1

AERATED CONCRETE IN THE WORLD

Aerated concrete products, which, as the name suggests, are porous-structure stone-based materials. The principles of manufacturing technology were invented in the 1920s and 1930s in Finland and Sweden. The first two factories for the production of aerated concrete products were established in Sweden, where the oldest and best-known brands of this material, Siporex and Ytong, also come from. At the end of the 1930s, Siporex also operated in Latvia.

In English, the internationally used name for aerated concrete is Autoclaved Aerated Concrete, abbreviated as AAC, or aircrete, in German porenbeton, in Swedish, lättbetong, in Finnish höyrykarkaistu kevytbetoni.

Today, technology and equipment for the production of aerated concrete products have developed enormously compared to the early years, which has made it even more prominent to have the unique properties of this material - lightness, and also strength, which allows the properties of both insulation and construction material to be combined in one material. Currently, aerated concrete products are manufactured in various countries in all continents under tens of different brands - in addition to the above, Europe is also known for Celcon, Tharmalite and Durox in the UK and Hebel and Porit in Germany. Tens of millions of cubic meters of aerated concrete products are produced worldwide.

The main raw materials for classical aerated concrete are all-natural minerals - cement, lime and fine-grained quartz sand. In addition, it can be said that, in addition, the aerated concrete is largely made up of air contained in the closed pores of the material. Raw materials, like production technology, are highly dependent on the quality of aerated concrete products, which varies greatly depending on the manufacturer.

bauroc MATERIAL IS UNIQUE

Bauroc is a trademark under which Bauroc AS manufactures aerated concrete products in its factory near Kunda and in addition to selling them in Estonia, it distributes them in Latvia, Lithuania, Denmark, Sweden, Finland and the St. Petersburg region of Russia.

bauroc's main raw materials are all pure Estonian natural mineral materials, all delivered in the immediate vicinity of the factory - cement from Kunda, lime Rakkest and sand from Bauroc AS Toolse sand quarry. It is important to note here that oil shale ash is not used in the manufacturing of Bauroc products, which is why it is a raw material composition as well as properties that are fundamentally different from the properties of the so-called Narva ash block.

bauroc is the lightest building material used in construction, which at the same time has sufficient strength for the construction of multipurpose building walls. With the combination of high-quality raw materials and modern manufacturing technology, the bauroc products' bulk weight and compression strength ratios represent the world's highest level of excellence.

In enclosed pores of Bauroc material with dimensions of 0.5 to 2.0 mm, the ambient air provides excellent thermal insulation properties and good fire resistance. The material is also very workable and water and frost resistant. In short, the bauroc is the best wood-like stone, which, unlike wood, does not burn, does not rot and fear moisture.

bauroc is an ecological material that does not contain or excrete any harmful substances. bauroc belongs to the best M1 class in Finland according to its RTS quality.

The lightest bauroc blocks bauroc ECOTERM + can be built into a single-layer very well-maintained external wall without the use of additional thermal insulation materials. This massive "breathing" and heat-accumulating exterior wall design creates a healthy and pleasant microclimate in the rooms, comparable to full-bodied houses. Bauroc ECOTERM + exterior wall smoothes out sudden fluctuations in outside temperature, in cold winter nights the house is cozy warm and cool on hot summer days.

bauroc MANUFACTURING PROCESS

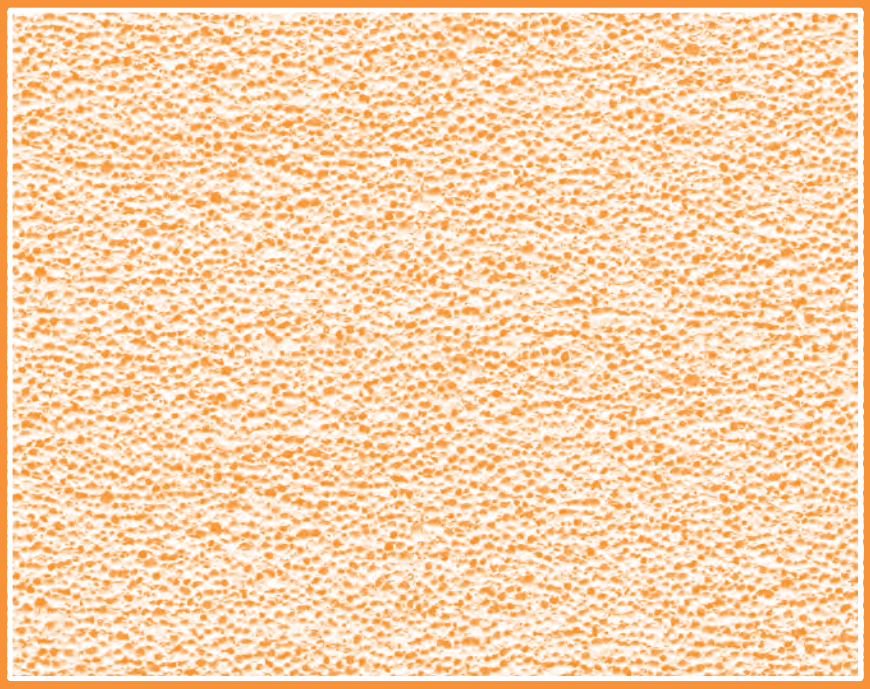
The bauroc production process is comparable to bread making.

Aluminum powder ("yeast") is added to the mixture of base materials and water ("dough") as a result of which, when the mixture starts to rise and settle, a closed pore structure of the material is formed during the release of hydrogen gases.

After curing ("dough rise"), the mixer, which has reached about the strength of the plasticine, is cut into a cutting machine for products with the right dimensions ("breadcrumbs"). The ultimate strength is achieved by Bauroc products in autoclaves ("bread furnaces") by heat treatment with steam in high temperature and pressure mode.

During the autoclaving process, a new homogeneous mineral - tobermorite is produced from the starting materials, which together with the porous structure gives the material at the same time its strength and lightness.

After autoclaving, Bauroc products are packed on wooden pallets and covered with plastic.



2. bauroc AERATED CONCRETE CONSTRUCTION CHARACTERISTICS

2.1. General

The strength characteristics of the bauroc products are shown in section 3 and the properties of the masonry in section 5.

Products made at the bauroc factory have different specifications. This gives a wide range of applications for aerated concrete products. bauroc blocks are produced with five different average dry weights of 300 kg/m3 (ECOTERM +), 375 kg/m3 (UNIVERSAL), 425 kg/m3 (CLASSIC), 475 kg/m3 (ELEMENT), 535 kg/m3 (HARD, PLADE *) and 575 kg/m3 (ACOUSTIC). Reinforced products (BRUSH, FELT, WALL PANEL) and MASK blocks are produced with an average dry density of 500 kg / m3.

The table shows the most important properties of the material according to the density of the aerated concrete.

Table 2.1 bauroc Aerated concrete technical specifications

Properties	ECOTERM+	UNIVERSAL	CLASSIC	ELEMENT	PLADE*	ACOUSTIC	HARD
Dry density (kg/m³)	300	375	425	475	535	575	535
Normalized compressive strength (N/mm²)	1,8	2,5	3,0	3,0	4,5	4,0	5,0
Volume shrinkage (mm/m)	:: 0,3	:: 0,3	:: 0,3	:: 0,3	:: 0,3	:: 0,3	:: 0,3
Grip strength (N/ mm²)	0,30	0,30	0,30	0,30	0,30	0,30	0,30
Thermal cond. $J_{-10, dry}$ (W/mK)	0,072	0,09	0,10	0,10	0,13	0,14	0,13
Thermal cond. J_D (W/mK)	0,080	0,10	0,11	0,11	0,17	0,17	0,17
Fire sensitivity	Class A1	Class A1	Class A1	Class A1	Class A1	Class A1	Class A1
Water vapor diffusion factor	5/10	5/10	5/10	5/10	5/10	5/10	5/10
Frost resistence (cycle)	25	35	35	35	50	50	50

* - Order product

Table 2.2. bauroc Thermal properties

Property	LINTEL	STAIRS ELEMENT	WALL PANEL	CEILING PANEL	MASK
Dry density (kg/m³)	500	500	500	500	500
Normalized compressive strength (average) (N/mm²)	3,5	3,5	3,5	3,5	3,5
Volume shrinkage (mm/m)	:: 0,3	:: 0,3	:: 0,3	:: 0,3	:: 0,3
Thermal cond. (W/mK)	0,12	0,12	0,12	0,12	0,12
Fire sensitivity	Class A1	Class A1	Class A1	Class A1	Class A1
Water vapor diffusion factor	5/10	5/10	5/10	5/10	5/10
Fire resistence (cycle)	50	50	50	50	50

Porosity and volume of pores

In bauroc products, the solid materials are about 20%, 0.5 to 2 mm macropores about 50%, and micropores between macropores about 30%.

2.2. Thermal properties

The heat insulation properties of porous concrete in dry form depend primarily on the density of the material and the structure of the pores. In addition to the above, the thermal insulation properties of a complete wall structure are influenced by the quality and number of joints and the conditions of use of the wall (humidity). Using bauroc blocks in the form of a bauroc adhesive mixture, the joints are so thin (~ 2mm) that their impact on the thermal insulation of the structure is not taken into account.

Air density

In terms of energy saving, air density is a more important indicator of the thermal insulation of the barrier. Different thermal conductivity characteristics can be achieved in different insulated wireframe structures. At the same time, the wall thickness is relatively small. However, if the construction is done a little wrong and there are smaller air bubbles in the building structures, this will greatly affect the heating costs. Also, different movements of structures and deformations of insulation materials that occur during the operation of buildings can cause unwanted air bubbles.

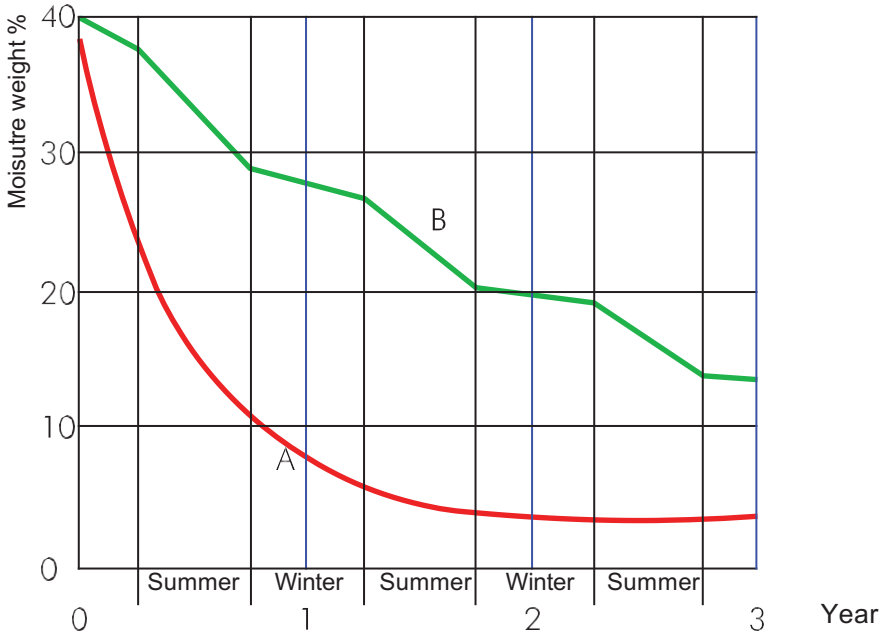
In bauroc houses the wall structures are so simple that the risk of building errors and cracks is minimized.

Porous concrete is closed with pores and hence air tight. By using porous concrete blocks in addition to the blocks, the outer wall is automatically air tight. And more importantly, the formation of cold bridges, which may require complex solutions when joining different materials, is excluded.
The porous concrete house stays airy for decades as it does not become fragile with years, does not rot and is not afraid of rodent damage.

2.3. Construction moisture

Moisture during construction

Moisture penetrates into building elements both during construction and use. In addition, during the production process, a certain amount of moisture remains in the building materials, which is between 30% and 35% for the aerated concrete. Hence, there is much more moisture in the building in the early stages of use. Under normal conditions of use, the moisture content of the aerated concrete structures is substantially balanced during the first heating periods to so-called equilibrium humidity, which, depending on the particular conditions, remains in the range of 3% to 6% by weight (graph 2.1)



A – moisture permeable finish both inside and outside
B– non-moisture exterior finish, such as polystyrene insulation

Graph 2.1. bauroc outer wall dry up

As the graph shows, the drying speed depends on the vapor permeability of the finishing materials used. The ideal release of moisture from the building by evaporation is achieved on both sides of the diffusing wall.

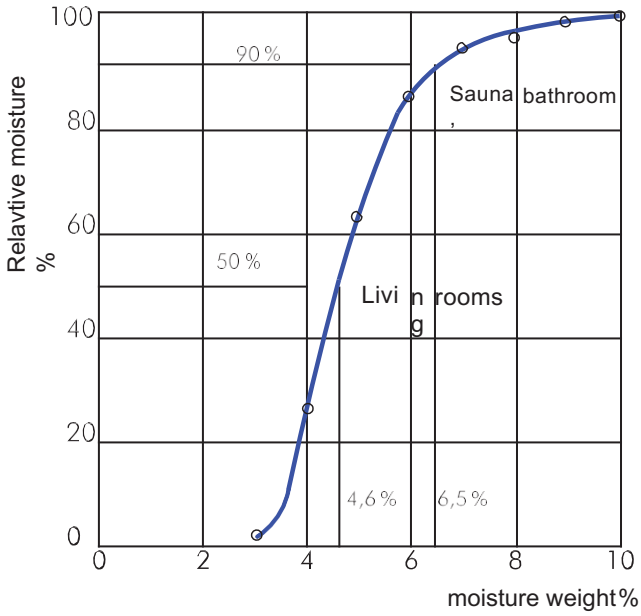
Moisture moves more easily from a warm environment to a cold. Therefore, for Bauroc wall constructions, it is particularly important that the exterior finish of the wall is of sufficient vapor permeability (mineral plaster mix). For multi-layered insulated Bauroc wall constructions we recommend using mineral wool as insulation material.

It is not always possible to dry the structure outwards (roof ceilings made of aerated concrete panels). In this case the finish of the inner surface must necessarily be such that it allows drying in the room.

For all porous concrete constructions, the principle is that they must be able to dry at least on the one side so the moisture in the structure or falling into it could be continuously evaporate.

Every day moisture

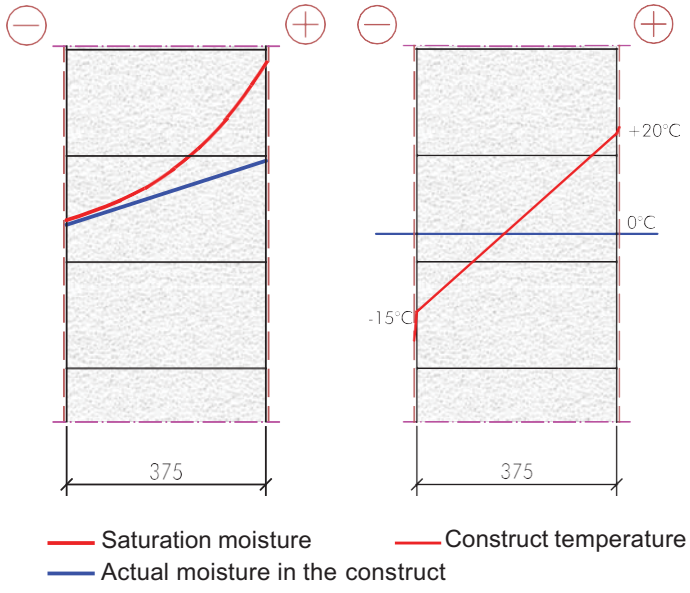
The use of the building also generates moisture, which can also cause moisture damage to the structures. Depending on the intended use of the room, the humidity may fluctuate within quite large limits. Due to the structure of the aerated concrete, the equilibrium of the walls in the damp rooms is not much higher than in the dwellings (graph 2.2)



Graph 2.2. Moisture balance of aerated concrete walls depending on the relative moisture of the air in the rooms.

Dew point

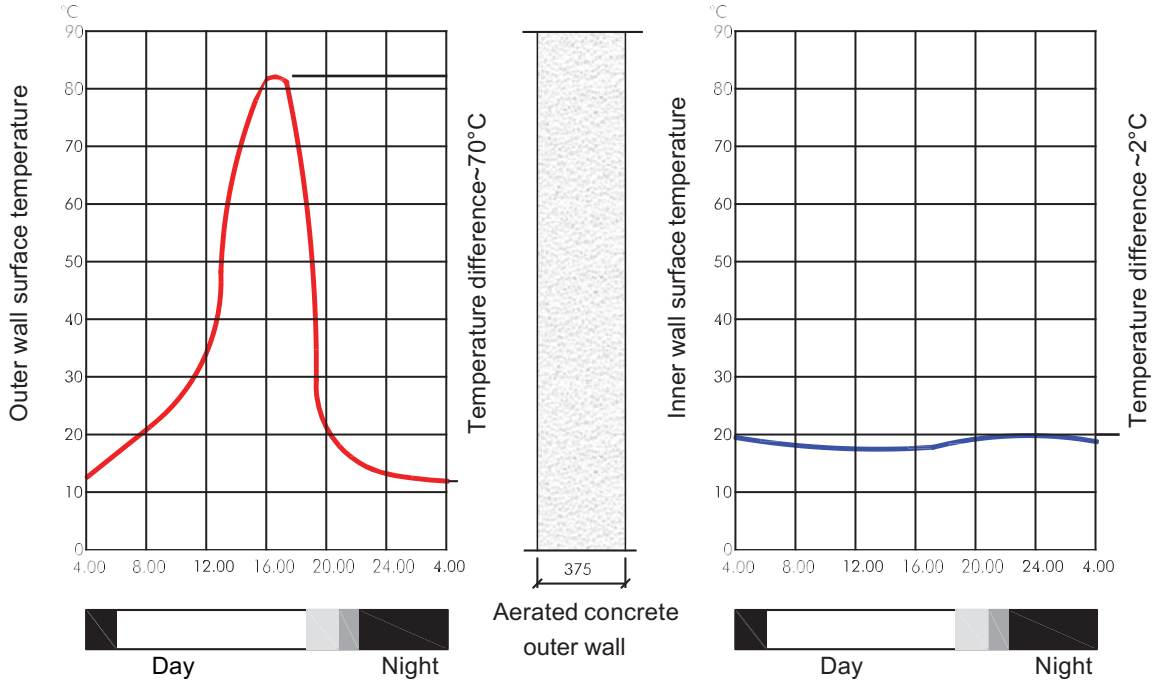
Warm air can absorb more moisture than cold air in the form of water vapor. As the air cools, the relative humidity rises until the saturation level is reached and the water vapor begins to condense. This is called dew point. There is a widespread belief that condensation occurs in a single-layer wall at a temperature of 0°C. It is therefore recommended to insulate the wall. The graph 2.2 shows normal operating conditions (internal wall surface temperature + 20°C and relative humidity RH = 40%; external surface temperature -15°C and RH = 90%) as a bauroc foam concrete wall. As can be seen, the actual humidity remains below the saturation moisture level. Thus, there is no risk of condensation occurring in such an outer wall.



Graph 2.3. bauroc ECOTERM+finished blocks(outside plaster and inside putty) external wall temperature and humidity graphs

Microclimate

Good microclimate is important so that we would comfortable in the room in summer and winter. It is assumed that a healthy living environment with a natural moisture regime is best guaranteed by a full log house. Porous concrete also has a number of features that ensure a living space equivalent to the log house. Due to the porous structure, the aerated concrete is able to collect some moisture in the air to some extent and later to let it out. This allows for better room humidity even in winter during the more intensive heating period. The low thermal conductivity of the aerated concrete and the sufficient heat accumulation capacity (thermal inertia) ensure a stable temperature in the room. That's why the houses with massive porous concrete walls are pleasantly cool on hot summer days and warm in cold winter nights. This is due to the fact that aerated concrete slows down the effects of large temperature fluctuations. Graph 2.4 shows that the temperature of the inner surface of the wall fluctuates only ~ 2°C when the surface temperature of the wall fluctuates.



Graph 2.4. bauroc exterior wall thermal inertia

2.4. Product weight

Transport weight

bauroc products achieve their ultimate strength in the autoclave by treating them with steam. When exiting the autoclave, the humidity of the products ranges from 30% to 35% by weight. This moisture also affects the weight of the products. The maximum transport weight at the factory is 1.35 times the dry density (also includes the weight of the base and the packaging). For example, with a dry density of 450 kg/m3 bauroc products, the maximum transport weight is therefore 607 kg/m3.

Calculation weight

When dimensioning the supporting structures, Bauroc own weight isat least 1.1 times the dry density. The individualproduct weights are givenin Section 3.

2.5. bauroc cemical properties

Bauroc is a chemically alkaline material. Its chemical strain is made up of calcium hydrosilicates. Due to autoclaving, the chemical structure of the aerated concrete differs from ordinary concrete, as the autoclave lime and fine ground sand react chemically with one another. The reaction results in calcium hydrosilicates that favorably affect compression strength, volume stability and water resistance.

2.6. Volume changes

As with any concrete, we can alsoobserve the volume changes caused by
moisture change in autoclave aerated concrete.
The volume of shrinkage of porous concrete is less than 0.3‰ (0.3 mm/m) when the moisture content drops from saturated water (~60%) to balanced humidity (4-6%), where the relative humidity of indoor air is ~43%. In real constructions such as a block wall, a value of 0.2 ‰ (0.2 mm/m) can be used to calculate the volume dissipation. It should also be taken into account that the volume shrinkage of the aerated concrete is significantly higher if the moisture content of the structure drops below 3%. Therefore, rapid drying of structures with an efficient drying device should be avoided.

Shifting

By dimensioning the bauroc blocks from the masonry, the impact of the creep is taken into account when calculatin gthe shape changes induced by thelong-term load by dividing the short-term modulus of elasticity by 2.0.

Thermal expansion

The porosity test for porous concrete is 8 x 10-6/K, which is slightly smaller than concrete or steel (1.2 x 10-5/K for concrete and 1.0 ... 1.4 x 10-6/K for steel).

2.7. Contact with other materials

Metals

Since bauroc is a porous material, the oxygen and possible moisture contained therein can move relatively freely around the bauroc-bound unprotected metals and cause their corrosion. That is why iron must be protected from corrosion (paint) or use stainless steel or aluminum.

Wood

Evaporating moisture during construction can damage wooden structures that are placed tight against aerated concrete. To avoid this, wood structures (roof and ceiling beams, and lining) must be separated from the aerated concrete by a suitable moisture barrier (bitumen roll material).

2.8. bauroc and environmental impacts

Bauroc can be equated with concrete for the chemical composition of the living and living environment. It doesn't evaporate poisonous gases or ingredients of this type.

Impact on indoor climate
Coatings and building materials affecting indoor climate have been studied at the request of the Finnish Ministry of Environment. On the basis of that, a class of indoor air control and design values has been compiled and guidelines for achieving these requirements.

The coating grade of coatings sets requirements for materials used in work and living spaces, distributing the materials on the basis of three classes of emissions (volatile organic compounds, carcinogens, etc.). Limit values for hazardous compounds and limit values for specified materials have been established.

As a result of the research, the aerated concrete is recognized as the best class of the above-mentioned class of pollution. Other materials in the same class are natural stone, brick, glass, wood.

Biological properties
Bauroc produced on the basis of mineral material does not rot or generate mold.

Ecological properties
Bauroc's base materials are based on minerals: sand, clay and limestone used as raw material for cement. In addition, gypsum in its natural form.

The waste generated by cutting products at the bauroc factory is collected as a raw material for the production process and the autoclaved bauroc residues are comminuted and used for the production of crushed stone and dry mixes.
Demolished bauroc structures are often reusable. The material can be used as a piece or crushed to fill the soil, as a filler for yellowing or other insulation.

Radiation properties
The Radiation Protection Center has investigated the radioactivity of building materials and has determined the radiation levels of different materials in the premises.

Building materials are subject to a sanitary requirement that the gamma index (Bq / kg) must be below 1.

The corresponding figure for bauroc aerated concrete is 0.05 ÷ 0.1. Thus, the dose of radiation emitted from aerated concrete is only one tenth of the permissible values.

$$\frac{K^{40}}{3000} + \frac{Ra^{226}}{300} + \frac{Th^{232}}{200} < 1$$

The corresponding figure for bauroc aerated concrete is 0.05 ÷ 0.1. Thus, the dose of radiation emitted from aerated concrete is only one tenth of the permissible values.

3

3. **bauroc** PRODUCTS

The raw materials for bauroc products are finely ground quartz sand, portland cement, lime, natural gypsum, water and aluminum powder. Products are asbestos free. The products achieve their strength during the autoclaving process and are therefore immediately usable (no need for subsequent grinding). The aerated concrete products are manufactured at various densities in the bauroc factory. The blocks are manufactured at a dry density of 300 kg/m3, 375 kg/m3, 425 kg/m3, 475 kg/m3, 535 kg/m3 and 575 kg/m3, and the reinforced products and MASK blocks at a dry density of 500 kg/m3. This provides the products with different strength and heat insulation properties.

The bauroc product family includes:

- bauroc BLOCKS
- bauroc PARTITION BOARDS
- bauroc U-BLOCK
- bauroc LINTEL
- bauroc STAIRS ELEMENT
- bauroc CEILING PANEL
- bauroc WALL PANELS
- bauroc MASK
- bauroc DRY MIXE:
  - bauroc BLOCK ADHESIVE
  - bauroc REPAIR MIX

3.1. bauroc blocks and partition walls

Compliance

bauroc blocks and partition boards meet the requirements of the harmonized standard EVS-EN 771-4 and are CE marked.

Field of use

bauroc blocks and partition walls are intended for use in both load-bearing and non-load bearing outer and inner walls, including

firewalls.

Shape

The bauroc blocks are smooth, rectangular masonry bricks. One end face of most blocks has one or two vertical grooves, except. ACOUSTIC, MASK, UNIVERSAL and 100 mm CLASSIC blocks with no grooves. bauroc partition panels ELEMENT and

PLADE are also cuboidal and all surfaces are smooth without grooves.

Installation

bauroc blocks and partition boards are intended for installation in so-called thin adhesive joints with bauroc adhesives.

Measurements

bauroc blocks are category I wall blocks and are made of 6 different widths. bauroc partition boards are also category I wall blocks and are made of 4 different widths. The height of the partition boards is twice as high as the blocks. Thanks to modern technology, blocks and partition panels are always of equal quality, with precise dimensions and properly packed.

Table 3.1. Bauroc blocks and partition walls modular dimensions, dry density and

Products	Modular dimensions (mm)			Dry density (kg/m³)	Weight* (kg)
	Length	Width	Height		
ECOTERM+ 500	600	500	200	300	19,8
ECOTERM+ 375	600	375	200	300	14,9
ECOTERM+ 300	600	300	200	300	11,9
UNIVERSAL 200/300	600	200 / 300	300 / 200	375	14,9
CLASSIC 300	600	300	200	425	16,8
CLASSIC 250	600	250	200	425	14,0
CLASSIC 200	600	200	200	425	11,2
CLASSIC 150	600	150	200	425	8,4
CLASSIC 100	600	100	200	425	5,6
ACOUSTIC 250	600	250	200	575	19,0
ACOUSTIC 150	600	150	200	575	11,4
ACOUSTIC 100	600	100	200	575	7,6
HARD 300	600	300	200	535	21,2
HARD 250	600	250	200	535	17,7
HARD 200	600	200	200	535	14,4
ELEMENT 150	600	150	400	475	18,8
ELEMENT 100	600	100	400	475	12,5
ELEMENT 75	600	75	400	475	9,4
ELEMENT 50	600	50	400	475	6,3
PLADE 100**	600	100	400	535	14,1
PLADE 75**	600	75	400	535	10,6

* - 1,1 multiple dry densities. The weight is used as the normal value in the calculations
** - Order product

Dimentional tolerences

Product dimension tolerances meet the requirements of the category TLMB. This category sets the strictest requirements for dimensional accuracy and establishes criteria for the flatness and parallelism of bedding surfaces.

For all bauroc blocks and bulkheads, the maximum flatness deviation is 1.0 mm and the maximum parallelism of the loading surfaces is 1.0 mm.

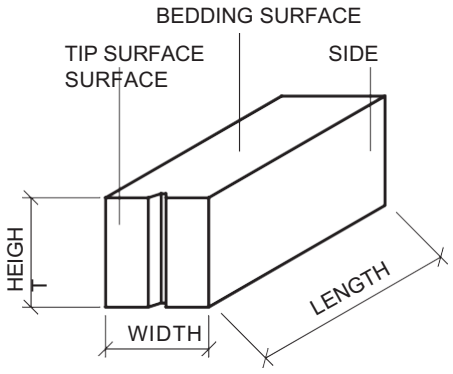


Table 3.2. Blocks and partition walls actual dimensions and tolerances

Product	Actual measurements (mm)		
	Length	Width	Height
ECOTERM+ 500	599±1,5	499±1,5	198±1,0
ECOTERM+ 375	599±1,5	374±1,5	198±1,0
ECOTERM+ 300	599±1,5	299±1,5	198±1,0
UNIVERSAL 200/300	599±1,5	198±1,5 / 299±1,5	299±1,0 / 198±1,0
CLASSIC 300	599±1,5	299±1,5	198±1,0
CLASSIC 250	599±1,5	249±1,5	198±1,0
CLASSIC 200	599±1,5	199±1,5	198±1,0
CLASSIC 150	599±1,5	149±1,5	198±1,0
CLASSIC 100	599±1,5	99±1,5	198±1,0
ACOUSTIC 250	599±1,5	249±1,5	198±1,0
ACOUSTIC 150	599±1,5	149±1,5	198±1,0
ACOUSTIC 100	599±1,5	99±1,5	198±1,0
HARD 300	599±1,5	299±1,5	198±1,0
HARD 250	599±1,5	249±1,5	198±1,0
HARD 200	599±1,5	199±1,5	198±1,0
ELEMENT 150	599±1,5	149±1,5	398±1,0
ELEMENT 100	599±1,5	99±1,5	398±1,0
ELEMENT 75	599±1,5	74±1,5	398±1,0
ELEMENT 50	599±1,5	49±1,5	398±1,0
PLADE 100**	599±1,5	99±1,5	398±1,0
PLADE 75**	599±1,5	74±1,5	398±1,0

** - Order products

Table 3.3. bauroc blocks comparison

Indicator	ECOTERM+	UNIVERSAL	CLASSIC	ELEMENT	PLADE**	HARD	ACOUSTIC
Width (mm)	500, 375, 300	300, 200	300, 250, 200, 150, 100	150, 100, 75, 50	100, 75	300, 250, 200	250, 150, 100
Avarage dry density (kg/m³)	300±25	375±25	425±25	475±25	535±25	535±25	575±25
Normalized pressure (average)(N/mm²)	1,8	2,5	3,0		4,5	5,0	4,0
Thermal conduct. $J_{-10,dry}$ (W/mK)	0,072	0,09	0,10		0,13		0,14
Thermal conduct. J_D(W/mK)	0,08	0,10	0,11		0,17		
Expend (tk/m²)	8,3	5,6 / 8,3	8,3	4,2	4,2	8,3	8,3
Traits, field of use	Heat retaining Outer walls	Light block 2,5 MPa	Light block 3 MPa	Partition walls	Apartment partition walls	Light block 5MPa	Partition walls of public buildings and apartments

** - order product

Table 3.4. bauroc blocks field of

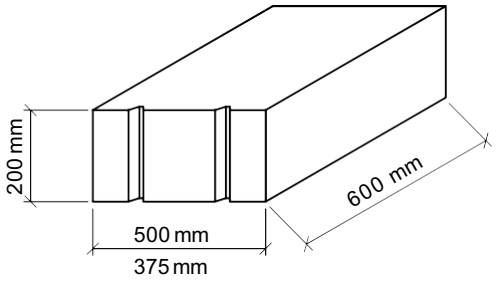
	Outer walls	Bearing inner walls	Non-bearing inner walls	Comments
ECOTERM+	+			bauroc ECOTERM + blocks are made of a particularly heat-retaining material and therefore do not require additional external walls. ECOTERM + blocks are the only building blocks that make it possible to build a single-layered exterior wall that keeps the stone warm in our climate.
CLASSIC	+	+	+	Affordable, lightweight, strong and heat-resistant 3Mpa general building blocks
HARD	+	+		Building blocks with increased compressive strength, fb = 5.0 N/mm² (5 MPa). More affordable, lighter and warmer than other lightweight blocks of the same compressive strength.
ELEMENT			+	Large and accurate partition blocks, cost per square meter only 4.17 pcs. Openings up to 1m wide do not require braces.
ACOUSTIC		+		ACOUSTIC blocks have a higher density, which in turn ensures better sound insulation properties
UNIVERSAL	+	+	+	Large, affordable 2.5 MPa high-quality building blocks, suitable for large construction sites. bauroc UNIVERSAL blocks can be placed sideways for 200 mm wall construction or flat 300 mm for wall construction. Due to its large dimensions, the cost of blocks in the construction of 200 mm wide walls is only 5.6 piece / m².

3.1.1. **bauroc** ECOTERM+

bauroc ECOTERM + blocks are made of porous concrete with a dry density of 300 kg / m³ and a compressive strength of fb = 1.8 N / mm². The blocks are produced in three different widths. The blocks have one (300 mm) or two (375 mm, 500 mm) vertical grooves at one end.

bauroc ECOTERM+ 500 ja 375

Massive, yet lightweight wall blocks that allow you to build a single-layer heat-retaining outer skirt without using additional thermal insulation materials. In addition, the blocks also have sufficient compressive strength (fb = 1.8 N / mm²) to build up to 2 storey bearing walls.



The blocks are mainly used as a load-bearing and heat-retaining structure in the outer walls of individual dwellings and apartment buildings.

Heat conductivity U = 0.15 W / (m²K) of the exterior wall finished from ECOTERM + 500 blocks

Heat conductivity U = 0.20 W / (m²K) of the exterior wall finished from ECOTERM + 375 blocks.

bauroc ECOTERM+ 300

Block widths of 300 mm are used in buildings that do not have such high demands on the thermal conductivity of the outer guard (gyms, shopping centers, warehouses, production buildings, etc.).

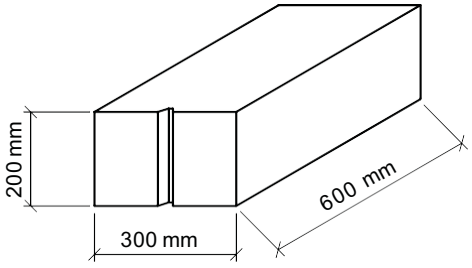


Table 3.5. bauroc ECOTERM+ technical data

Property		ECOTERM+ 500	ECOTERM+ 375	ECOTERM+ 300
Measurements (mm)	Length	599 (±1,5)		
Tolerances (TLMB)	Width	499 (±1,5)	374 (±1,5)	299 (±1,5)
	Height	198 (±1,0)		
Bedding surface flatness		:: 1,0 mm		
Bedding surface parallelness		:: 1,0 mm		
Normalized pressure strength (avarage)		1,8 N/mm²		
Dry density		300 kg/m³ (±25 kg/m³)		
Volume shrinkage		:: 0,3 mm/m		
Grip strength on shifting		0,3 N/mm²		
Thermal conductivity $J_{-10,dry}$		0,072 W/mK		
Water vapor diffusion factor		5/10		
Frost resistence		25 cycles		

Table 3.6. Quantitative estimations

Product	Pcs m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
ECOTERM+ 500	8,3	24	1,44	2,88	11,7
ECOTERM+	8,3	32	1,44	3,84	9,0
ECOTERM+ 300	8,3	40	1,44	4,80	7,5

3.1.2. **bauroc** UNIVERSAL 200/300

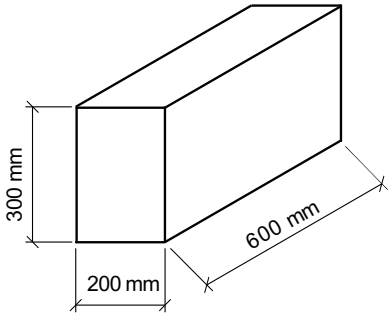
bauroc UNIVERSAL blocks are made of porous concrete with a dry density of 375 kg/m³ and normalized compressive strength fb = 2.5 N/mm². UNIVERSAL blocks are produced with dimensions 600x300x200.

Field of use

Unlike other bauroc blocks, the end faces of the UNIVERSAL block are smooth without the grooves. This allows the blocks to be laid on both sides as sideways (width 200 mm) and flatways (width 300 mm). The construction of 200 mm walls is particularly effective – sideways laid, the consumption rate is only 5.6 blocks / m².

