

FLOOR PLAN OF THE CEILING



ELEMENT	DIMENSION l/w [mm]	KS	PRECAMBER [mm]	NOTE
BEST - ceiling insert 7/25	250 x 480 x 70	55		insert intended to be trimmed at the point of bearing on the load-bearing wall; the minimum bearing length on the wall is 25 mm
BEST - ceiling insert 20/25	250 x 480 x 200	347		
BEST - plastic cap 20/25	25 x 470 x 190	72		
BEST - ceiling beam 2,75 m	2750 x 140 x 175	14		
BEST - ceiling beam 3,75 m	3750 x 140 x 175	5		
BEST - ceiling beam 5,00 m	5000 x 140 x 175	4	12	
BEST - ceiling beam 5,75 m	5750 x 140 x 175	15	14	
CEILING AREA [m²]	AREA OF ADDITIONAL REINFORCEMENT [m²]	PERIMETER OF THE FORMWORK [m]		
84,08	4,88	40,36		

LEGEND

- BEST - plastic cap 20/25
- BEST - ceiling insert 20/25
- BEST - ceiling insert 7/25
- Concrete topping
- Ceiling opening
- Reinforcement mesh
- Trimmed element
- REKORD ring beam formwork
- Load-bearing structure under the ceiling
- Openings in load-bearing structures under the ceiling
- Structure above the ceiling

NOTE

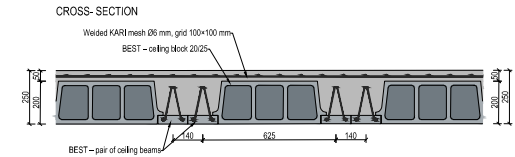
- Element installation must be carried out according to the manufacturer's installation instructions.
- The ceiling structure is designed with a thickness of 250 mm. A reinforcement mesh (100 x 100 x 6 mm) is placed over the entire surface within the concrete topping. Meshes must be overlapped by at least two grid spaces. Concrete cover for reinforcement is 20 mm unless otherwise specified in the reinforcement drawing. If the required cover cannot be maintained at the mesh connection points, the meshes can be butted together and additional bars of the same diameter made of B500B steel should be inserted at the same spacing as the connected meshes. These bars must be long enough to overlap at least two mesh spaces on each side and be hooked at the ends. Reinforcement meshes must be placed on pre-installed spacers with a minimum thickness of 15 mm (approx. 4 pcs/m²).
- Meshes located near ring beams must be extended into the ring beams.
- In areas with lowered inserts, an additional layer of mesh strips (100 x 100 x 6 mm) will be added.
- The ceiling structure must be supported with temporary installation props and slightly cambered in the middle as per the manufacturer's instructions.
- The structure must be moistened with water before concreting. Concreting must be done continuously without interruption.
- Penetrations through the ceiling structure must be coordinated with the MEP (technical services) design.
- This project does not address reinforced concrete ring beams, lintels, beams under the ceiling, vertical load-bearing structures, etc.
- All manufacturer's regulations and recommendations must be followed during ceiling construction (support method, insert placement, cambering, etc.).
- Partition walls may only be built on an unshored and properly cured ceiling structure, with the maximum possible time gap after concreting.

Loading:

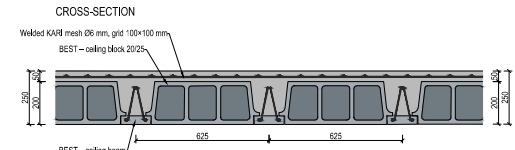
- The ceiling design assumes loads that have not been changed from the original project documentation.
- A 250 mm thick ceiling with single beams has a self-weight of $g_k = 3.57 \text{ kN/m}^2$.
- A 250 mm thick ceiling with double beams has a self-weight of $g_k = 4.02 \text{ kN/m}^2$.
- The design assumes a characteristic floor layer load of max. 2.0 kN/m^2 and a characteristic live load of 1.50 kN/m^2 (Category A according to ČSN EN 1991-1-1).

TYPICAL SUPPORT DETAILS

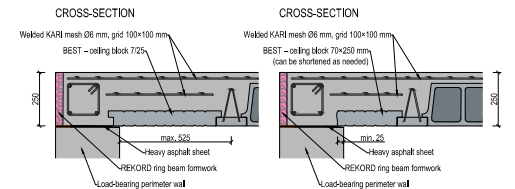
Structural solution for doubled beams



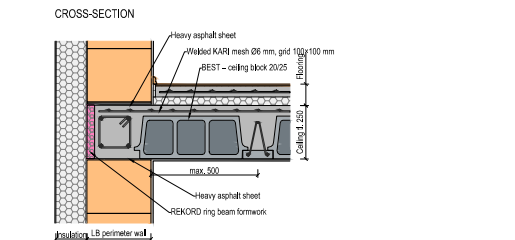
Structural solution for simple beams



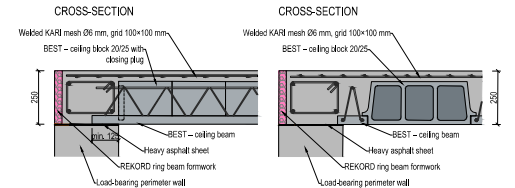
Placement of infill blocks on load-bearing perimeter wall



