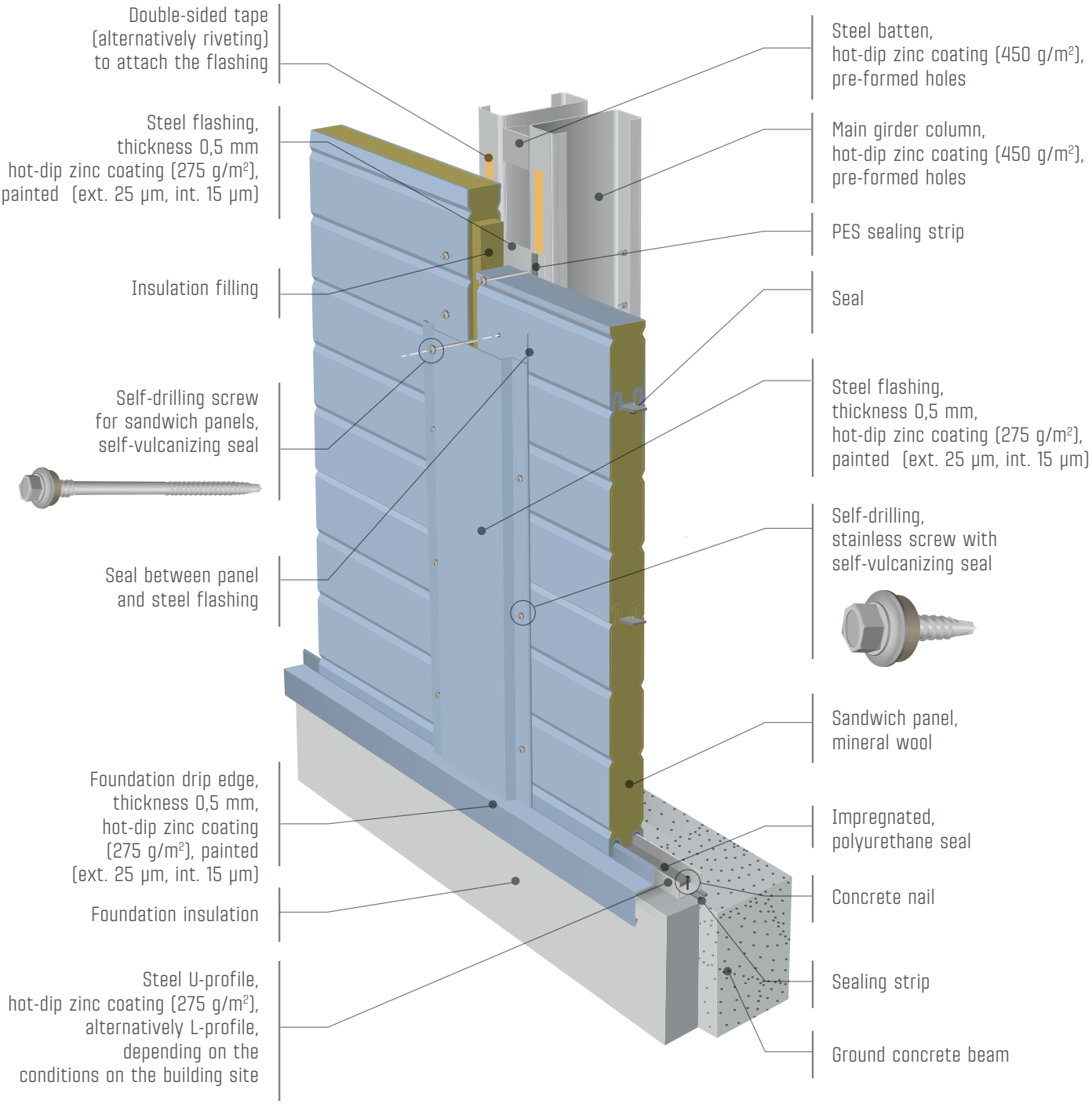
WALL - TYPE 7

wall insulation - mineral wool sandwich panels (horizontal arrangement)



LLENTAB PANEL VALUES - MINERAL WOOL FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
120	U = 0,32	compliant	-	-
150	U = 0,27	compliant	compliant	-
240	U = 0,18	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance.
Filling- mineral wool λ = 0,040W/mK, ρ = 85 kg/m³.
Panels from other manufacturers can also be used with other fillings, e.g. PUR.

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CZ0501 KOLBENSCHMIDT

BUILDING SIZE	4 602 m²
CATEGORY	Production building
INSULATION	Yes
ROOF SLOPE	2°
HEIGHT	7.4/4.6/8.5 m
LENGTH	47.0/75.1/54.7 m
WIDTH	75.4/6.7/10.2 m
COUNTRY	Czech Republic
CITY	Chabařovice

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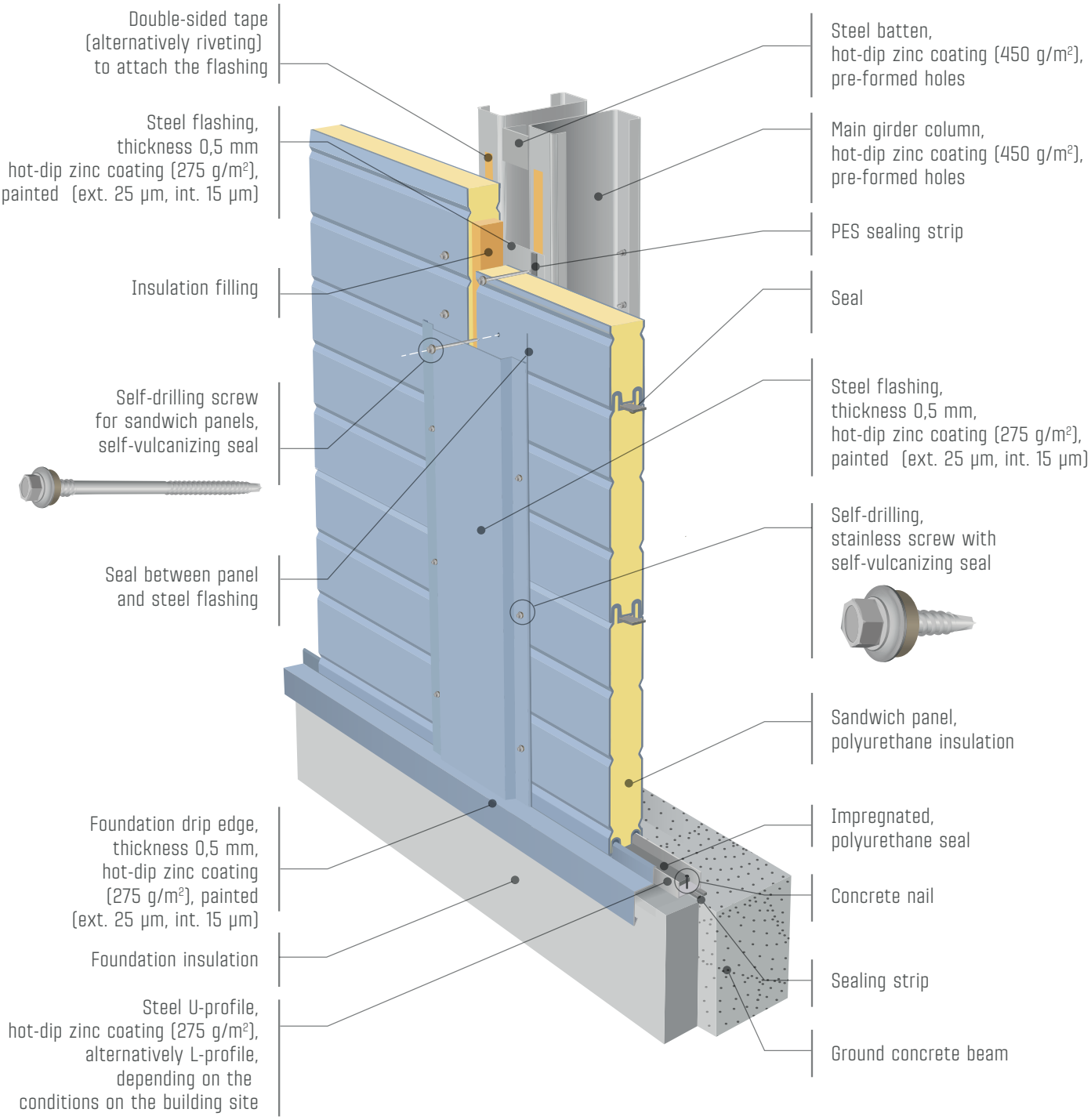
WALL - TYPE 7
wall insulation - PUR sandwich panels (horizontal arrangement)



PANEL VALUES - IPN/PUR FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
100	U = 0,22	compliant	compliant	-
120	U = 0,19	compliant	compliant	compliant
150	U = 0,15	compliant	compliant	compliant
200	U = 0,11	compliant	compliant	compliant

Note: Filling - IPN λ = 0,024W/(m.K), ρ = 37 kg/m³.

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CZ0946 SERBUS KOBERCE

BUILDING SIZE	660 m²
CATEGORY	Storage building
INSULATION	Yes
ROOF SLOPE	7°
HEIGHT	6.8 m
LENGTH	33.0 m
WIDTH	20.0 m
COUNTRY	Czech Republic
CITY	Nehvizdy

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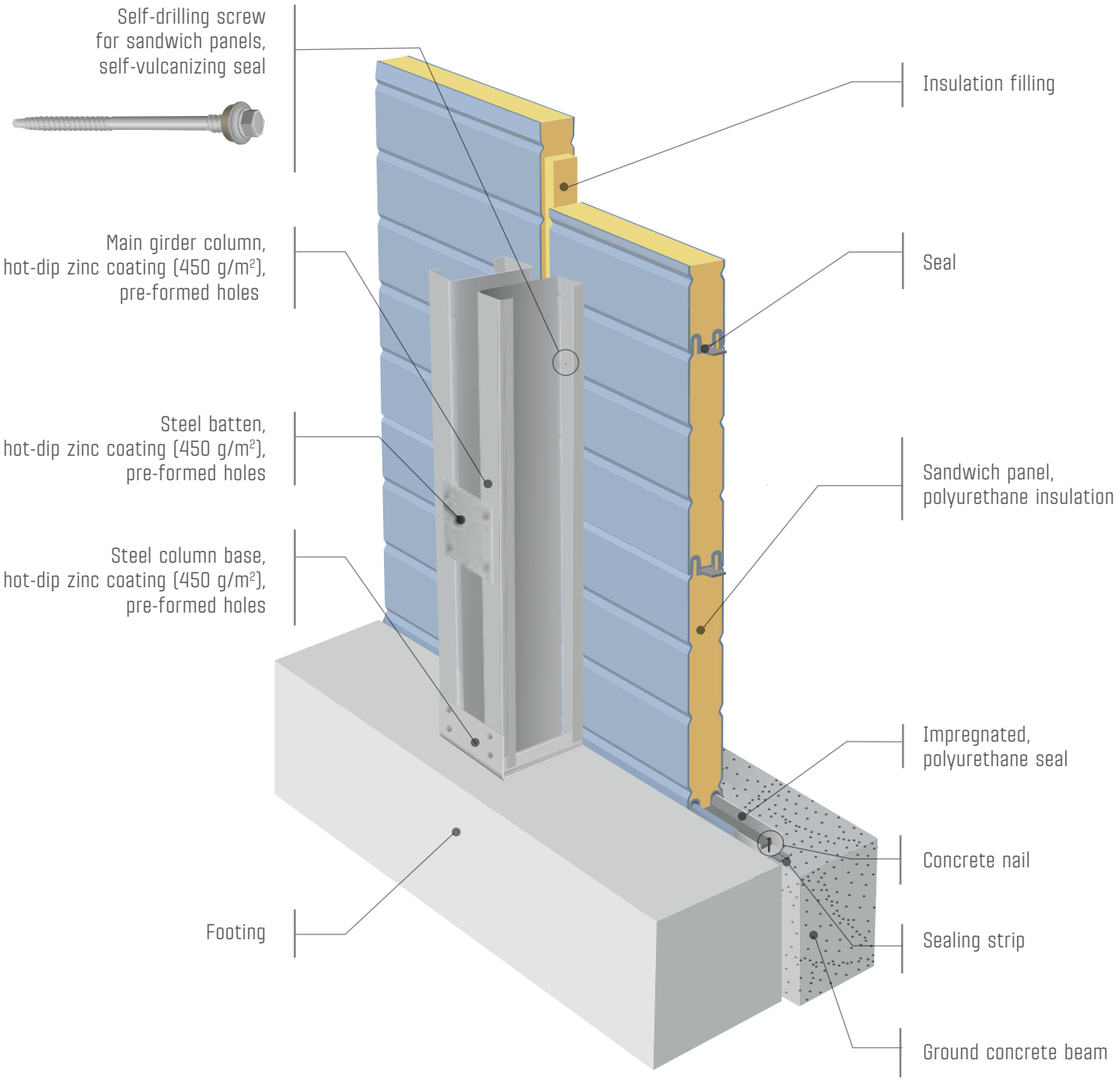
WALL - TYPE 7