The blocks can be used to build both load-bearing and non-load-bearing walls. An external wall built from UNIVERSAL blocks needs additional insulation

UNIVERSAL edgeways



UNIVERSAL flat

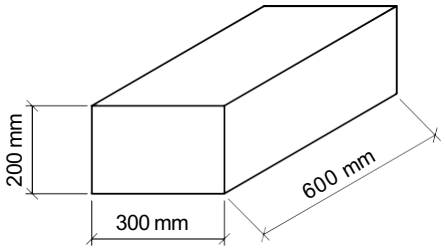


Table 3.7. bauroc UNIVERSAL technical characteristics

Property		UNIVERSAL 200/300	
measurements (mm)	Length	599 (±1,5)	
Tolerances (TLMB)	Width	198 (±1,0)	299 (±1,5)
	Height	299 (±1,5)	198 (±1,0)
Bedding surface flatness		:: 1,0 mm	
Bedding surface parallelness		:: 1,0 mm	
Normalized pressure strength		2,5 N/mm²	
Dry density		375 kg/m³ (±25 kg/m³)	
Volume shrinkage		:: 0,3 mm/m	
Grip strength on shifting		0,3 N/mm²	
Thermal conductivity $J_{-10,dry}$		0,09 W/mK	
Water vapor diffusion factor		5/10	
Frost resistence		35 cycles	

Table 3.8. Quantative estimations

Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
UNIVERSAL (serviti, 200 mm)	5,6	40	1,44	7,2	3,6
UNIVERSAL (lapiti, 300 mm)	8,3	40	1,44	4,8	7,5

3.1.3. **bauroc** CLASSIC

Bauroc CLASSIC blocks are made of porous concrete with a dry density of 425 kg/m³ and a compressive strength of fb = 3.0 N/mm².

The blocks are produced in 5 different widths (300 mm; 250 mm; 200 mm; 150 mm; 100 mm).

There is one vertical groove at one end of all blocks (except CLASSIC 100). The CLASSIC 100 block does not have this groove

bauroc CLASSIC blocks are mainly used for in-house carrier walls. Also multi-layered exterior walls with additiona insulation and lining (stone, board and panel lining).

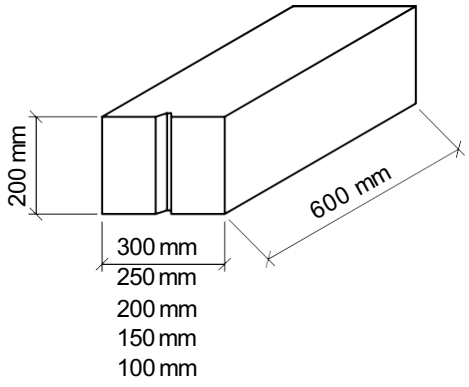


Table 3.9. bauroc CLASSIC technical characteristics

Property		CLASSIC 300	CLASSIC 250	CLASSIC 200	CLASSIC 150	CLASSIC 100
Measurements (mm)	Length	599 (±1,5)				
Tolerance (TLMB)	Width	299 (±1,5)	249 (±1,5)	199 (±1,5)	149 (±1,5)	99 (±1,5)
	Height	198 (±1,0)				
Bedding surface flatness		:: 1,0 mm				
Bedding surface parallelness		:: 1,0 mm				
Normalized pressure strength (average)		3,0 N/mm²				
Dry density		425 kg/m³ (±25 kg/m³)				
Volume shrinkage		:: 0,3 mm/m				
Grip strength on shifting		0,3 N/mm²				
Thermal conductivity $J-_{10,dry}$		0,10 W/mK				
Water vapor diffusion factor		5/10				
Frost resistence		35 Cycles				

Table 3.10. Quantative estimations

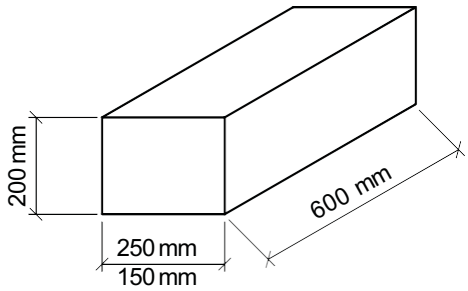
Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
CLASSIC 300	8,3	40	1,44	4,8	7,5
CLASSIC 250	8,3	48	1,44	5,76	6,5
CLASSIC 200	8,3	56	1,344	6,72	5,7
CLASSIC 150	8,3	80	1,44	9,6	4,9
CLASSIC 100	8,3	120	1,44	14,4	3,0

3.1.4. **bauroc** ACOUSTIC

Bauroc ACOUSTIC dry density is 575 kg / m³ and a compressive strength of fb = 4.0 N / mm².

bauroc ACOUSTIC blocks are produced in 3 different widths (250 mm; 150 mm, 100 mm).

The higher density of bauroc ACOUSTIC blocks ensures better sound insulation properties. The blocks are ideal for use in the building's bearing and non-bearing interior walls, for which the requirements for sound insulation have been established. The blocks can also be used to build exterior walls with additional insulation.



bauroc ACOUSTIC 250 (48 dB): Suitable for building walls in health care institutions between wards, in classrooms between classrooms (without door walls), in kindergartens for group and bedroom, between office premises.
bauroc ACOUSTIC 250 blocks can also be built into a 200mm wide wall. In this case, the height of the blocks in the wall is 250mm.
bauroc ACOUSTIC 150 and ACOUSTIC 100 blocks can be successfully used in multi-layered wall constructions (60 dB), suitable for building walls between apartments, and for building walls between noise-absorbing equipment spaces and living or work rooms.

Tabel 3.11. bauroc ACOUSTIC plokkide tehnilised näitajad

Property		ACOUCTIC 250	ACOUTIC 150	ACOUSTIC 100
Measurements (mm)	Length	599 (±1,5)		
Tolerances (TLMB)	Width	249 (±1,5)	149 (±1,5)	99 (±1,5)
	Height	198 (±1,0)		
Bedding surface flatness		:: 1,0 mm		
Bedding surface parallelness		:: 1,0 mm		
Normalized pressure strength (average)		4,0 N/mm²		
Dry density		575 kg/m³ (±25 kg/m³)		
Volume shrinkage		:: 0,3 mm/m		
Grip strength on shifting		0,3 N/mm²		
Thermal conductivity $J_{-10,dry}$		0,15 W/mK		
Water vapor diffusion factor		5/10		
Frost resistence		**50 Cycles**		

Table 3.12. Quantative estimations

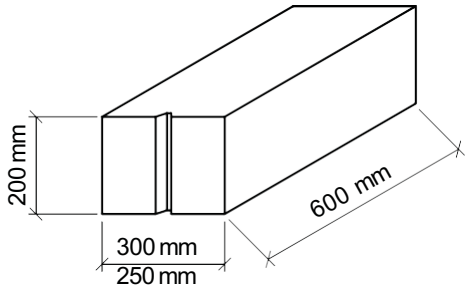
Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
ACOUSTIC 250	8,3	48	1,44	5,76	6,5
ACOUSTIC 200 (250 külili)	6,7	48	1,44	7,20	4,6
ACOUSTIC 150	8,3	80	1,44	9,60	4,9
ACOUSTIC 100	8,3	120	1,44	14,4	3,0

3.1.5. **bauroc** HARD

Bauroc HARD blocks look the same as bauroc CLASSIC blocks. The difference is only in the strength and weight of the blocks. Bauroc HARD are made of porous concrete with a dry density of 535 kg/m³ and a compressive strength of fb = 5.0 N/mm².

The blocks are produced in 3 different widths (300 mm; 250 mm; 200 mm). Each block has one vertical groove at one end.

HARD blocks are bauroc products of the highest strength and are suitable for the construction of harder-loaded masonry. HARD blocks can also be used to build cellar walls.



Often there are situations where some wall parts are more loaded. If the strength of the bauroc CLASSIC block is not sufficient, it is very easy to pair these wall parts with the same size Hard blocks.

In the external walls of buildings, Hard blocks require additional additional insulation.

Table 3.13. bauroc HARD technical characteristics

Property		HARD 300	HARD 250	HARD 200
Measurements (mm)	Length	599 (±1,5)		
Tolerances (TLMB)	Width	299 (±1,5)	249 (±1,5)	199 (±1,5)
	Height	198 (±1,0)		
Bedding surface flatness		:: 1,0 mm		
Bedding surface parallelness		:: 1,0 mm		
Normalized pressure strength (average)		5,0 N/mm²		
Dry density		535 kg/m³ (±25 kg/m³)		
Volume shrinkage		:: 0,3 mm/m		
Grip strength on shifting		0,3 N/mm²		
Thermal conductivity $J_{-10,dry}$		0,15 W/mK		
Water vapor diffusion factor		5/10		
Frost resistence		50 Cycles		

Table 3.14. Quantative estimations

Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
HARD 300	8,3	40	1,44	4,8	7,5
HARD	8,3	48	1,44	5,76	6,5
HARD 200	8,3	56	1,344	6,72	5,7

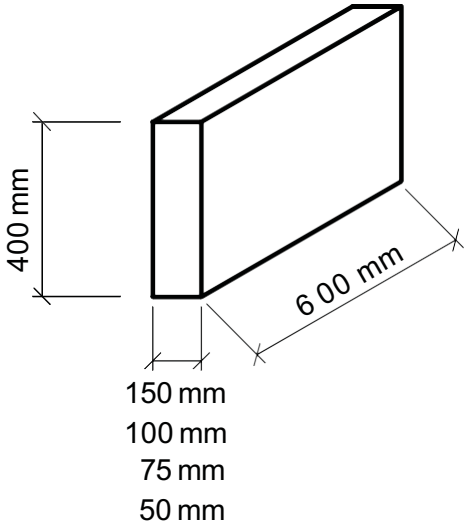
3.1.6. **bauroc** ELEMENT

Partition wall bauroc ELEMENT is made of aerated concrete with a dry density of 475 kg/m³ and a compressive strength fb = 3.0 N/mm². The height of the partition boards is 400 mm and length 600 mm. The boards are produced in four different widths (150 mm; 100 mm; 75 mm; 50 mm).

Bauroc partition boards are designed for building non-load-bearing partitions inside buildings.

Bauroc ELEMENT partitions are rising rapidly, there are 4,2 partition boards on a 1 m² wall. Finished walls are easy to finish - ready for tile and putty.

Particularly suitable for wet rooms.



Tabel 3.15. bauroc ELEMENT technical characteristics

Properry		ELEMENT 150	ELEMENT 100	ELEMENT 75	ELEMENT 50
Measurements (mm)	Length	599 (±1,5)			
Tolerances (TLMB)	Width	149 (±1,5)	99 (±1,5)	74 (±1,5)	49 (±1,5)
	Height	398 (±1,0)			
Bedding surface flatness		:: 1,0 mm			
Bedding surface parallelness		:: 1,0 mm			
Normalized pressure strength (average)		3,0 N/mm²			
Dry density		475 kg/m³ (±25 kg/m³)			
Volume shrinkage		:: 0,3 mm/m			
Grip strength on shifting		0,3 N/mm²			
Thermal conductivity $J_{-10,dry}$		0,11 W/mK			
Water vapor diffusion factor		5/10			
Frost resistence		35 Cycles			

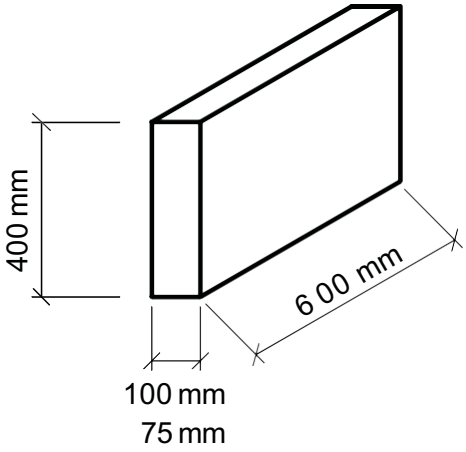
Table 3.16. Quantative estimations

Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
ELEMENT 150	4,2	40	1,44	9,6	2,6
ELEMENT 100	4,2	60	1,44	14,4	1,7
ELEMENT 75	4,2	80	1,44	19,2	1,3
ELEMENT 50*	4,2	104	1,248	25,0	0,9

* bauroc ELEMENT 50 is packed with top and bottom layers of 100 mm plates. Free of charge, each element of the ELEMENT 50 pallet is equipped with partition panels ELEMENT 100 8 pcs (1.92 m²).

3.1.7. **bauroc** PLADE

Partition boards bauroc PLADE are made of porous concrete with a dry density of 535 kg/m³ and a compressive strength of fb = 4.5 N/mm². The boards are offered in two different widths (100 mm; 75 mm) on the Estonian market. Height and length measurements (600 x 400mm) are similar for bauroc ELEMENT and bauroc PLADE products, differences in width and material density, bauroc PLADE is significantly denser than bauroc ELEMENT.



The intended use is multi-layer soundproof partition systems as PLADE 100 + PLADE 75, which can be read in detail in section "8. Sound insulation ".

bauroc PLADE is a custom made product on order only

Table 3.17. bauroc PLADE technical charactersistics

Property		PALDE 100	PALDE 75
Measurements (mm)	Length	599 (±1,5)	
Tolerances (TLMB)	Width	99 (±1,5)	74 (±1,5)
	Height	398 (±1,0)	
Bedding surface flatness		:: 1,0 mm	
Bedding surface parallelness		:: 1,0 mm	
Normalized pressure strength (average)		4,5 N/mm²	
Dry density		535 kg/m³ (±25 kg/m³)	
Volume shrinkage		:: 0,3 mm/m	
Grip strength on shifting		0,3 N/mm²	
Thermal conductivity $J_{-10,dry}$		0,15 W/mK	
Water vapor diffusion factor		5/10	
Frost resistence		50 tsüklit	

Table 3.18. Quantative estimations

Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
PLADE 100	4,2	60	1,44	14,4	1,7
PLADE 75	4,2	80	1,44	19,2	1,3

3.2. Blocks and partition boards joints

Block joints

In the masonry of bauroc blocks, the joints are much thinner than the joints of other block masonry units. This is made possible by the smooth surface of the blocks and the exact dimensions. When bauroc blocks are placed the bauroc pore concrete glue (fine grain mortar - compression strength class M10) is used. For better results, use bauroc tools to provide same and proper thickness joints. The horizontal joints must be properly filled with adhesive and the joints must not be thinner than 1 mm and thicker than 3 mm.

During placement, care must be taken to ensure that at least one vertical joint block has a groove(s). To ensure the vertical tightness of the vertical hinges, these grooves are filled with bauroc Pore concrete adhesive after each row of beams is placed. During the execution of the work, observe the manufacturer's instructions.

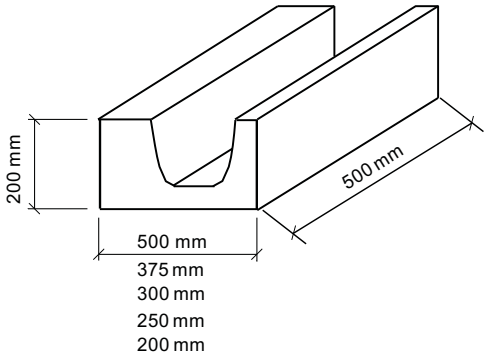
Partition board joints

Bauroc pore concrete glue (fine grain mortar - compression strength class M10) is used for bauroc partition boards. Bauroc adhesive tool is used to apply the adhesive to the partition plates. In the masonry, all joints (horizontal and vertical) of the partition boards must be properly filled with glue. The joints must not be thinner than 1 mm and thicker than 3 mm. During the execution of the work, observe the manufacturer's instructions.

3.3. **bauroc** U-BLOCK

Bauroc U-BLOCK are made of porous concrete and are sent from conventional blocks of the appropriate width. U-PLOKKE is made of 200 mm, 250 mm, 300 mm, 375 mm and 500 mm width. The blocks are 500 mm long and 200 mm high.

Bauroc U-BLOCK is mainly used for casting concrete beams in the stiffening of buildings and as a supporting surface for panels, ceiling beams, brick walls and the like. below.
U-BLOCK can also be used for casting monolithic laths on a construction sit



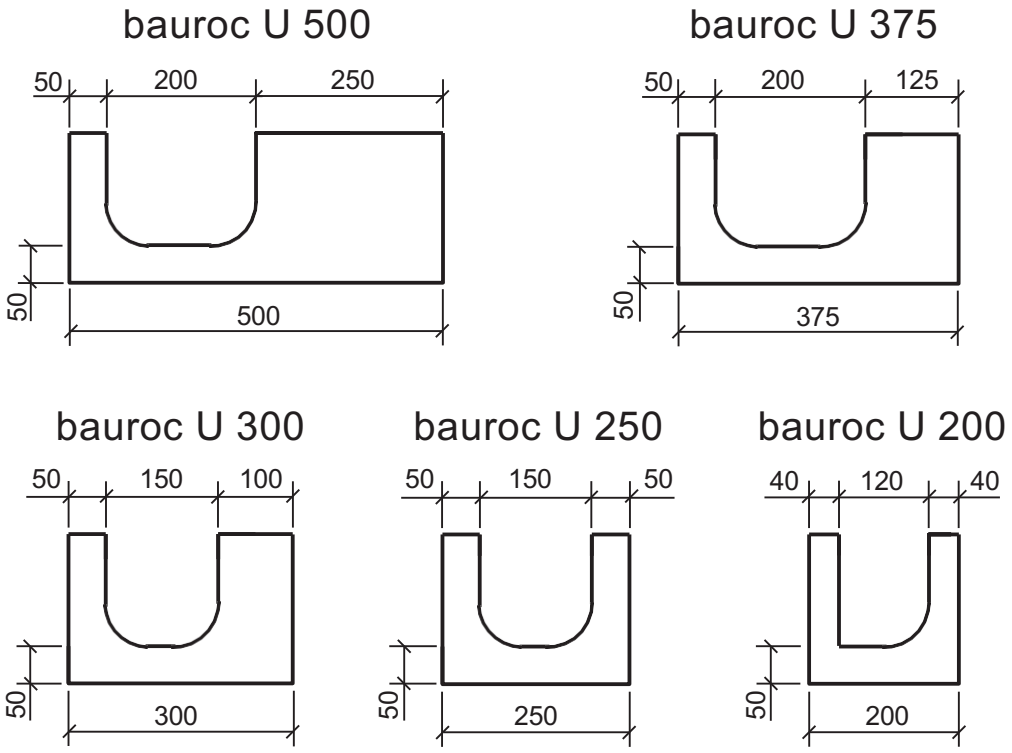


Table 3.19. U-BLOCK measurements

Product	Modular measurements (mm)					Weight (kg/pc)
	Length	Width	Height	Groove depth	Groove width	
U 500	500	500	200	150	200	14,7
U 375	500	375	200	150	200	11,9
U 300	500	300	200	150	150	12,4
U 250	500	250	200	150	150	9,2
U 200	500	200	200	150	150	7,4

3.4. **bauroc** LINTEL

Bauroc LINTEL is a rectangular cross-section of autoclaved aerated concrete with a rectangular cross-sectional strength. BEAM meets the requirements of EVS-EN 12602 and is CE marked. bauroc LINTEL is made of porous concrete with a dry density of 500 kg/m³. Sillus works as a one-sided lintel and is able to absorb a certain evenly distributed line load. It is not advisable to load bridges with clogged loads. The bridges are reinforced in such a way that in most cases the intermediate panels can be supported directly on the bridge without an additional row of blocks.
Bridges are produced according to the width of bauroc blocks and have a height of 200 mm (one block height), 400 mm (two block height) or 600 mm (three block height).

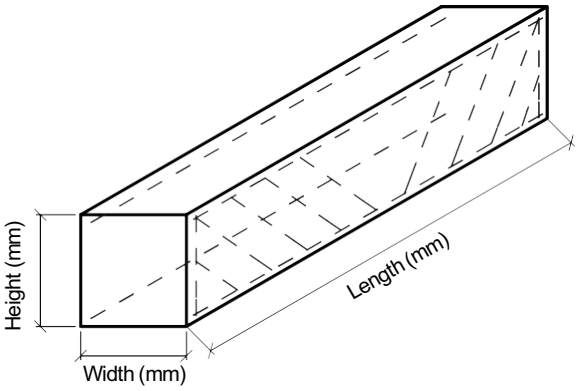


Table 3.20. bauroc LINTEL

width x height (mm)	Lintel Length (mm)									
	1200	1600	2000	2400	3000	3600	4000	4400	5200	6000
100 x 200	•	•	•	•						
150 x 200	•	•	•							
200 x 200		•	•	•	••					
250 x 200		•	•	•	••					
300 x 200		•	•	•	••					
375 x 200		•	•	•	••					
500 x 200		•	•	•	•					
150 x 400		••	••	•	•					
200 x 400		••	••	••	•	•	•			
250 x 400		••	••	••	•	•	•	••		
300 x 400		••	••	••	•	•	•	••		
375 x 400		••	••	••	•	•	•	•		
500 x 400		••	••	••	•	•	•	•		
200 x 600									••	••
250 x 600									••	••
300 x 600									••	••
375 x 600									••	••
500 x 600									••	••

• - stock product / •• - order product

All 100 mm wide Lintels, plus 150 mm wide and 1200 mm long bauroc LINTEL's are designed for bridging openings in non-bearing bauroc 100 mm or 150 mm partitions. These lintels are reinforced in such a way as to receive only the weight of the bridgehead and the weight of the partition plates laid on it. ***The use of these lintels in load-bearing walls is forbidden!*** Table 3.21 shows the dimensions of these bridges, the maximum opening, the carrying capacity and the weight of the bridge.

Table 3.21. Non-bearing bauroc LINTELs

Measurements (mm)			Max. gap (m)	Load capacity (kN/m)	Ben d (mm)	Beam weight (kg)
Length	Width	Height				
1200	100	200	0,90	13,0	0,5	18
1600		200	1,30	10,0	3,1	24
2000		200	1,70	5,0	3,8	30
2400		200	2,00	3,0	5,2	36
1200	150	200	0,90	10,0	0,5	27

All other bauroc BEAMs are usable for bridging gaps in bearing structures. The heights of 200 mm are used in less loaded places. Where larger loads are recommended we recommend using 400 or 600 mm beams. Tables 3.22, 3.23 and 3.24 show the dimensions of the beams, the maximum opening, the carrying capacity and the weight.

Table 3.22. 200 mm high bauroc LINTELs

Measurements (mm)			Max. gap (m)	Load capacity (kN/m)	Ben d (mm)	Beam weight (kg)
Length	Width	Height				
1600	150	200	1,20	18	1,65	41
2000			1,50	17	2,21	60
1600	200	200	1,20	20	1,46	52
2000			1,60	20	3,05	72
2400			1,90	20	4,19	98
3000			2,50	15	6,63	125
1600	250	200	1,20	20	1,38	64
2000			1,60	20	2,94	85
2400			1,90	20	4,09	114
3000			2,50	15	7,00	146
1600	300	200	1,20	20	1,32	75
2000			1,60	20	2,86	98
2400			1,90	20	4,54	128
3000			2,50	15	7,65	167
1600	375	200	1,20	20	122	90
2000			1,60	20	2,74	117
2400			1,90	20	4,39	151
3000			2,50	15	7,52	197
1600	500	200	1,20	20	1,52	120
2000			1,60	20	3,41	154
2400			1,90	20	4,17	196
3000			2,50	15	6,96	251

Table 3.23. 400 mm high bauroc LINTELs

Measurements (mm)			Max. gap (m)	Load capacity (kN/m)	Bend (mm)	Beam Weight (kg)
Length	Width	Height				
1600	150	400	1,10	25	0,31	72
2000			1,50	20	0,75	90
2400			1,90	20	1,26	111
3000			2,50	15	1,72	147
1600	200	400	1,20	30	0,40	93
2000			1,60	30	1,15	115
2400			1,90	25	1,75	143
3000			2,50	20	2,85	184
3600			3,10	15	4,22	223
4000			3,50	15	5,97	262
1600	250	400	1,20	30	0,35	114
2000			1,60	30	0,92	143
2400			1,90	30	1,97	175
3000			2,50	25	3,40	221
3600			3,10	20	5,45	268
4000			3,50	20	5,78	311
4400			3,80	20	8,22	345
1600	300	400	1,20	30	0,32	134
2000			1,60	30	1,84	169
2400			1,90	30	2,12	206
3000			2,50	30	3,91	260
3600			3,10	20	5,31	315
4000			3,50	20	5,66	364
4400			3,80	20	8,62	404
1600	375	400	1,20	30	0,28	167
2000			1,60	30	0,74	208
2400			1,90	30	1,95	253
3000			2,50	30	3,70	319
3600			3,10	25	6,39	385
4000			3,50	25	6,82	428
4400			3,80	25	10,38	475
1600	500	400	1,20	30	0,21	226
2000			1,60	30	0,55	284
2400			1,90	30	1,23	340
3000			2,50	30	3,42	428
3600			3,10	25	6,09	516
4000			3,50	25	7,12	585
4400			3,80	25	9,98	649

Table 3.24. 600 mm high bauroc LINTELs

Measurements (mm)			Max.gap (m)	Load capacity (kN/m)	Bend (mm)	Beam Weight (kg)
Length	Width	Height				
5200	200	600	4,60	12	5,14	476
6000			5,40	11	7,91	548
5200	250	600	4,60	18	6,48	584
6000			5,40	13	8,96	670
5200	300	600	4,60	20	6,94	688
6000			5,40	15	8,89	800
5200	375	600	4,60	25	8,23	837
6000			5,40	25	13,97	995
5200	500	600	4,60	25	7,78	1117
6000			5,40	25	13,51	1298

3.5. **bauroc** STAIRS ELEMENT

Bauroc STAIRS ELEMENT is a pre-reinforced staircase made of reinforced concrete (special product without final finish). The staircase elements are manufactured from aerated concrete with a dry density of 500 kg/m³.

The height of the staircase is 175 mm and width 300 mm. There are 3 standard lengths of 900 mm, 1000 mm and 1100 mm available, and you can also order stair elements of various sizes up to 1200 mm in length.

bauroc STAIRS ELEMENT is allowed to be cut on the construction site if necessary.

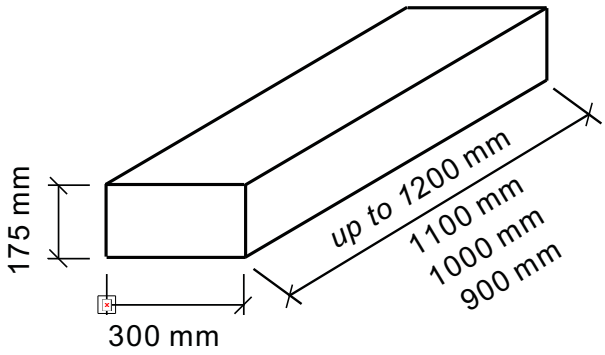


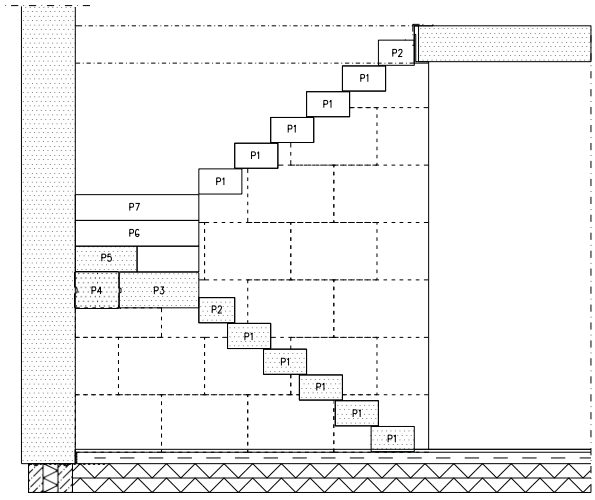
Table 3.25. bauroc STAIRS ELMENT measurements

Product	Length, mm	Width, mm	Height, mm	Weigth, kg
Stairs element 900 mm	900	300	175	31
Stairs element 1000 mm	1000	300	175	34
Stairs element 1100 mm	1100	300	175	37
Stairs element, special size up to 1200 mm	Up to 1200	300	175	Up to 50

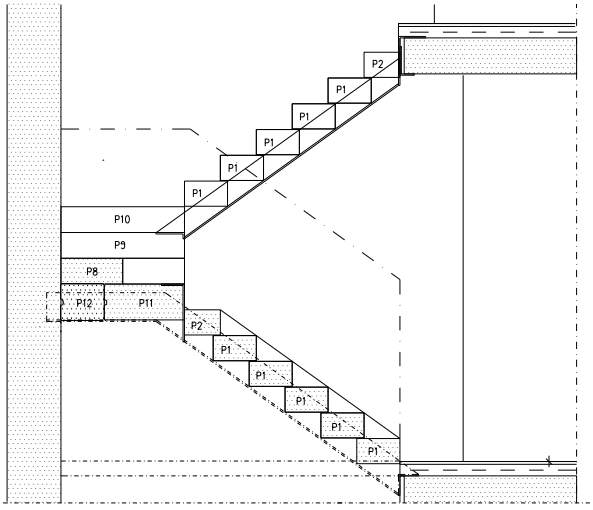
bauroc STAIRS ELEMENTS can be used to build staircases that are closed at the bottom (the stairs rests on the block walls that carry the stairs), as well as the angular corners of the stairs open on the stairs. Stair elements are supported at the ends by carrier walls or steel beams, and fixed with bauroc Pore concrete glue. The minimum support surface of the staircase at each end must be at least 85 mm.

Stair steps made of stair elements must be additionally covered with a floor covering material, such as floor tiles or parquet.

Closed staircase example



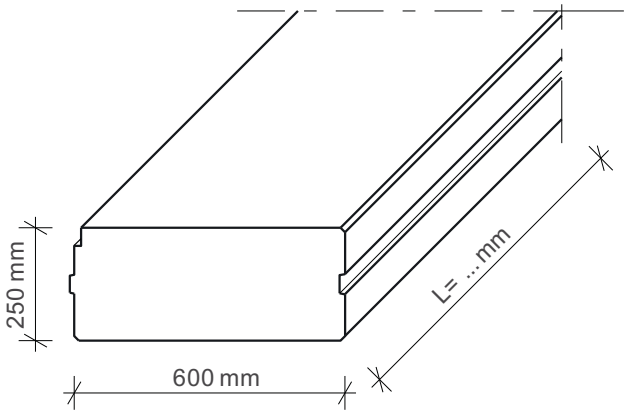
Open staircase example



3.6. **bauroc** CEILING PANELS

bauroc CEILING PANELS is a reinforced aerated concrete panel that can be used as a bearing and heat-retaining element in buildings roof and ceilings. bauroc CEILING PANELS meets the requirements of EVS-EN 12602 and is CE marked. The ceiling panels can also be tilted or can be used successfully on gable roof building. For more information on using ceiling panels, see: Designer / bauroc Ceiling panels for ceiling and roof.

Since the height of the ceiling panels is 250 mm different from the usual height of the bauroc blocks 200 mm, it is recommended to use bauroc MASK blocks at the height of the intermediate walls with bauroc ceiling panels.



Ceiling panel measurements

bauroc The width of the ceiling panels is 600 mm and the height is 250 mm.

bauroc CEILING PANELS is produced with a certain length, the length of the panel is 199 mm, the length of the step is 200 mm. The maximum length of the panels is 6.0 meters (the exact length is 5970 mm) due to the dimensions of the molds used for the casting of aerated concrete. The following table shows the possible lengths of ceiling panels, with additional lengths ranging from 1m to 6m in steps of 199 mm.

Table 3.26. bauroc CEILING PANELS technical characteristics

Width (mm)	Height (mm)	Length of ceiling panel * design module / actual (mm)									
600 300**	250	2400 2387	2800 2785	3200 3183	3600 3581	4000 3979	4400 4377	4800 4775	5200 5173	5600 5571	6000 5970
Panels weight (kg)		248	289	330	371	417	463	510	563	615	665
Load capacity		5,0 - 6,5 kN/m²									
Dry density		500 ± 30 kg/m³									
Thermal conductivity		0,13 W/mK									

* Additional panel lengths are possible in the range of 1.0 m .... 6.0 m in 200/199 mm increments.
** The standard width of the panels is 600mm, and as a special order it is possible to order half narrower panels with a width of 300mm.

Ceiling panels load-bearing capacity

The panels are designed in a uniform manner (supported from the ends) and the reinforcement is based on a solid load-bearing capacity.
The bearing capacity of the panels is a uniformly distributed load that can be applied to the intermediate ceilings or roof slabs in addition to the weight of the panels. With its load-bearing capacity, bauroc CEILING PANELS are comparable to reinforced concrete panels. The weight of the panels, however, is 2 times smaller than that of concrete panels or monolithic intermediate ceilings.

Ceiling panels cutting and penetration

The panels must not be cut shorter, because at the ends of the panels there are transverse anchoring rods that provide a predetermined load bearing capacity of the panels. Sewer and ventilation pipe penetrations are reasonable to design in panel joints. Both sides of the panels have a 90 mm wide zone for drilling holes suitable for pipe operation. ***Do not cut more than 180 mm and drill holes in the longitudinal slots of the panels!***

It is possible to make as a special order ceiling panels with a special reinforcement and in which larger openings can also be made at the locations specifically indicated by the manufacturer.

bauroc CEILING PANELS advantages

- In roof ceilings, bauroc panels require 2 times smaller thickness of an insulation layer than concrete panels (hollow panels) and monolithic roofs.
- Compared to concrete panels or monolithic concrete ceilings, the loads on the bearing walls are significantly reduced. bauroc panels have a weight of 170 kg / m², which is 2 times smaller than concrete ceilings.
- The bauroc panels can also be installed on a slope that allows them to be used as a load-bearing and heat-retaining structure for gable roofs and sloping roofs. This type of roof construction is faster and the cost of wood is also reduced.
- The joints of roofs and ceilings in bauroc panels do not require complex solutions, the ceilings are air tight and the risk of cold bridges is avoided.
- In roof ceilings, bauroc panels require 2 times smaller thickness of an insulation layer than concrete panels (hollow panels) and monolithic roofs.

Ceiling panels support surfaces

The minimum support surface length is 90 mm when supporting ceiling panels on support walls. When supporting the outer walls of ECOTERM + blocks, the recommended minimum support length is 120 mm (150 mm when designing, as the actual length of the panels is slightly shorter than the nominal length). We also recommend supporting bauroc panels on adjacent walls (along the panel) with the same surface area, ie. internal walls at least 90 mm and at least 120 mm on the outer walls. When supporting steel beams, the support surface may be 75 mm long.

In the concrete construction project, exactly the required support surfaces are calculated by the constructor of the building construction project. When calculating the length of the support surfaces, the designer must rely on the strength characteristics and loads of the materials used.

3.7. **bauroc** WALL PANELS

bauroc WALL PANEL is a jointed reinforced concrete slab with a joint-to-pin joint that can be used to build non- load-bearing prefabricated internal and external walls. Panels are installed horizontally, bauroc Pore concrete glue is applied to the loading surface, which seals the horizontal joints and the panels are fixed at the ends to the supporting structure (concrete or steel posts). bauroc Horizontal joints can also be sealed with sealing tape instead of glue.

Panel utilization

The main applications are standard fire walls (EI) for industrial and logistic halls and agricultural buildings, as well as impact-resistant fire walls (EI-M from the wall width of 200 mm). bauroc WALL PANELS are also suitable for the construction of any other internal and external walls of both heated and cold rooms. 250 mm and wider bauroc panel walls do not normally require insulation in industrial buildings, with a 250 mm panel wall heat transfer U = 0.57 W / m²K.

Panel shape and dimensions

bauroc WALL PANELS have a height of 600 mm and a width of 150, 200, 250, 300 or 375 mm. Bauroc WALL PANELS are produced with a length of 1.2 m to 6.0 m in steps of 0.2 m, but in agreement with the customer it is possible to produce wall panels with specific lengths for a specific construction project.

bauroc WALL PANELS technical specifications

Panels are made of aerated concrete with an average dry density of 500 kg/m³ ± 30 kg/m³. The panels hav two reinforcing meshes that provide the required strength and security. Panel thermal conductivity 10, dry = t0.13 W / mK.

Table 3.27. bauroc WALL PANELS technical characteristics

Panel measurements mm width/height max. height	Weight kg	Fire resistence EI	Fire resistence EI-M	Thermal transmittance at 5% moisture	Glue expense jm/ bag(25kg)	Utilization
150/ 600/ 6000	381	EI 240	-	0,9	93	EI240 fireproof walls for which no impact resistance is required
200/ 600/ 6000	506	EI 240	EI-M 90	0,7	70	Fireproof walls, class EI-M 90 / EI 240
250/ 600/ 6000	626	EI 240	EI-M 180	0,57	56	Fireproof walls, class EI-M 180 / EI 240, suitable for exterior intake, U = 0.57… 0.49 (moisture 5% to 1%)
300/ 600/ 6000	747	EI 240	EI-M 180	0,49	56	Fireproof walls, class EI-M 180 / EI 240, suitable for exterior intake, U = 0.49… 0.41 (moisture 5% to 1%)
375/ 600/ 6000	929	EI 240	EI-M 180	0,4	44	Fireproof walls, class EI-M 180 / EI 240, suitable for external walls, U = 0.4… 0.33 (moisture 5% to 1%)

Ceiling panels cutting and penetration

Panels should not be cut shorter as this will damage the reinforcing mesh in the panels. To make door openings, shorter panels must be used next to the openings and the opening will be bridged with a longer panel from above. Consult a Bauroc representative for smaller openings and penetrations

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3.8. **bauroc** MASK

Bauroc MASK blocks are made of porous concrete with an average dry density of 500 kg/m³ and a compressive strength of fb = 3.5 N/mm², or the same material from which bauroc ceiling panels are made. Mask blocks are produced with dimensions of 580x250x200 (length x height x width).
The main field of application is the construction of bauroc CEILING PANELS at the height of the intermediate wall as shown in the knot diagram “Intermediate_1.2”. In general, the bauroc wall blocks have a height of 20 cm, but since the height of the bauroc ceiling panels is 25 cm, we also added 25 cm high bauroc MASK blocks that can be used to "fully" built walls at ceiling height. Unlike other bauroc blocks, the end faces of the MASK block are smooth.