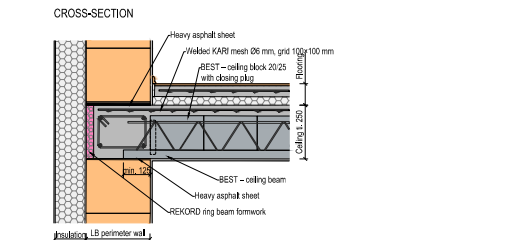
Placement of beams on load-bearing perimeter wall



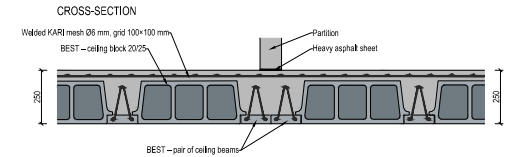
Placement of beams on load-bearing perimeter wall



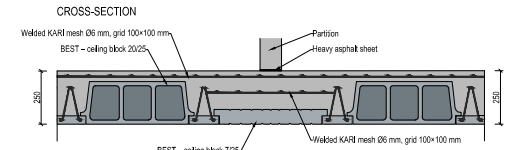
Placement of beams on load-bearing perimeter wall



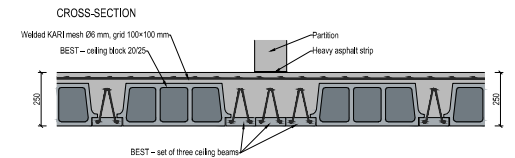
Longitudinal partition wall placed above structural beams



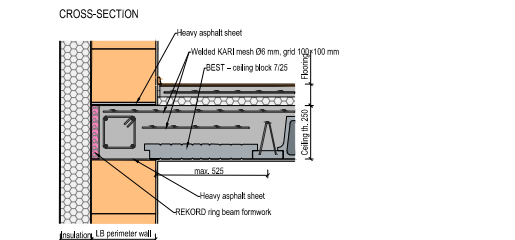
Partition wall in the longitudinal direction above the blocks



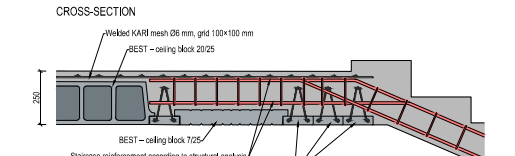
Heavy partition wall in the longitudinal direction above the beams



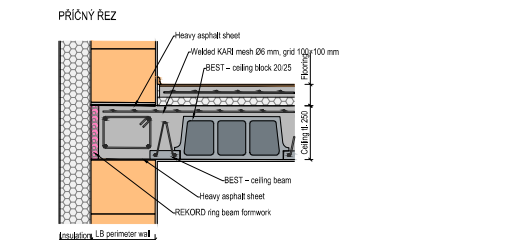
Placement of blocks on load-bearing perimeter wall



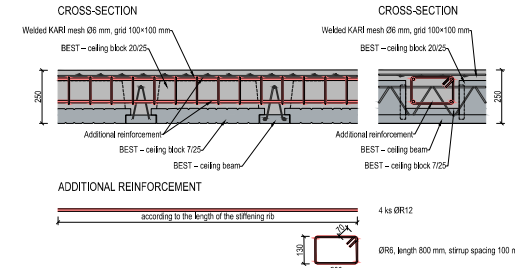
Staircase connection



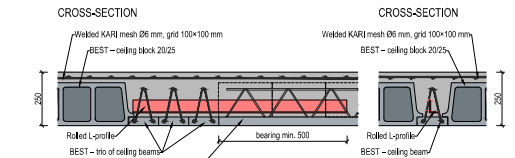
Placement of beams on load-bearing perimeter wall



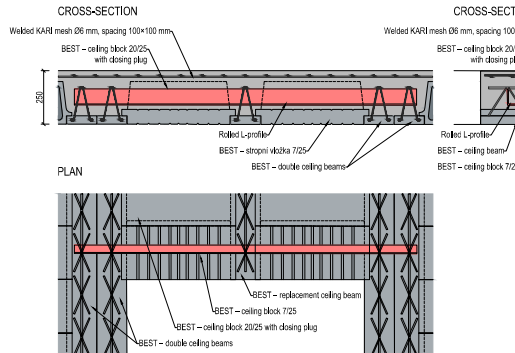
Stiffening rib



Perpendicular connection of beams



Replacement beam for ceiling floor opening



±0,000 = 488,307 m.a.s.l., B.H.S
/ COORDINATE SYSTEM S-JTSK

COURSE	BACHELORS' THESIS	PAPER FORMAT	210x297 (A4)
DRAWN BY	ADELA MATUSOVÁ		
SUPERVISED BY	PROF. ING. JITKA MOHELNÍKOVÁ, PH.D.		
INVESTOR	-		
LOCATION	Krokočín, č. p. 730/2 a 728/č. okres Třebíč, Kraj Vysočina		
PROJECT TITLE	FAMILY HOUSE WITH TATTOO STUDIO	DATE	20.5.2025
BUILDING OBJECT	SO_01	PROJ. PHASE	DPS
PART	D.1.2. BUILDING STRUCTURAL SOLUTION	SCALE	1:50
DRAWING TITLE:	UNDERGROUND CEILING PLAN	DRAWING NO.	D.1.2.04