wall insulation - PUR sandwich panels (inner horizontal arrangement)



PANEL VALUES - IPN / PUR FILING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,32)	16°C (U_n = 0,27)	18°-22°C (U_n = 0,20)
100	U = 0,22	compliant	compliant	-
120	U = 0,19	compliant	compliant	compliant
150	U = 0,15	compliant	compliant	compliant
200	U = 0,11	compliant	compliant	compliant

Note: Filing- IPN λ = 0,024W/(m.K), ρ = 37 kg/m³.

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CZ0555 TOP STAV AGATA

BUILDING SIZE	3 608 m²
CATEGORY	Agriculture building
INSULATION	Yes
ROOF SLOPE	7°
HEIGHT	7.15 m
LENGTH	78.1 m
WIDTH	46.2 m
COUNTRY	Czech Republic
CITY	Lysá nad Labem

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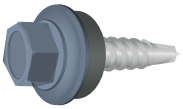
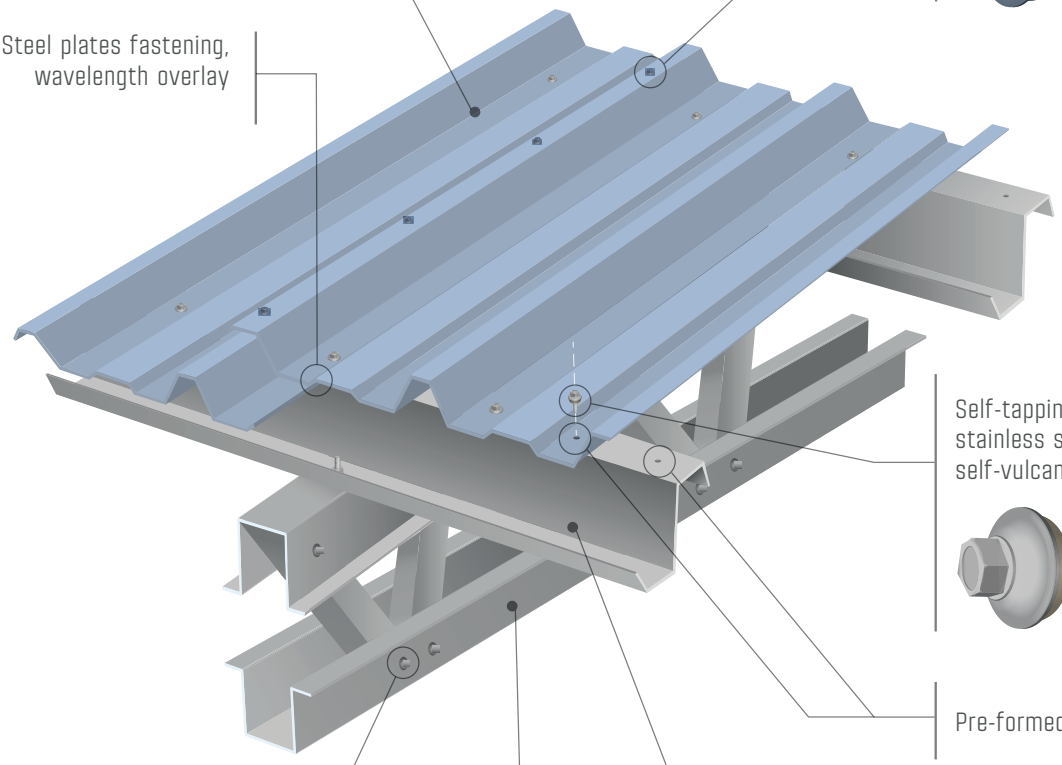
ROOF - TYPE 0
Uninsulated

Steel plate TP46,
thickness 0,63 mm,
hot-dip zinc coating (275 g/m²),
painted (ext. 25 µm, int. 15 µm),
inside layer preventing water
vapour condensation (NCD)

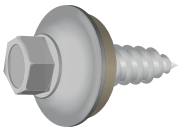
Steel plates fastening,
wavelength overlay

Self-drilling screw,
hot-dip zinc coated
and painted,
self-vulcanizing seal



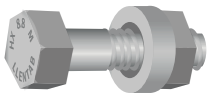


Self-tapping,
stainless screw,
self-vulcanizing seal



Pre-formed holes

Galvanized, mounting screw
class 8.8 with pad and nut



Steel roof purlin,
hot-dip zinc coating (275 g/m² or 450 g/m²),
Z-profile

Steel truss girder,
hot-dip zinc coating (275 g/m² or 450 g/m²),
pre-formed holes

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CZ0728 BSS

BUILDING SIZE	5 881 m²	**HEIGHT**	7.4 m
CATEGORY	Storage building	**LENGTH**	147.4 m
INSULATION	No	**WIDTH**	39.9 m
ROOF SLOPE	4°	**COUNTRY**	Czech Republic
		CITY	Sokolov

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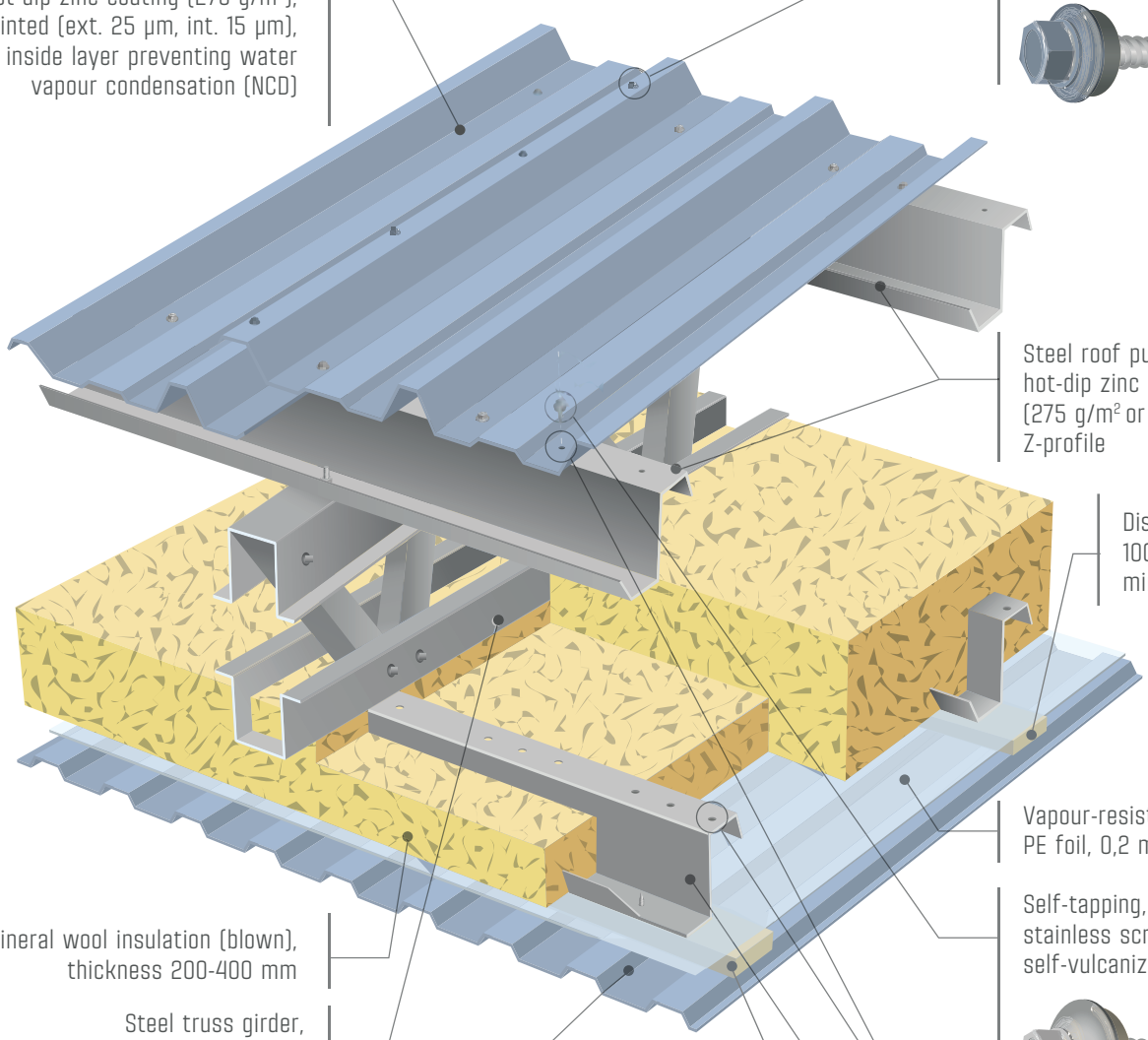
ROOF - TYPE 2LF
roof insulation - compound cladding



Steel plate TP46, thickness 0,63 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm), inside layer preventing water vapour condensation (NCD)

Self-drilling screw, hot-dip zinc coated and painted, self-vulcanizing seal

Steel roof purlin, hot-dip zinc coating (275 g/m² or 450 g/m²), Z-profile

Distance rail - isoblock 100x20 mm, mineral wool 200 kg/m³

Vapour-resistant layer, PE foil, 0,2 mm

Self-tapping, stainless screw, self-vulcanizing seal

Pre-formed holes

Soffit steel roof purlin, hot-dip zinc coating (275 g/m² or 450 g/m²), Z-profile

Mineral wool insulation (blown), thickness 200-400 mm

Steel truss girder, hot-dip zinc coating (275 g/m² or 450 g/m²), pre-formed holes

Steel plate IP18, thickness 0,5 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm)

Distance rail - isoblock 100x20 mm, mineral wool 200 kg/m³

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
200	U = 0,19	compliant	compliant	-
250	U = 0,15	compliant	compliant	compliant
300	U = 0,13	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance. Filling - mineral wool λ = 0,040W/mK, ρ = 50-90 kg/m³.