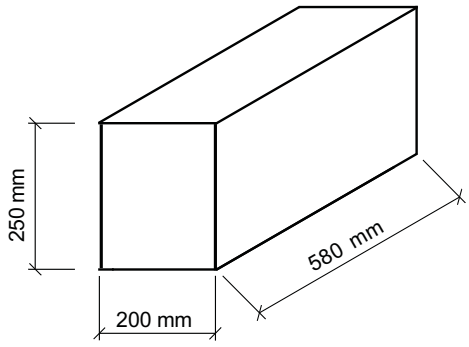

Table 3.28. bauroc MASK technical characteristics

Property		MASK
Measurements (mm)	Length	579 (±1,5)
Tolerances (TLMB)	Width	199 (±1,5)
	Height	249 (±1,0)
Bedding surface flatness		:: 1,0 mm
Bedding surface parallelness		:: 1,0 mm
Normalized pressure strength (average)		3,5 N/mm²
Dry density		500 kg/m³ (±30 kg/m³)
Volume shrinkage		:: 0,3 mm/m
Grip strength on shifting		0,30 N/mm²
Thermal conductivity		0,12 W/mK
Water vapor diffusion factor		5/10
Frost resistence		50 Cycles

Table 3.29. Quantative estimations

Product	pcs/m²	Amount on base			Glue kg/m²
		pcs	m³	m²	
MASK	6,9	48	1,44	7,2	4,2

3.9. **bauroc** ADHESIVES

Compliance

Bauroc adhesive meet the requirements of the harmonized standard EVS-EN 998-2 and are CE marked. This is a fine-grained masonry (Thin Layer Mortar - TLM).

3.9.1. **bauroc** CONCRETE GLUES

Bauroc CONCRETE GLUES is a fine-grained quartz sand and cement based fine mortar designed to install bauroc ECOTERM +, UNIVERSAL, CLASSIC, ACOUSTIC, HARD, ELEMENT and PLADE blocks indoors and outdoors. bauroc CONCRETE GLUES is dry-packed in 25 kg paper bags.

Properties:
Mortar Class **M10** (Compressive Strength 10 N / mm²)
Glue-to-Block Normal Strength 0.30 N / mm² Maximum grain size 0.5 mm

Fireproof class **A1**

How to use:
Bag bauroc CONCRETE GLUES (25 kg) are mixed with approx. 6.0 to 6.5 l of pure water. PORPETONE CONTAINER is mixed into a uniform mass with a powerful whiskey. The mixing time is at least two minutes, then the mixture is left to stand for about 5 minutes and stirred again. Use the ready mix within 4 hours of adding water.
The adhesive mixture is applied to a clean, dust-free surface by means of adhesive tape, adhesive tape or a mixing chamber. Make sure that the entire surface of the adhesive block is covered with the adhesive mixture. Glue nail is not guaranteed if blocks with too high moisture content or too dry are used. In dry and warm weather, the blocks must be moistened before gluing and then prevent the walls from drying too fast. Let the glue that has spilled out of the joints is cured and then removed with a float or putty.

The thickness of the joint in the masonry is ~2 mm.

The temperature of the adhesive blocks and adhesive mixture must exceed + 5°C.

The addition of water to the adhesive mixture which started to solidify in the mixing vessel does not restore the initial properties of the mixture. Horizontal surfaces of masonry must be protected against rainfall.

Preservation:
On the construction site, store the mixing bags on trays, not on the ground, and protect from rain. In sealed packaging and in dry conditions, the adhesive is preserved for 1 year from the date of manufacture.

Table 3.30. bauroc adhesive expense and masonry stacking time

Product	Glue expense (kg/m²) When using MURFOR armature	Adhesive Cost (kg/m²) Recessed with A-III armature
ECOTERM+, CLASSIC, HARD, ACOUSTIC, UNIVERSAL blocks		
500 mm bauroc blocks width	11,7	14,0
375 mm bauroc blocks width	9,0	12,0
300 mm bauroc blocks width	7,5	11,0
UNIVERSAL 200/ 300	3,6 / 7,5	7,0 / 11,0
250 mm bauroc blocks width	6,5	10,0
200 mm bauroc blocks width	5,7	8,5
150 mm bauroc blocks width	4,9	7,0
100 mm bauroc blocks width	3,0	5,0
ELEMENT partition block		
150 mm partition boards width	2,6	-
100 mm partition boards width	1,7	-
75 mm partition boards width	1,3	-
50 mm partition boards width	0,9	-

3.9.2. **bauroc** FIXING MIX

Bauroc FIXING MIX is a mineral dry blend packed in 20 kg paper bags. The main ingredient of the blend is the finely ground bauroc blocks. bauroc FIXING MIX is designed for correcting and filling crushes and cuts and cable lines from bauroc blocks in masonry. Filling the holes with said mixture does not impair the thermal insulation properties of the masonry.

How to use:
A bag bauroc FIXING MIX (20 kg) is mixed with approx. 7-7.5 l of pure water. The mixture is mixed into a form mass with a powerful whisk. The mixing time is at least two minutes, then the mixture is left to stand for about 10 minutes and stirred again. Use the ready mix within 3 hours after adding water. The surfaces to be repaired are moisturized and filled with a trowel and repair mixture. Deep breaks (up to 50 mm) are filled several times. The temperature of the repair mixture should exceed + 5°C. The addition of water to the correction mixture does not restore the initial properties of the mixture.

Preservation

On the construction site, store the mixing bags on trays, not on the ground, and protect from rain. In sealed packaging and in dry conditions, the adhesive is preserved for 1 year from the date of manufacture.

3.9.3. Winter adhesives

Common bauroc adhesive mixtures are suitable for use at temperatures above + 5°C. When the air temperature drops lower, it is necessary to use winter adhesive mixtures. Suitable cold additives are added to these mixtures to ensure that the glue is hardened even at lower temperatures. Winter adhesive mixtures are suitable for use up to -10°C and mixed bags are marked with a special marking (snow flake).

How to use:

In addition, follow the instructions for using conventional adhesives:

- Designed for use in winter conditions (up to -10°C).
- Keep glue bags in a heated room, if available.
- Use hot water (max. 60°C) and mix the glue in a warm room. The temperature of the finished mixture must exceed
- + 10°C.
- Keep the adhesive glue sled in warm water before use and after use, insulate the dishes for preparing the adhesive and, if possible, protect the workplace from wind.
- The service life of the pre-heated mixture is 30 minutes.
- Open time for masonry mixture is maximum 5 minutes.
- Bauroc blocks or joints used in masonry work must not be frozen, snowy or wet.
- The blocks should be preheated to at least + 1°C. Only dry preheated blocks provide the necessary grip (suction capacity).

3.10. **bauroc** EASYFIX

Bauroc EASYFIX is a one-component polyurethane adhesive for the construction of non-load-bearing partitions from bauroc partition boards or bauroc blocks as an alternative to mineral fine mortar. bauroc EASYFIX is not suitable for the construction of load-bearing walls and exterior walls. Compared to conventional mineral bauroc adhesive mixing, bauroc EASYFIX has the advantage of cleaner and more comfortable work and a faster pace of construction, eliminating the need for blending.

bauroc EASYFIX product is in 1000 ml aerosol cans with a filling level of 750 ml. The cylinders are packed in cardboard boxes in 12 cartons. The minimum order quantity is 1 can and the cans are only sold with bauroc block products needed to build non- load-bearing partitions.

Table 3.31. Technical characteristics

Technical characteristics	Value
Quantity in a bottle	Filling level 750ml in a 1000ml bottle
Dry surface (+23°C, 50% RH)	8-15 minutes
Fully cured (+23°C, 50% RH)	24h
Fully cured (+ 5°C, 50% RH)	72h
Fire Resistance to Cured Adhesive Foam (DIN 4102-1	B3
Ignition point of cured adhesive foam	400°C
Guaranteed storage life	12 months in unopened package

Table 3.32. bauroc EASYFIX expense rates *

Product	expense rate m²/bottle	expense rate bottle/crate
CLASSIC 150	4...5	1,9...2,4
CLASSIC	5...7	2,1...2,
ELEMENT 150	6...8	1,2...1,6
ELEMENT	9...11	1,3...1,
ELEMENT 75	9...11	1,7...2,1
ELEMENT 50	11...15 1,7...2,3	

* Expenditure rates are estimated and actual costs can vary significantly.

How to use:

During masonry work, the air temperature must be between -5°C ... + 35°C, the temperature of the bauroc EASYFIX cylinder is between + 5°C ... + 30°C, the best result is at + 20°C. Cylinders can be warmed up to achieve the required working temperature during cold weather, either in warm water or in a warm room, where the ambient temperature should not exceed + 30°C. The temperature of the cured adhesive foam is between -40°C and + 90°C.

The surfaces to be glued must be clean and smooth. To ensure the quality of the result, it is important to understand that the grip between the blocks is best when the surfaces to be glued are tightly pressed against each other. We recommend using bauroc grinding tools. The grinding dust must be carefully removed with a brush to ensure grip to the surface.

The adhesive foam cures under the influence of moisture. Bauroc ELEMENT or CLASSIC products from a newly opened plastic package have the necessary moisture content and no need to further dampen the surfaces. If the bauroc partition boards or blocks to be installed have been exposed to the open in dry conditions for a longer period of time, it is recommended to pre-moisten the surfaces to be glued. At low temperatures below + 5°C, it is recommended that the substrate be moistened with special equipment such as PENOSIL Premium Foam Activator.

Connect the aerosol can to the spray gun while holding the cylinder upright. Make sure there are no people in front of the gun and do not turn the pistol, just the bottle, keeping the foam gun in place with you away. The bottle must not be connected to the spray gun so that the valve is downwards position and also the gun must not be turned on the bottle.

After attaching the balloon to the spray gun, shake the bottle about 20 times. Apply the adhesive as 2 - 4 cm diameter foam strips to both horizontal and vertical adhesive surfaces. For walls up to 100 mm, one can use one wide foam bar in the middle of the wall or two parallel narrow foam strips. Two walls should be used for the construction of walls over 100 mm thick. The size of the foam strip, the structure of the foam and its stability depend on the shape of the nozzle of the foam gun. The blocks to be glued must be strongly compressed. The adhesive forms a strong bond as soon as 30 minutes, the final curing takes place within 24 - 72 hours depending on air temperature and humidity. Adhesive foam that has escaped from the joints should be allowed to solidify for at least a couple of hours and then removed, using a bauroc grinding tool.

bauroc ELEMENT - In order to interlock the partition boards during wall construction, a bauroc joint paste can be used which accelerates the construction work. do not move the slabs with joint groove before the adhesive settles and the wall is easier to lay. When using bauroc CLASSIC blocks, joint glue is not needed in the construction of bulkheads.

Bottles must be completely emptied and disposed of in accordance with applicable waste management regulations.

Safety regulations:

Aerosol cans should not be stored at temperatures above + 50°C, in the vicinity of heat sources, or in direct sunlight. Bottles should be stored in an upright position at + 5°C to + 30°C. Keep away from sources of ignition - No smoking! Avoid static electricity. Avoid breathing gas / vapor, as gases released during use are harmful to health by inhalation. This product should not be used in rooms with poor ventilation unless a protective mask is used with the appropriate gas filter (ie A1 type tr ltr according to EN 14387). Wear suitable protective clothing and gloves. May cause irritation to eyes, respiratory system and skin and may cause sensitization by inhalation and skin contact, as well as risk of serious damage to health by prolonged exposure through inhalation. The use of this product may cause allergic reactions in people who are sensitive to diisocyanates. People with asthma who have eczema or skin diseases should avoid exposure, including skin contact, to this product. Keep out of reach of children.

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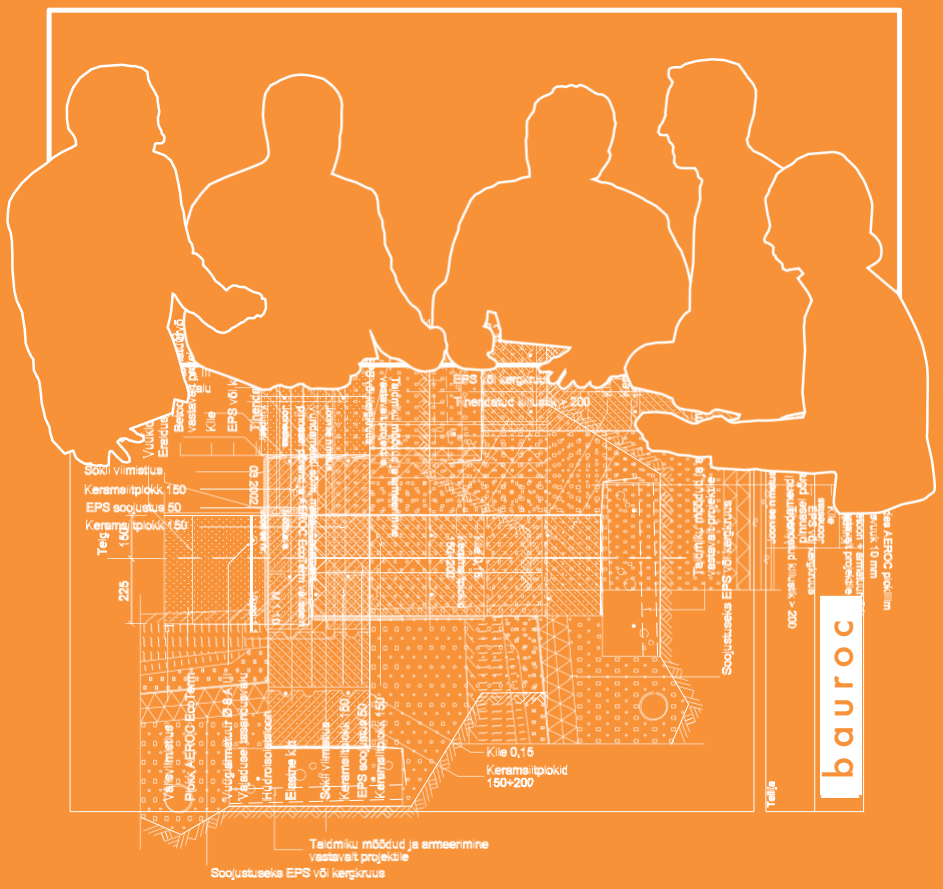


Tellija	Joonise nimetus Vundamendi eõim; madalvundament pinnasel põrand ja AEROC EcoTerm välissein	
	Joonestas	Mõõtkava M 1:10
	Kuupäev 03.2002	Joonise nr. Vund 1.1

FOR THE ARCHITECT

4. DESIGN MODULES

1. General

Bauroc aerated concrete products are produced in certain dimensions. It is therefore worthwhile to follow the dimensions of the agreed modules at the design stage. For bauroc products, the main module is 2M in the horizontal direction and 2M in the vertical direction. Dimension M = 100 mm. Due to technological possibilities, we manufacture only products with certain standard dimensions (see bauroc products).

4.2. Horizontal modules

When designing the building, put the axises in place using step n•2M. The outer walls should be connected to the axises so that the inner edge of the block is 150 mm from the axis. It is advisable to place the interior partitions of the building so that the axis is located between both sides of the wall and at least 100 mm inside the wall surface. Thus, the minimum thickness of the two-partitioned bulkhead is 200 mm. This provides the necessary support lengths for the panels on the walls.

It is also advisable to design the widths of the window and door openings in 2M increments (see lengths of standard stamps)

The outer wall of the plinth and basement is bound to the outer wall at the top so that there is a 15 to 35 mm degree between the finished exterior surfaces.

The most common options are shown in Figure 4.1.

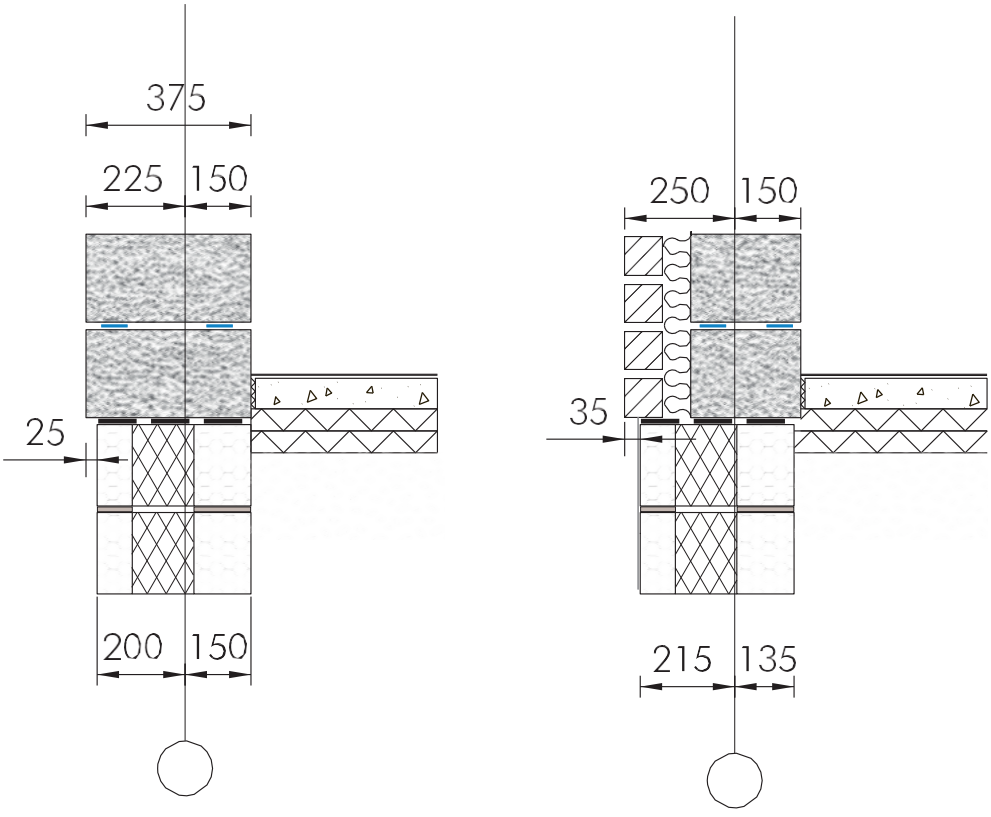


Figure. 4.2.a. Linking the socket to the modular network.

4.3. Vertical modules

In the height direction, the main module 2M is used, which is the same as the height measurement of the bauroc blocks. However, there may be a disconnection between the intermediate ceilings because the thickness of the hollow panels is 200 mm; 220mm; 265 mm.

Often, it is advantageous to glue the block cut to a suitable height first on the panels. In this way, the lined wall brick lining will remain in the normal 1M vertical module.

When positioning the window and door openings, it is assumed that the upper edge of the aperture is set to a normal level that is 4M or 2M (bauroc BEAM height) lower than the bottom surface of the panel.

The height of the window apertures could also be 2M times to reduce the need for block cutting.

Figure. 4.2 is a cross-sectional view showing the above instructions.

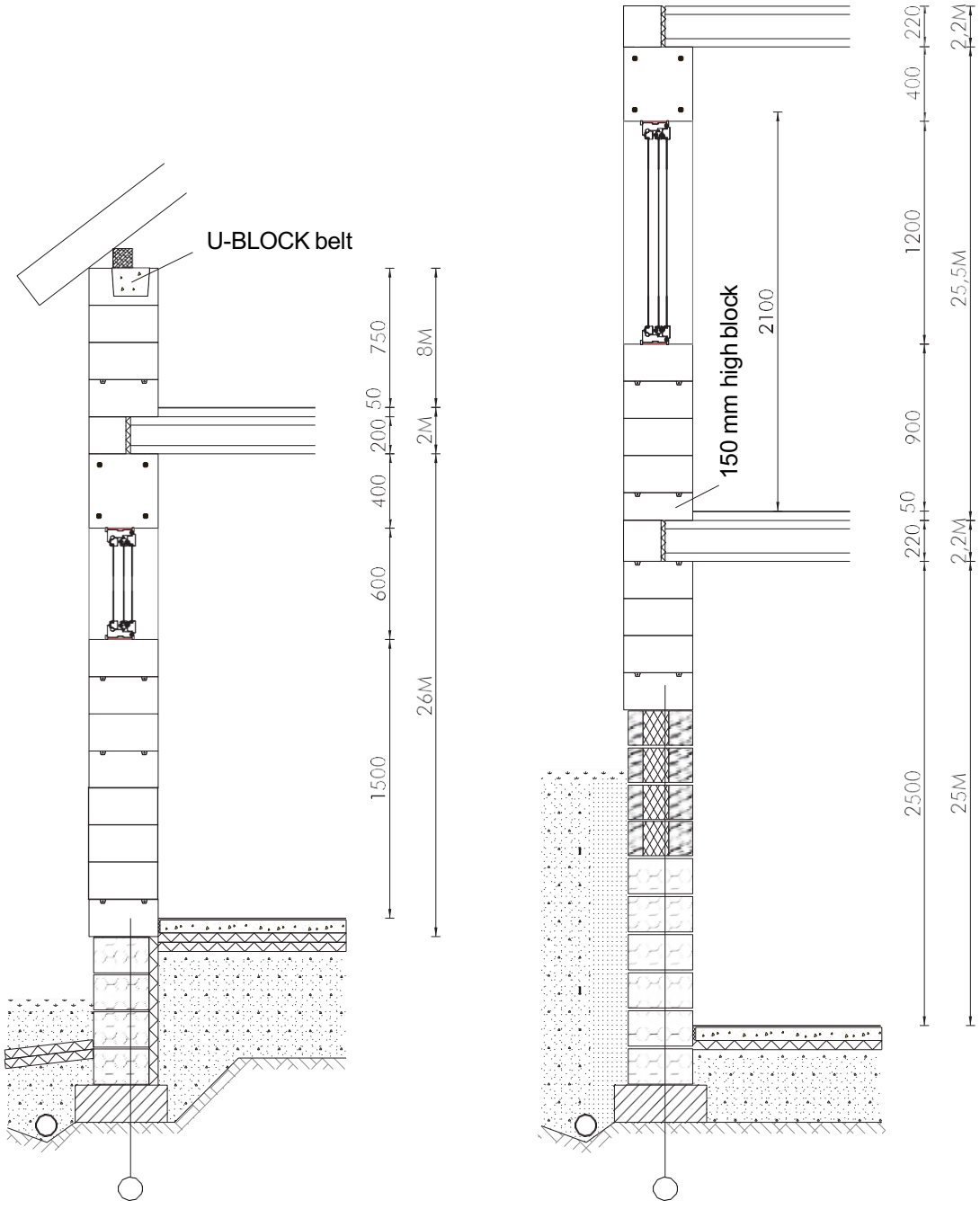


Fig. 4.2.a. Wall vertical module measurement on bauroc ECOTERM + exterior wall

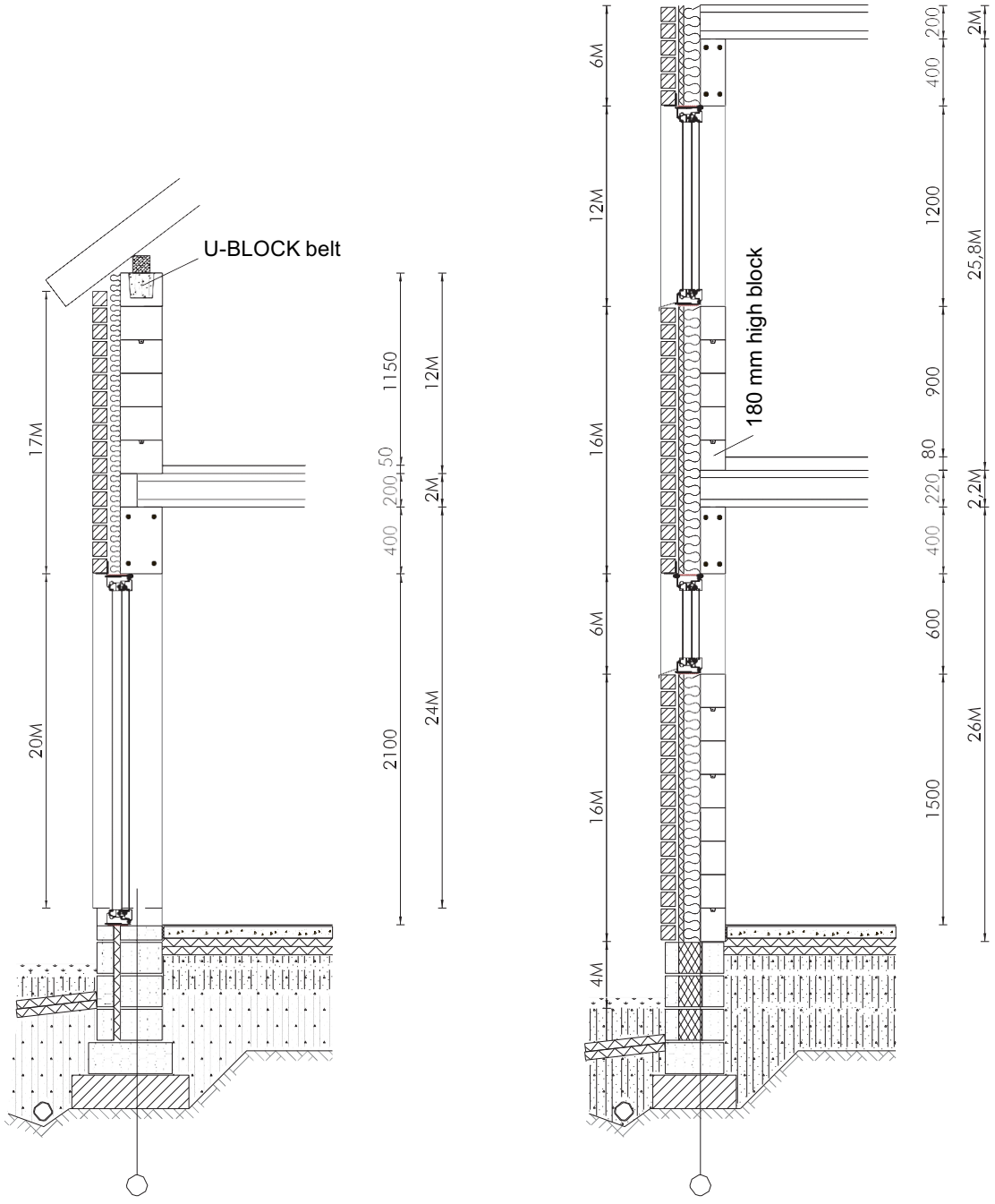


Figure 4.2.b. bauroc wall vertical module measurement lined wall

5. bauroc BLOCK WALL DESIGN

5.1. General

When designing and constructing structures, it must be borne in mind that it is capable of bearing all loads during construction and operation. The design must also be durable and fit for its intended purpose throughout the design lifetime. Accordingly, the most suitable material for the design must be selected and the necessary calculations made.
The strength of masonry is determined by both the strength of the blocks and the properties of the mortar used. As a result, bauroc Concrete Glue, specially designed fine grain mortar (joint thickness up to 3 mm), should be used to lay the masonry for bauroc blocks.

Table 5.1. bauroc Block strength values

Product	Dry density (kg/m^3)	Normalized pressure strength f_b (N/mm^2)	Flexural strength f_{bt} (N/mm^2)	Elasticity module E (N/mm^2)
EcoTErM+	300	1,8	0,32	750
UNIVERSAL	375	2,5	0,46	1125
claSSic	425	3,0	0,56	1375
HarD	535	5,0	0,93	1925
acouSTic	575	4,0	0,74	2125

* in case of long-term load, E is divided by 1.5.

5.2. Masonry block strength calculations

The strength calculations for masonry must be carried out in accordance with the recommendations and advice given in standard EVS-EN 1996-1-1 (Eurocode 6: Stone structures Part 1-1: General rules and design rules for building structures).

Bauroc aerated concrete blocks belong to the quality class I masonry units, and their dimensional tolerances allow the use of a fine grain mortar (bauroc Concrete Adhesive, compressive strength 10 N / mm²).

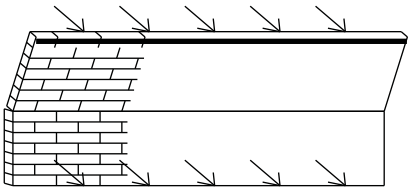
Therefore, we can find the normal pressure strength of masonry blocks from properly stacked bauroc blocks with the equation (EVS-EN 1996-1-1 clause 3.3.1.2 expression 3.3):

$$f_k = 0{,}8 \cdot f_{b_{0,85}}$$

Table 5.2. bauroc masonry strength values

Product	Dry density (kg/m³)	Normalized pressure strength f_k (N/mm²)	Flexural strength (N / mm²)		Elasticity module E (N/mm²)
			Breakage in unbound joints 1) f_{xk1} (N/mm²)	Breakage in bound joints 2) f_{xk2} (N/mm²)	
EcoTErM+	300	1,32	0,15	0,20	1300
UNIVERSAL	375	1,74	0,15	0,25	1800
claSSic	425	2,04	0,15	0,25	2000
HarD	535	3,14	0,15	0,30	3600
acouSTic	575	2,60	0,15	0,30	3100

1)



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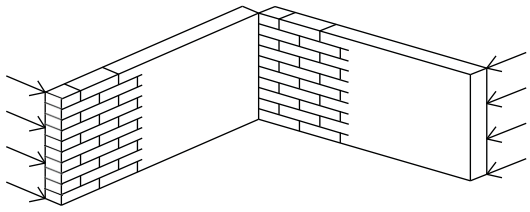


The size of the masonry strength calculations is obtained by dividing the normal values by the partial property of the material properties, which is 2.0 in the load limit state and 1.0 by the limit of use.

5.3. Deformation joints and reinforcement of bauroc block walls

External factors can cause volume changes in block walls. Mainly, volume changes are due to temperature fluctuations and changes in moisture content. This results in internal stresses. Since the block wall is of low resistance to tensile stresses, these tensions can lead to cracking over time. Such cracks do not pose a threat to the overall strength of the masonry, but change the appearance of the finished surfaces.

Insufficient rigidity of foundations and beams can also cause cracks to occur. In addition, the cracking of block walls also affects the volumetric shrinkage of the porous concrete blocks themselves. Proper design and construction allows to avoid harmful cracks.

In order to reduce the risk of cracks, the masonry is divided into small parts with deformation joints or block reinforcement is used. In addition, a net can be used for interior finishing, which also protects against unwanted crack openings.

5.4. Reinforcement

The reinforcement of block walls helps to reduce cracks in the masonry. The distance between the deformation joints can also be increased by reinforcement. The reinforcement is placed in either horizontal joints or reinforcing belts are provided.

The need for reinforcement and the location of the reinforcement are determined by the designer.

It should definitely be reinforced:

-long walls where resistance to lateral loads is required (wind);

-heavier loaded wall parts;

-first row of blocks on the foundation;

-the lower joint of the window apertures (at least 900 mm over each side of the aperture);

-support surfaces for bridges (900 mm).

Since bauroc blocks are laid on a thin glue stick, we offer two options for reinforcing the masonry:

1. Use reinforcing bars Ø 8 mm;
2. Use the MURFOR armature

5.4.1 Joint reinforcement Murfor® Compact-A

The reinforcement of the block wall is not mandatory but is recommended. The Murfor® Compact-A dashboard is used to reduce the risk of cracks in bauroc block walls. Non-load-bearing walls less than 3m usually do not require reinforcement. In Bauroc block walls, we recommend that each floor be reinforced with the first joint, every fourth joint and the last joint as shown in Figure 5.1.

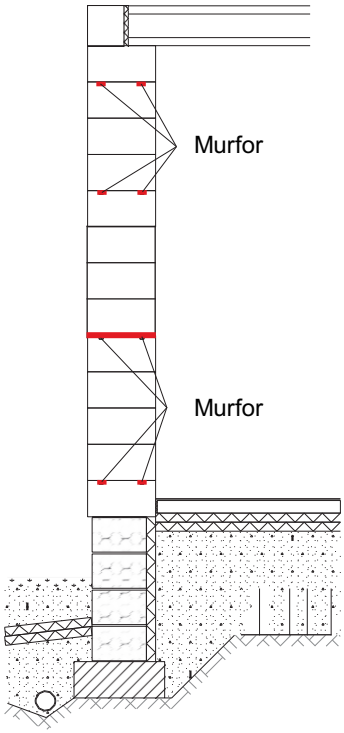


Figure 5.1. Joints armature locations

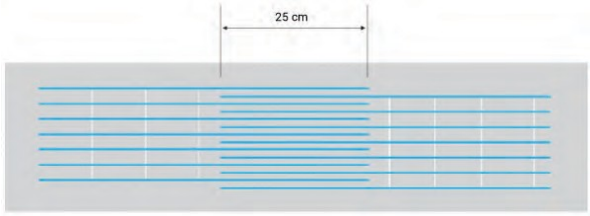
When installed, the reinforcement is rolled directly onto a clean block surface. Depending on the width of the block, it is necessary to install one or two adjacent Murfor Compact-A reinforcing grids of appropriate width.

table 5.3 Dimensions of Murfor® Compact-A reinforcement (mm) and expense ratio

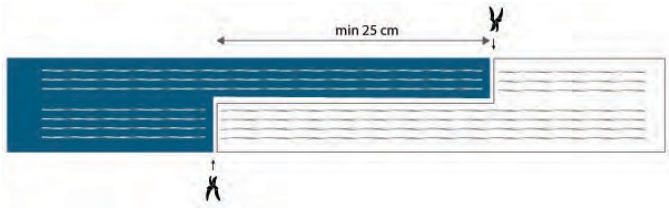
Block masonry width	Suitable reinforcement mesh and quantity in joint	Expense ratio, jm/m²
500	2 x compact a-40	2,86
375	2 x compact a-40	2,86
300	2 x compact a-40	2,86
250	2 x compact a-40	2,86
200	1 x Compact A-80	1,43
150	1 x Compact A-80	1,43
100	1 x Compact A-80	1,43

Continuing the reinforcement

When continuing with Murfor® Compact-A, do not place the reinforcement on top of each other! The cross mesh of the reinforcement must be cut through 25 cm and placed at a distance of 25 cm between each other so that the height of the reinforcement at the extension is the same as the rest of the joint.



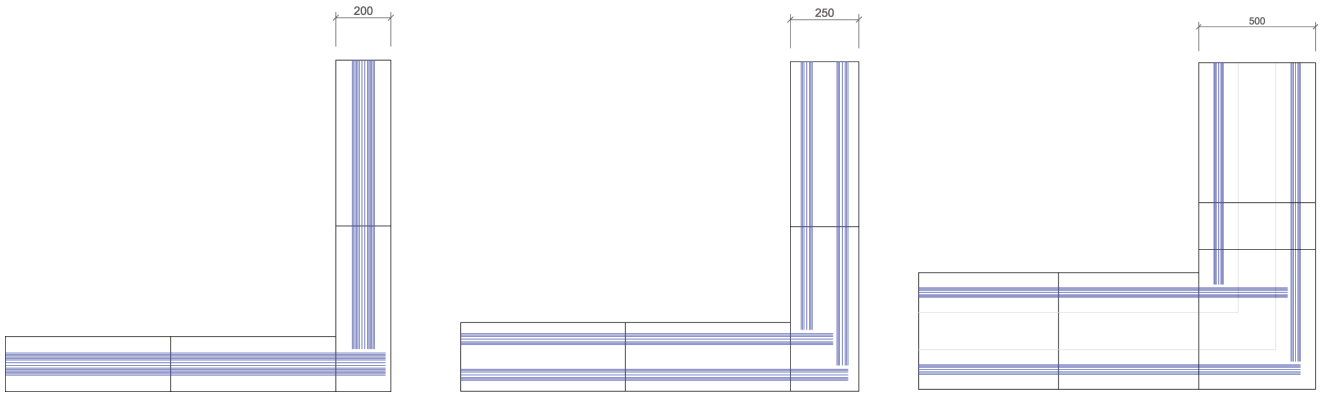
An alternative is to make a continuation of at least 25 cm in length as a "tooth" by cutting the nets narrower as shown in the picture.



In joints with two parallel reinforcing meshes, the extensions must be made at different locations, preferably at least 50 cm apart.

Armature extensions in different joints should be located in different places in the masonry, not over each other.

Corner reinforcement



bauroc 200 mm + Murfor 80 mm | bauroc 250 mm + Murfor 2x40 mm | bauroc 500 mm + Murfor 2x40 mm

5.4.2. Reinforcement Ø 8 mm

As bauroc blocks are laid on a thin adhesive joint, the required grooves must be milled on the surface of the blocks to arm the joints. This can be done either by electric or hand-operated machine. These grooves are filled with bauroc Concrete Adhesive before fitting the reinforcement rods. The reinforcing bars are then pushed into the grooves filled with adhesive so that they are completely covered with adhesive. The distance of the joint groove from the outside of the block must be about 60 mm.

In cases where reinforcement is required, the minimum reinforcement requirement shall be met by 375 mm, 300 mm and 250 mm thick two reinforcing bars in each of the four joints and one rod Ø 8 mm in the 200 mm and 150 mm thick walls.

The arrangement of the joint armature for the different block walls is shown in Figure 6.1.

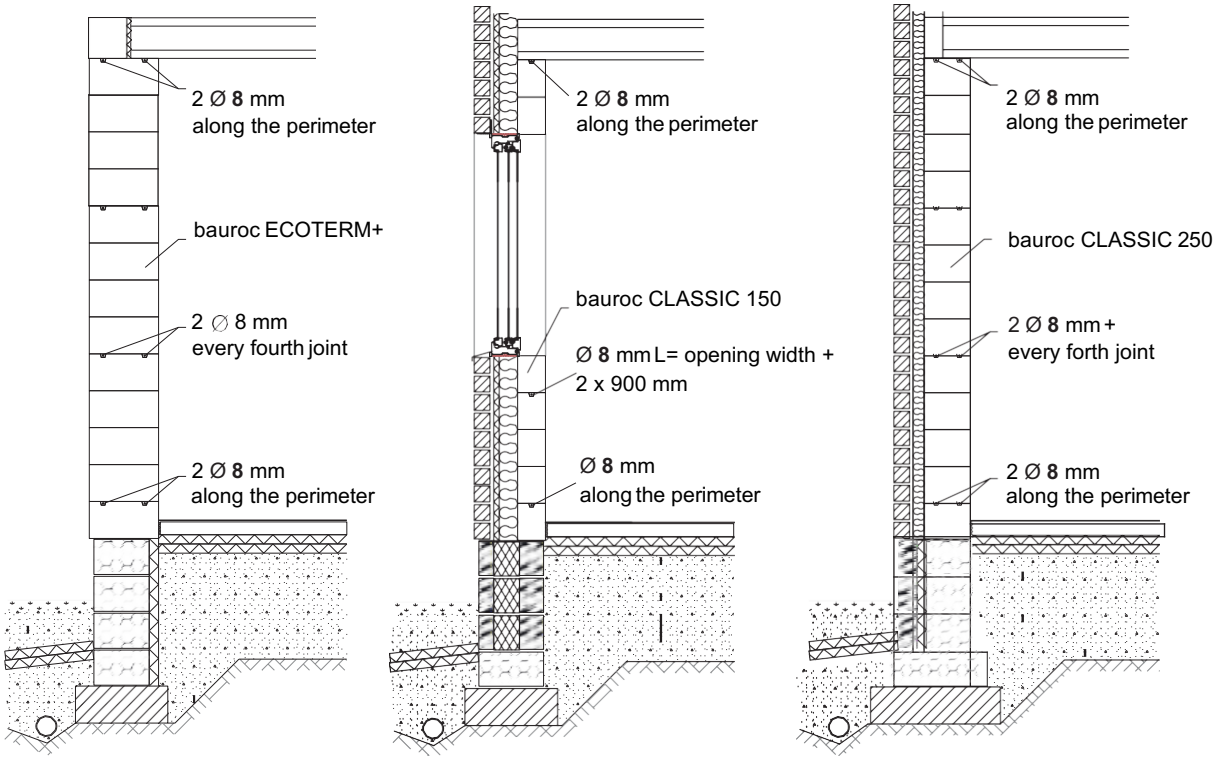


Figure 6.1. Location of joint armature.

5. Deformation joints

Since each building is unique, it is not possible to give precise instructions on the location of the deformation joints. It should be solved by the designer who finds the most suitable places to place the joint.

The deformation band should be done:

- Between the foundation and the wall using bitumen roll material;
- joining or transitioning to a warm and cold wall;
- if the thickness of the block wall changes;
- if the length of non-reinforced walls is more than 6 m (wall reinforcement allows to
- increase the distance between the deformation joints);
- crossing long bearing walls;
- joining walls with walls or walls of other materials;
- When the wall height changes sharply.

Compaction of deformation joints

Because the masonry is cut through the deformation hole, the joints must be tightly sealed and protected against the effects of the weather. Deformation joints are mostly filled with mineral wool (ex. ISOVER TK). The external and internal sealing joints of the outer walls are sealed with elastic joint fillers, which must be weather-resistant in outdoor conditions. Finishing must not extend over the joint filler, otherwise the joint will lose its purpose. The joints may also be covered with suitable moldings.

The deformation joints can be made, for example, as shown in Figure 6.2.

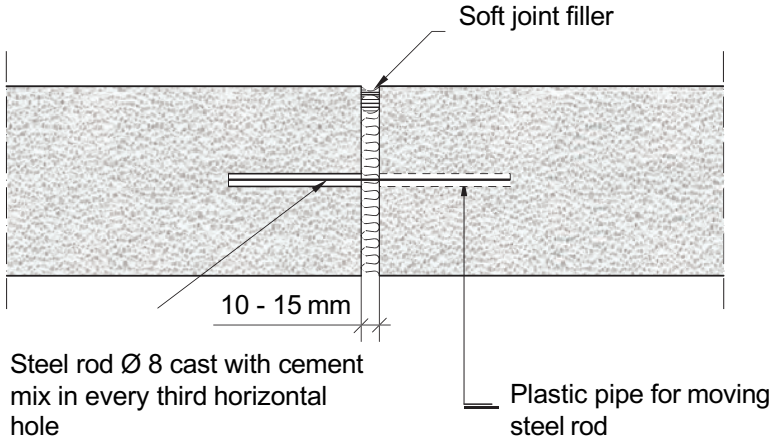


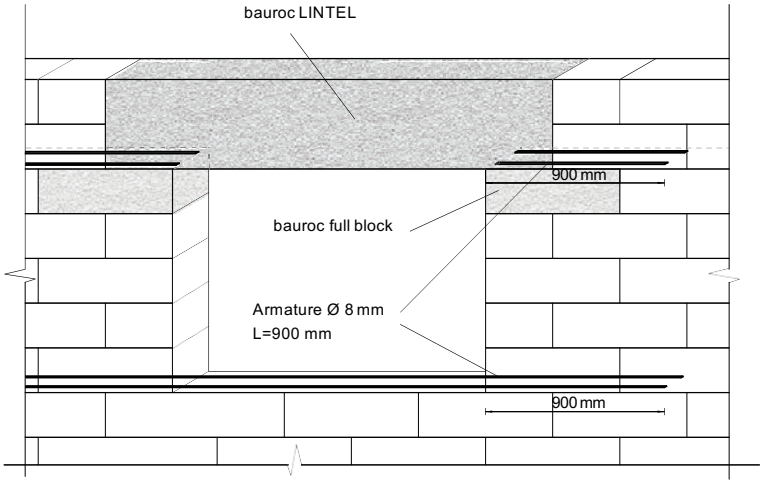
Figure 6.2. Deformation joint

6. BRIDGING OPENINGS IN **bauroc** BLOCK WALLS

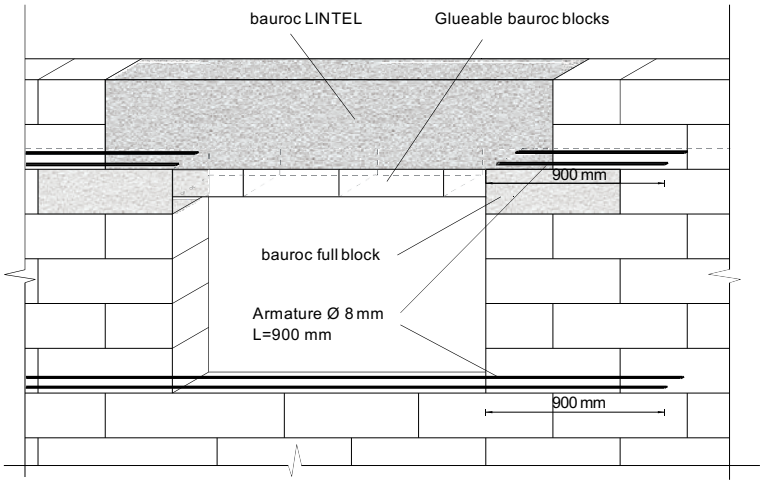
6.1. General

The bauroc block walls are suitable for bridging holes, both prefabricated and locally manufactured. Bauroc porous concrete glues are best suited as prefabricated bridges. Reinforced concrete slabs and steel lintels can also be used. The locally produced lintel is a reinforced concrete slab cast in a spot-made mould. The mould can be made of wood or bauroc U-BLOCK.

6.2. Suport surface blocks



bauroc BEAM recommended base on bauroc blocks for masonry. We recommend the lower joints of the window openings and the supporting surfaces of the bridges to be reinforced with a 900 mm steel ø8 mm steel mesh installed in the milled grooves.



The height of the door and window opening can be adjusted, if necessary, with suitable bauroc blocks cut to size or other bauroc block products of suitable size. For example, from ECOTERM + blocks in the masonry, pieces of slabs cut from the element 100 can be glued underneath the bridges. The hardened bauroc Concrete glue is strong enough to keep the blocks glued to the bottom from below.

6.3. **bauroc** LINTELs

Bauroc LINTEL is a reinforced porous concrete beam intended to bridge openings in bauroc block walls. For bauroc LINTEL details, see p3.4.

Bauroc LINTEL has been calculated as a uniform beam and dimensioned for a certain load capacity. The carrying capacity of the various bridges is 15 kN/m; 20 kN/m and 30 kN/m. Carrying capacity indicates the maximum permissible linear load of kN/m without the self-weight of the bridge. The design of the bridges takes into account both the permanent load and the variable load.

Bauroc LINTEL reinforcement consists of longitudinal rods welded together to form a single spatial frame. The reinforcement is treated with corrosion protection.

6.4. Concentrated, etc. special loads

Loading bauroc LINTEL with collocated loads is not advised. However, if there is a need for this, it is necessary to check that the collocates, etc. the maximum moment due to the load does not exceed the values resulting from

the uniform linear load determined by the load capacity.

6.5. Bend

Bauroc LINTEL is dimensioned so that the beam bend, caused by long-term load is below L / 400 due to self-weight and other special loads. Usually the bend is much smaller than that.

6.6. Support surface length

Bauroc LINTEL recommended floor support surface length in masonry is 300 mm, minimum 200 mm. In the case of long bridges and large loads, an even greater length of the supporting surface must be used in certain cases,
so that the local vertical load does not exceed the load in the underlying masonry.

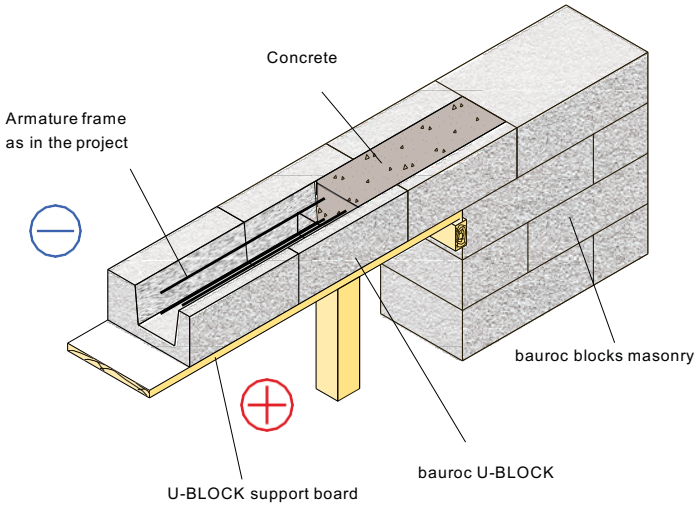
6.7. Cross section weakness

All minor cross-sectional weaknesses except small holes (Ø ≤ 30 mm) and small ridges (max. Depth 20 mm) are prohibited. To avoid damaging the reinforcement frame in the bridges! It is forbidden to cut the bauroc LINTEL shorter and to mill the armored areas on the top of the lintel.

6.8. **bauroc** U-BLOCK BEAMs

Bauroc U-BLOCK design must be based on general rules for the design of reinforced concrete structures.

In such a case, the U-BLOCK performs the formwork function and the beam is formed as the concrete is cast. The bridges should be designed as rigid as possible (deflection ≤ L / 400) to prevent the masonry pinching in the supporting surface. The exact dimensions of the U-blocks can be found in section 3.3.



7. **bauroc** CEILING PANEL USE IN CEILINGS AND ROOFS

7.1 General

bauroc CEILING PANELS is produced with specific length and width dimensions, which must be taken into account at the design stage. The length of the panels is between 1.0 and 6.0 m, with a step of 0.2 m. The standard width of the panels is 600 mm. In addition, 300 mm wide ceiling panels are produced. The height of the ceiling panels is 250 mm. The exact dimensions of the panels can be found in Chapter 3.6.

bauroc CEILING PANELS are designed as a monotonous beam and calculated for a specific load. The ceiling panels are produced with a load capacity of 5.0-6.5 kN/m², which is a permissible load calculation value in addition to the product's own weight.

bauroc CEILING PANELS have two planar welded meshes - bottom and top. They provide both the required bearing capacity and the strength of the panels when lifting them from the center of the panels.

As a special product, they also make console ceiling panels (max. Console 1.5 m) and stainless steel panels.

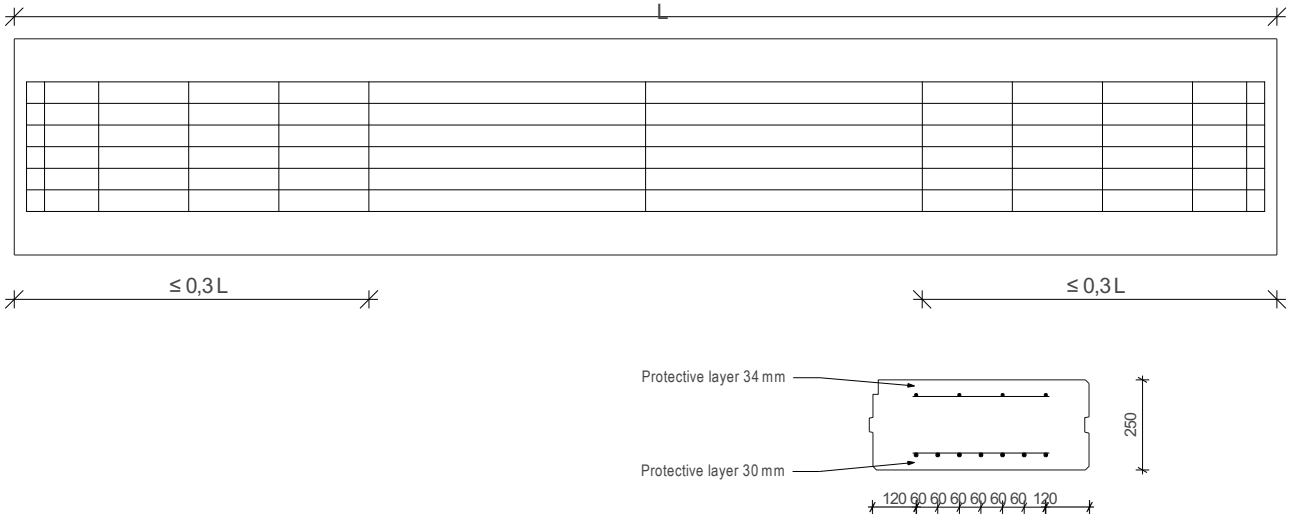


Figure 7.1. Panel armature diagram

bauroc CEILING PANELS are rectangular in cross section and without cavities. The side surfaces of the panels are a plug-and-pin profile. Figure 7.2 shows the dimensions of the pins and their compatibility along the groove. There is an additional groove at the upper edge of one side of the panel, which is filled with fine concrete after the panels have been installed (e.g., Wber S-06).

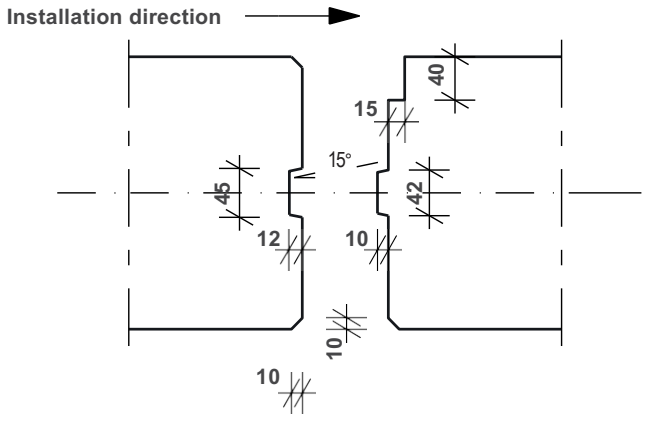


Figure 7.2. Panel dimensions for plug-and-pin connection

7.2. Length of panel support surfaces

The length of the panels to the masonry is at least 90 mm. When supporting steel beams, the support length of the panels can also be 80 mm.

bauroc ECOTERM+ blocks ,for external walls, should be provided a slightly larger support length of about 150 mm. In bauroc panels, it is also useful to support the outer panels of the panel field in the longitudinal direction to the outer walls. This way, we can start with the same height on all the walls of the next floor. Otherwise, there would be a difference in height on the sidewalls, since the height of the panel is 250 mm but 200 mm on bauroc blocks.

If the design of the building takes into account the instructions described in section 4.2 for the connection of walls to the axises and the horizontal modules, the necessary lengths of the supporting surfaces of the panels are ensured.

The same principles apply to sloping panels in sloping ceilings.

Cutting the panels

Welding nets of bauroc panels are designed according to panel dimensions and load-bearing capacity and are only used for the production of panels of the respective length. As a result, the panels must not be cut short on the construction site as this affects the bearing capacity of the panels.

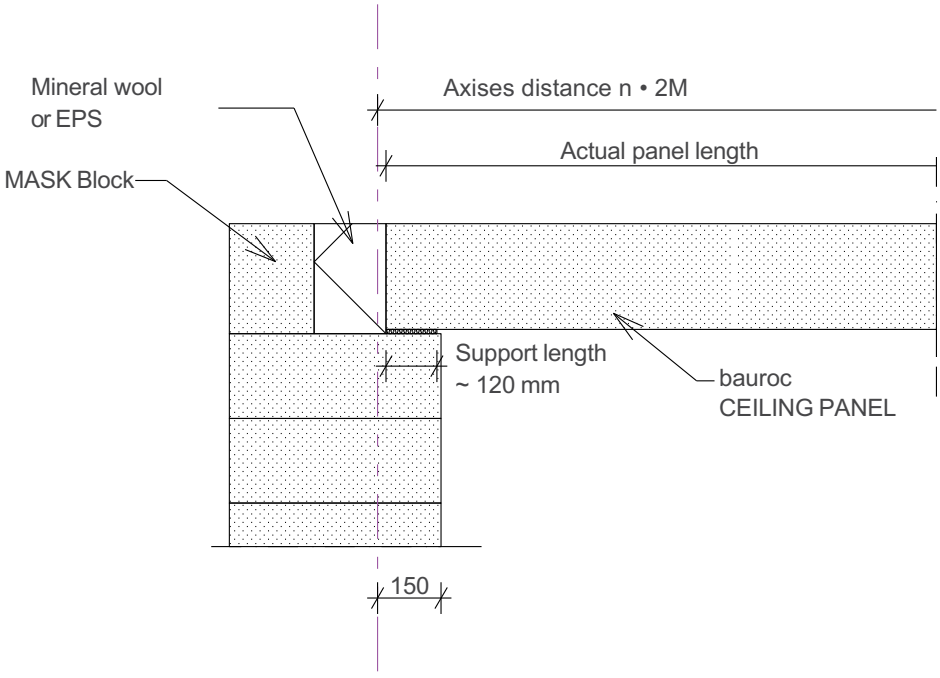


Figure 7.3. Panel support on bauroc ECOTERM + blocks on exterior wall

7.3. Openings and penetration design

The reinforcing mesh in the panels impose certain limitations on making openings and penetrations in the intermediate ceilings. In the following, we will try to provide guidance on where and how it is best to make the necessary openings and what should be taken into account when designing the building.

The bauroc sales office is always ready to help you with this.

7.3.1. Making of smaller openings

Sewer penetrations and other smaller holes should be designed so that they are made in the longitudinal joints of the panels (Figure 7.4).When making bauroc CEILING PANELS we have taken it into account and the edges of the panels have a 90 mm wide zone without reinforcing mesh.

It is not possible to make penetrations in the narrow 300 mm panels longitudinal joints!
For conducting water pipes and electric cables, the holes can also be drilled in the center of the panels, or in the area marked with white on the figure. Carefully locate the reinforcement spacing in the mesh.

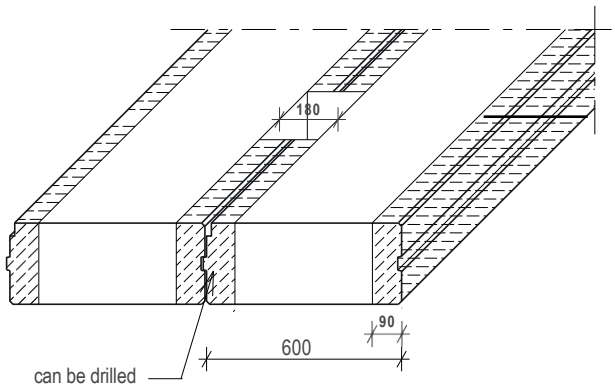


Figure 7.4. Opportunities for making openings in longitudinal joints of bauroc panels

7.3.2. Larger openings in ceilings and roofs

There will certainly be a need to make larger openings in the ceilings (chimneys, ventilation shafts, etc). Here you should use the binding of the panels. To do this, shorter panels should be binded on adjacent panels. We offer special hanging bolts and binding beams that allow you to make openings in ceilings up to 1200 mm (two panels).
Possible examples of panel binding are shown in Figures 7.5. - 7.7.

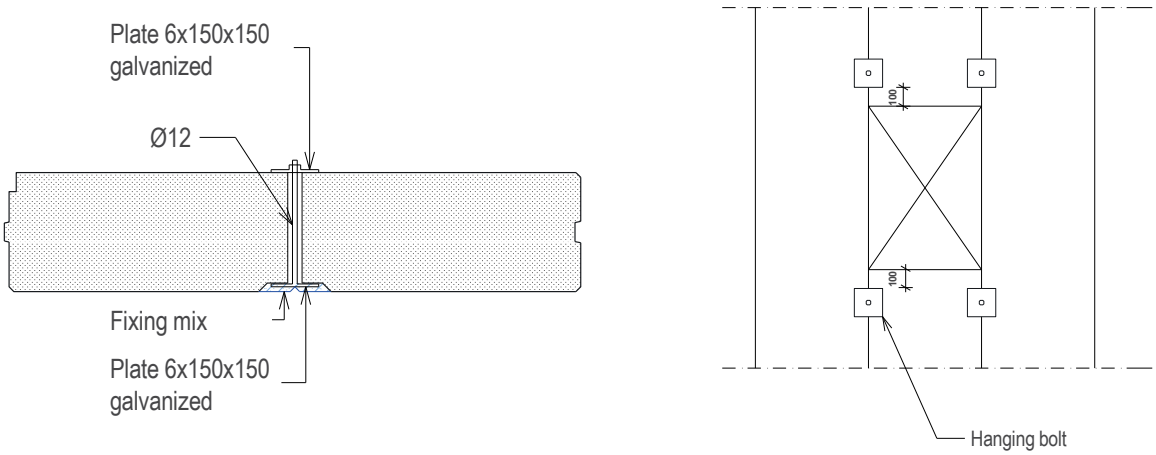


Figure 7.5. binding bauroc panels with hanging bolts

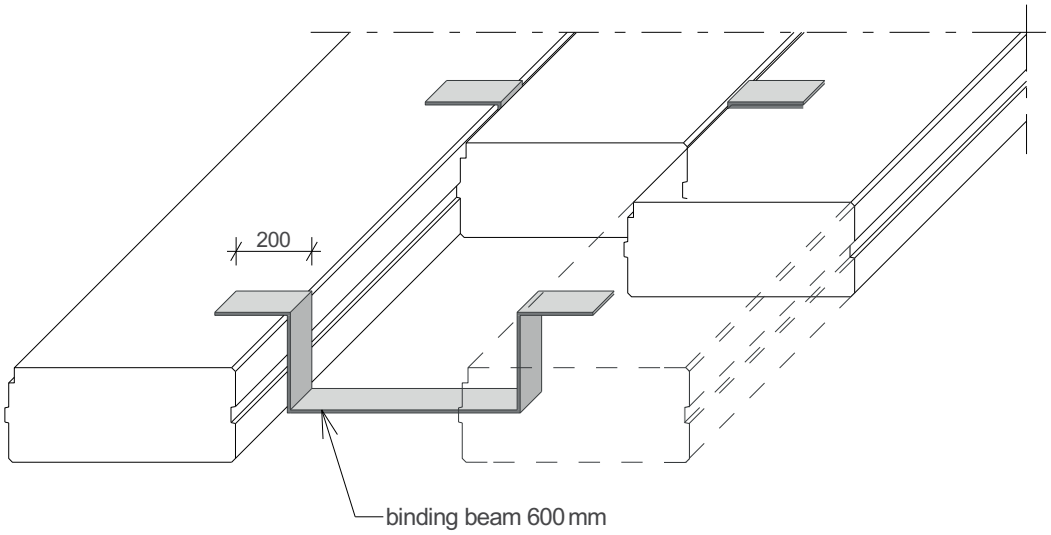


Figure 7.6. Binding beam for 600 mm panel binding

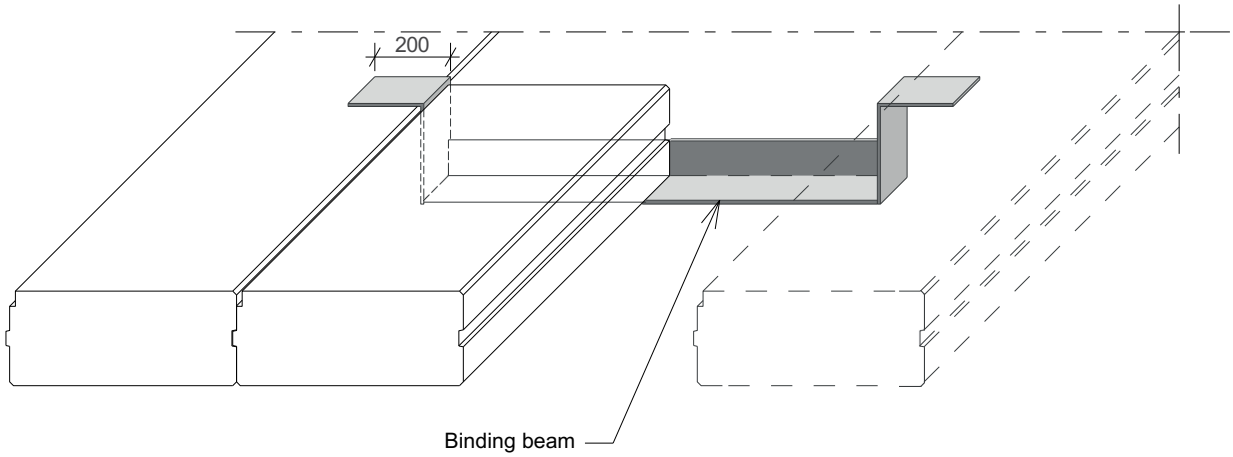
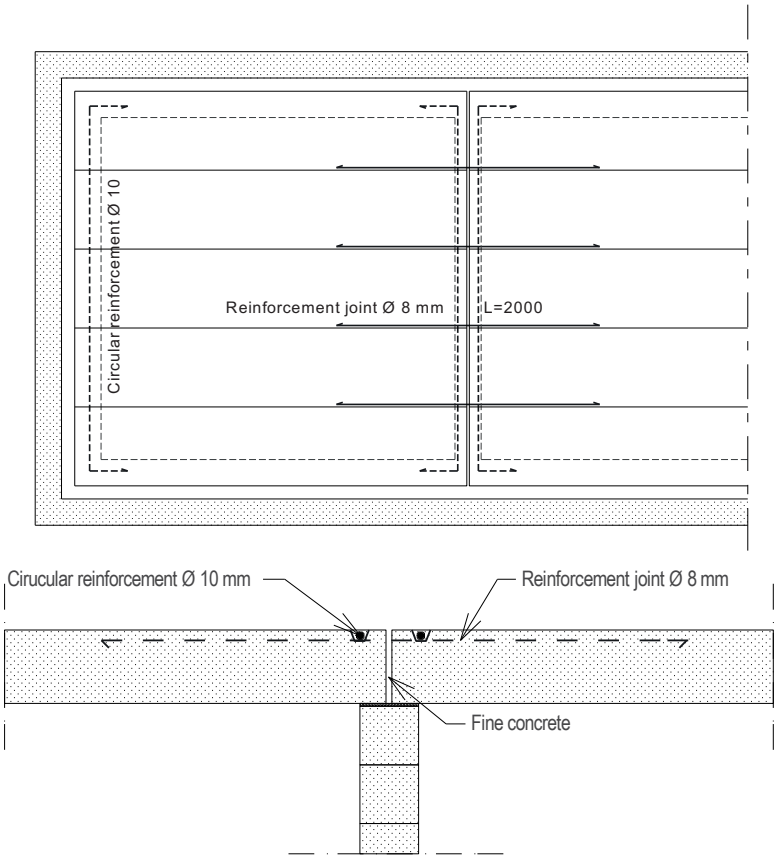


Figure 7.7. Binding beamfor binding 1200 mm panels

7.4. Reinforcement and stiffening of ceilings

Reinforcement of joints
bauroc CEILING PANELS longitudinal joints are not reinforced through the whole panel. The longitudinal joints of panels on the inner carrier walls are mainly reinforced. This allows the transfer of pull forces from one ceiling section (panel field) to another. Figure 7.8 shows the principle of reinforcing joints.

Circular reinforcement
In the ceilings of bauroc panels, a circular reinforcement should also be provided. First of all, the circular reinforcement helps to absorb tensile stresses caused by the horizontal load. Secondly, the adjacent panels are held close to each other by the reinforcement and thereby reduce the risk of cracks in the longitudinal joints of the panels. The grooves of the panels must be milled to install the reinforcement. The diameter of the reinforcing steel used must be at least 10 mm. A possible circular reinforcement is shown in Figure 7.8.



Joonis 7.8. bauroc ceiling reinforcement

7.5. Panel caulking in longitudinal joints

In bauroc CEILING PANELS longitudinal joints, the groove on the upper surface of the panels is filled with fine concrete, which ensures the density of joints between the different floors of the building. At the ends of the panels that support the outer walls, the longitudinal joints of the panels require additional sealing. Above the outer wall, drill a hole Ø30 mm on the panel's longitudinal joint and fill it with fine concrete (Figure 7.9a). Anchoring of panels for this purpose in ceilings fulfills this purpose. If there is a suspicion that these holes were not drilled and untreated during construction, the holes should be drilled upwards from the bottom surface of the panels and filled with assembly adhesive (Figure 7.9b).

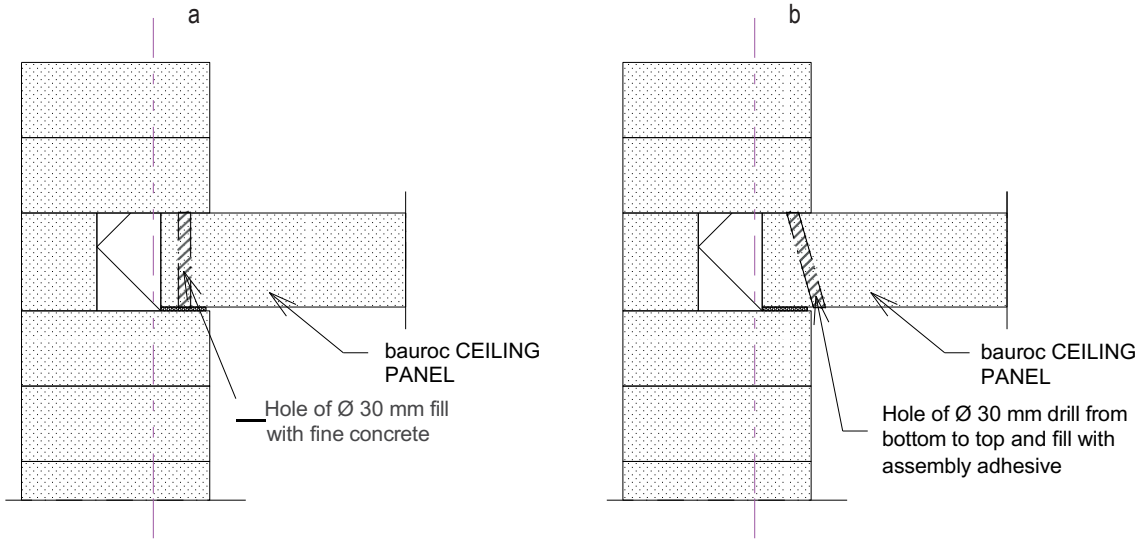


Figure 7.9. sealing joints of bauroc panels

7.6. Anchoring the ceilings of bauroc panels

Ceilings made of panels stiffen the building and help to increase the resistance of the masonry to the horizontal load (wind load). If the frictional force between the panel and the wall is not sufficient to overcome the horizontal loads, the ceilings must be anchored to the walls. In small houses on intermediate floors, there is usually no need. However, it is important to anchor the roof panels of the panels, and especially when the roof panels are sloped.

12 mm stainless steel rods are used to anchor bauroc panels with non-load-bearing outer walls. The bars are struck through the panel wall and must reach a depth of at least 250 mm into the bauroc masonry (Figure 7.10).

The bauroc panels are anchored to the wall with 10 mm reinforcing steel rods, which are pressed into holes filled with cement. Holes with a diameter of 30 mm are drilled in the longitudinal joints of the panels and must reach a depth of 400 mm in the masonry (Figure 7.11).

The bauroc panels in the tilting sloped roofs prevent the anchoring of rods from sliding on sloping surfaces and also work on the suction power of the wind.

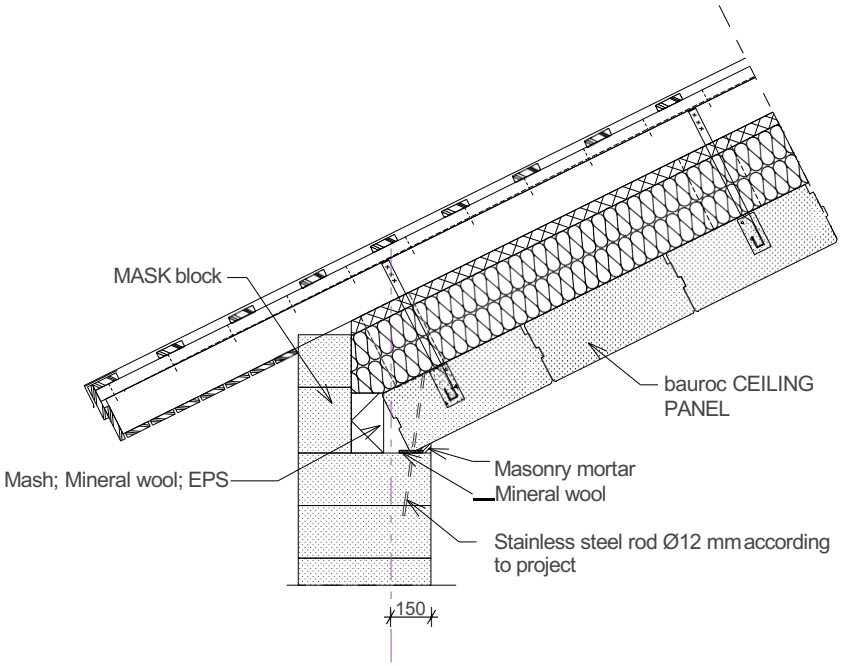


Figure 7.10. anchoring bauroc panels with stainless steel rods

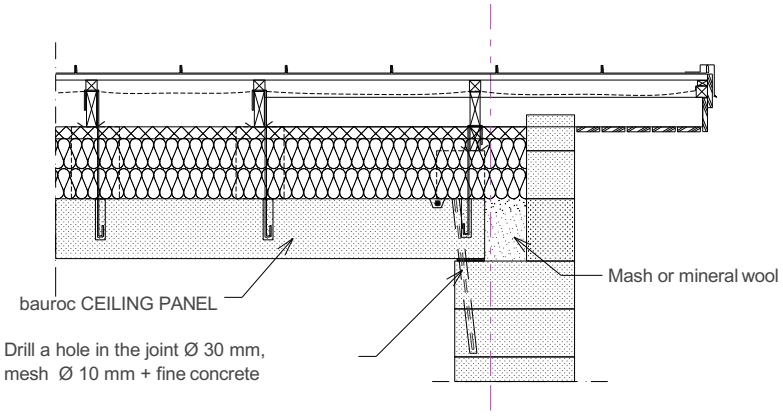


Figure 7.11. anchoring bauroc panels with load-bearing wall

bauroc panels can also be installed in roof ceilings as shown in Figure 7.12 (roof slope 15 °). In this case, the anchoring of the panels with the walls is particularly important.
The upper surface of the lower masonry remains horizontal, but the inner edge of the higher masonry must be cut on an angle according to the slope of the roof. When panels are installed, they must be prevented from slipping. To do this, stainless steel rods are inserted into the panel through the panel wall. After installing the panels, the holes in the longitudinal joints of the panels with a diameter of 30 mm are drilled over both the higher and the lower masonry. The holes are filled with cement mixture and reinforcement bars are pressed inside.