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CZ0831 TŘÍDÍRNA VAJEC

BUILDING SIZE	7 904 m²
CATEGORY	Agriculture building
INSULATION	Yes
ROOF SLOPE	7°
HEIGHT	4.6 m
LENGTH	104.0 m
WIDTH	76.0 m
COUNTRY	Czech Republic
CITY	Vejprnice

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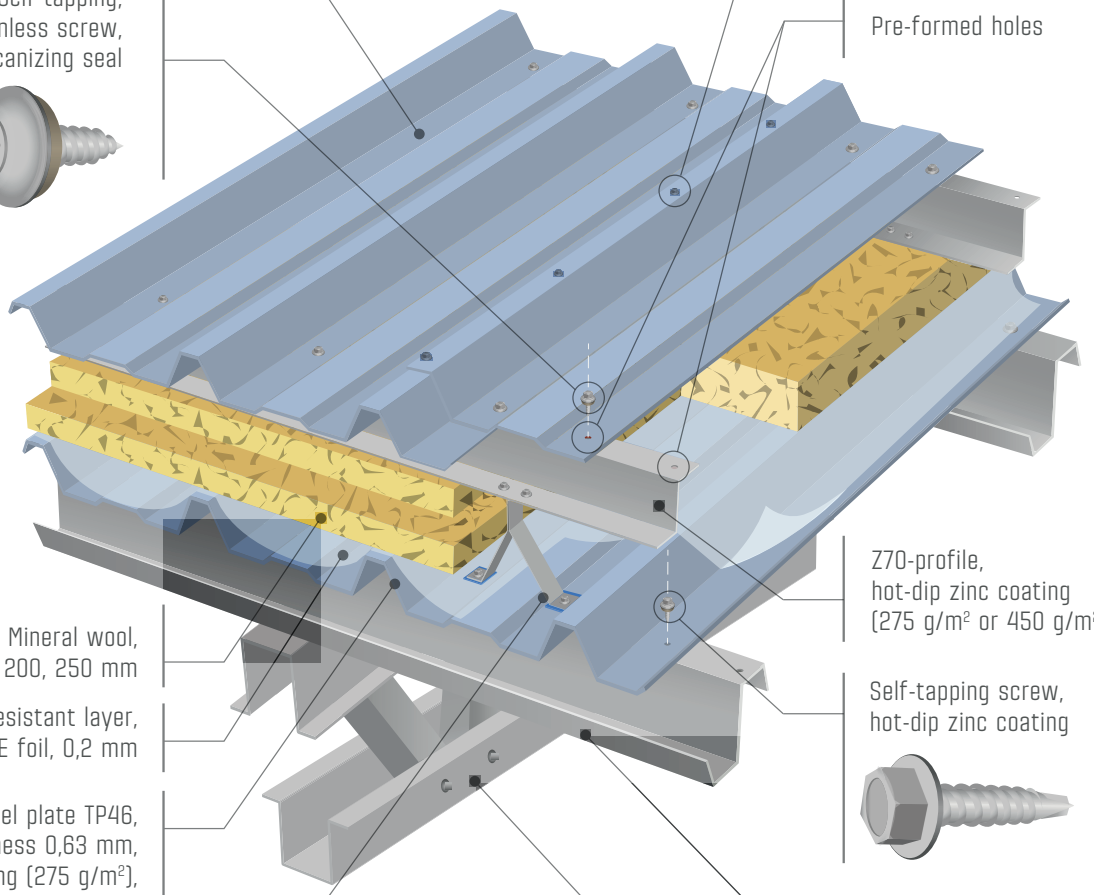
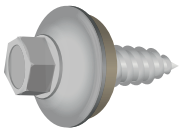
ROOF - TYPE 5
roof insulation - compound cladding



Steel plate TP46, thickness 0,63 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm),

Self-tapping, stainless screw, self-vulcanizing seal



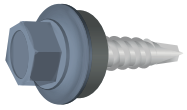
Mineral wool, thickness 150, 200, 250 mm

Vapour-resistant layer, PE foil, 0,2 mm

Steel plate TP46, thickness 0,63 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm)

Steel console, hot-dip zinc coating (275 g/m² or 450 g/m²), height 150, 200 or 250 mm, with insulation pads reducing the thermal bridge

Self-drilling screw, hot-dip zinc coated and painted



Pre-formed holes

Z70-profile, hot-dip zinc coating (275 g/m² or 450 g/m²)

Self-tapping screw, hot-dip zinc coating

Steel roof purlin, hot-dip zinc coating (275 g/m² or 450 g/m²), Z-profile

Steel truss girder, hot-dip zinc coating (275 g/m² or 450 g/m²), pre-formed holes

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
150	U = 0,26	compliant	-	-
200	U = 0,20	compliant	compliant	-
250	U = 0,16	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance. Filling - mineral wool λ = 0,039W/mK, ρ = 50-90 kg/m³.

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SK0120 JL ARÉNA

BUILDING SIZE	1 800 m²
CATEGORY	Sport building
INSULATION	Yes
ROOF SLOPE	14°
HEIGHT	3.1 m
LENGTH	60.0 m
WIDTH	30.0 m
COUNTRY	Slovakia
CITY	Liptovský Mikuláš

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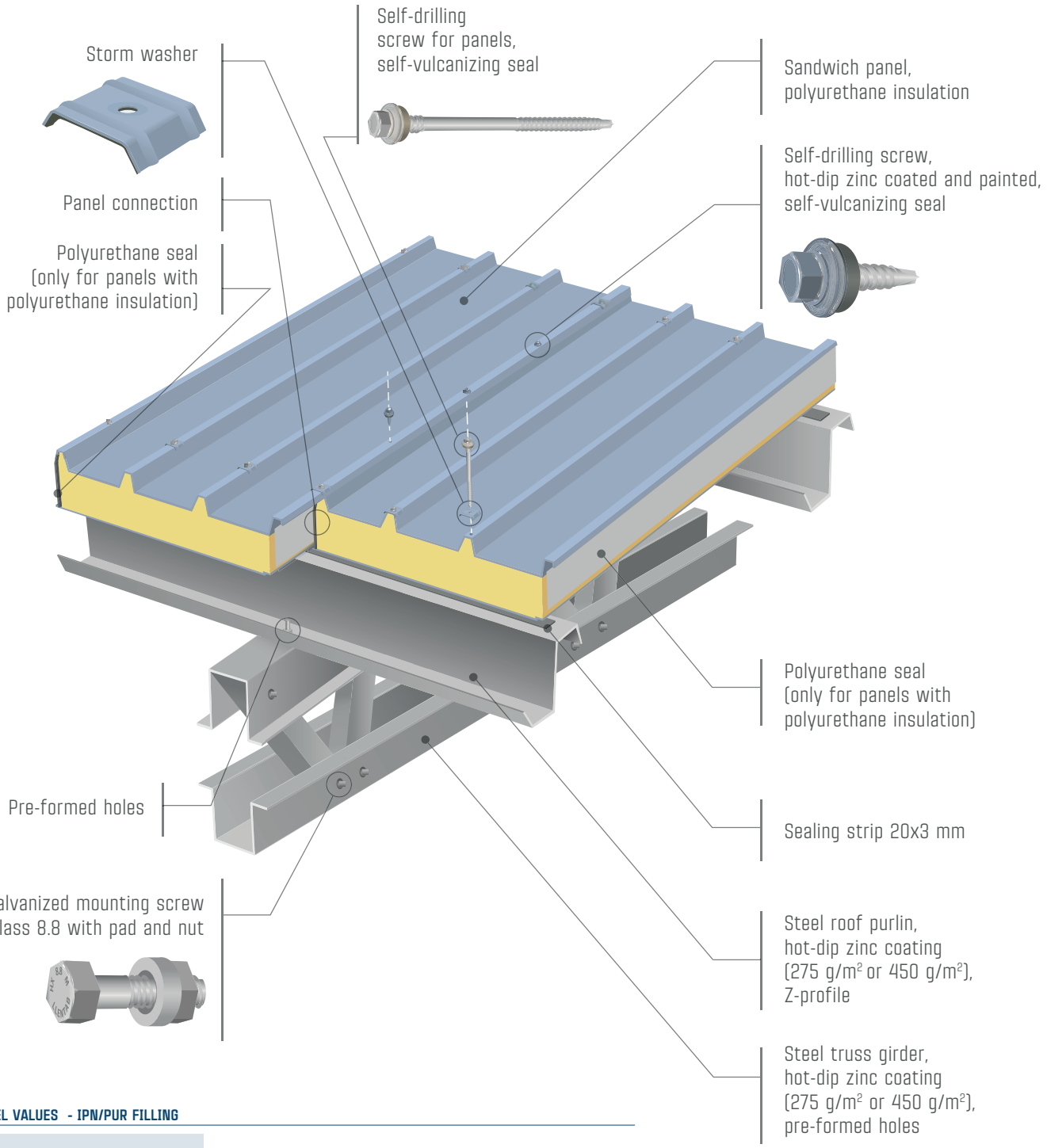
ROOF - TYPE 6

roof insulation - PUR sandwich panels



PANEL VALUES - IPN/PUR FILLING

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
80	U = 0,25	compliant	-	-
100	U = 0,21	compliant	compliant	-
120	U = 0,16	compliant	compliant	compliant
160	U = 0,13	compliant	compliant	compliant

Note: Filling - IPN λ = 0,024W/(m.K), ρ = 37 kg/m³.

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CZ0713 AUTOSALON MŇUK

BUILDING SIZE	333 m²
CATEGORY	Retail building
INSULATION	Yes
ROOF SLOPE	4°
HEIGHT	5.0 m
LENGTH	31.1 m
WIDTH	10.7 m
COUNTRY	Czech Republic
CITY	Vysoké Mýto