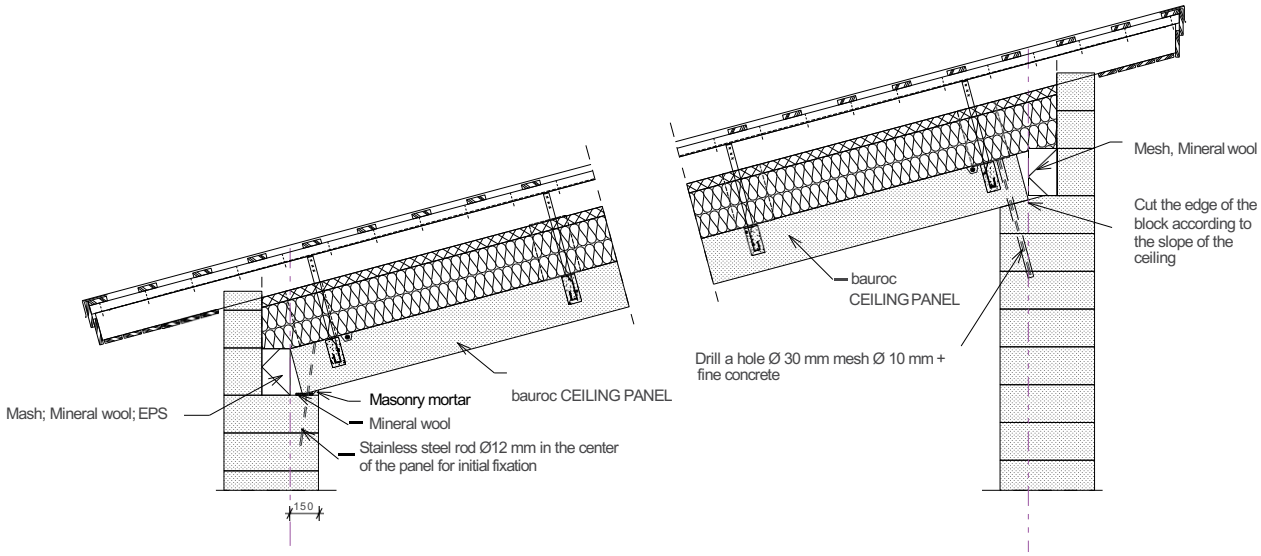


Figure 7.12. anchoring bauroc panels with load-bearing wall - cut in the longitudinal direction

7.7. Attaching rafters from bauroc panels to roof ceilings

Roof ceiling with horizontal panels
Ferms and rafters are attached to the panel supports through masonry and distribution beams. The most suitable galvanized fastening tape is used to attach the masonry and battens to the panels. attach suitable lengths of tape to the panel joints during installation of the panels with nails or pour cement into drilled holes in panels (Figure 7.13). Drill hole Ø 30 mm and depth 150 mm. To ensure better anchoring, the end of the tape, to be put into the hole ,must be turned back.

Figures 7.14 and 7.15 illustrate the possibility of the roof structures being supported by horizontal bauroc panels on the roof panels according to whether or not the roof point is perpendicular to the panels.

All wooden structures must be separated from the bauroc panels by a moisture barrier (ex. bitumen paper).

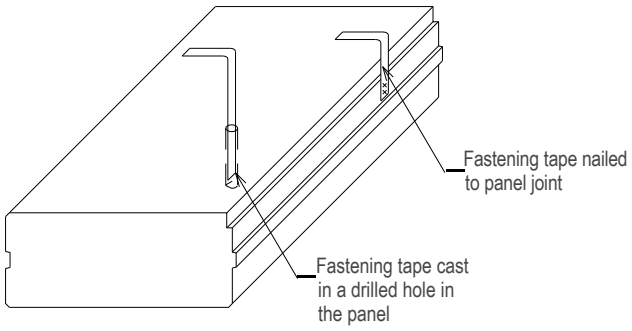
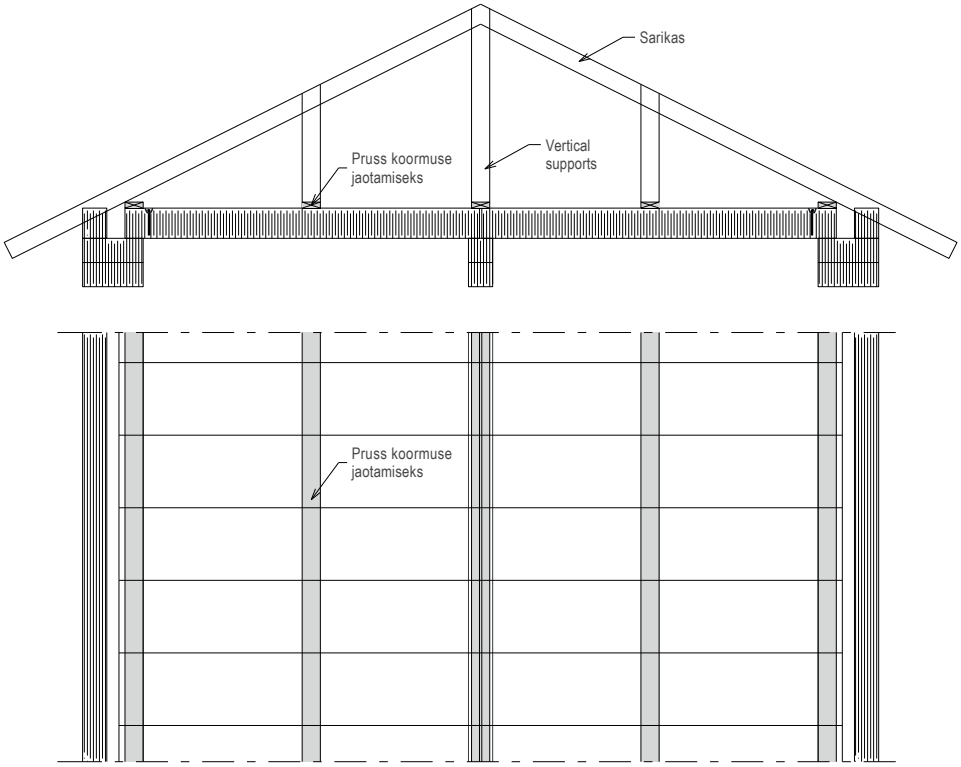
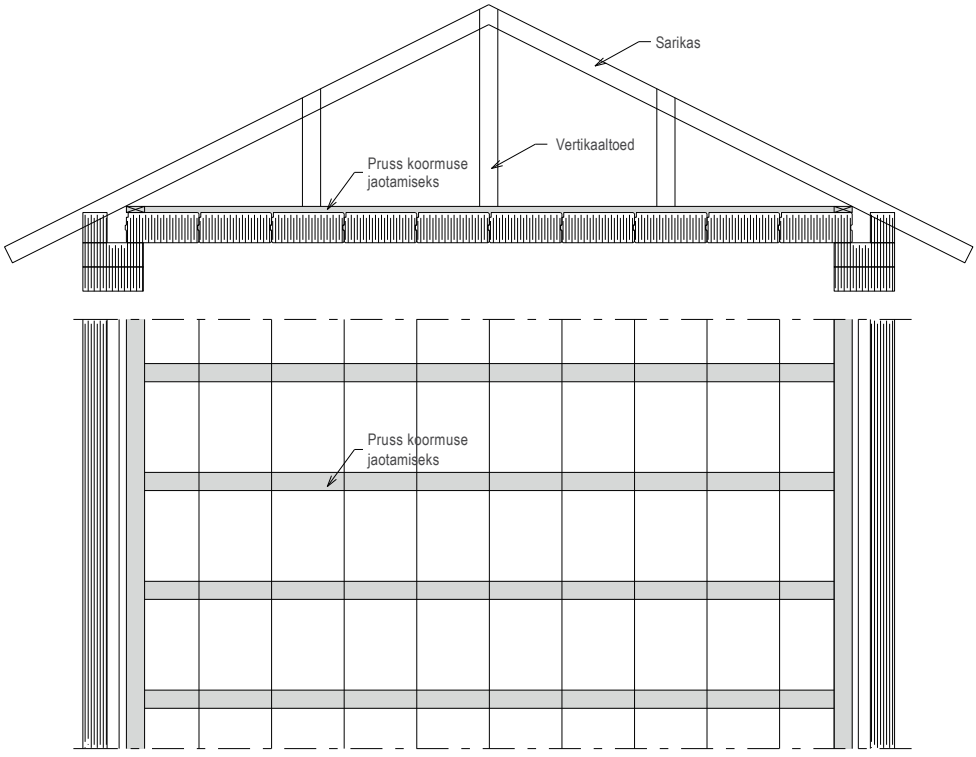


Figure 7.13. Fastening tape on bauroc panels



Joonis 7.14. katuse hari risti bauroc paneelidega



Joonis 7.15. katuse hari paralleelne bauroc paneelidega

bauroc panel sloped roofs

The roof must also be insulated. for everything to fit properly, the rafters must be raised above the panels. For this purpose, bauroc blocks are used which are glued to the panels. The rafters are already installed on these blocks. For fastening the rafters to the panels strips of tape are cast into the holes of Ø 30 mm in the panels and 150 mm deep. To ensure better anchoring, the end of the tape to be poured into the hole must be turned back.

Figure 7.16 shows a schematic solution of the sloped roof with panels with blocks under the rafters. The fastening of the rafters can be seen in more detail in Figure 7.10.

All wooden structures must be separated from the bauroc panels by a moisture barrier (eg bitumen paper).

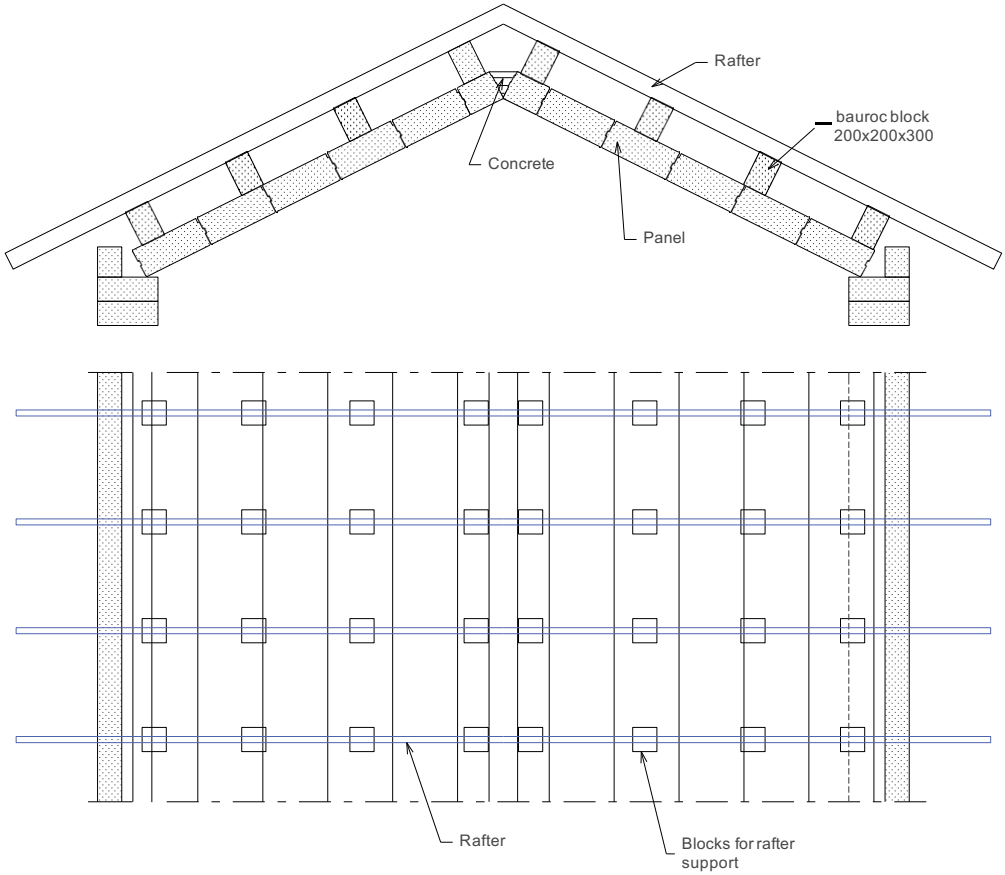


Figure 7.16. Sloped roof with bauroc panels

8. SOUND ISOLATION

8.1. General

When designing and constructing buildings, care must be taken to ensure that the sound insulation requirements laid down by the norms are in accordance with the intended use of the buildings and premises.

8.2. Sound isolation in walls between apartments with bauroc products

Sound insulation issues are very important when it comes to insulation between different apartments in semi-detached houses, terraced houses or blocks of flats, for which Rw ≥ 55dB is required. It is very important to understand that the sound insulation requirement of 55 dB between two apartments applies to all sound transmitting structures, not just walls. Therefore, it is very important to ensure, when designing and constructing, that the sound is not transmitted from one room to another through the ventilation system, floors, ceilings or joints of structures. bauroc has developed recommended reference solutions.
Wall constructions that meet different requirements for airborne noise insulation can be built using a multi-layered bauroc wall solution. The great advantage of such walls is the lightness of the wall. For example, bauroc's recommended solution for the construction of such non-load-bearing sound-insulating walls is a multi-layered 23 cm thick wall, which is a stone wall that meets the soundproofing requirements of the lightest square-meter walls between apartments and provides a more useful interior due to a compact solution.

The cross-section of the multi-layer wall and the different layers are shown in the figure. All vertical and horizontal joints of both block walls must be filled with bauroc block adhesive. To one of the blocks, a rigid mineral wool slab should be stuck to the appropriate thickness. The mineral wool must not touch the other layer of the block wall; The different layers of the multilayer wall must not be fixed to each other by wall brackets or special constructions, because in this case the insulating capacity drops sharply. It is also desirable to interrupt adjacent walls and ceilings in order to avoid transmission of sound through adjacent structures. Experiments show that plastering does not affect the sound insulation capacity of multilayer walls by more than 1dB

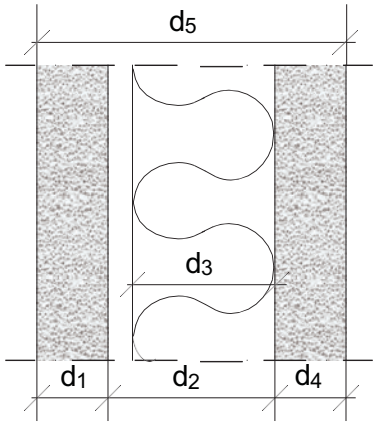


Table 8.1. The recommended multilayer wall solutions for bauroc are shown in the table below

bauroc wall layer d1 (mm)	Stone wall gap d2 (mm)	Mineral wool d3 (mm)	bauroc wall layer d4 (mm)	Total thickness d5 (mm)	Rw (dB)	Rw´ (dB) (Rw-C)	Wall Weight kg/m²
bauroc acouSTic 150	50	30	bauroc EIEMENT või claSSic 100	300	60	≥ 55	ca. 144
bauroc PlaDE 100	40	30	bauroc PlaDE 100	240	62	≥ 55	ca. 120
bauroc acouSTic 100	40	30	bauroc acouSTic 100	240		≥ 55	ca. 130
bauroc acouSTic 150	50	30	bauroc acouSTic 150	350		≥ 55	ca. 192

Rw - Sound insulation value of bauroc wall solution measured in laboratory conditions or calculated by formulas.
Rw '- Estimated value of sound insulation between rooms on real construction sites.
C - the noise factor for household noise.

It is advisable to build multilayered walls from bauroc PLADE (bulk weight 535 kg/m3) or bauroc ACOUSTIC (volume weight 575 kg/m3) products. The complete solutions of the bauroc products listed in the first three rows of the table are suitable for a soundproof non-carrier wall system. complete solutions from bauroc ACOUSTIC products can also be used as systems for bearing sound-insulating walls, in which case ceilings and floors must be interrupted. For example, the wall solution shown in the last row of the table is suitable for use as a load-bearing wall in a rowhouse between neighboring apartments.

8.3. Single-layer bauroc wall air noise insulation

Wall noise insulation depends mainly on the weight of the wall, ie. its thickness and the density of the material. The airborne sound insulation characteristics that can be achieved with single-layer bauroc wall structures are shown in the table below.

Table 8.2. Airborne sound insulation of a plastered bauroc wall Rw, dB

bauroc wall blocks	Aerated concrete dry density, kg/m³	Block wall thickness, mm						
		100	150	200	250	300	375	500
ECOTERM+	300					44	47	50
UNIVERSAL	375			42		47		
CLASSIC	425	36	40	43	46	48		
EIEMENT	475	37	41					
HARD	535	38		46	49	50		
ACOUSTIC *)	575	39	44	47	49			

*) ACOUSTIC 200 mm wide wall can be built from ACOUSTIC 250 blocks by stacking them on their side.

The figures in the table are valid assuming that the wall is plastered, all joints of the wall are properly filled and side effects of other constructions do not weaken the insulation. The plaster layer is calculated with a wear rate of 10kg/m² on both wall surfaces.

8.4. Wall lining

One way to improve the sound insulation of walls is by lining the walls with gypsum boards, similar to the examples below.

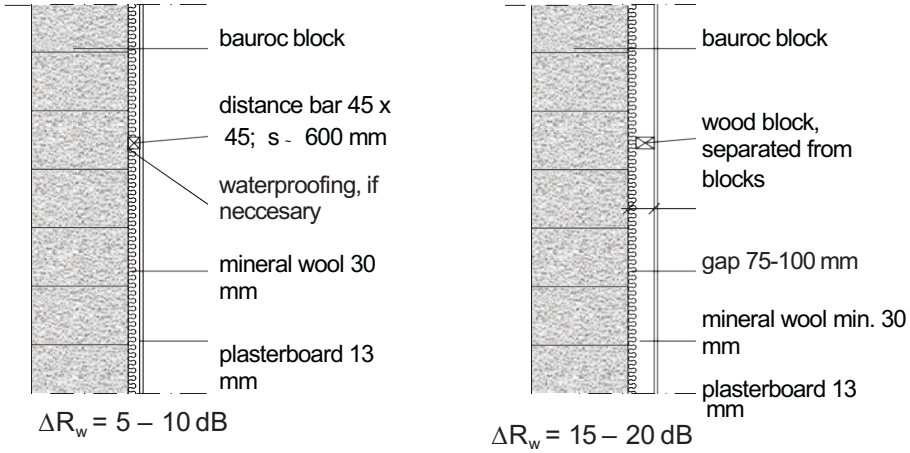


Figure 8.1. Improvement of wall soundproofing with lining

9. FIRE RESISTENCE

9.1. General

Bauroc aerated concrete is a non-combustible material that can withstand extremely high temperatures for several hours. bauroc aerated concrete belongs to fire class A1. Porous concrete can also have a very high temperature, as well as a very high temperature. Drying below the equilibrium will cause the aerated concrete to shrink. Stronger shrinkage occurs between 200 ... 300 ° C during several hours of fire. The shrinkage then remains constant until about 700 ° C.

As the fire penetrates the material at a very slow rate, even in the case of strong short-term fires, only the cracks in the surface due to the depletion of the aerated concrete surface do not affect the strength properties of the material.

By physically and chemically bound water evaporation, the material weight also decreases during the fire.

The compressive strength is maintained at temperatures up to +700 ° C. It then drops almost in a straight line so that at + 800 ° C the compressive strength is 50% of the initial value and at + 900 ° C it is zero.

table 9.1. bauroc masonry fire resistance

Masonry width (mm)	Fire resistence
500	rEi 240
375	rEi 240
300	rEi 240
250	rEi 240
200	rEi 240
150	R 120; EI
100	Ei 120
75	EI 90
50	EI 30

5

PRACTICAL

10. FIXING SUPPLIES and FIXING of bauroc AERATED CONCRETE

10.1. General

By its very nature, aerated concrete is a fairly soft material that can raise the question of how something can be fixed on such a wall. By using the right type of fasteners, nothing is impossible here and fastening is easy and quick. Tests carried out in the laboratory of AS Teede Tehnokeskus show that the extraction strength of the shortest 65mm bauroc SCREWS is 0.73 kN (ECOTERM + blocks) depending on the product and 2.255 kN (HARD, ACOUSTIC blocks). When using 200 mm screws with a longer threaded portion, the tensile strength of the tests is up to 3,765 kN.

We achieved the best results with ESSVE Heavy Load 10x185 lightweight concrete screws. For strength calculations, we recommend using a 3-fold strength margin.

The table below summarizes the results of both tests.

	Extraction strength kN					
	ECOTERM+ 300 kg/m³		CLASSIC, ELEMENT 425 kg/m³		HARD, ACOUSTIC 575 kg/m³	
	Test average	3x strength spare	Tests average	3x strength spare	Tests average	3x strength spare
bauroc SCREW 8x65, thread length 50mm	0,73	0,24	1,422	0,47	2,255	0,75
Porous concrete screw 8x200, thread 100mm	1,292	0,43	1,652	0,55	3,765	1,26
dowel Sormat KBT 8	0,965	0,32	1,838	0,61	2,365	0,79
Essve Heavy Load 10x185, thread 160mm	2,03	0,68	7,53	2,51	8,34	2,78
dowel Sormat NAT L 10x80	0,71	0,24	1,53	0,51	1,62	0,54
dowel YTOX 10/55	0,8	0,27	1,61	0,54	2,87	0,96
Fisher gas concrete anchor FPX-1	0,59	0,2	1,76	0,59	2,99	1,0

Lighter things can be fixed with bauroc porous concrete nails and screws almost as successfully as wood, without the need for special tools. However, the nail should be wedge-shaped or such that the retention of the nail is based, for example, on the tip shape change. The screws are better suited as all-length threaded screws. Also for heavier items like kitchen cabinets and the like. Attaching to a porous concrete wall is also easy. Only suitable dowels and screws should be selected. Drilling holes in the wall can also be done with a hand drill.

The presence of fasteners in the aerated concrete can also rely on their expansion as well as on the bonding and casting.

When choosing accessories, you should try to avoid using small accessories. If a slightly larger type is chosen from the required minimum size, the resistance may increase several times. However, the total cost of validation does not increase much.

It is worth asking their vendors or importers for information on the properties of accessories.

10.2. Corrosion resistance of fasteners

Fasteners used in porous concrete blocks must have sufficient corrosion resistance. This is especially important for accessories used in the exterior of the exterior walls and in cold rooms. Directly adherent nails and screws for aerated concrete must be particularly corrosion resistant (hot-dip galvanized or stainless). Indoor accessories can be safely used indoors, although here the nails and screws that can be attached directly to the aerated concrete should be at least electrically galvanized.

10.3. Effect of bauroc density class on the durability of fasteners

Bauroc aerated concrete products are manufactured with different density classes depending on the different conditions of use, which in turn significantly affects the tensile strength of the fasteners.
Suppliers and importers of accessories, together with the loads allowed for the accessories, also provide the density class of the adjoining aerated concrete or loads for different density classes. Always select the permissible strength characteristics of the accessory from the correct density class cell. When the dry density of bauroc aerated concrete ranges from 400 to 500 kg/m³, the tensile strength of the fastener can change 2-3 times.

Attachment point	Used fasteners
Wall baulks for lining fastening	Hanger dowels (KAT N) Turbo Fast Pound Aluminum cutting nails anchorage spacing of 600 to 900 mm with a mounting depth of at least 80 mm
Wall baulks on mineral wool	Fixer + hanger dowel (KAT N)
Exterior door wooden hangers	Nylon dowel (NAT L) + Attachment Screw Attachment Depth at least 80 mm for sealing, assembly foam
Interior doors, balcony doors, ...	Hanger dowel (KAT N) mounting depth at least 80 mm for sealing, assembly foam
Fire door hangers, metal hangers	Threadlock + Adhesive Mass or Casting Attachment Depth at least 80 mm for sealing, mortar or fireproof wool
Window hangers	Hanger dowel (KAT N) mounting depth at least 80 mm for sealing, assembly foam
Kitchen furniture	Lightweight concrete dowel (KBT), hanger dowel(KAT N), nylon dowel (NAT L) mounting depth of at least 80 mm thin walls with bolts through the wall
Sinks	Lightweight concrete dowel (KBT), threaded bolt + cast, nylon dowel (NAT L) with a minimum depth of 80 mm thin walls with bolts through the wall
Radiators	Lightweight Concrete Dowel (KBT), Nylon Dowel (NAT L)
Curtain rods, shelves, Slats	Lightweight Concrete Dowel (KBT), Nylon Dowel (NAT Nail dowels, galvanized nails crossed
Pictures, etc. light objects	Dowels, spherical screws, brass nails, zinc nails

bauroc SCREW

bauroc SCREW thread is specially designed for use in porous materials. Thread length is 60 mm. The screw has a diameter of 8.0 mm and has a Torx 30 groove head. The screw is covered with a CorrSeal coating that protects it from corrosion. Screws are available in lengths of 65 mm; 90 mm; 110 mm; 130 mm.
Depending on the thickness of the component to be fastened, a suitable screw length must be selected. bauroc The SCREW must reach the block with a minimum of 60 mm.
bauroc SCREW is suitable for rafters, boards, furniture, etc. for fixing bauroc blocks to walls. The advantage of the screw is ease of use - the screw can be mounted directly on the wall without drilling in front of the holes. The need for drilling a hole in the attachment depends on its material and thickness. This must be tested on a case-by-case basis. However, it is always better to drill a hole in the attachable part to reduce the risk of over-screwing in the bauroc blocks. If the screw is turned over, it will no longer fix the attachment and it is better to take it out.

bauroc blocks	Exhaustion load (kN)	Cross load (kN)
ECOTERM +; material density 300kg/m³	0,24	0,30
CLASSIC; material density 425kg/m³	0,47	0,30
ACOUSTIC; material density 575 kg / m³	0,75	0,30

The exhaustion load indicators are based on the results of the tests carried out in the laboratory of AS Teede Tehnokeskus, taking into account the 3-fold strength margin.

Lightweight concrete screw

Commercially there are screws similar to bauroc SCREWS but different size lightweight concrete screws. The general rule - the longer the threaded part and the rarer and deeper the thread, the greater the screw pull-out strength. We have tested the extraction strength of a lightweight concrete screw with a total length of 200 mm and a diameter of 100 mm, as shown in the table below.

bauroc blocks	Exhaustion load (kN)
ECOTERM +; material density 300kg / m³	0,43
CLASSIC; material density 425kg /	0,55
ACOUSTIC; material density 575 kg / m³	1,26

The exhaust load indicators are based on the results of the tests carried out in the laboratory of AS Teede Tehnokeskus, taking into account the 3-fold strength margin.

Lightweight concrete dowel KBT

Nylon dowel KBT is designed for light fastening in aerated concrete blocks. The coarse thread on the outer surface of the anchor ensures good adhesion to the base material. Screws suitable for KBT are wood, universal and metal screws. Suitable for use in temperatures between -40 ... +80 ° C.

bauroc block	Exhaustion strength (kN)
ECOTERM +; material density 300kg/m³	0,32
CLASSIC; material density	0,61
ACOUSTIC; material density 575 kg/m³	0,79

The exhaust load indicators are based on the results of the tests carried out in the laboratory of AS Teede Tehnokeskus, taking into account the 3-fold strength margin.

Installation of dowels KBT

Drill a wall opening according to the dowel type. Do not use impact drill when drilling. Install the dowel with a hex wrench and secure the detail with a suitable screw.

11. TOOLS AND SUPPLIES

For quick and trouble-free installation of bauroc blocks and partition boards, ask the shop for the right tools and supplies. Using the right tools saves you time and you can always be sure that the end result meets your expectations.

11.1. Power Tools

Electric bandsaw
Designed for cutting bauroc blocks on a construction site. Very good sawing accuracy. It is also possible to saw at different angles and curved surfaces (arc blocks).

The saw is available in two different variants, the MBS 650 has a cutting height of 650 mm and the MBS 510 is 510 mm high.

Electric mill
For milling grooves for jointing in bauroc block walls. It is also possible to mill grooves for the installation of electrical wires and finer pipes.

Butterfly drill bit
Used for drilling holes for sockets and switches. Also allows drilling holes for water and ventilation ducts through bauroc masonry. Available in diameter 80 and 120 mm.

11.2. Hand tools

bauroc GLUE SLED

The glue sled is used with bauroc block glue to apply glue to the blocks. With the sled you apply an even coat of glue, which ensures the same joint thickness across the wall. The 375 mm and 500 mm wide sleds feed the block glue into two fins, with an additional air gap between the joints. A very good tool for long and straight walls. Glue sleds are available for all blocks ranging from 150 to 500 mm.

bauroc GLUE LADLE

An effective tool in case you need to assemble complex and short walls. Also for applying adhesive to bauroc ELEMENT partition boards. Ladles are available in widths of 50 mm, 75 mm, 100 mm, 150 mm and 200 mm.

bauroc SPREADER

The spreader is used for smoothing unevenness in porous concrete walls. Before each new row of blocks is laid, the surface of the blocks should be smoothed over with the spreader. The wall is also smoothed over before the plaster and plaster works.

bauroc RASP

Rasp is used for grinding hardened glue, as well as large differences in the wall surfaces.

bauroc HAND MILL

Hand tool for milling grooves for joints and wires. The blade has a width of 20 mm and a depth of 40 mm.

Hand saw and angle iron

Use a large toothed saw to saw the blocks. Use an angle iron to get the block at exactly the right angle.

11.3. Assistive products

bauroc JOINT SLAT
For fixing bauroc ELEMENT partition boards during installation work.

Aluminum bars
For fixing crossing bauroc wall blocks with one another.

Murfor® Compact-A reinforcement
The Murfor® Compact-A joint bar is a braided steel mesh that is rolled when shipped. One roll has 30 m of reinforcement and is available in two widths of 40 mm and 80 mm. Murfor® has been specially developed for use in thin glue joints.

The surface of the blocks does not have to be milled by grooves, the reinforcement fits into the glue. Thanks to its light weight (one roll 3 kg) and small dimensions it is safe and easy to transport and store - no special lifting equipment is needed. In use, the reinforcement is easy to roll and cut to the correct size, which reduces the loss due to cutting.

Deformation joint clamp
Used to fix deformation joints.

Wall connection clip
Used for joining walls of different materials.

12. FINISHING

21.1. Exterior finish

The exterior finish gives the building its appearance and is like a business card. The architectural solution, the external finishing materials used and their color make the building attractive. With well thought out and done exterior finishing we can realize ideas and dreams.

In addition to this, the external finish has an even more important role to play. Namely, the finish must protect the building's structures from harmful external influences. Thus, it is important that the choice of finishing materials takes into account the properties of the materials used for the construction of the masonry and the climatic conditions in Estonia. Exterior finishing materials suitable for aerated concrete in the warm climate of southern Europe may not be suitable for aerated concrete in northern Europe. In order to maintain the finish, you need to choose the appropriate time for the work and follow the instructions.

For the exterior finishing of bauroc walls, we recommend two main options:

1) plastered facade;
2) ventilated facade system, such as board lining, facade bricks or tiles.

This does not necessarily mean that all the walls of the building must be finished with the same material. Combining different systems and materials allows you to achieve very interesting and eye-catching results as well as technically well-functioning and time-consuming results.

Stonewalls sticking directly to the wall surface in our climatic conditions are not suitable for exterior walls, as they may lose wall adhesions due to condensation and then immediately freezing water behind the stone slab. There is no such restriction in interior finishing and different stone tiles directly bonded to walls are well suited for both wet and dry rooms.
Finished bauroc exterior walls must be finished with finishing materials that are suitable for used insulation material.

Plastered facades in uninsulated bauroc exterior wall

When using Bauroc ECOTERM+ for single-layer walls the most common finishing is plastering of the facade. The plastered facade looks good with its decorative plaster with a huge number of combinations of its structures and colors. People who do not come into contact with the construction industry often do not know that the outer plaster consists of several layers, all of which together form a complete plaster system.

When selecting a plaster system from bauroc blocks to walls, the drying need of the structure must be taken into account. This means that, if the plaster layer is to be sufficiently dense to protect the rainwater absorption, it must at the same time release the original moisture and moisture during the production of the aerated concrete blocks.
We recommend using mineral plaster mixes with good vapor conduction to plaster the outer surface of bauroc walls. The use of high-cement plaster mixes should be avoided.
The compressive strength of facade plaster should not be much higher than the strength of the substrate and the plaster should have sufficient elasticity. Elasticity is required in order that the movements caused by changes in temperature and humidity do not cause facade cracks.
The range of different plaster systems is very wide and is constantly improving. That's why we recommend that you apply directly to the plaster system manufacturers and obtain complete plaster systems with all components from the coating dispersion to the paint. Combining finishing materials from different manufacturers may not guarantee the stability of the plaster system.

Proper preparation of the substrate and the quality of the masonry work are also important to ensure the durability and longitude of the facade plaster. The rough surface must be flat and cleaned of loose dust. All the horizontal joints of the masonry must be properly filled with the block glue. Partially above the blank flanges and other wall unevenness is the probability of a crack. Before plastering, the wall surface must be cleaned of excess adhesive and any splashes from the joints using bauroc grinding tools. Possible holes in the walls due to mechanical effects or other reasons during construction must be filled with bauroc repair mix 2-3 days before the start of the plastering work. Before applying the first plaster layer, the smooth surface must be cleaned with a brush and the bauroc wall must also be primed to ensure proper adhesion to the substrate.

When performing plaster work, follow the instructions of the manufacturer of the finishing materials. When applying different plaster layers, care must be taken to ensure that the thickness of the mixing layer remains within the limits recommended by the manufacturer. Regardless of the smoothness of the substrate, the plaster mixture must not be applied to the wall as too thin of a layer. A very thin layer does not provide sufficient strength for the plaster and may not withstand weather conditions. The plasterwork must be done in dry weather and the façade must also be protected from rain during drying. Air temperature monitoring is also important, not too cold or too warm. The recommended temperature range for finishing works is provided by the manufacturers of plaster mixes.

bauroc The wall of ECOTERM+ blocks does not require additional insulation, and the masonry is air-tight even in the unfinished form. This gives the bauroc block wall a unique opportunity to start with the interior finishing of the building before the exterior walls are finished . Thus, for example, late-autumn buildings can be refurbished from the inside and exterior finishing done next year by choosing a more suitable weather.

Plastering facades on insulated bauroc wall

Insulation of exterior walls must be based on the suitability of the plaster system for a particular insulation layer, and again it is advisable to use the same manufacturer's complete insulation and finishing systems, whereby one manufacturer ensures the compatibility and durability of the different insulation and finishing layers

Ventilated facades

A ventilated facade means that the facade cladding is secured away from the wall, and a few centimeters of ventilation is left between the masonry and the facade cover. The vapor resistance of the facade cladding in this case is of no importance, and therefore, completely vapor-tight finishing materials can also be used here.

In the case of a ventilated system, a fastening system suitable for the facade cladding must be anchored to the wall. For example, a stucco on which the facade boards are fixed or on the board.

When fixing wooden trusses and laths, suitable moisture barrier material, such as bitumen paper, should be placed between the grooves and the wall. It is not advisable to fasten wooden trusses and laths directly to the surface of the bauroc wall without moisture barrier material, as the grooves may be curved due to moisture.

The brick façade must be anchored to the bauroc outer wall with corrosion-resistant anchoring rods. Here, it should be taken into account that the anchorage can absorb the load of the structure and also the wind load on the facade.

Such ventilated facade systems can be used for finishing exterior walls insulated from bauroc blocks as well as for finishing of single-layer ECOTERM + blocks on exterior walls.

12.1. Interior finishing

Thanks to the smooth surface, bauroc walls usually do not need to be plastered, using only putty is sufficient. For finishing bauroc walls, all the plasterwork for interior and stone finishes can be used. Substrate priming is mandatory.

Finished surfaces must be flat, clean and dry. The milled grooves in the walls should be filled with a bauroc repair mixture in advance. If excess adhesive has leaked out of the joints during storage, it must be removed by bauroc grinding tools. Before applying the putty, the walls must be cleaned of dust with a brush or vacuum cleaner.

If the wall is exposed to rainy weather and the wall is visibly damp (the wall surface is gray), the walls should be dried for about 4 weeks after the enclosure has been closed and the heating switched on, ensuring sufficient ventilation in the building. If possible, switch on forced ventilation while avoiding rapid drying of the walls with very intense heaters, which can cause unwanted microprises in the walls.

Wallpapered surfaces

First, the milled grooves and other unevenness are smoothed using bauroc fixing mix. This is followed by a 1-2- fold full leveling of the wall with a putty. Stronger fiberglass or plastic wallpaper needs only one layer of putty. When using thin wallpaper, double layer of putty should be used.

Painted surfaces

First, the leveling of the milled grooves and possible unevenness with the bauroc fixing mixture and then the double layering with the putty. For the surfaces to be painted, the most durable substrate is ensured by plasterboard. For surfaces to be painted, we recommend using a surface reinforcement fabric that is pressed onto the surface of the first screed or glued after the first layer has dried. Surely the reinforcement fabric should be used with bauroc ELEMENT partition walls.

Tiled surfaces

Ceramic tiles are fixed to the untreated bauroc wall with a tile mix. The bauroc wall is watertight, but in damp rooms it is advisable to treat the surfaces with a moisture barrier.

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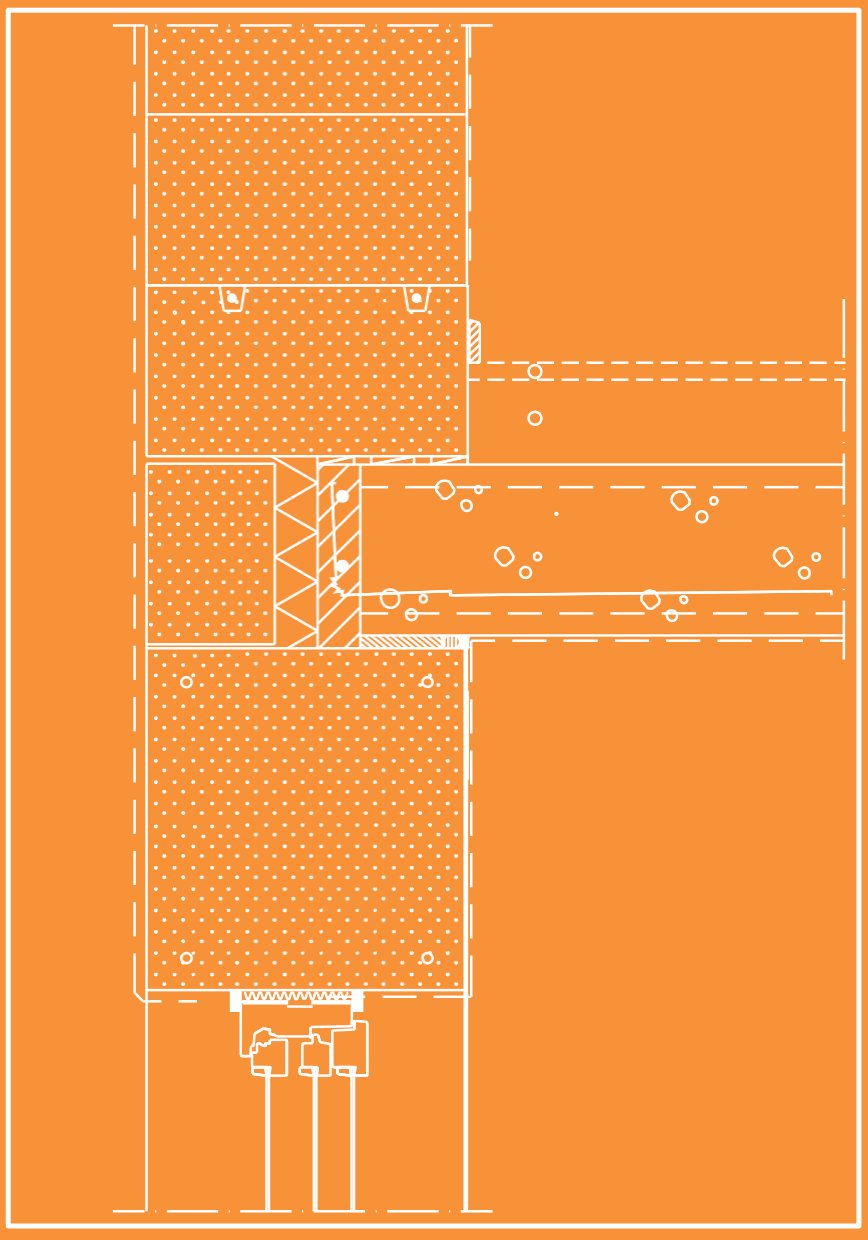
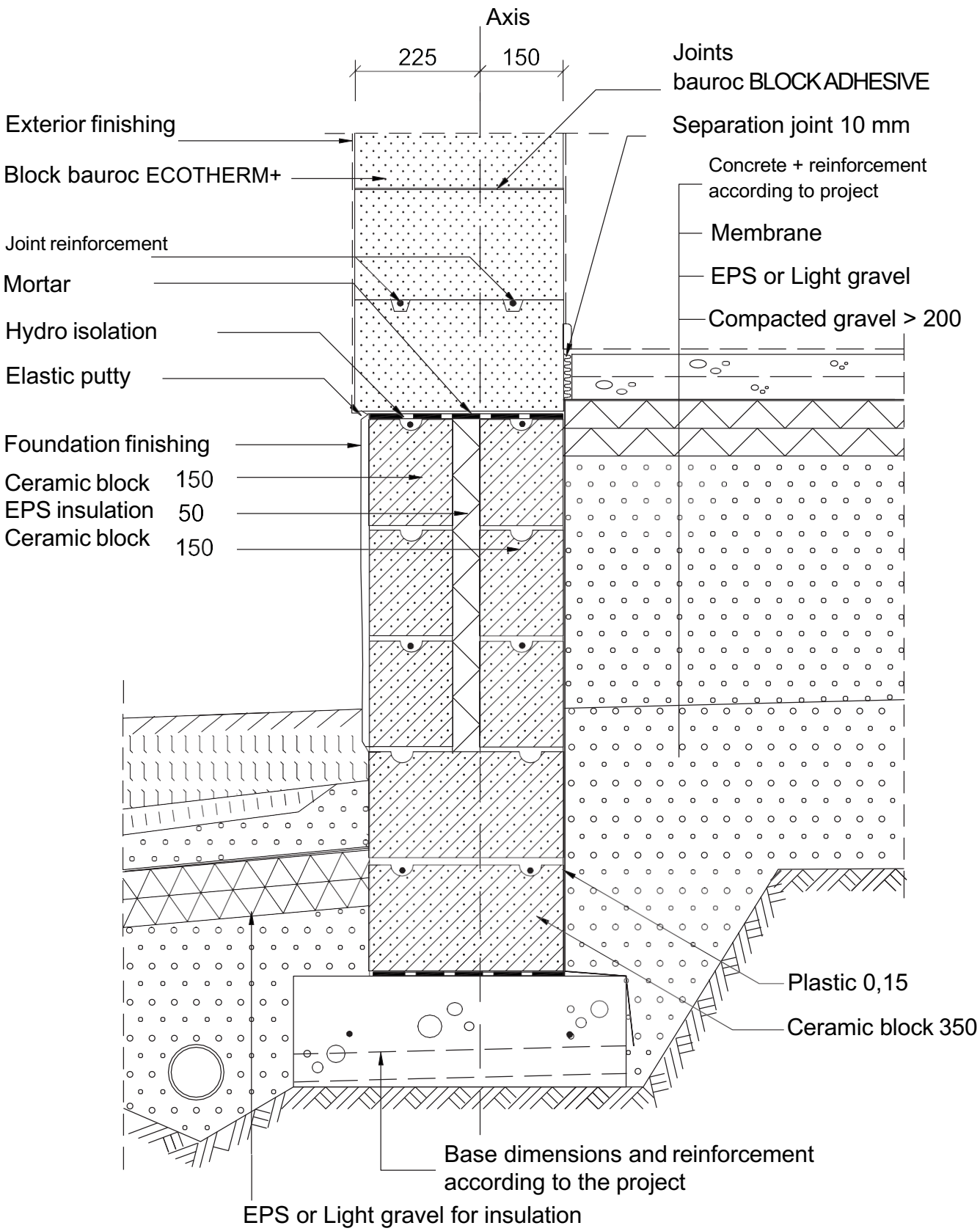
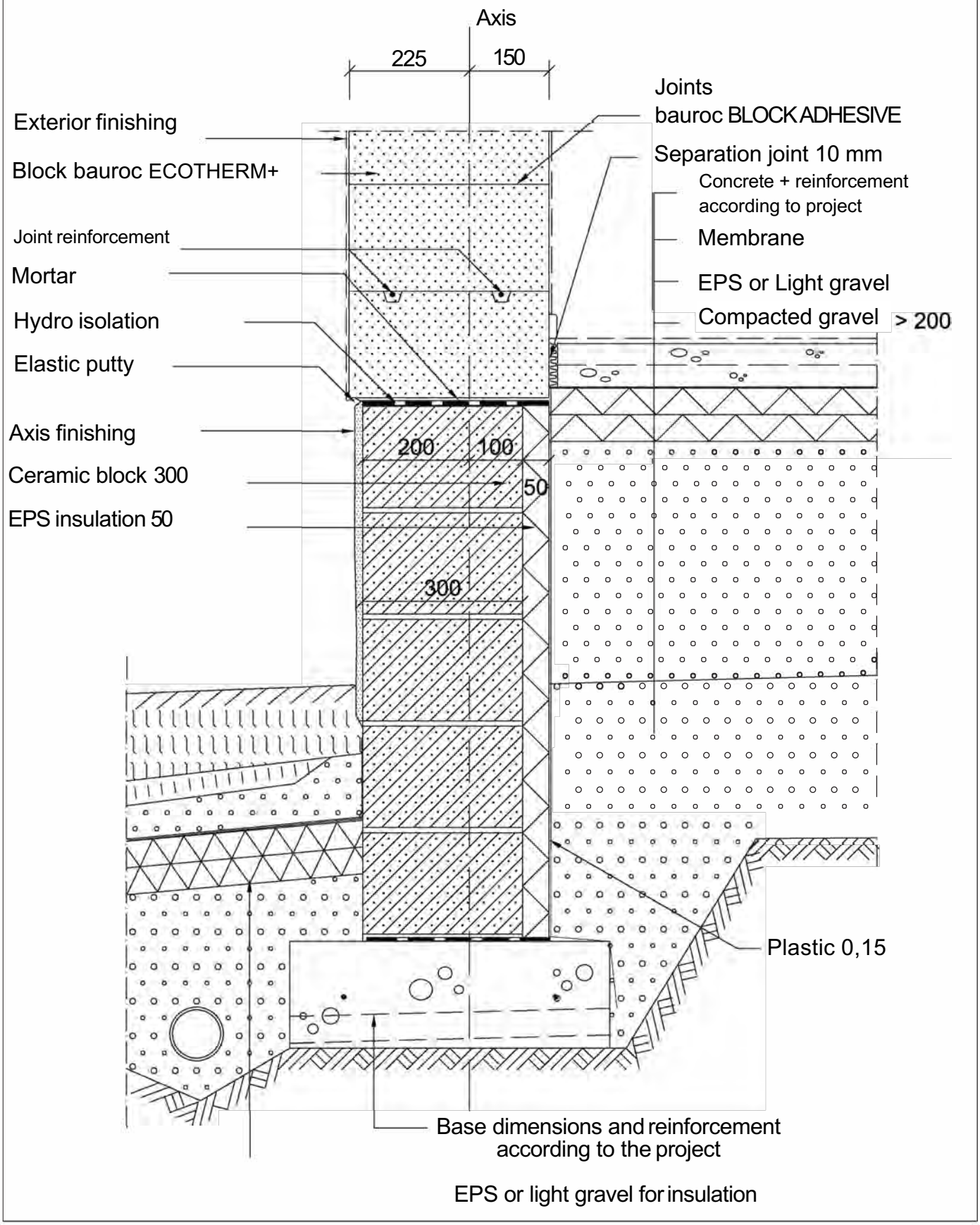


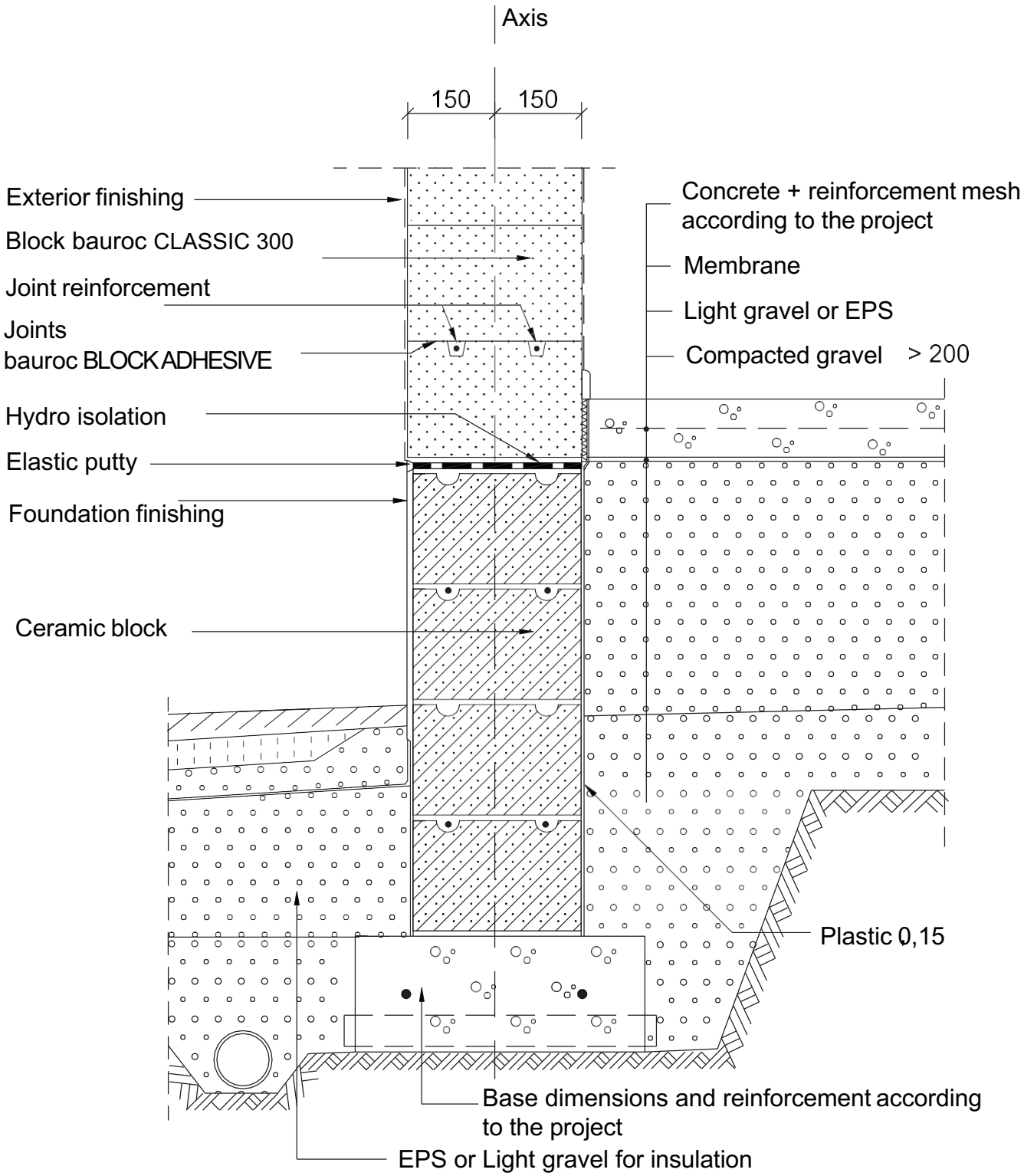
TECHNICAL SOLUTIONS



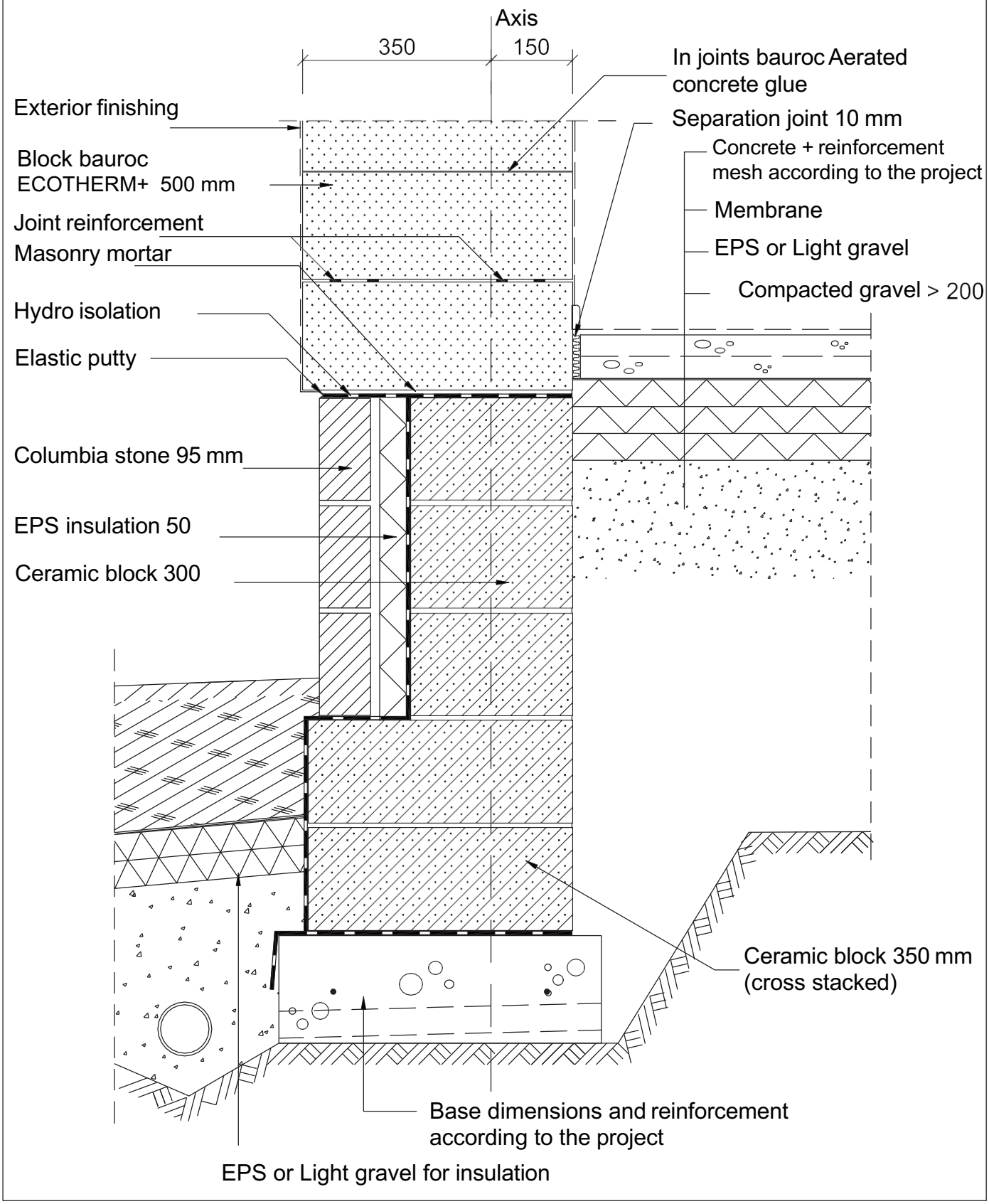
Client	Name of the figure Foundation knot; Floor on a low-concrete foundation surface and bauroc ECOTERM+ exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 1.1



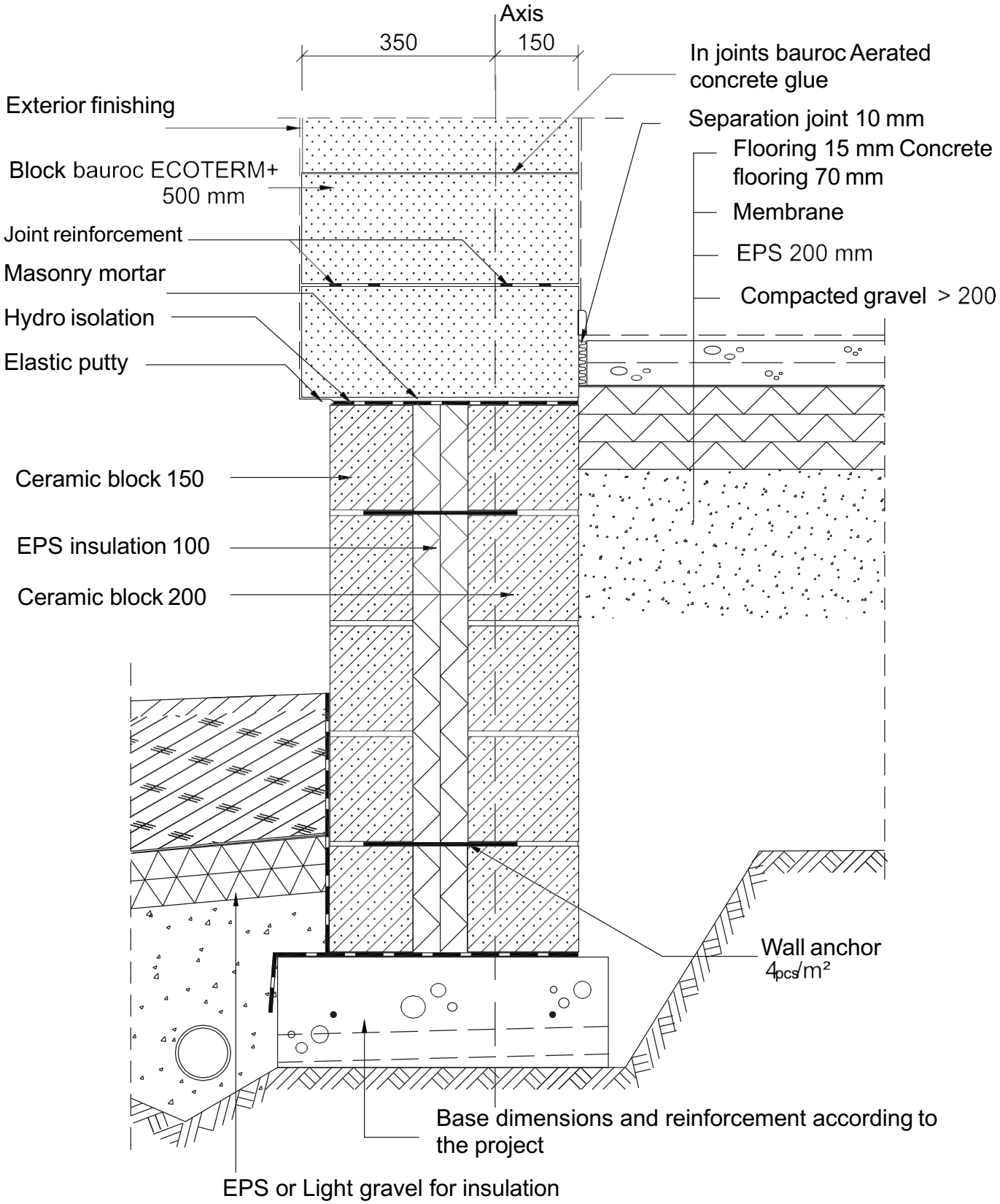
Client	Name of the figure Foundation knot; low foundation on the ground floor and bauroc ECOTERM + exteriorwall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 1.2



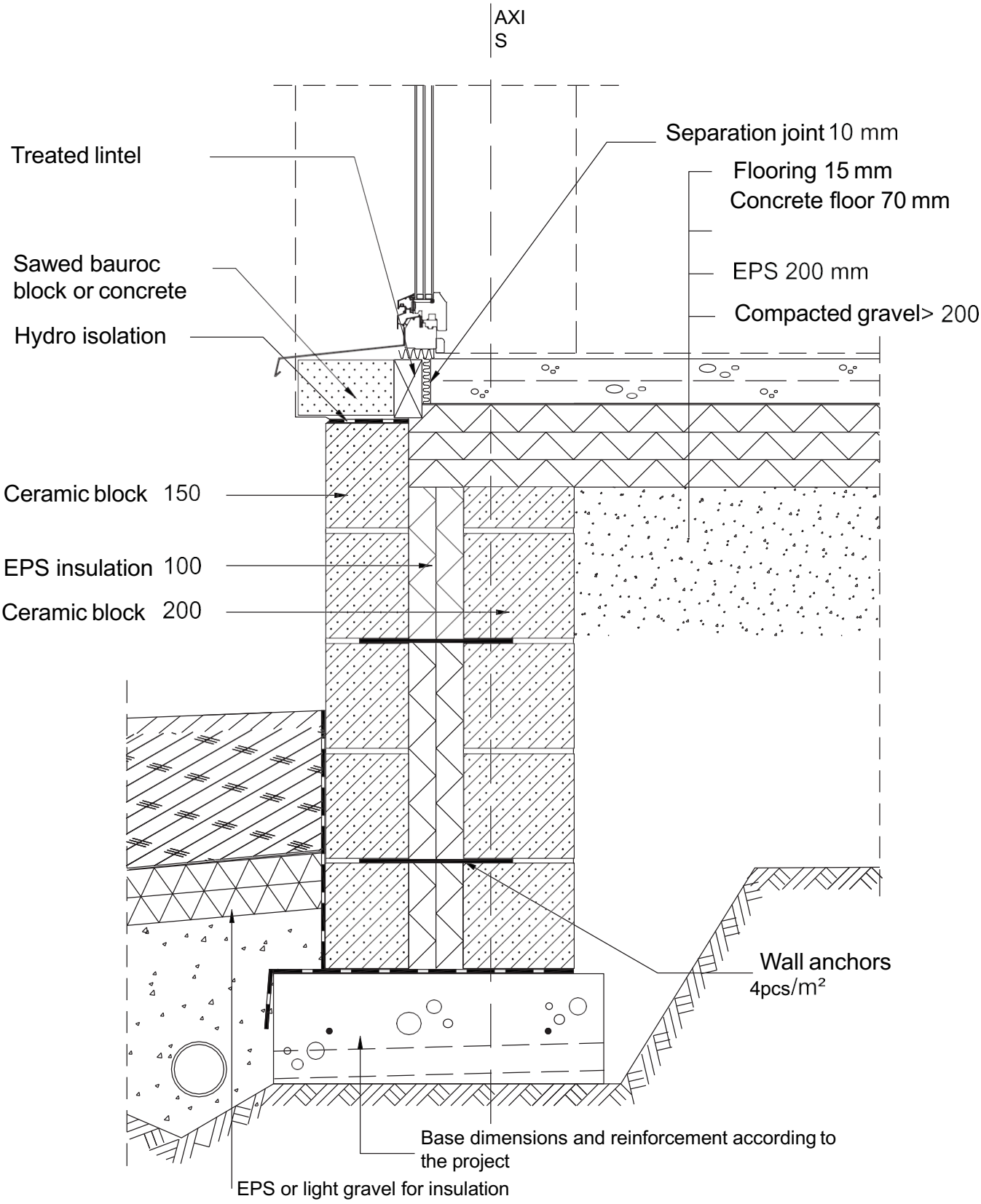
Client	Name of the figure Foundation knot; low foundation on the ground floor and bauroc CLASSIC 300 exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 1.3



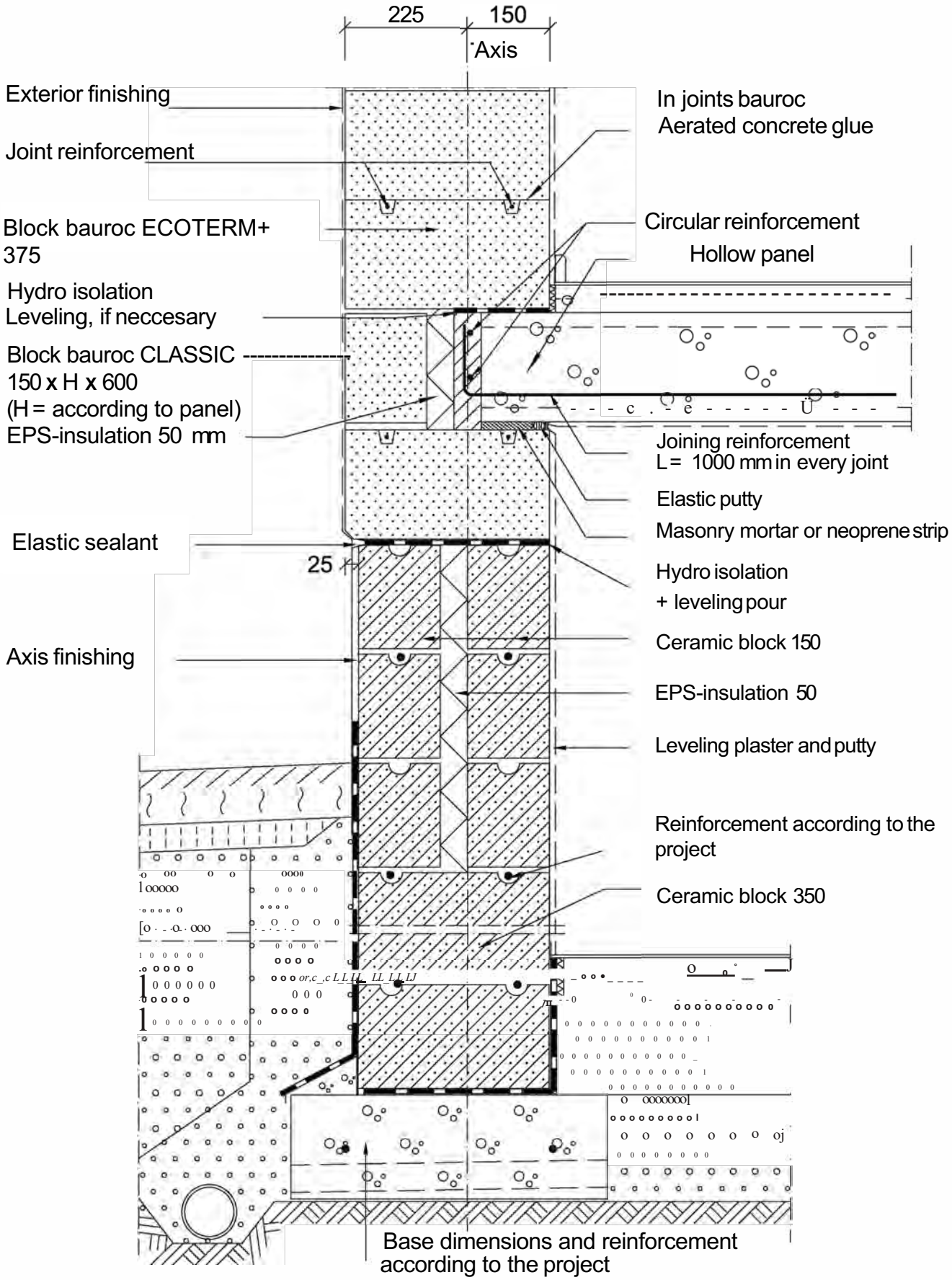
Client	Name of the figure Foundation knot; low foundation and bauroc ECOTERM + 500 exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 2.1



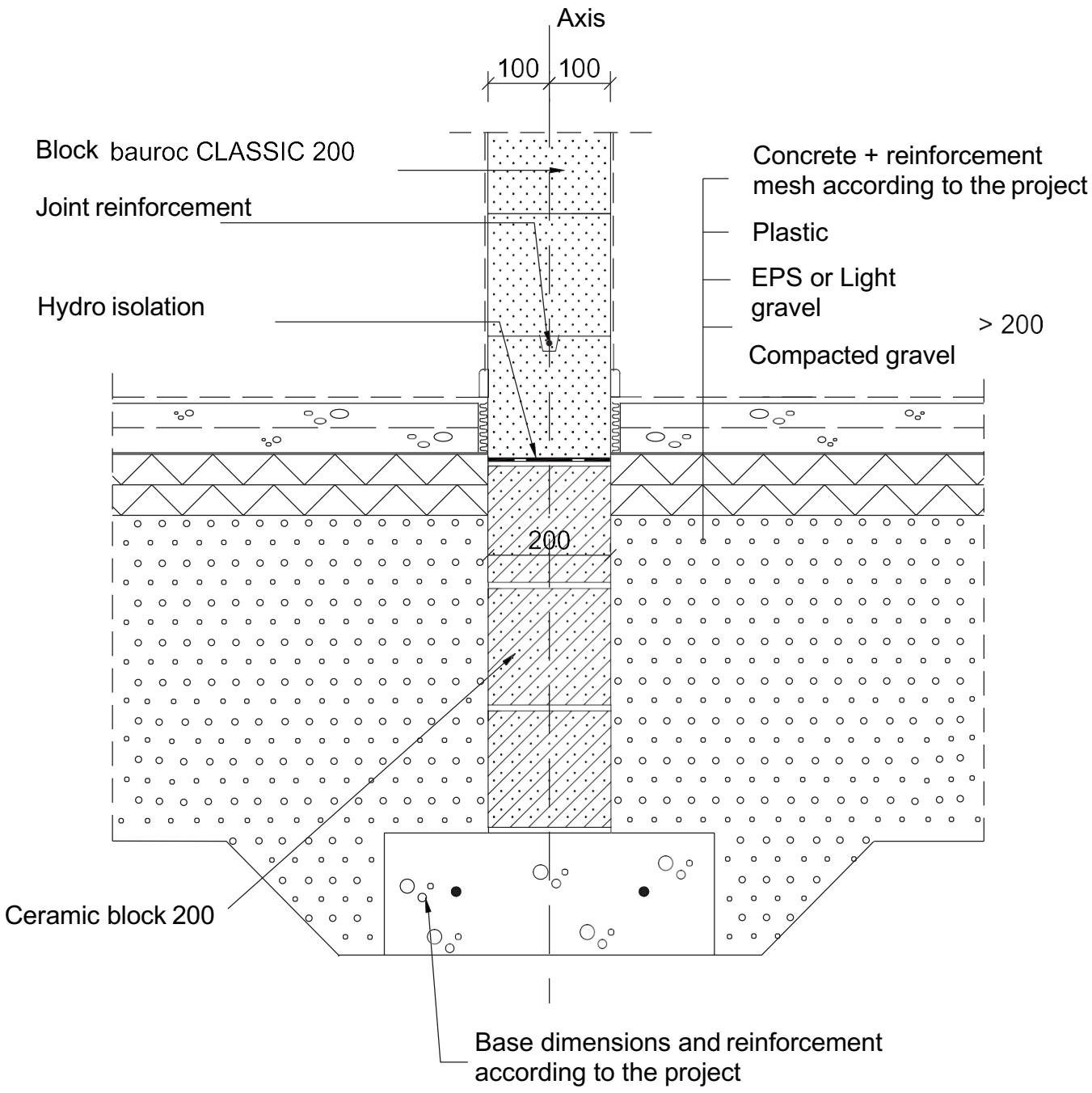
Client	Name of the figure	
	Foundation knot; low foundation and bauroc ECOTERM + 500 exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 2.2



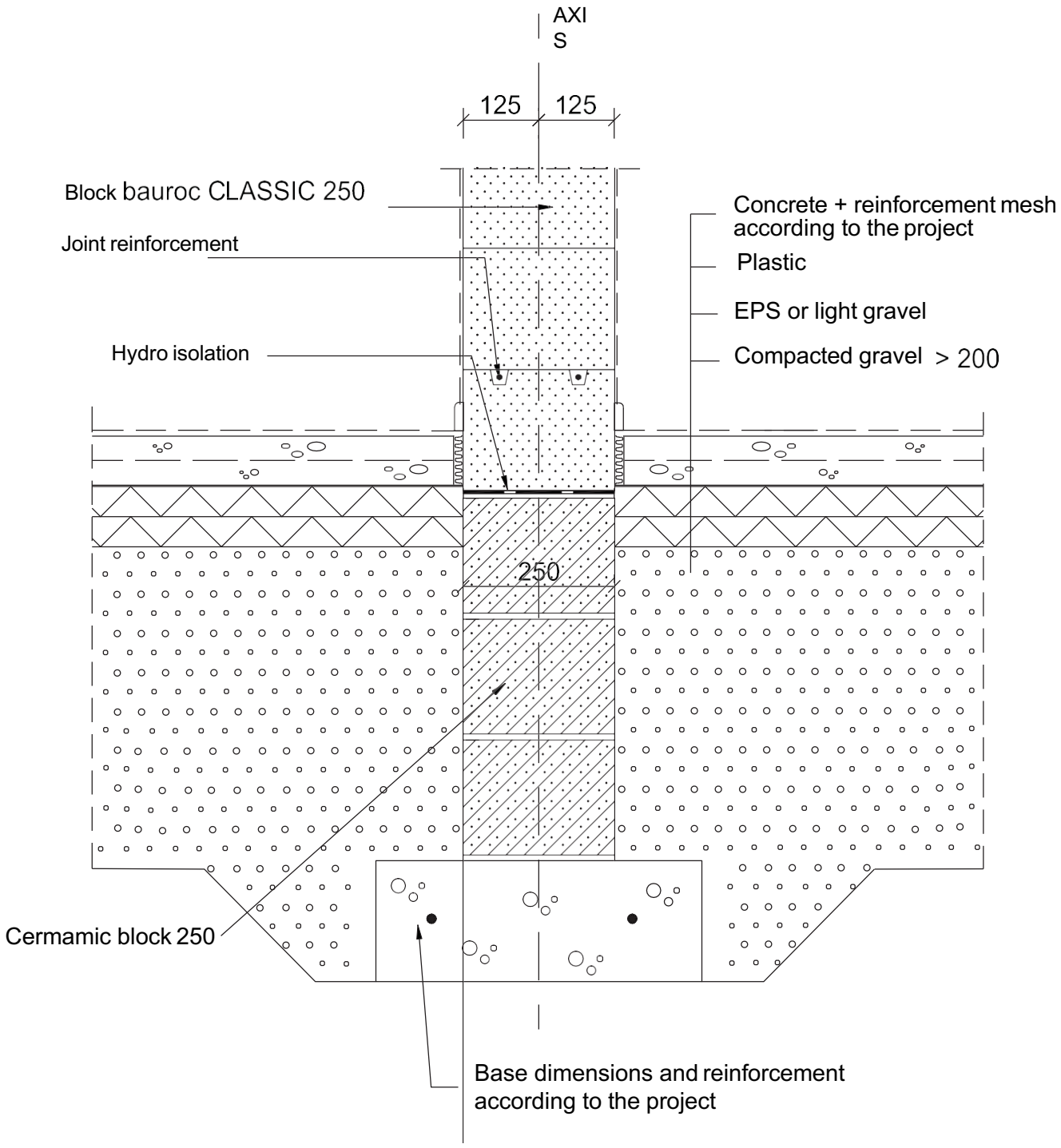
Client	Name of the figure Foundation knot; window to the floor bauroc ECOTERM+ 500 mm exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 2.2.A