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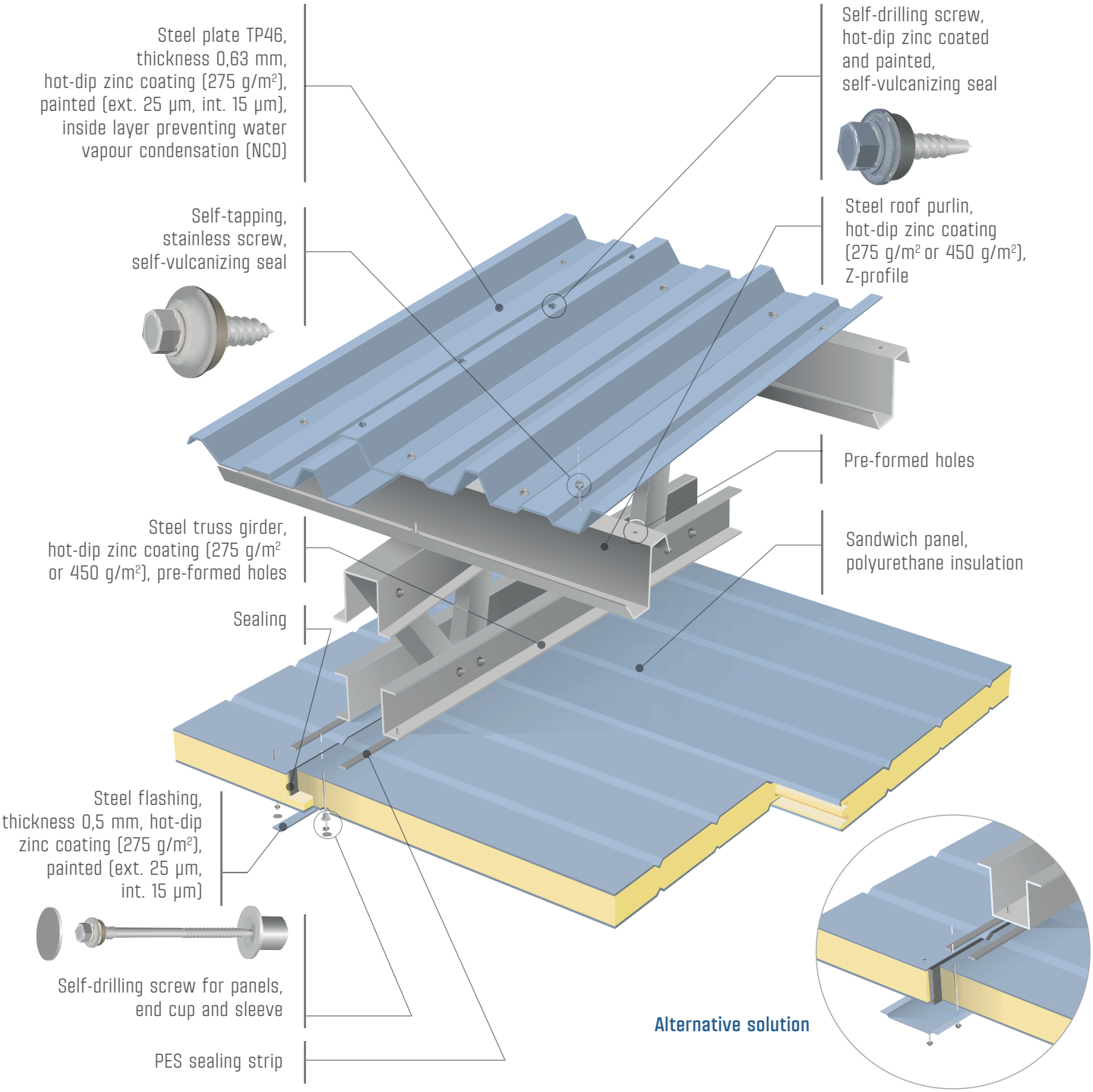
ROOF - TYPE 7W
roof insulation - PUR sandwich panels



PANEL VALUES - IPN/PUR

INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
100	U = 0,22	compliant	-	-
120	U = 0,19	compliant	compliant	-
150	U = 0,15	compliant	compliant	compliant
200	U = 0,11	compliant	compliant	compliant

Note: Filling - IPN λ = 0,024W/(m.K), ρ = 37 kg/m³.

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CZ0482 FROSTFOOD

BUILDING SIZE	873 m²
CATEGORY	Production building
INSULATION	Yes
ROOF SLOPE	11°
HEIGHT	11.5 m
LENGTH	37.8 m
WIDTH	23.1 m
COUNTRY	Czech Republic
CITY	Rokytnice

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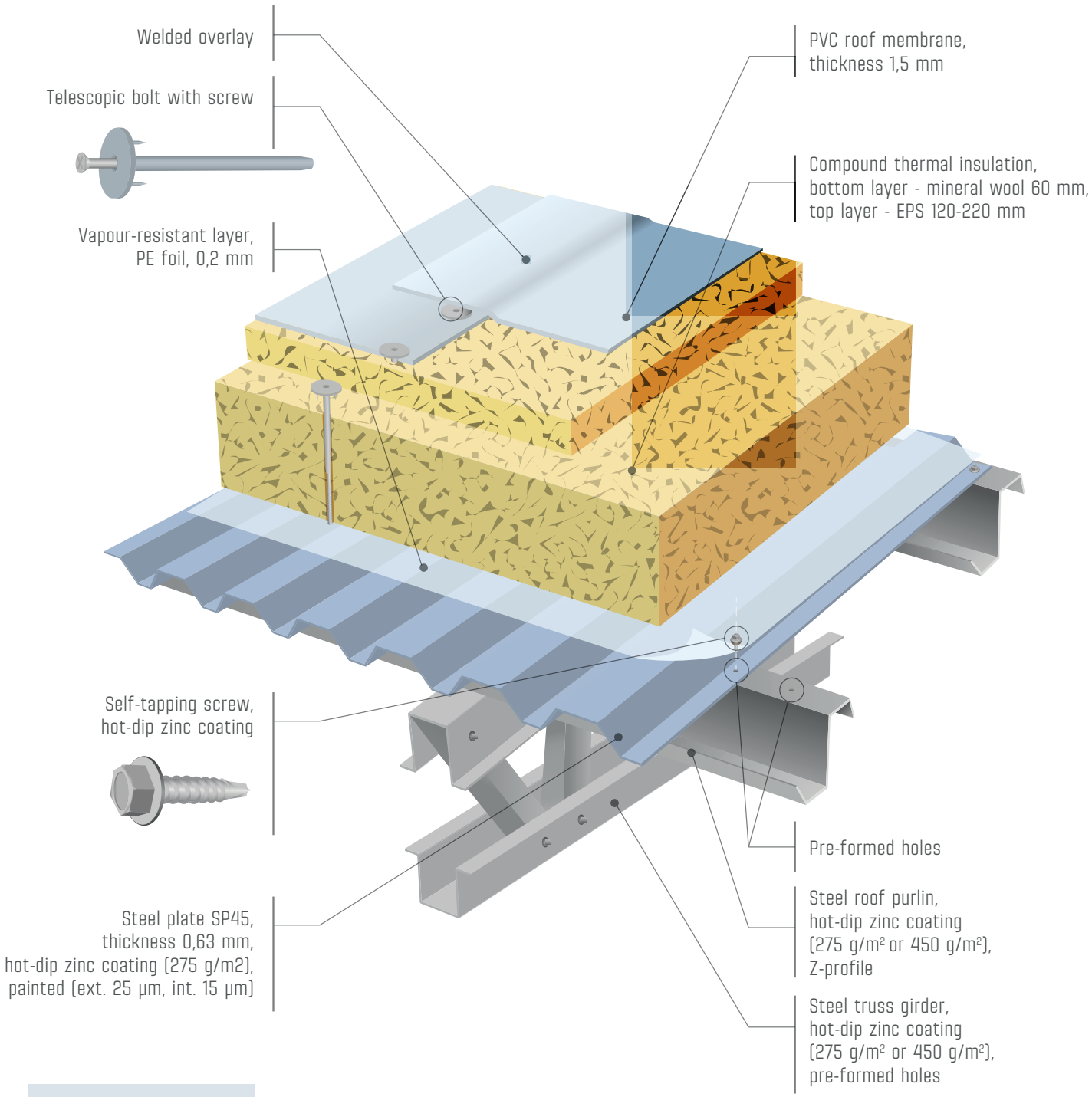
ROOF - TYPE SP
roof insulation - compound cladding



INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
60+120	U = 0,20	compliant	compliant	-
60+150	U = 0,17	compliant	compliant	compliant
60+220	U = 0,13	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance.
Filling - mineral wool 60 mm λ = 0,038 W/mK, ρ = 80 kg/m³ + EPS 120/150/220 λ = 0,038 W/mK, ρ = 70 kg/m³

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CZ0705 COPRECI

BUILDING SIZE	1 520 m²
CATEGORY	Production building
INSULATION	Yes
ROOF SLOPE	4°
HEIGHT	3.7 m
LENGTH	42.0 m
WIDTH	36.2 m
COUNTRY	Czech Republic
CITY	Dvorce

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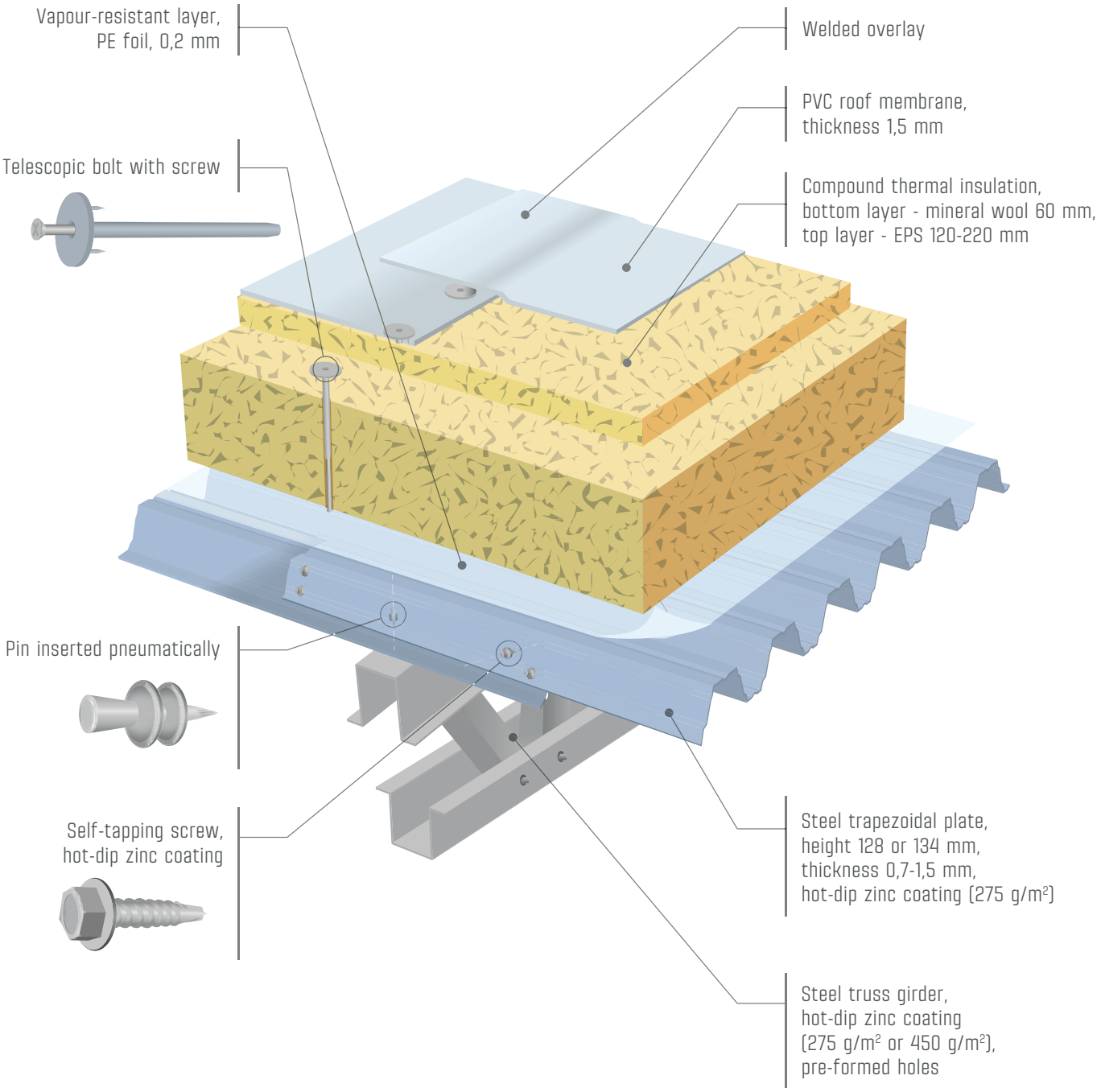
ROOF - TYPE SPH
roof insulation - compound cladding