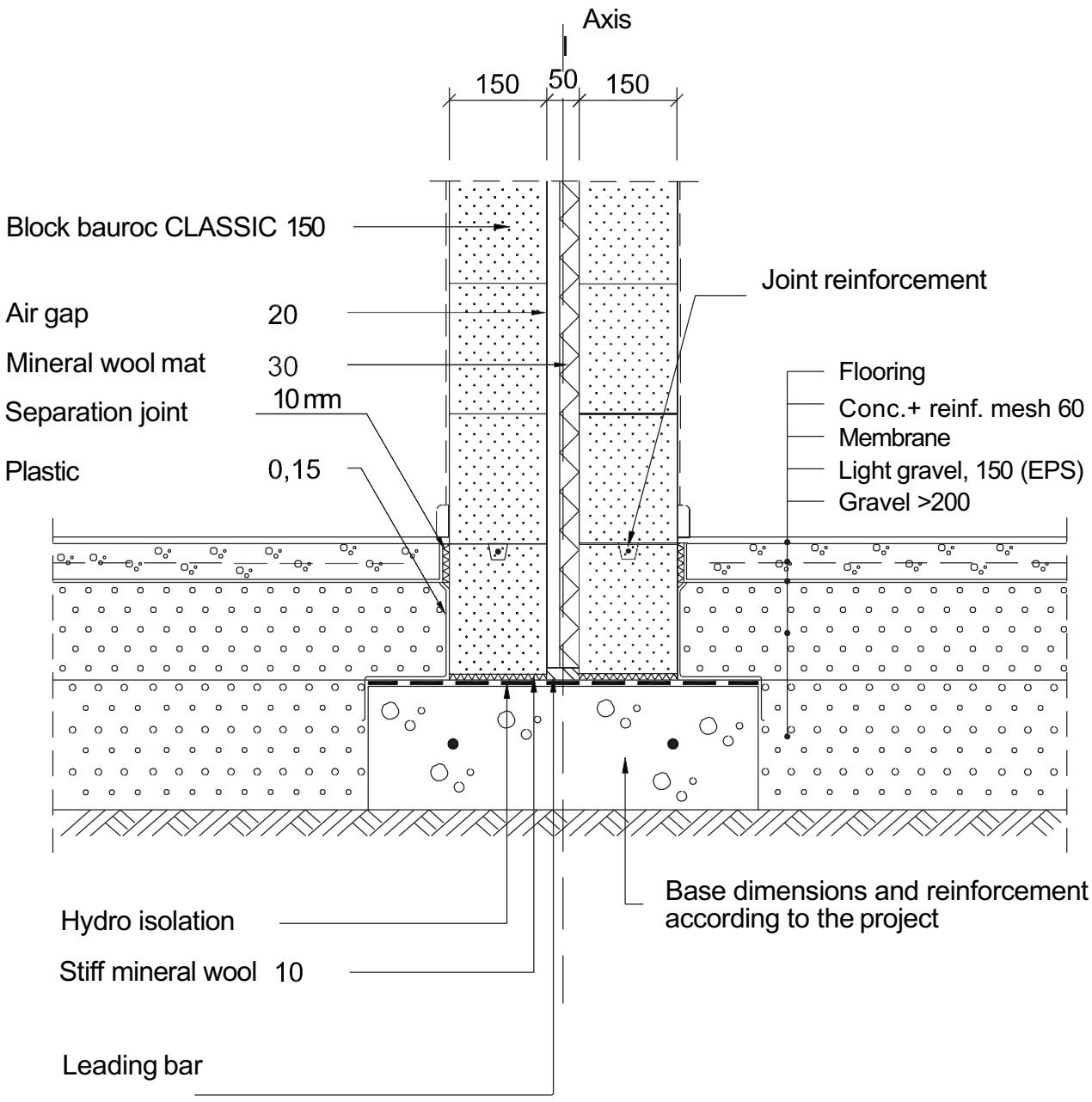
Client	Name of the figure Building with a basement foundation bauroc ECOTERM + exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Foundation 3.5



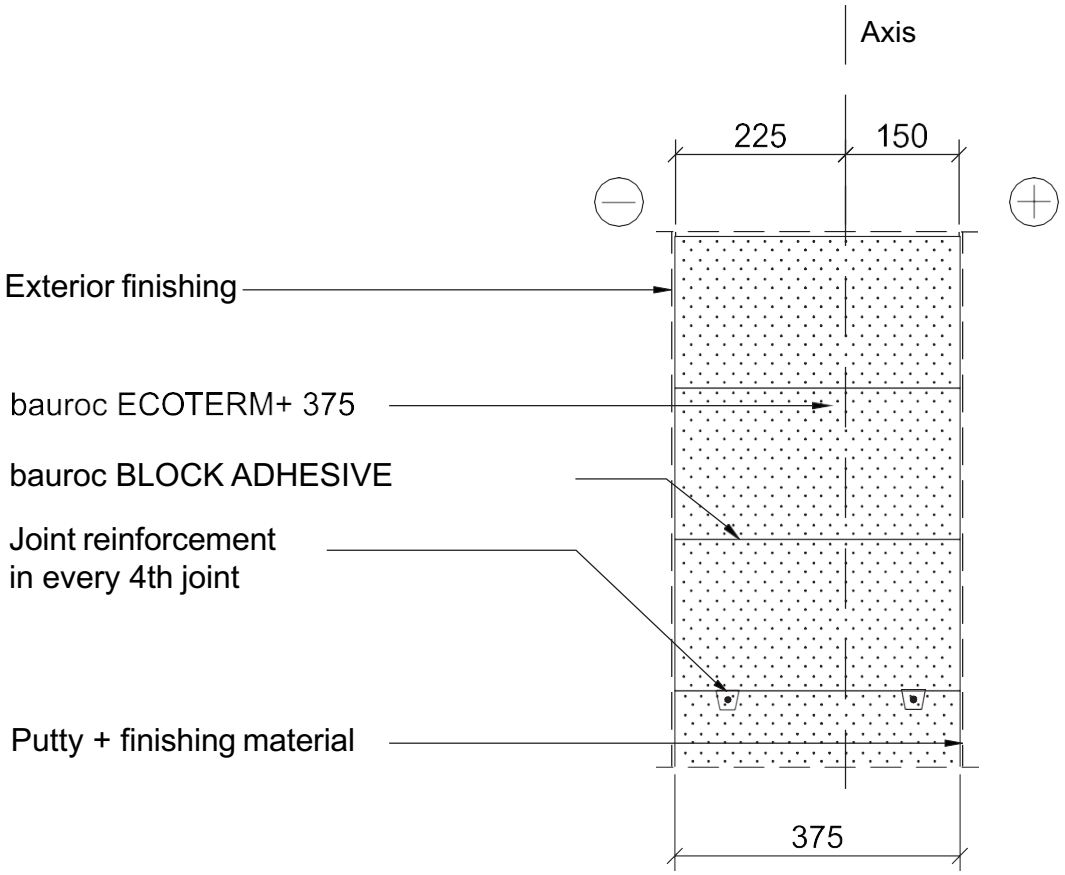
Client	Name of the figure Foundation knot; Joining of a bauroc interior load-bearing wall and flooring.	
bauroc	Drawn by	Scale M 1:10
	Date 03.2002	Figure nr. Foundation 4.1



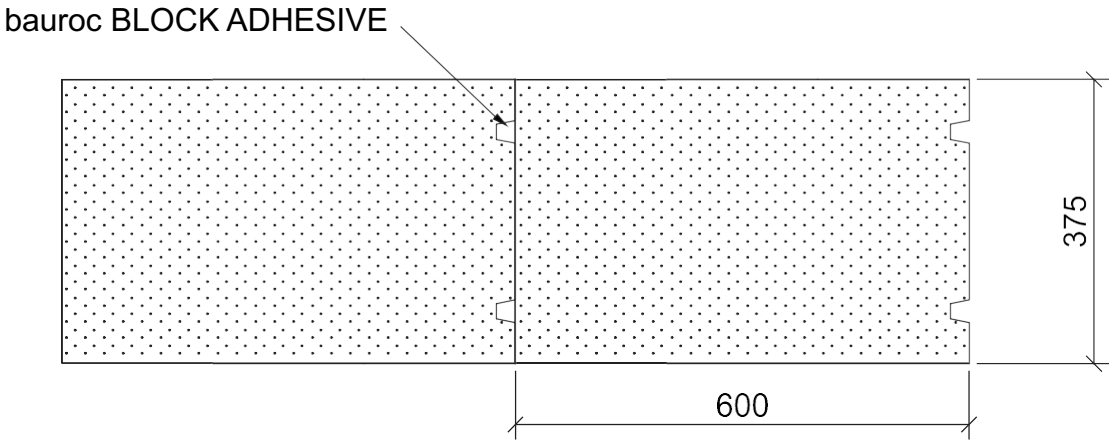
Client	Name of the figure	
	Foundation knot; joining of the floor and the bauroc inner wall	
bauroc	Drawn by	Scale M 1:10
	Date 03.2004	Figure nr. Foundation 4.2



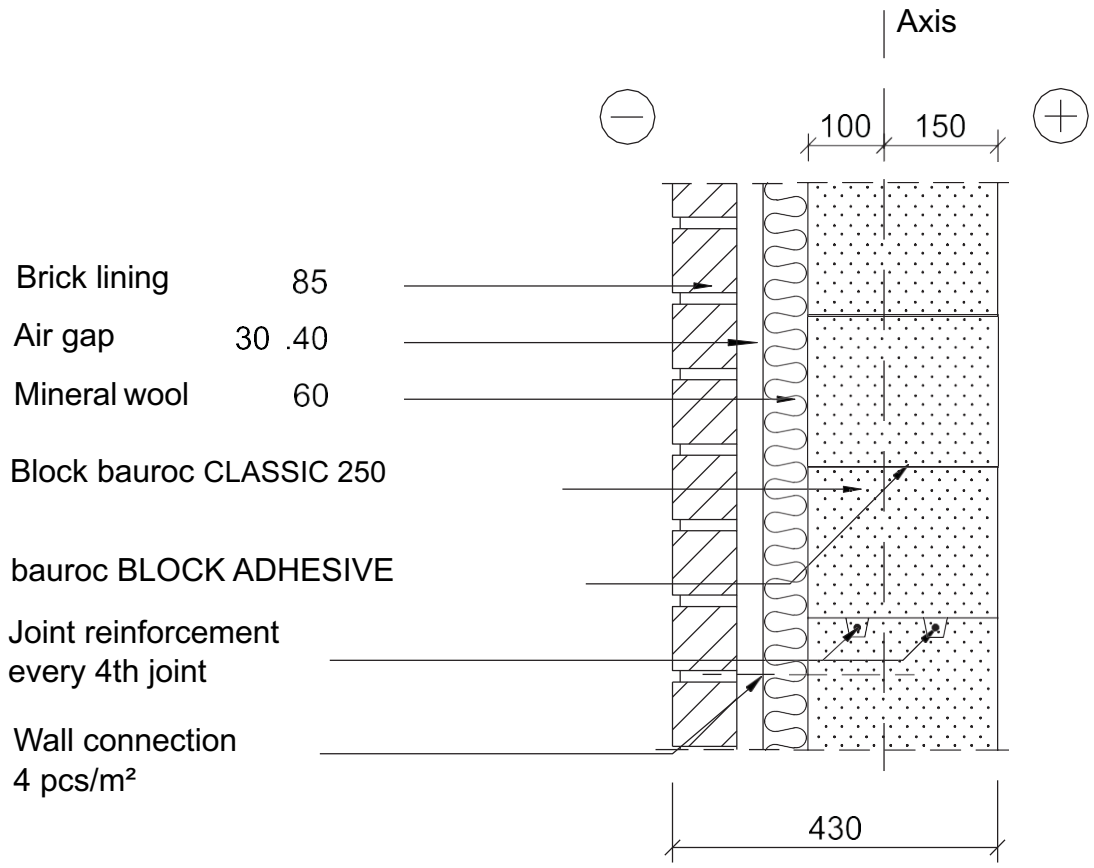
Client	Name of the figure A multi-layered apartment wall joining on base surface with the floor	
bauroc	Drawn by	Scale M1:10
	Date	Figure nr. Foundation 5.1



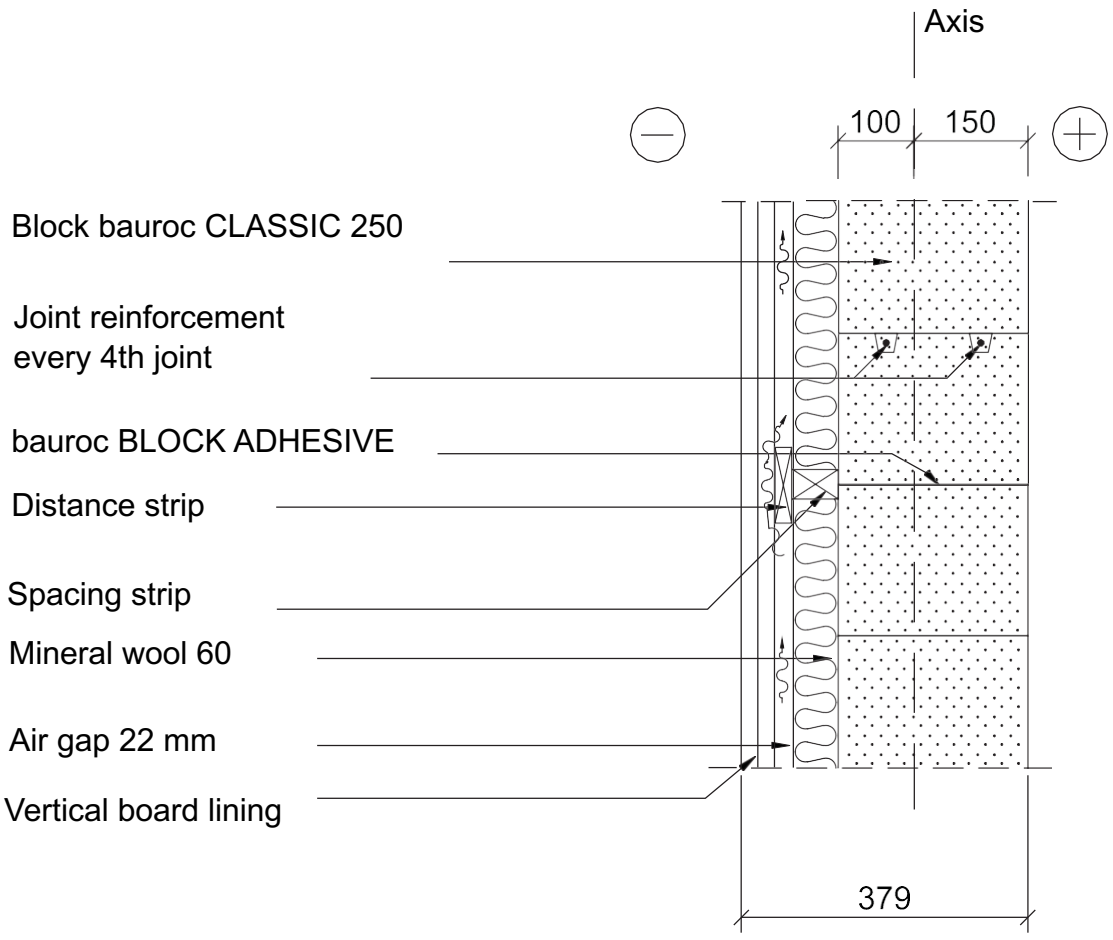
Vertical joints



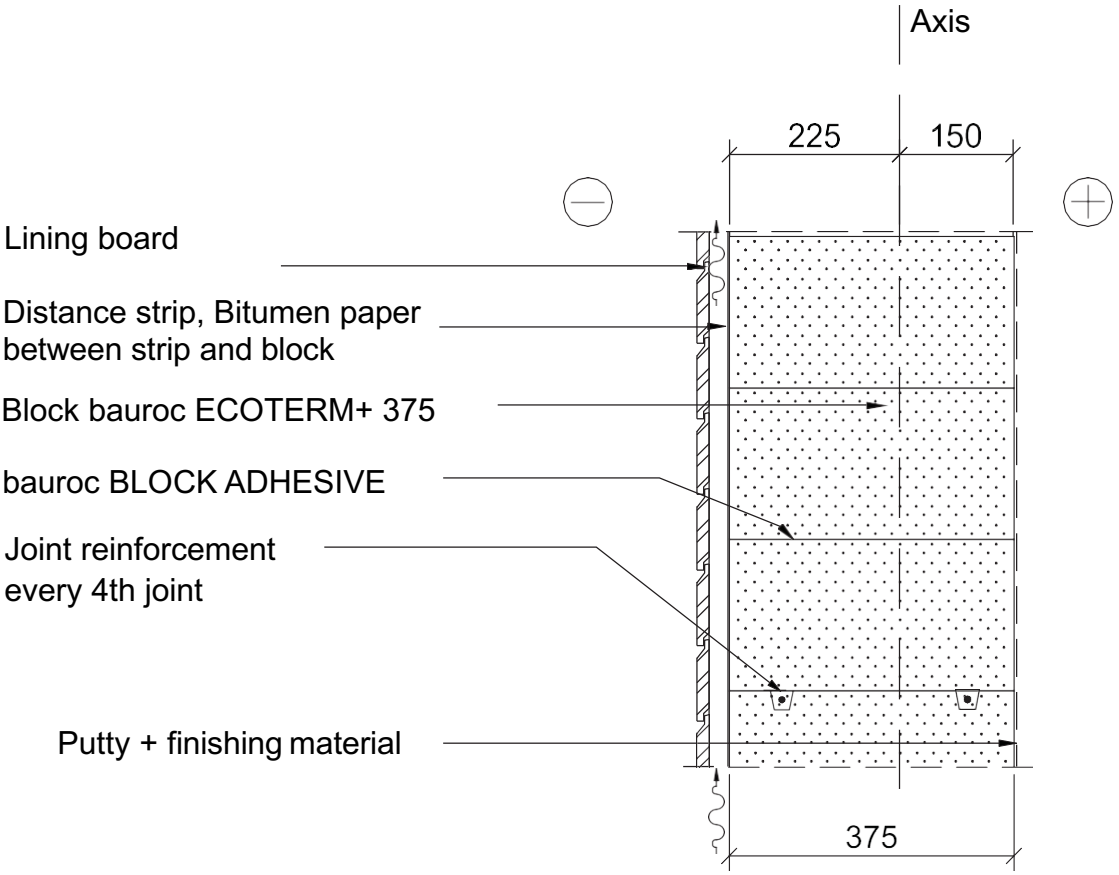
Client	Name of the figure Bauroc block wall, exterior wall bauroc ECOTERM+	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Exterior wall 1.1

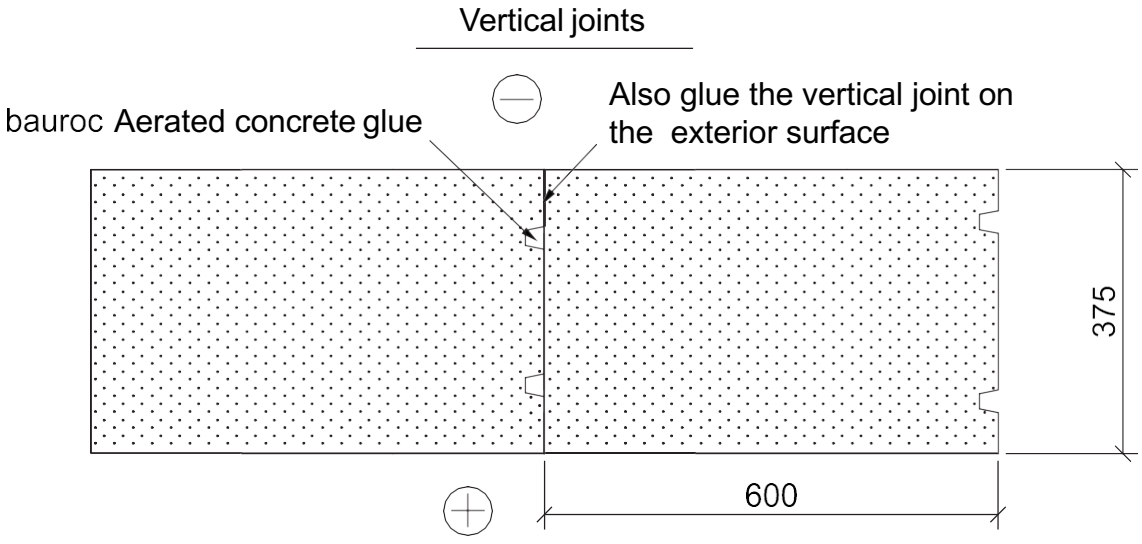


Client	Name of the figure bauroc block wall, brick lined exterior wall bauroc CLASSIC 250	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Exterior wall 1.3

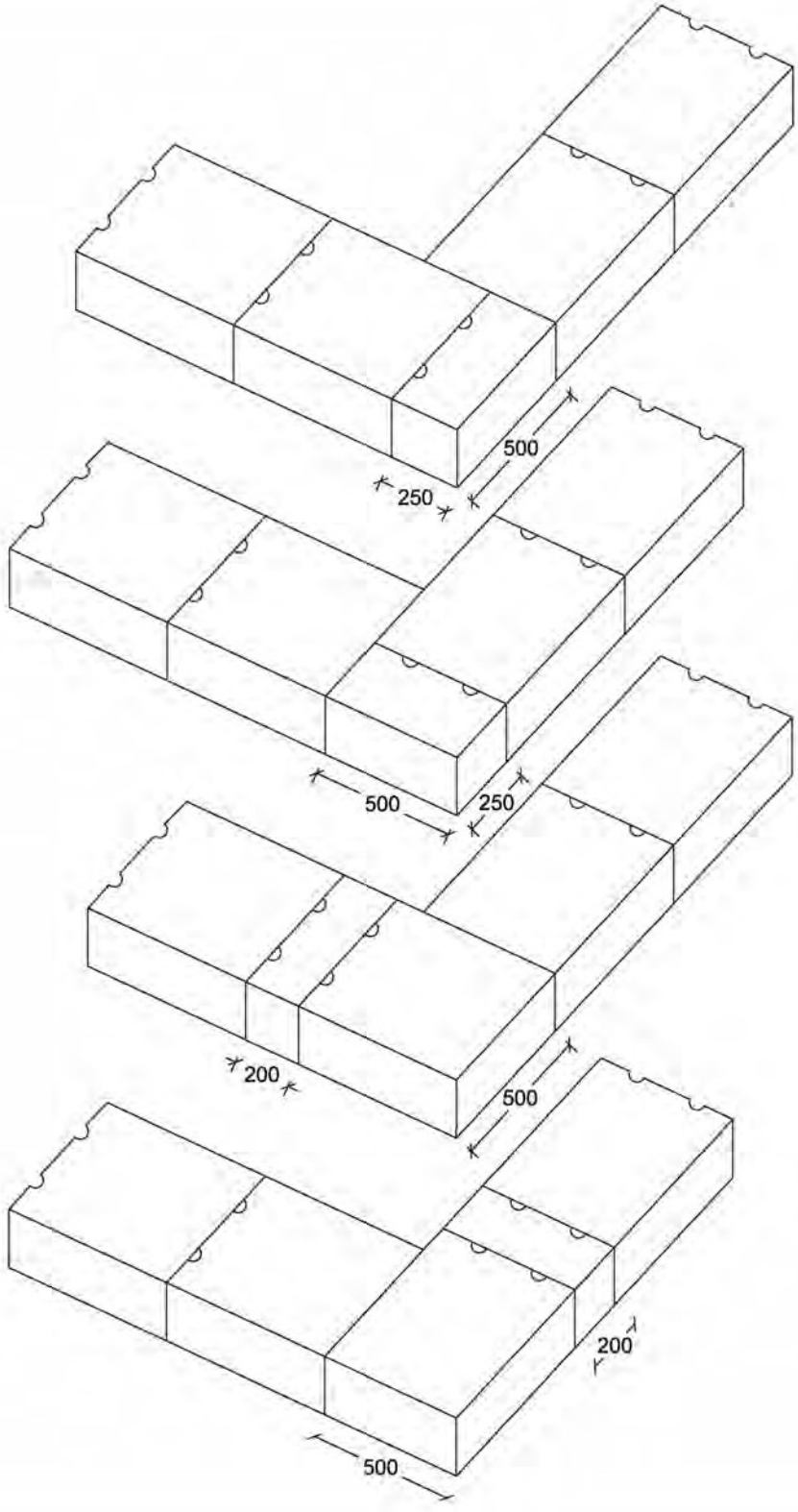


Client	Name of the figure	
	bauroc block wall, bauroc CLASSIC 250 exterior wall with board lining	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Exterior wall 1.4

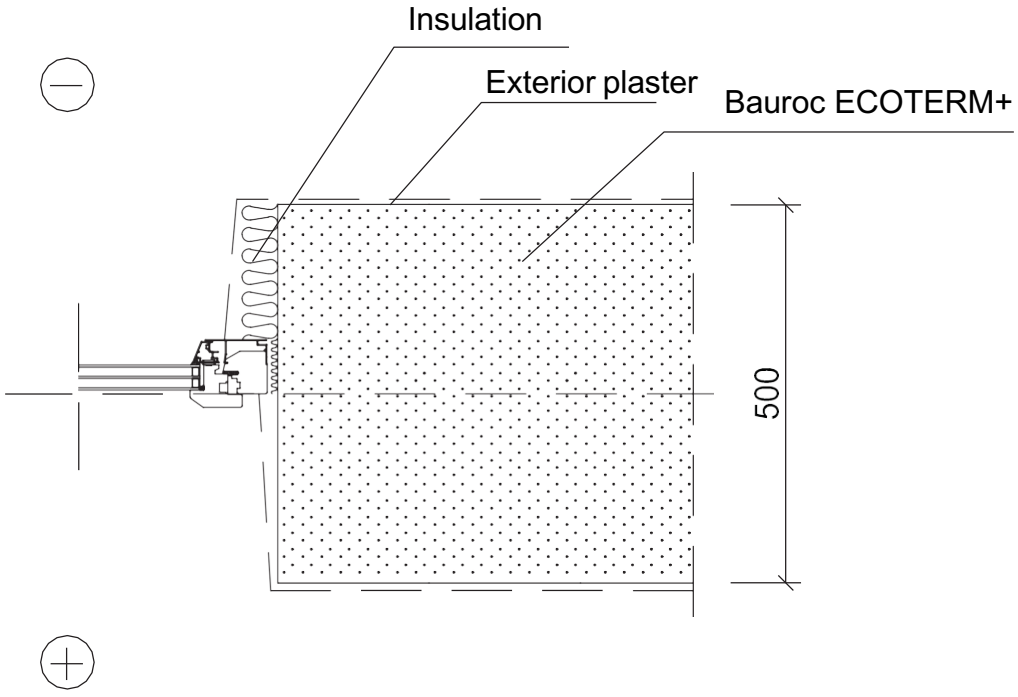




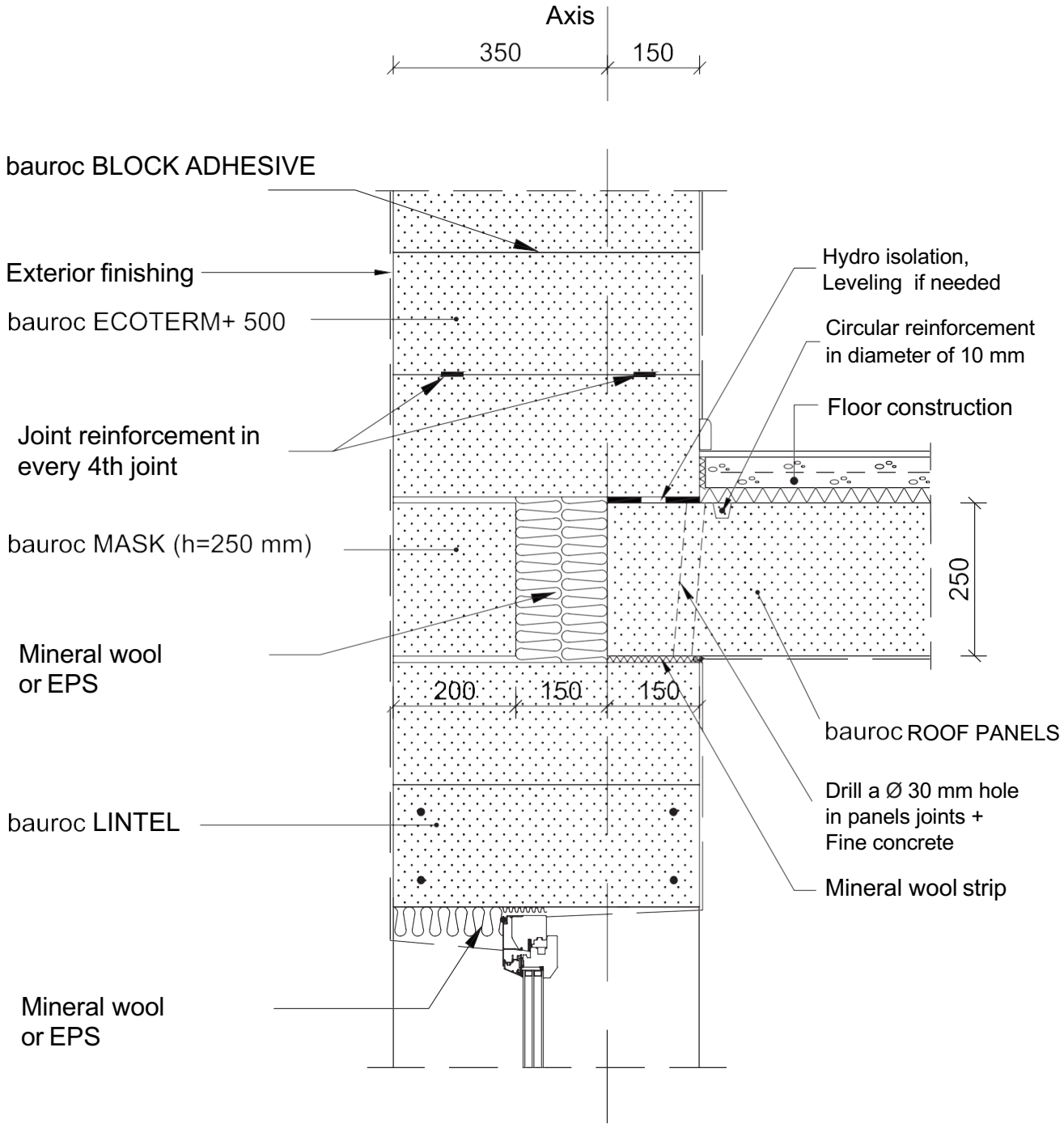
Client	Name of the figure bauroc block wall, bauroc exterior wall ECOTERM +with board lining	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Exterior wall 1.5



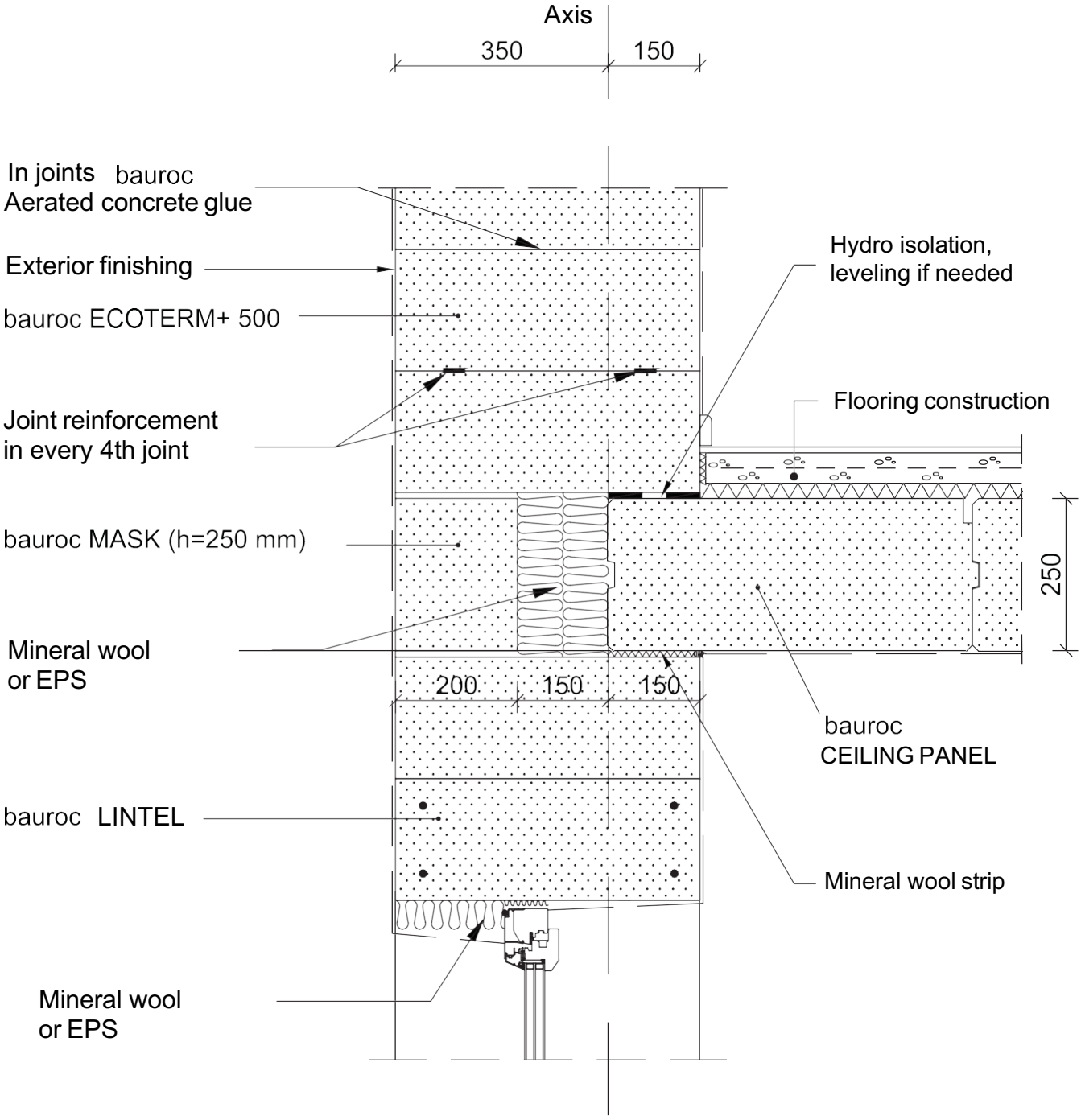
Client	Name of the figure bauroc block wall bauroc ECOTERM + 500 walls exterior corner	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Exterior wall 1.6