INSULATION THICKNESS (mm)	THERMAL TRANSMITTANCE U (W/Km²)	REQUIRED U_N VALUES ACCORDING TO INTERNAL DESIGN TEMPERATURE 14°C (U_n = 0,26)	16°C (U_n = 0,21)	18°-22°C (U_n = 0,16)
60+120	U = 0,20	compliant	compliant	-
60+150	U = 0,17	compliant	compliant	compliant
60+220	U = 0,13	compliant	compliant	compliant

Note: System thermal bridges were taken into account when calculating thermal transmittance.
Filling - mineral wool 60 mm λ = 0,038 W/mK, ρ = 80 kg/m³ + EPS 120/150/220 EPS λ = 0,038 W/mK, ρ = 70 kg/m³

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CZ0592 TĚLOCVIČNA MĚLNÍK

BUILDING SIZE	1 188 m²
CATEGORY	Sport building
INSULATION	Yes
ROOF SLOPE	7°
HEIGHT	10.0 m
LENGTH	45.5 m
WIDTH	26.1 m
COUNTRY	Czech Republic
CITY	Mělník

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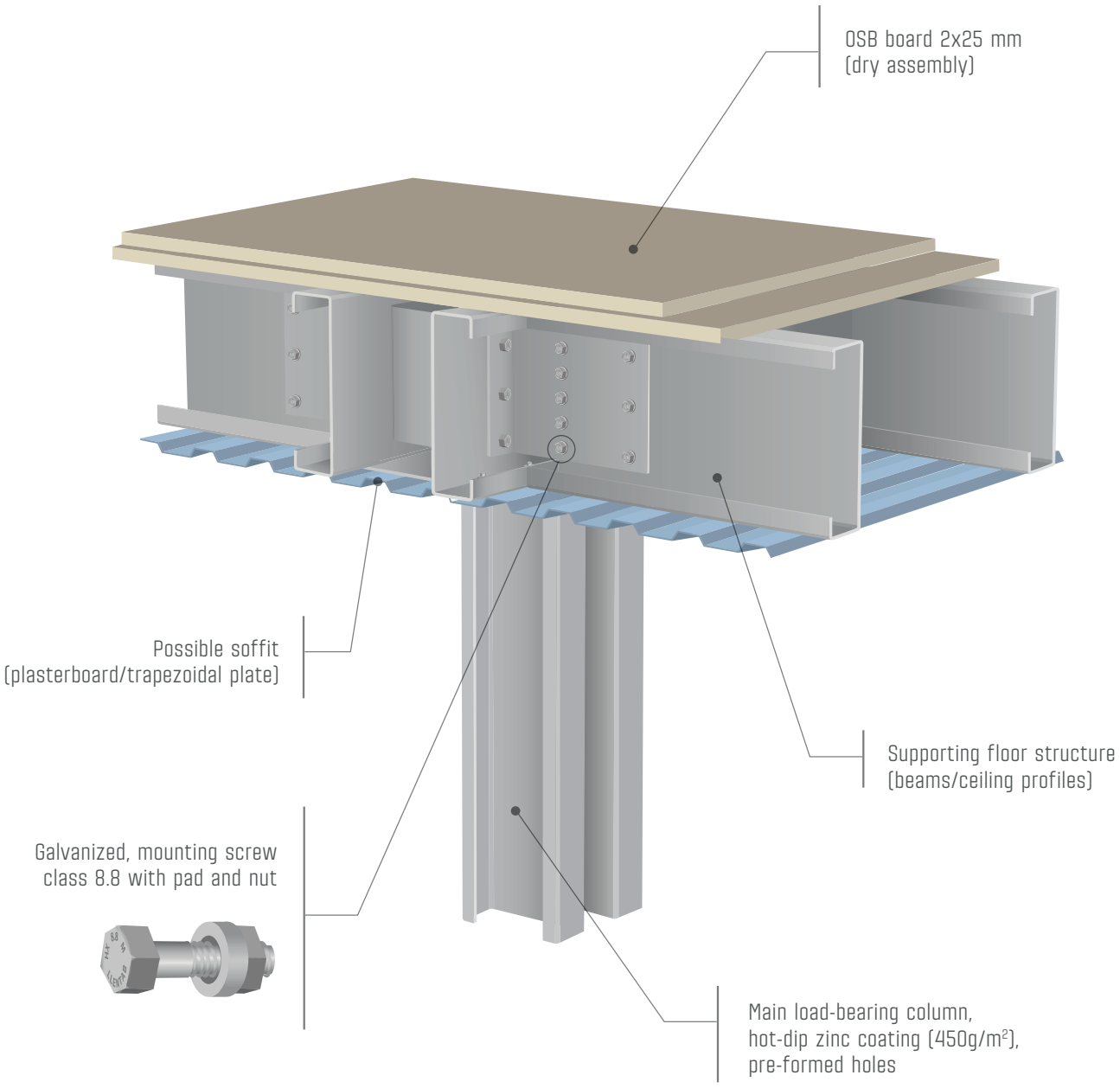
FLOOR - OSB BOARDS
dry assembly

The floor consists of a system of ceilings profiles and beams, on which a load-bearing layer of OSB boards is laid. The boards can be laid in one to three layers, depending on the required load and the distance of the ceilings profiles.



LOADING AREAS CATEGORIES	A, B
SPAN	3 - 7 m
PERMISSIBLE LOADING	2,5 - 5,0 kN/m² (depending on the load-bearing capacity of OSB boards)
FLOOR SUPPORTING STRUCTURE THICKNESS	300 - 500 mm incl. beams/ceiling profiles

Note: Fire resistance can be ensured by a fire-resistant ceiling (plasterboard, mineral board). Consult LLENTAB technical department for any different uses.

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CZ0321 STAUNER PŘÍSTAVBA AB

BUILDING SIZE	317 m^2
CATEGORY	Office building
INSULATION	Yes
HEIGHT	9,0 m
LENGTH	20.7 m
WIDTH	15.3 m
COUNTRY	Czech Republic
CITY	Starý Klíčov

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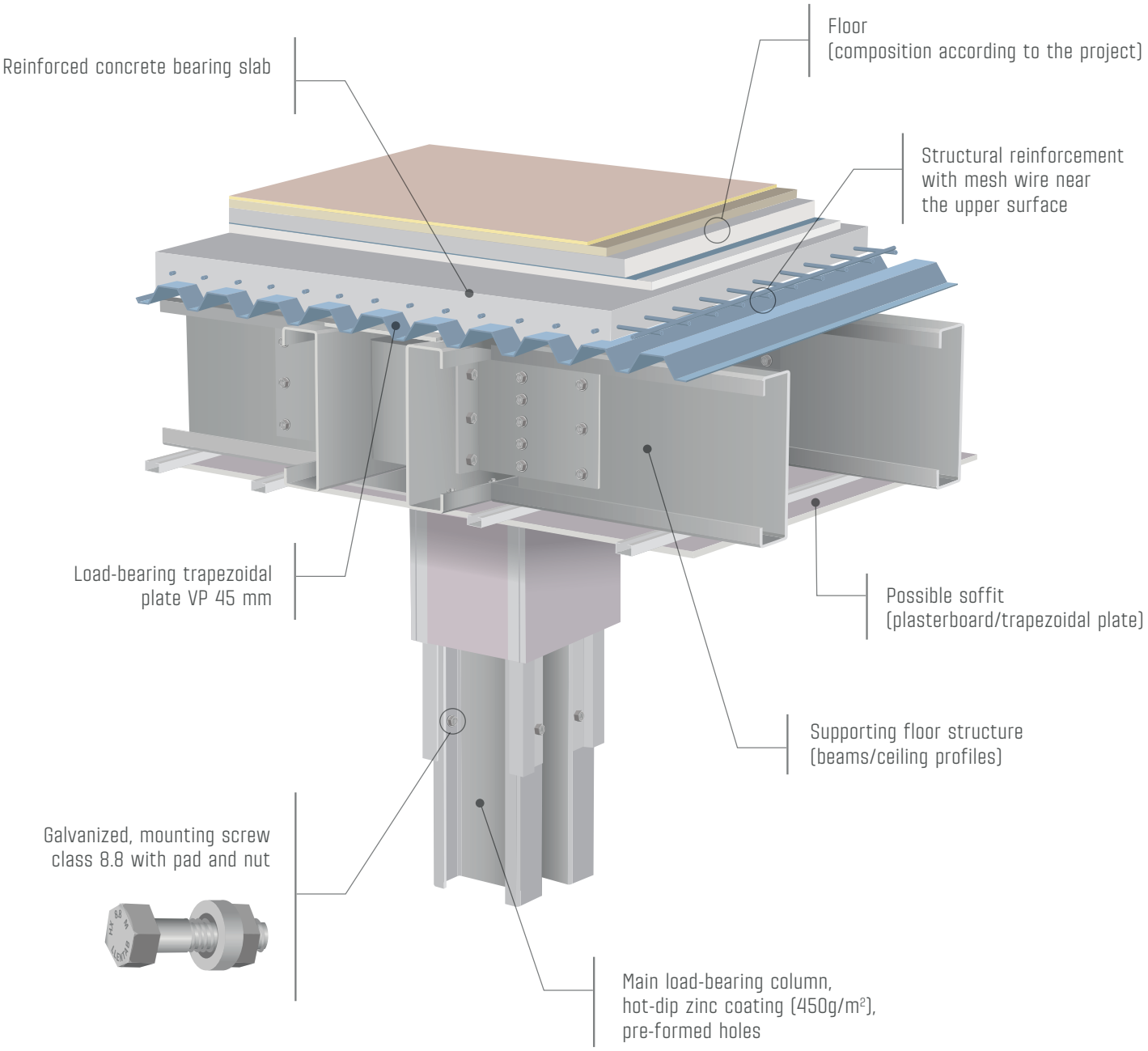
FLOOR - LLENTAB
load-bearing trapezoidal plate

The floor consists of a system of ceilings profiles and beams, on which a load-bearing trapezoidal plate is placed. A concrete bearing layer is poured into the trapezoidal plate, which is structurally reinforced with mesh wire near the upper surface. The final composition of the floor is then created on the concrete layer.



LOADING AREAS CATEGORIES	A, B, C1
SPANS	3 - 7 m
PERMISSIBLE LOADING	2,5 - 7,0 kN/m²
FLOOR SUPPORTING STRUCTURE THICKNESS	370 - 650 mm incl. beams/ceiling profiles

Note: Fire resistance can be ensured by a fire-resistance ceiling
Consult LLENTAB technical department for any different uses.

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CZ0744

BUILDING SIZE	673 + 646 + 462 + 644 m²
CATEGORY	Storage building
INSULATION	Yes
ROOF SLOPE	4°
HEIGHT	5.7+4.5+6.9+7.3 m
LENGTH	51.0+27.5+27.5+51.1 m
WIDTH	13.2+23.5+16.8+12.6 m
COUNTRY	Czech Republic
CITY	Přelouč

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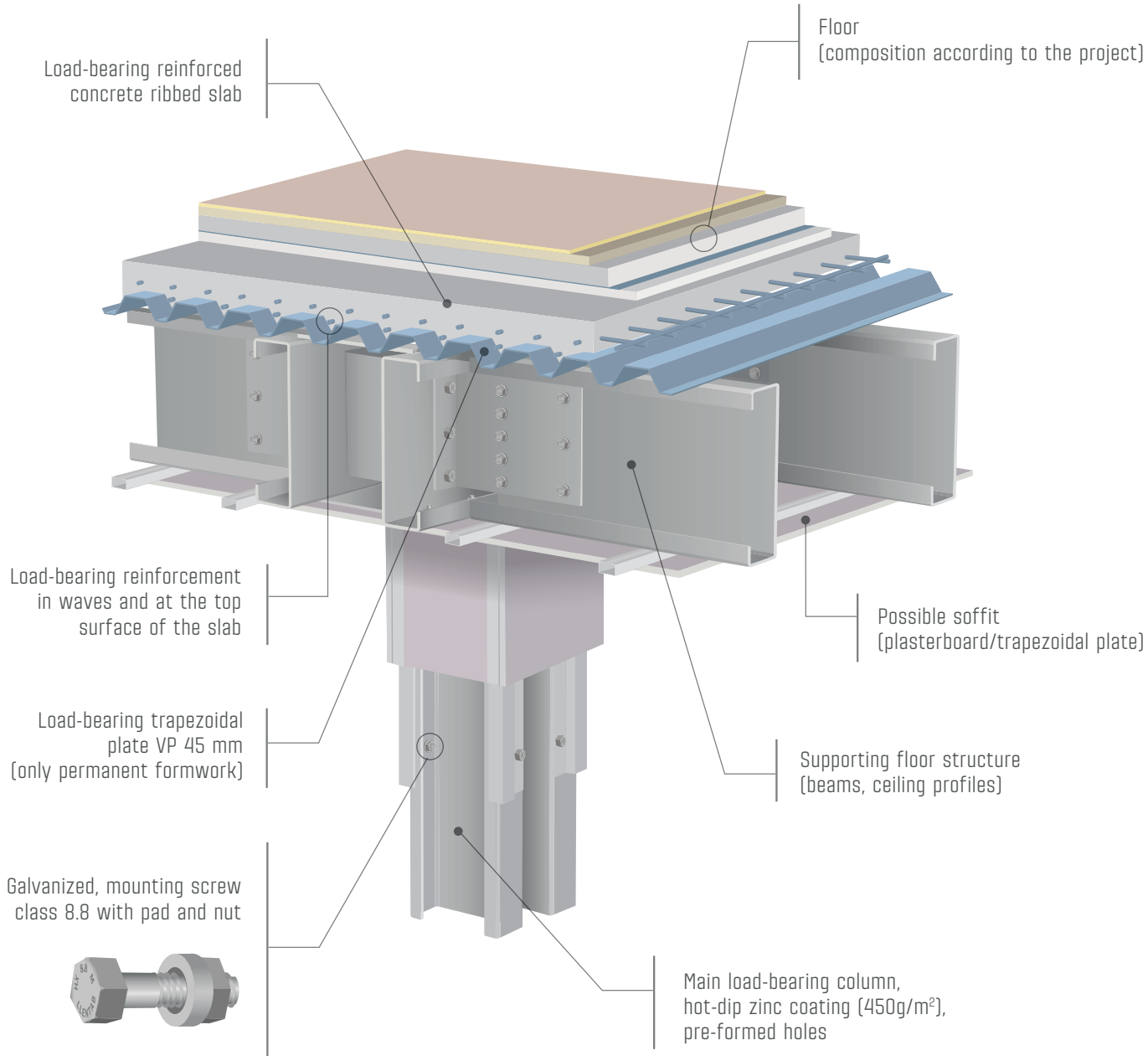
FLOOR - RC SLAB LOW

low trapezoidal plate (formwork)

The floor consists of a system of ceiling profiles and beams, on which a load-bearing concrete ribbed slab is poured. The slab is reinforced at the top and bottom surface (in waves). The slab is poured into the permanent formwork made of low trapezoidal metal plate. The final composition of the floor is then created on the concrete slab.



LOADING AREAS CATEGORIES	A, B, C1-C5, D1, E1, F
SPANS	3 - 7 m
PERMISSIBLE LOADING	2,5 - 5,0 kN/m²
FLOOR SUPPORTING STRUCTURE THICKNESS	420 - 650 mm incl. beams/ceiling profiles

Note: Fire resistance can be ensured by a fire-resistance ceiling.
Consult LLENTAB technical department for any different uses.

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CZ1073 BOHEMIATEX LOGISTIKA

BUILDING SIZE	9 956 m²
CATEGORY	Storage building
INSULATION	Yes
ROOF SLOPE	3°
HEIGHT	10.7 m
LENGTH	79.96 m
WIDTH	124.51 m
COUNTRY	Czech Republic
CITY	Pohodlí

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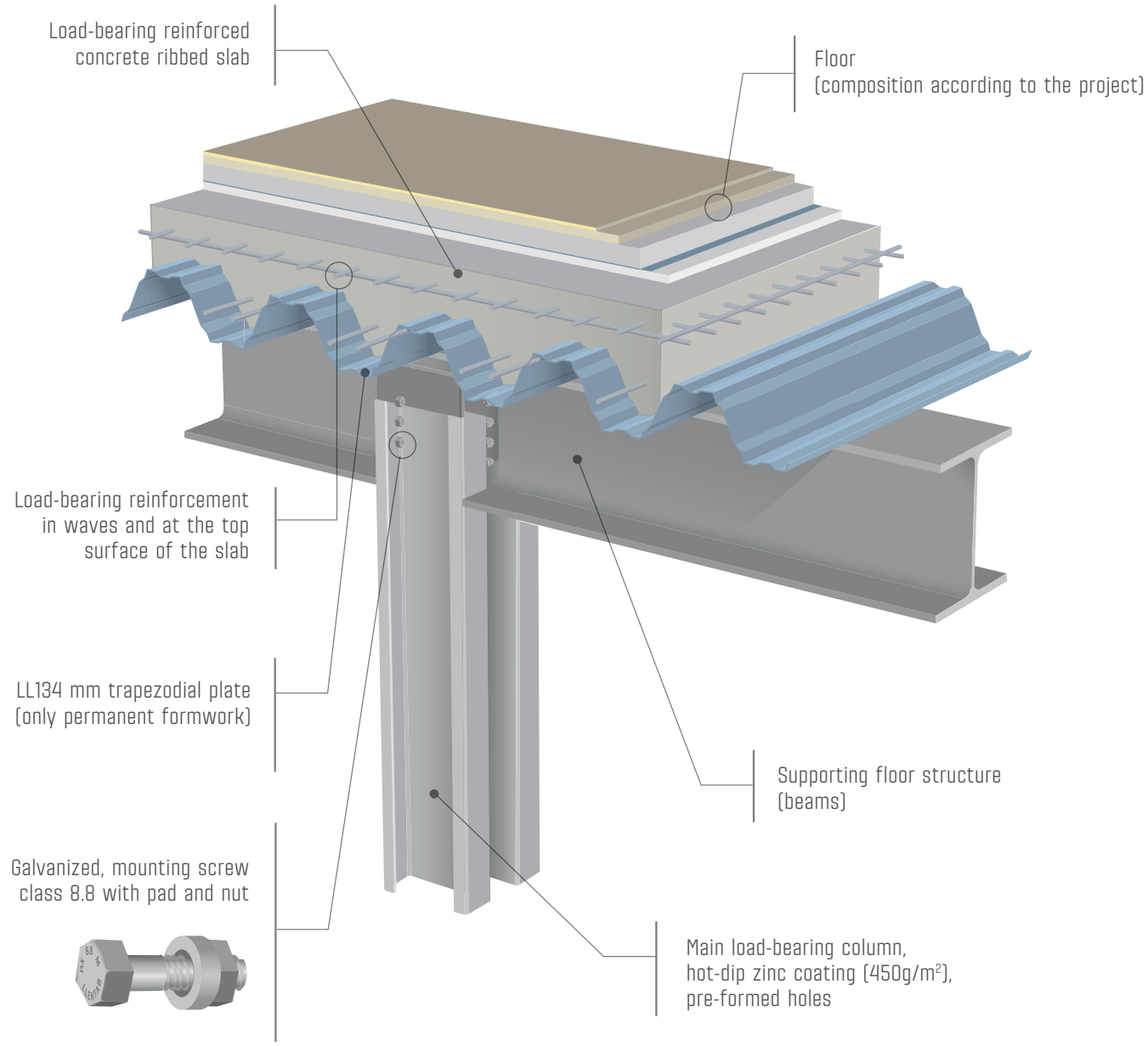
FLOOR - RC SLAB HIGH
high trapezoidal plate (formwork)

The floor consists of hot-rolled steel beams in the shape of IPE, HEA or HEB, which are anchored to the columns. A load-bearing reinforced concrete ribbed slab is placed on the beams. The slab is cast into trapezoidal steel plates serving as permanent formwork.



LOADING AREAS CATEGORIES	A, B, C1-C5, D1, E1, F
SPANS	3 - 7 m
PERMISSIBLE LOADING	2,5 - 7,5 kN/m²
FLOOR SUPPORTING STRUCTURE THICKNESS	500 - 600 mm

Note: Fire resistance can be ensured by the structural design of the reinforced concrete slab (reinforcement cover), structural assessment of steel beams, fire-resistant soffit or fire-resistant covering only steel beams or fire-retardant painting of beams only. Consult LLENTAB technical department for any different uses.

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SK0146 SL TECH

BUILDING SIZE	227 m²
CATEGORY	Office building
INSULATION	Yes
ROOF SLOPE	4°
HEIGHT	6.3 m
LENGTH	15.1 m
WIDTH	15.0 m
COUNTRY	Slovakia
CITY	Liptovský Mikuláš

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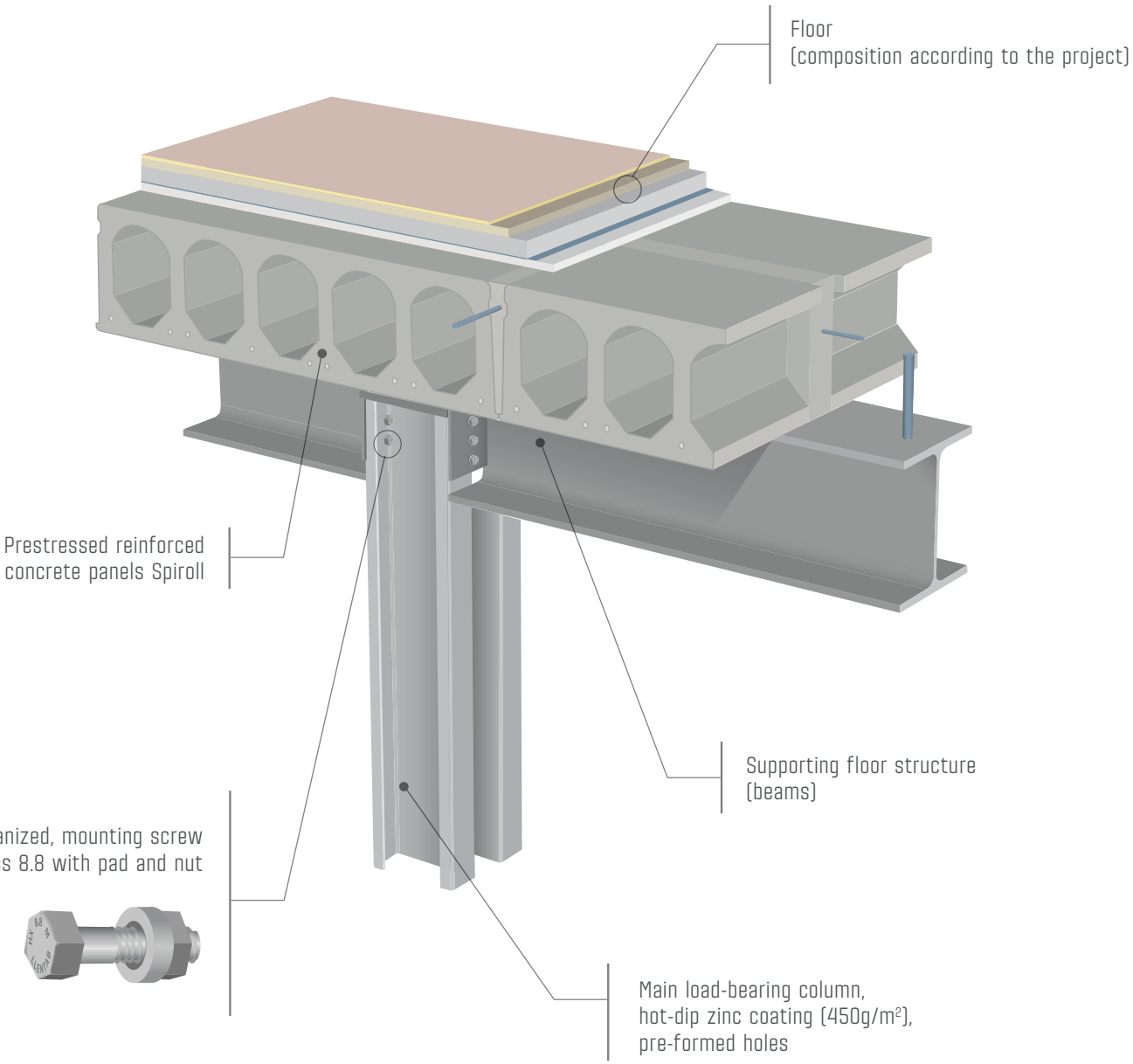
FLOOR - SPIROLL
prestressed reinforced concrete panels

The floor consists of hot-rolled steel beams in the shape of IPE, HEA or HEB, which are anchored to the columns. Supporting prestressed reinforced concrete panels SPIROLL are laid on the beams.



LOADING AREAS CATEGORIES	A, B, C1-C5, D1, E, F
SPANS	3 - 12 m
PERMISSIBLE LOADING	2,5 - 10,0 kN/m²
FLOOR SUPPORTING STRUCTURE THICKNESS	160 - 400 mm excl. beams, 410 - 750mm incl. beams

Note: Fire resistance can be ensured by the structural design of the panels, structural assessment of steel beams, fire-resistant soffit or fire-resistant covering only steel beams or fire-retardant painting of beams only.
Consult LLENTAB technical department for any different uses.

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CZ0368 ROLUX

BUILDING SIZE	218 m²
CATEGORY	Office building
INSULATION	Yes
ROOF SLOPE	2°
HEIGHT	6.7 m
LENGTH	29.0 m
WIDTH	7.5 m
COUNTRY	Czech Republic
CITY	Bohuňovice

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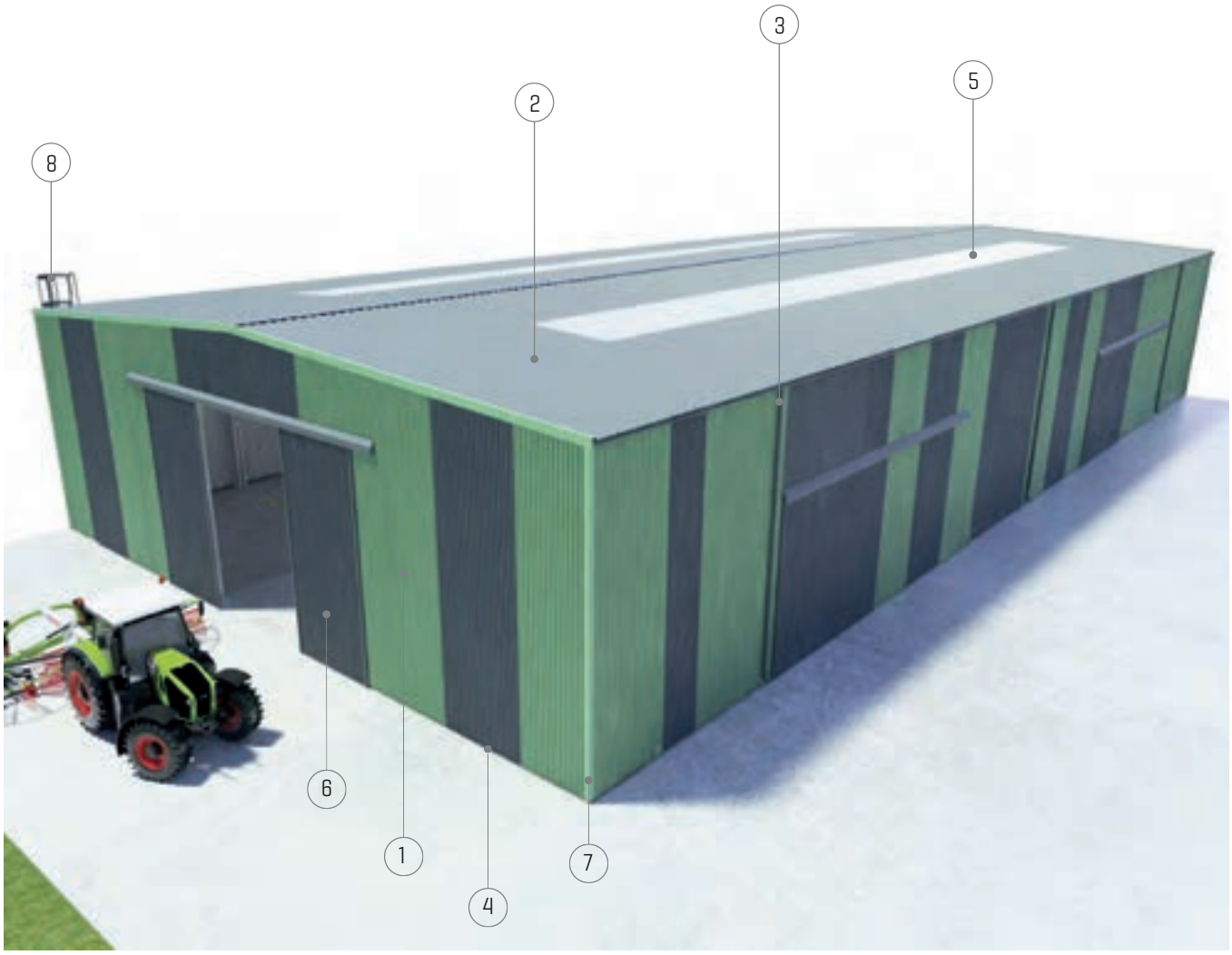
WALL - TYPE 0
ROOF - TYPE 0



1. Steel trapezoidal plate VP45, thickness 0,5 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm)
2. Steel trapezoidal plate TP46 with NCD, thickness 0,63 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm),
3. Gutter and downpipes
4. Foundation drip edge
5. Roof skylights
6. Outside slideside gate
7. Corner flashing
8. Ladder

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WALL - TYPE 3
ROOF - TYPE 5

1. Steel trapezoidal plate VP45, thickness 0,5 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm)
2. Steel trapezoidal plate TP46, thickness 0,63 mm, hot-dip coating (275 g/m²), painted (ext. 25 µm, int. 15 µm),
3. Gutter and downpipes
4. Canopy
5. Plastic or aluminum windows
6. Roof skylights and smoke exhaust vents
7. Overhead gate
8. Loading dock
9. Glass facade
10. Ladder

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WALL - TYPE 6
ROOF - TYPE 6

1. Wall sandwich panel
2. Roof sandwich panel
3. Gutter and downpipes
4. Foundation drip edge
5. Corner flashing
6. Roof skylights and smoke exhaust vents
7. Overhead gate
8. Steel doors
9. Plastic or aluminium windows
10. Ladder

CE

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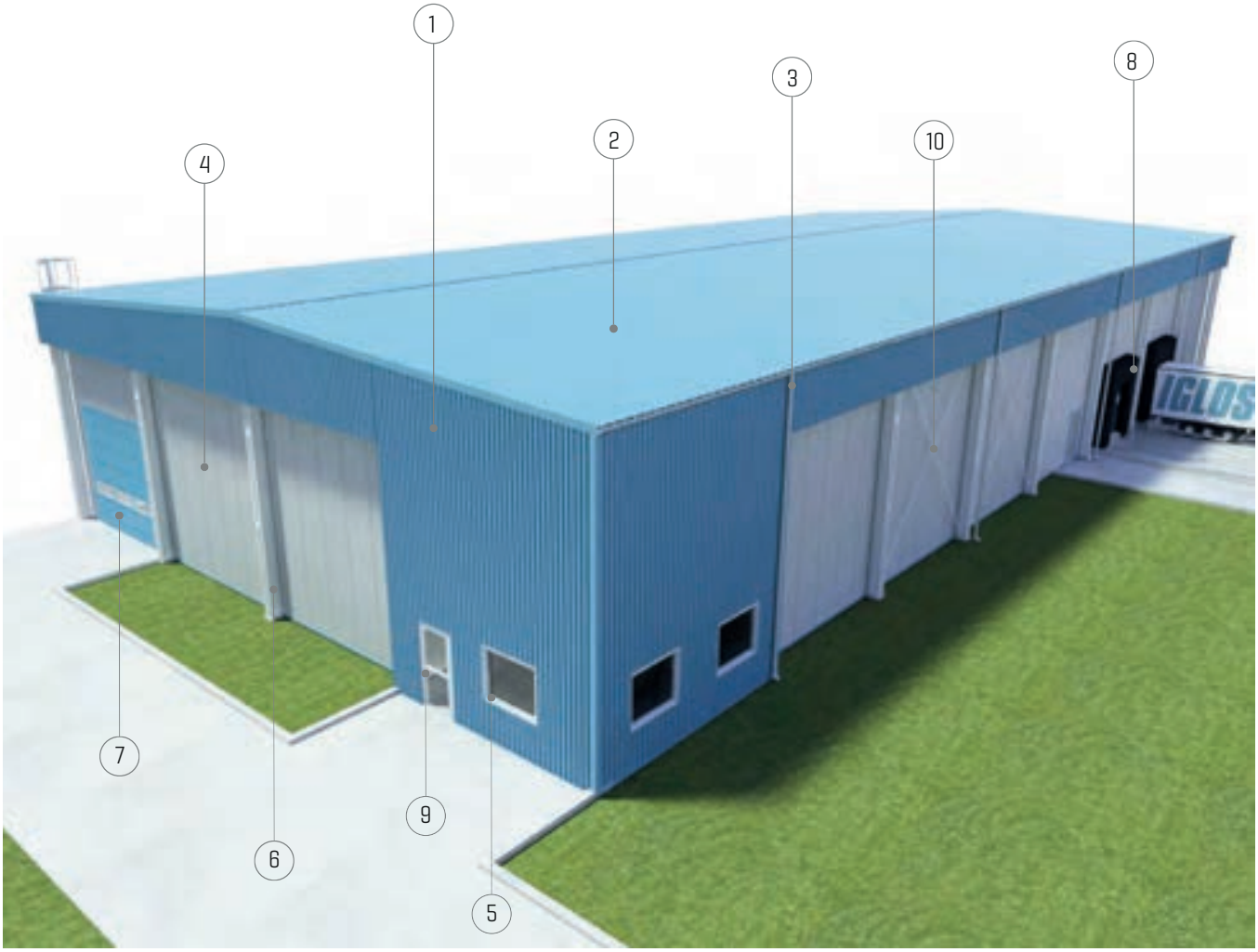
WALL - TYPE 6W
ROOF - TYPE 6W



1. Steel trapezoidal plate VP45, thickness 0,5 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm)
2. Steel trapezoidal plate TP46, thickness 0,63 mm, hot-dip zinc coating (275 g/m²), painted (ext. 25 µm, int. 15 µm),
3. Gutter and downpipes
4. Refrigeratory panel
5. Plastic or aluminum windows
6. Main load-bearing column, hot-dip zinc coating (450 g/m²)
7. Overhead gate
8. Loading dock
9. Steel doors
10. Bracing

CE

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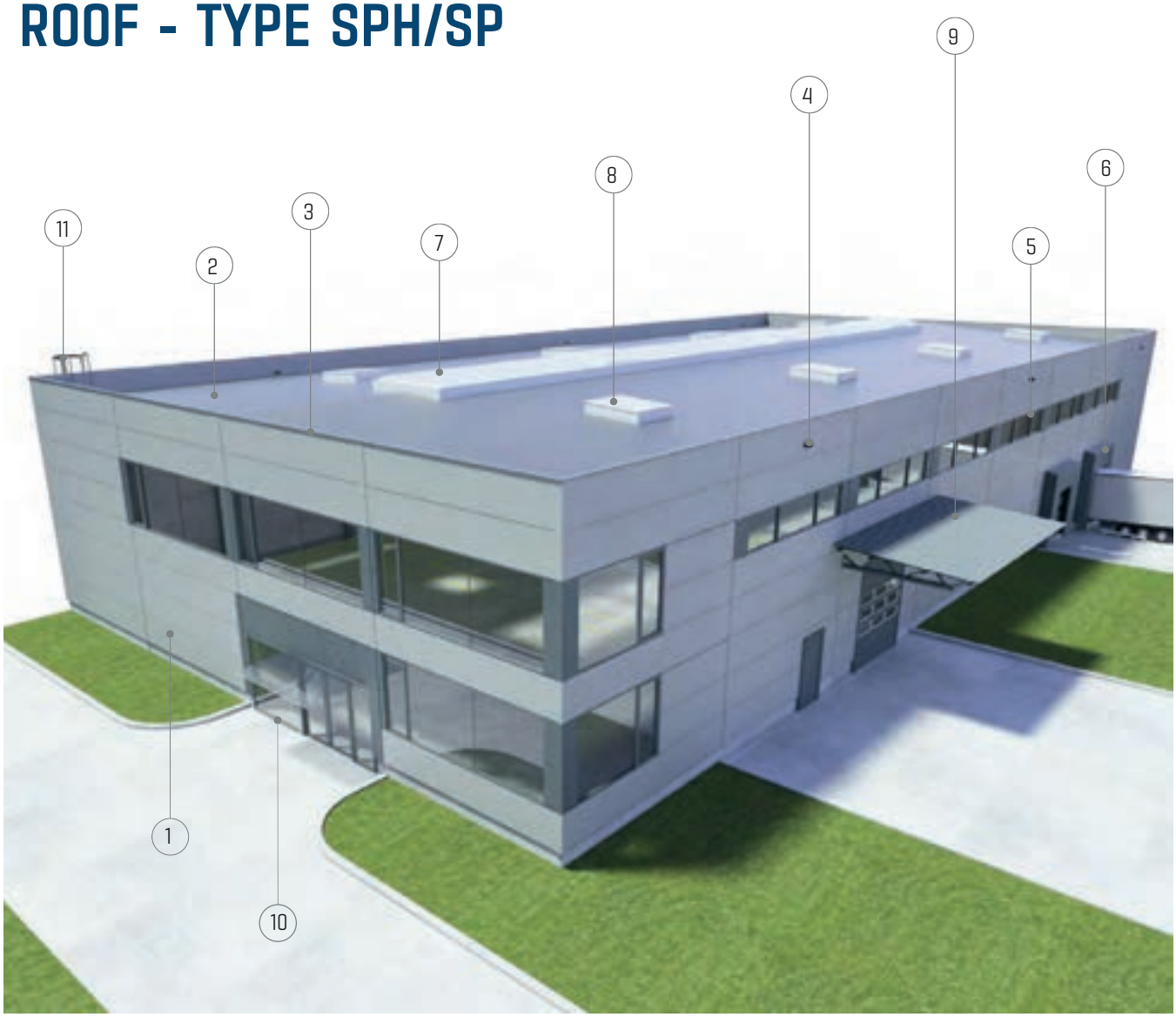
WALL - TYPE 7
ROOF - TYPE SPH/SP



1. Wall sandwich panel
2. PVC roof membrane
3. Attic
4. Roof outlet
5. Wall light / windows
6. Loading dock
7. Roof skylights and smoke exhaust vents
8. Smoke exhaust vents
9. Canopy
10. Glass facade
11. Ladder

CE

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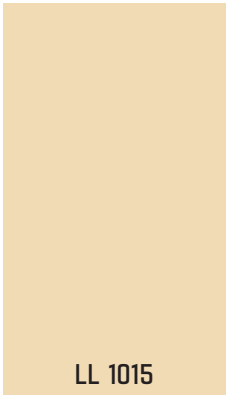
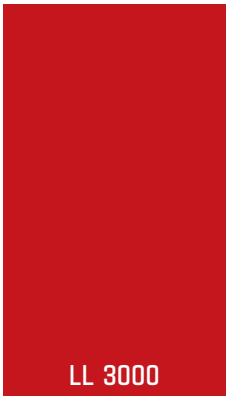
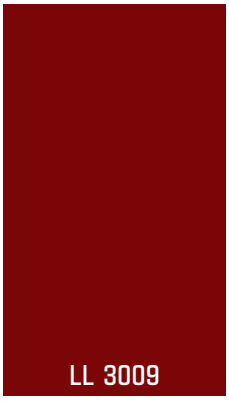
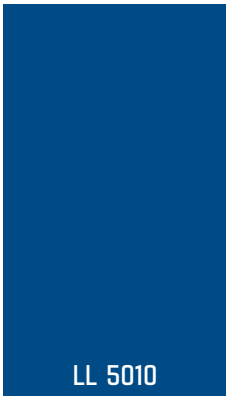
COLOR GUIDE

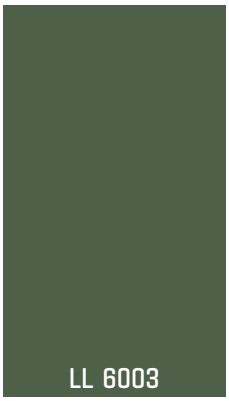
Standard

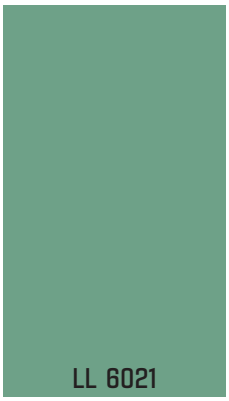


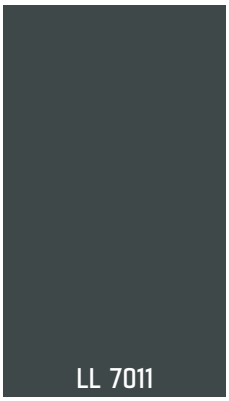


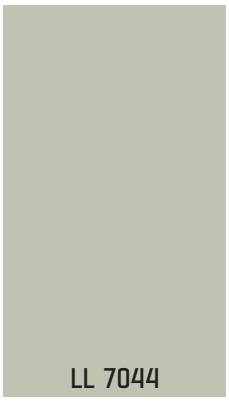


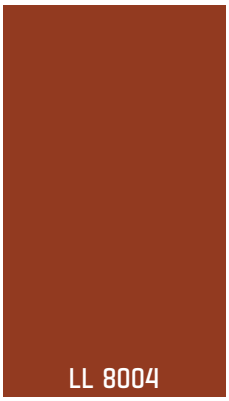


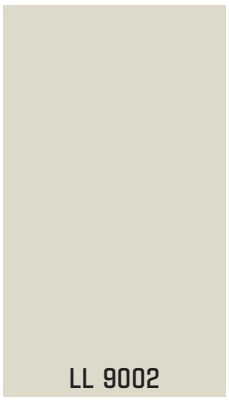


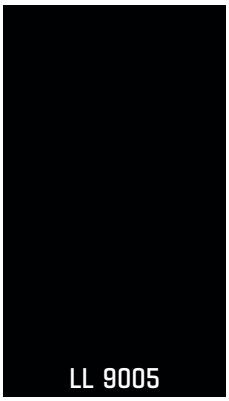


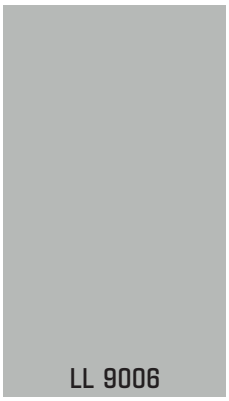


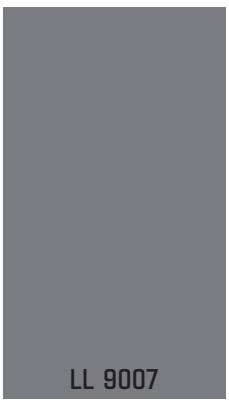


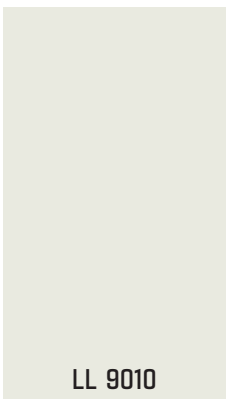




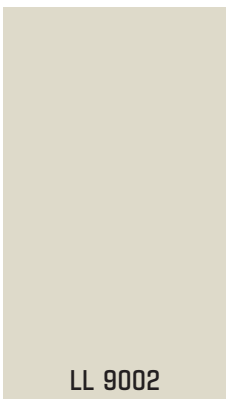




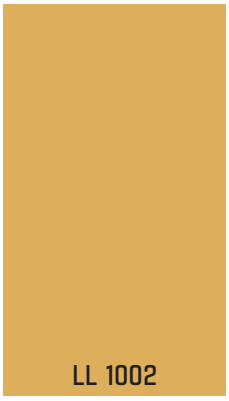


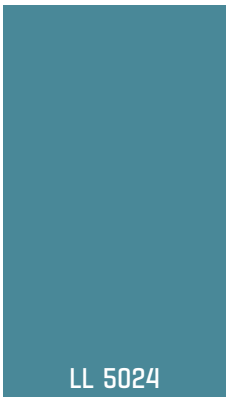


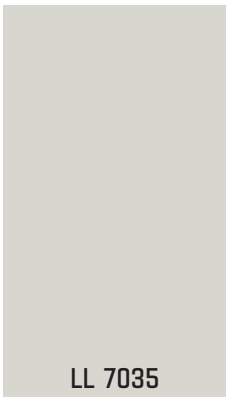
interior

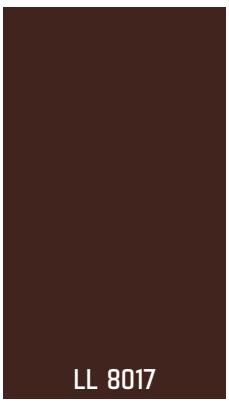


Standard +









The colors shown do not correspond exactly to the real colors. (01/2022)

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