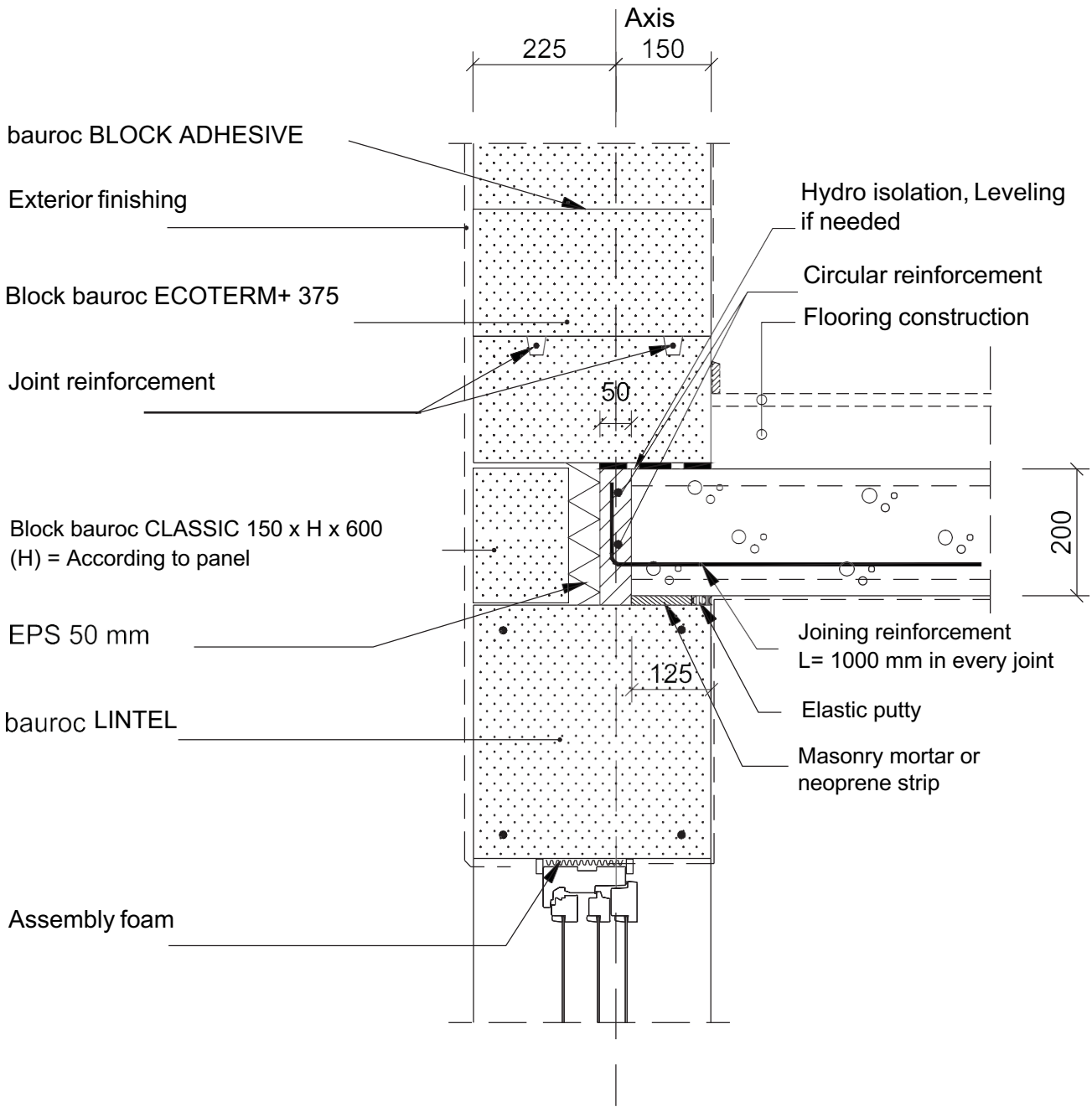
Client	Name of the figure Window in bauroc ECOTERM + 500 exterior wall, insulated window cheeks, German type window	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Window 1.5



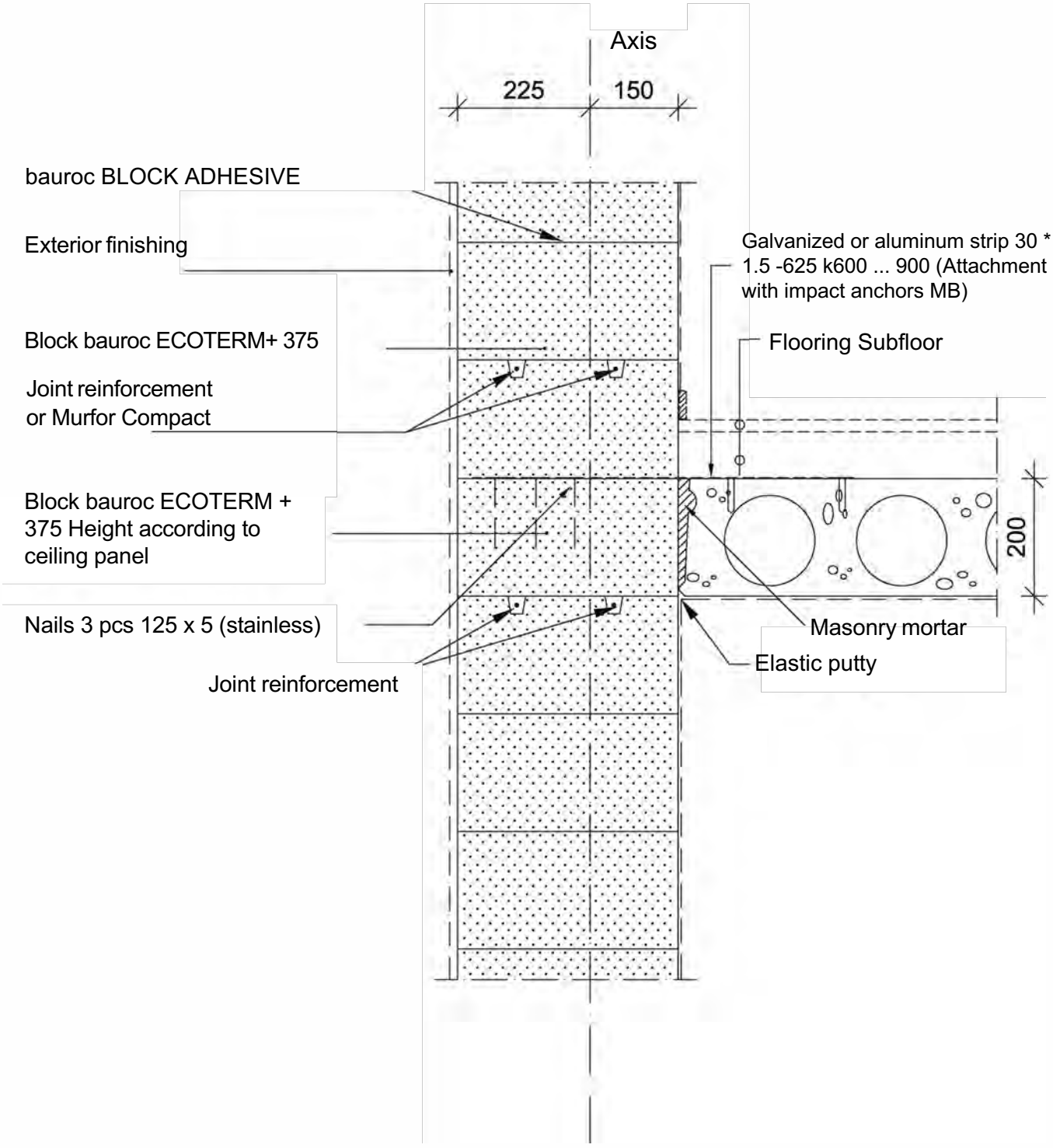
Client	Name of the figure	
	bauroc ECOTERM + 500 exterior wall and bauroc CEILING PANELS ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 1.1



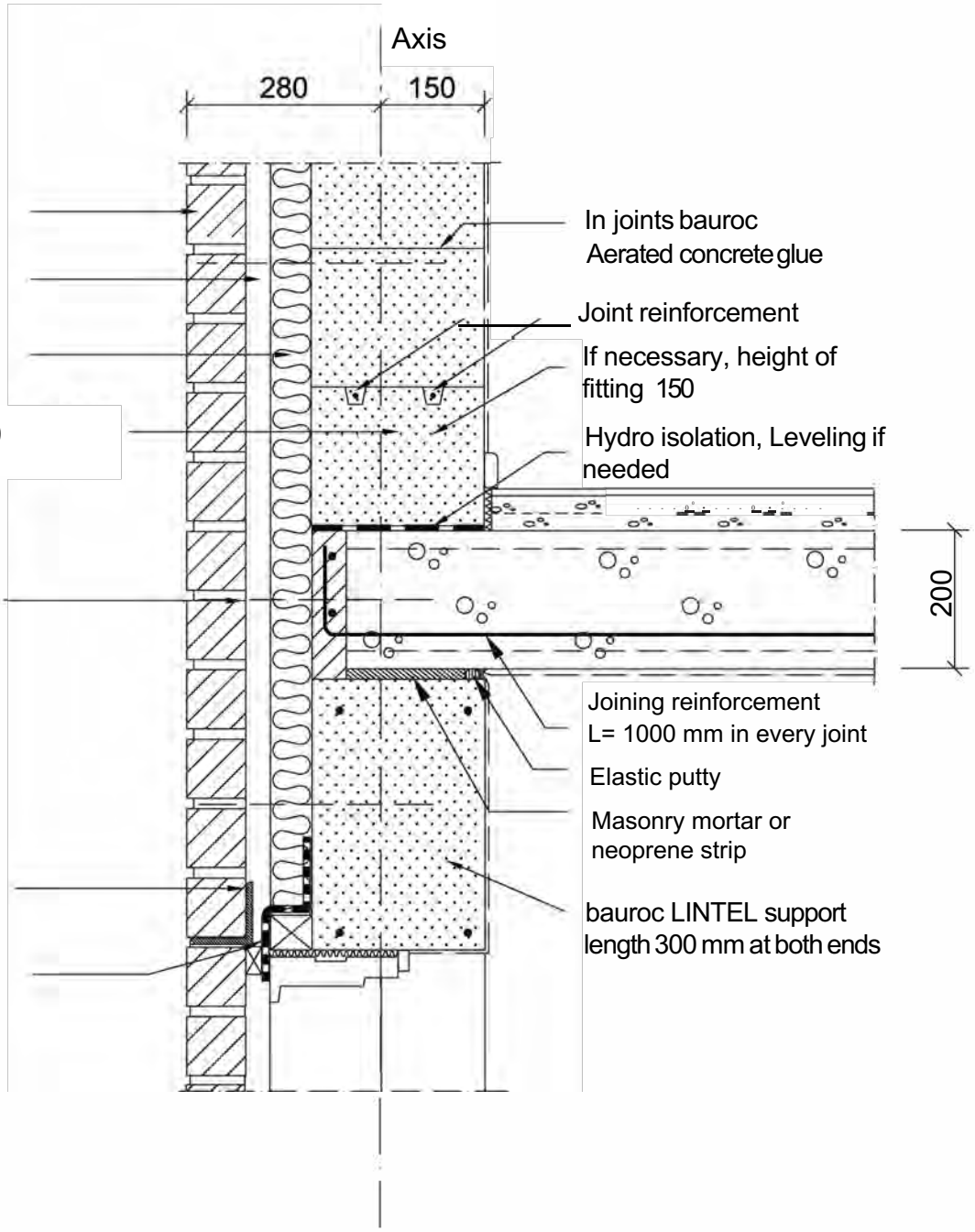
Client	Name of the figure	
	bauroc ECOTERM + 500 exterior wall and bauroc CEILING PANELS ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 1.2



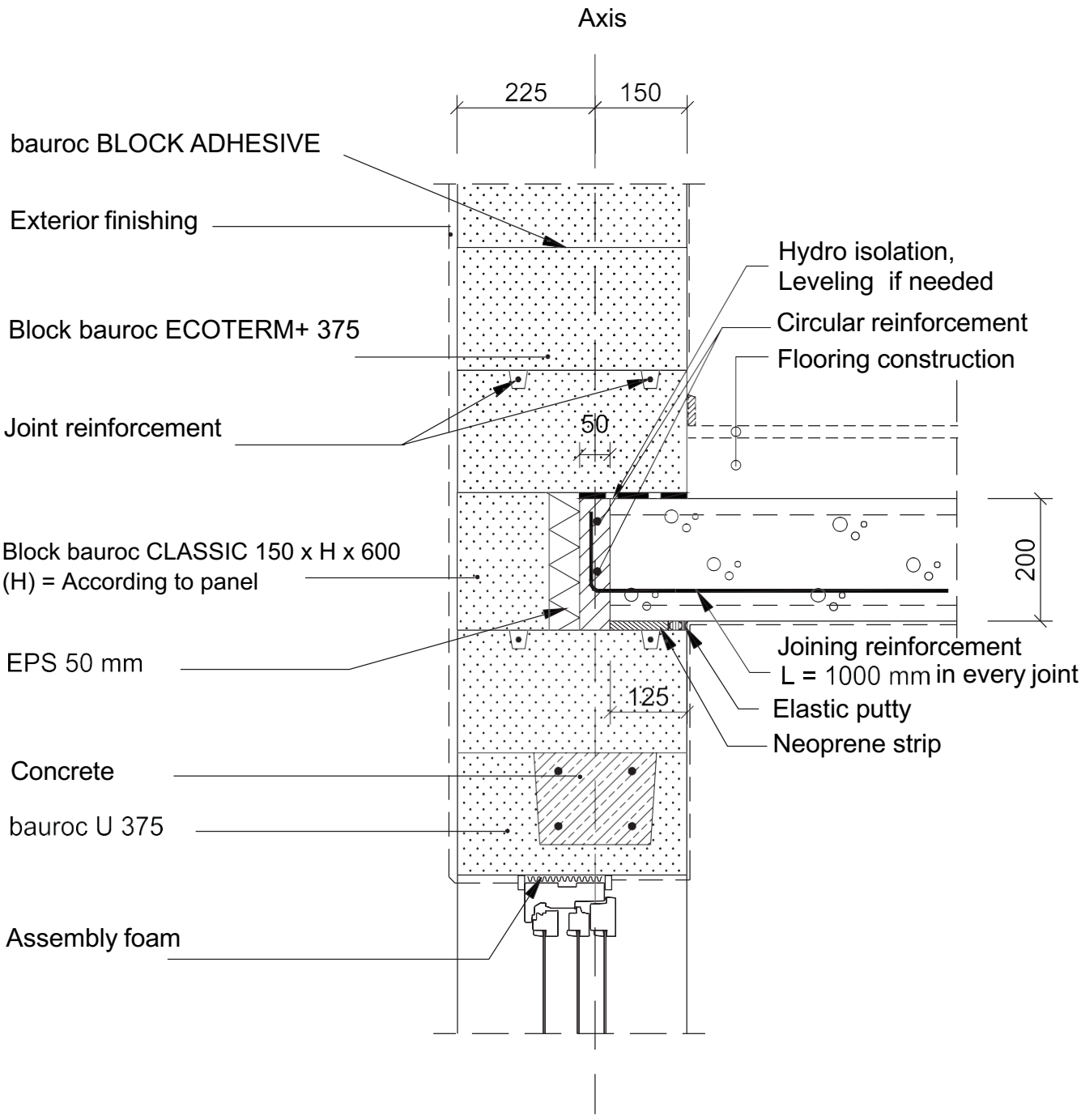
Client	Name of the figure	
	The joing of the exterior wall and ceiling, bauroc LINTEL and r./b. panels ceiling.	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 2.1



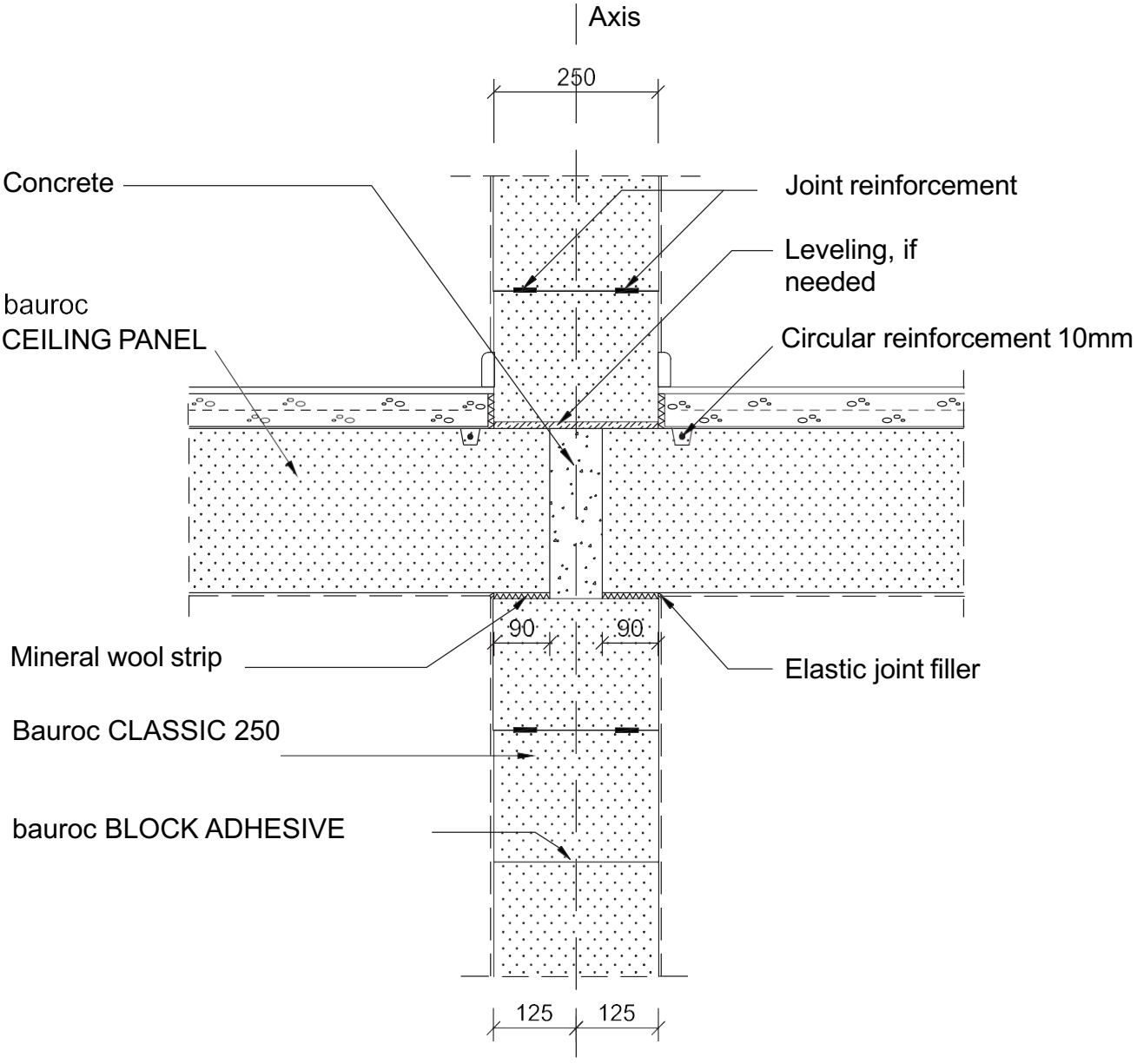
Client	Name of the figure Exterior wall and ceiling joining Ceiling from concrete panels	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figurenr. Ceiling 2.2



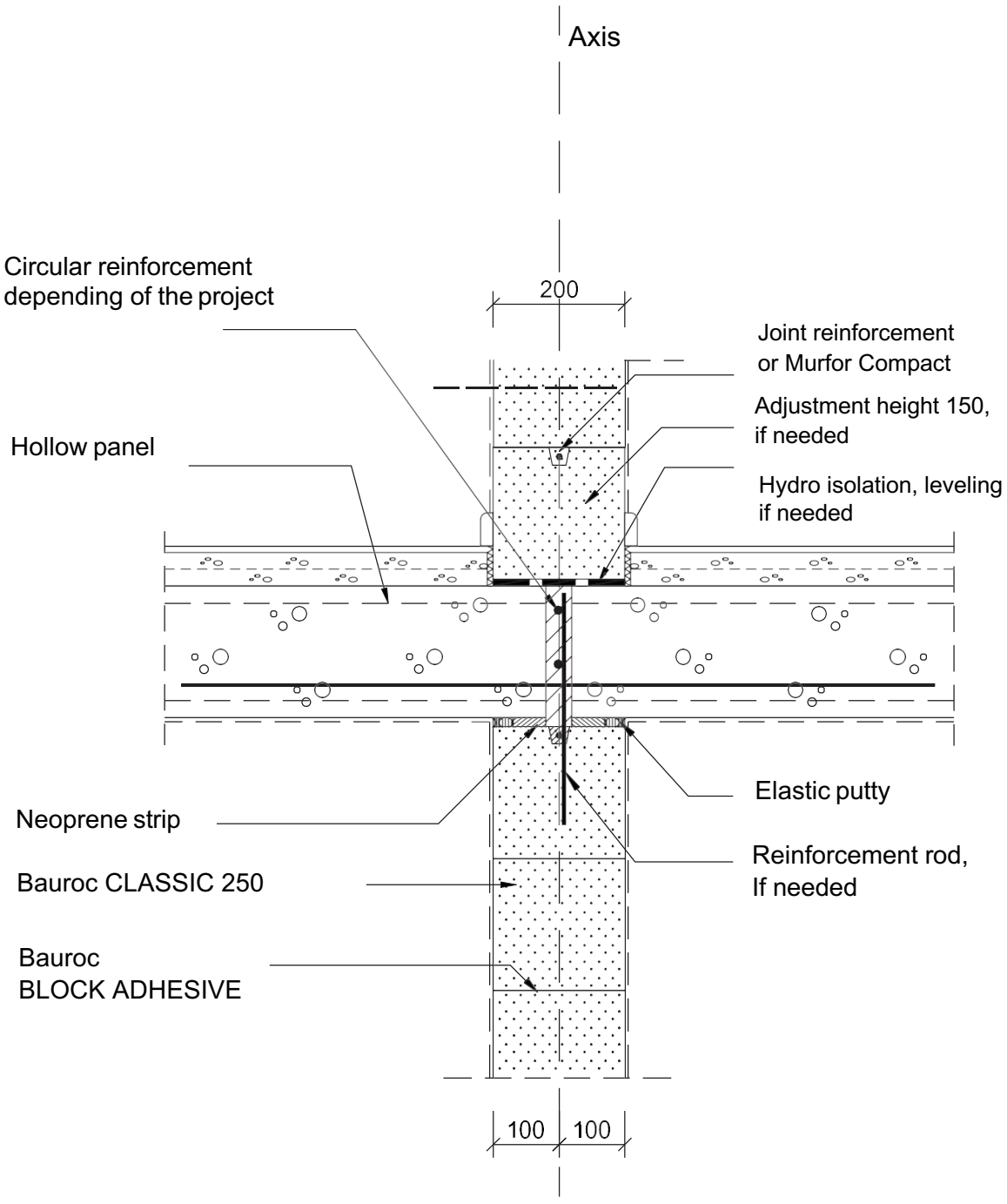
Client	Name of the figure Connection of the exterior wall and ceiling bauroc CLASSIC 250 + brick	
bauroc	Drawing by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 2.4



Client	Name of the figure	
	Connection of the exterior wall and ceiling, U- BLOCK LINTEL	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 3.1

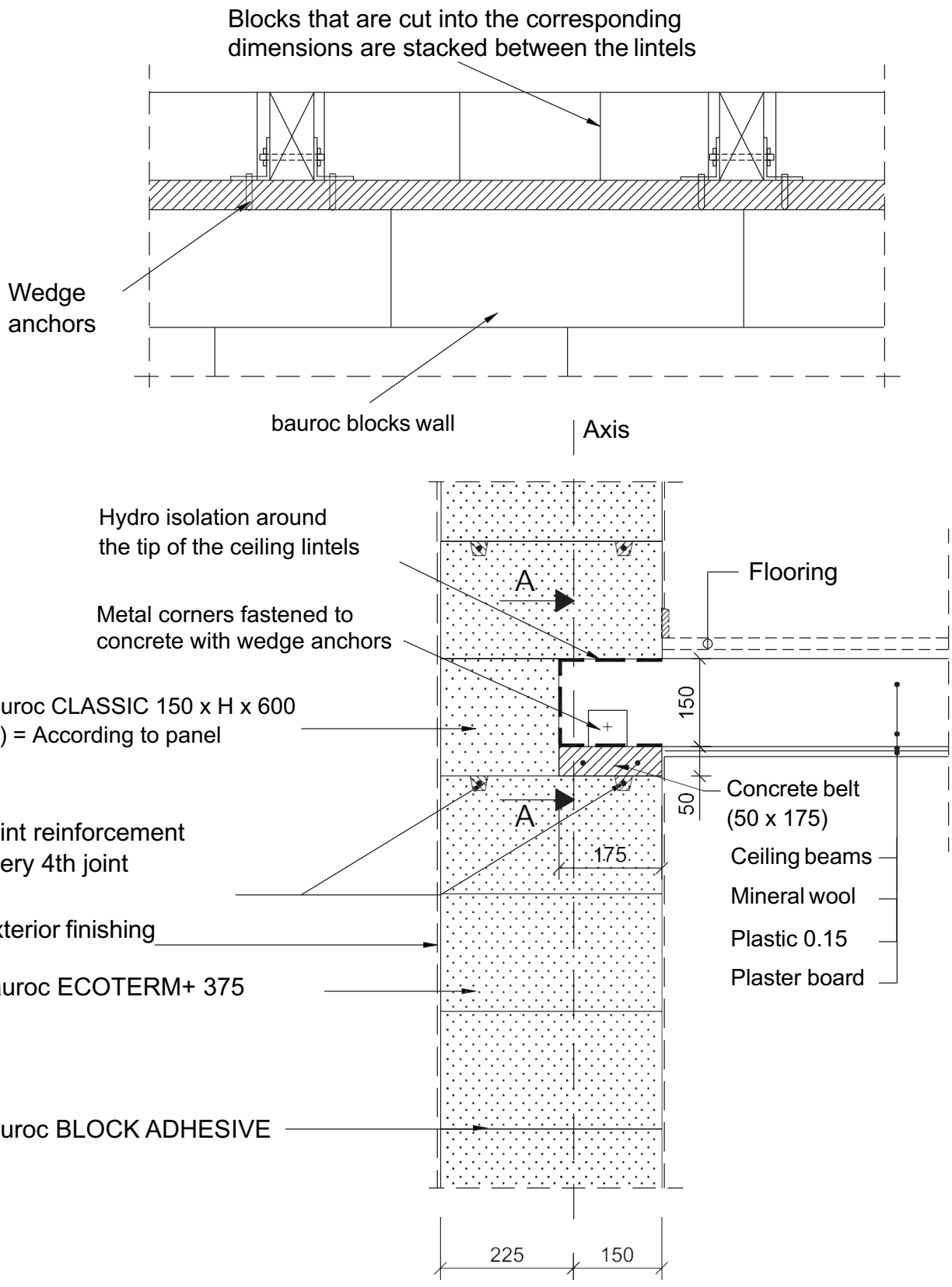


Client	Name of the figure	
	Connecting the inner wall and the ceiling bauroc classic 250 and bauroc CEILING PANELS	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. 4.1 Ceiling



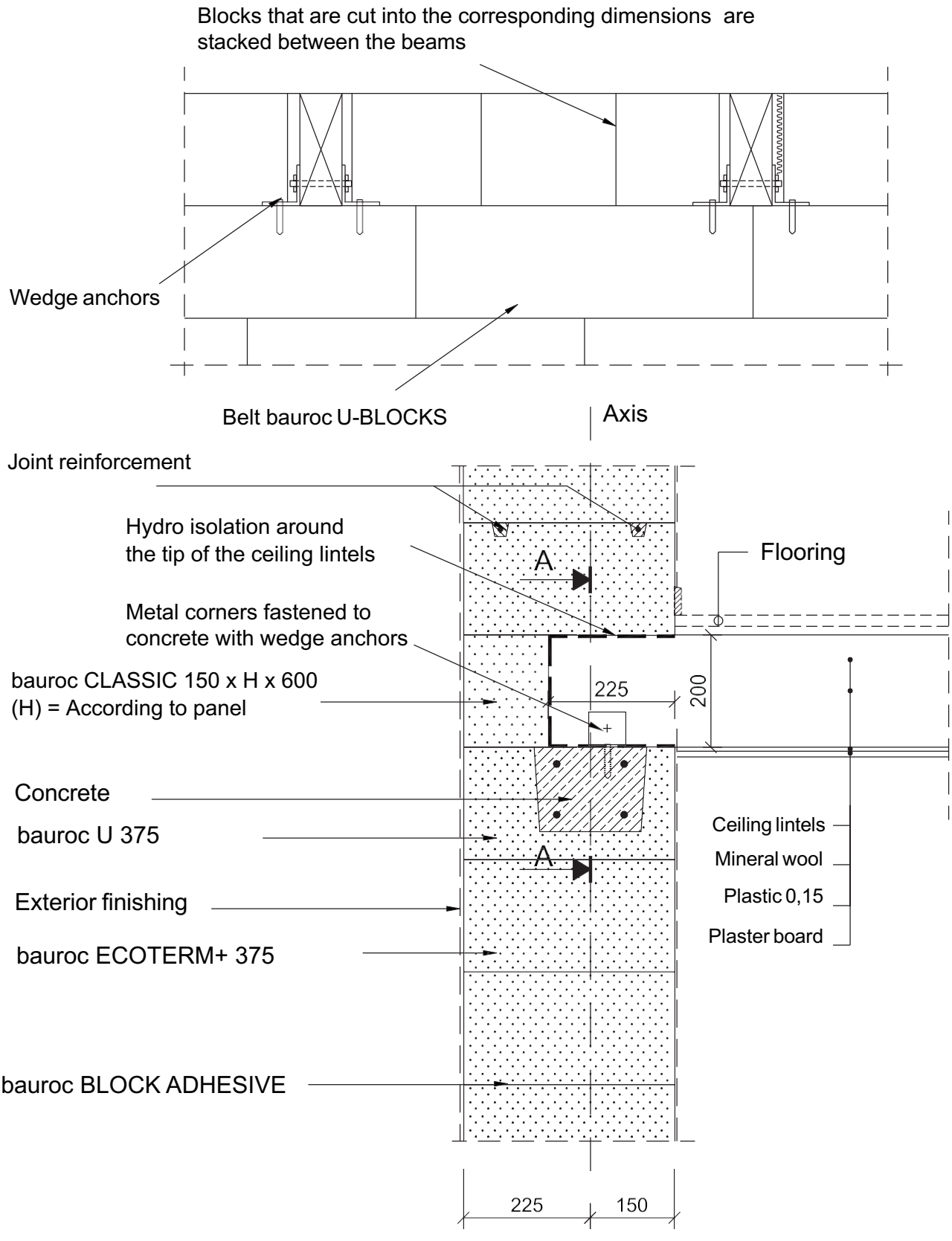
Client	Name of the figure Connecting the inner load-bearing wall and ceiling bauroc CLASSIC 200 and Hollow panels	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 4.2

Section A-A

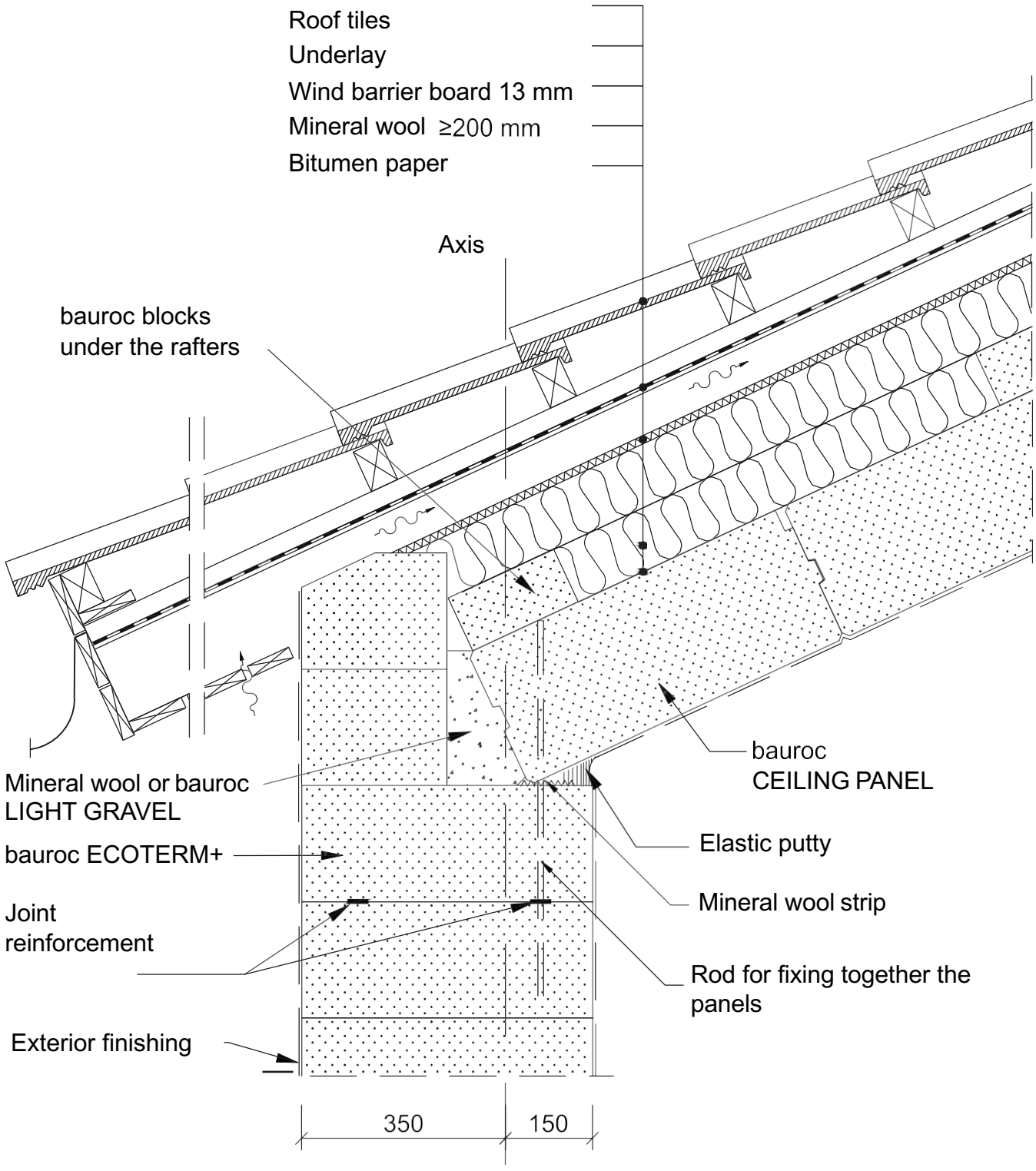


Client	Name of the figure Ceiling on wooden lintels bauroc ECOTERM+ exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 5.1

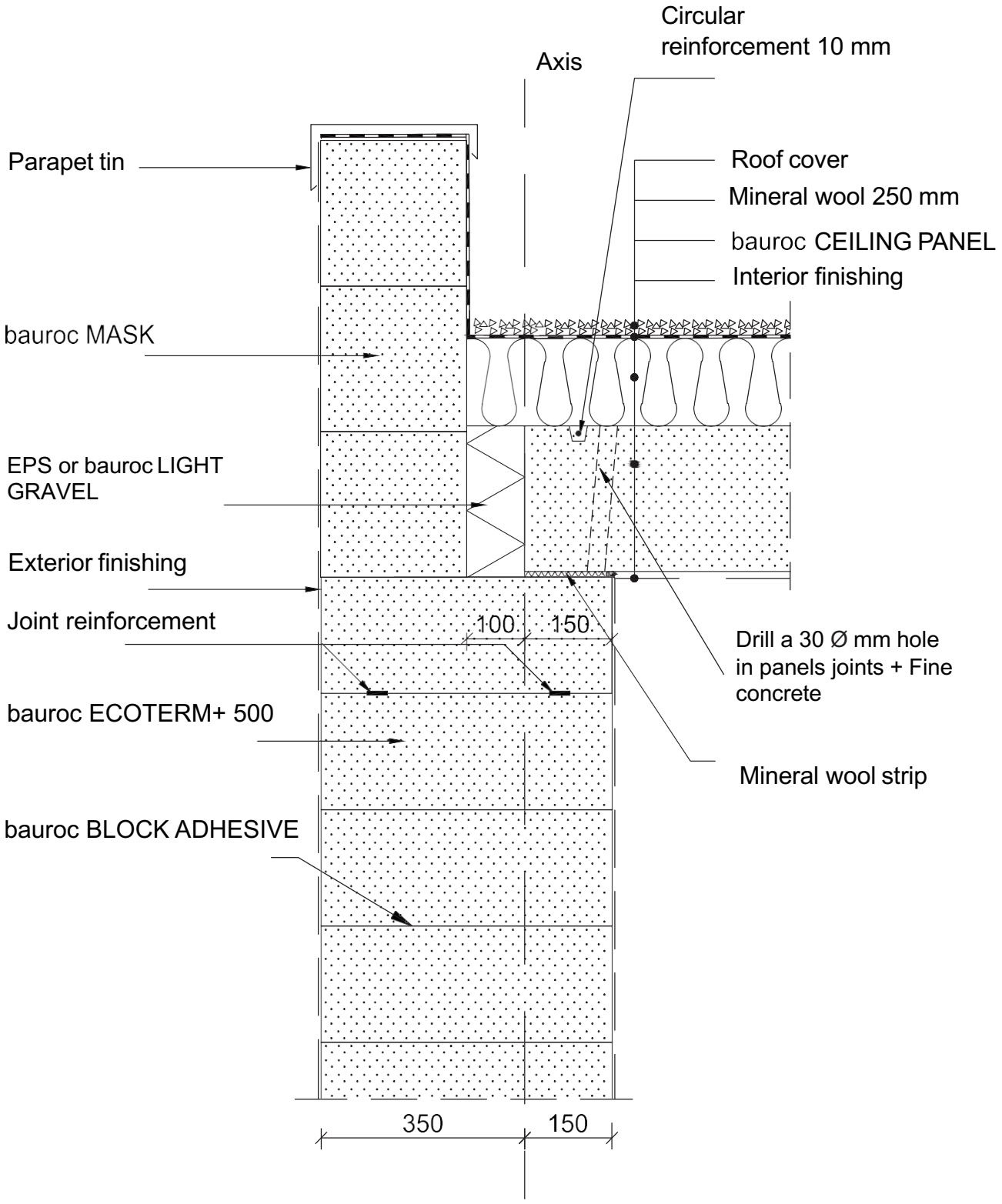
Section A-A



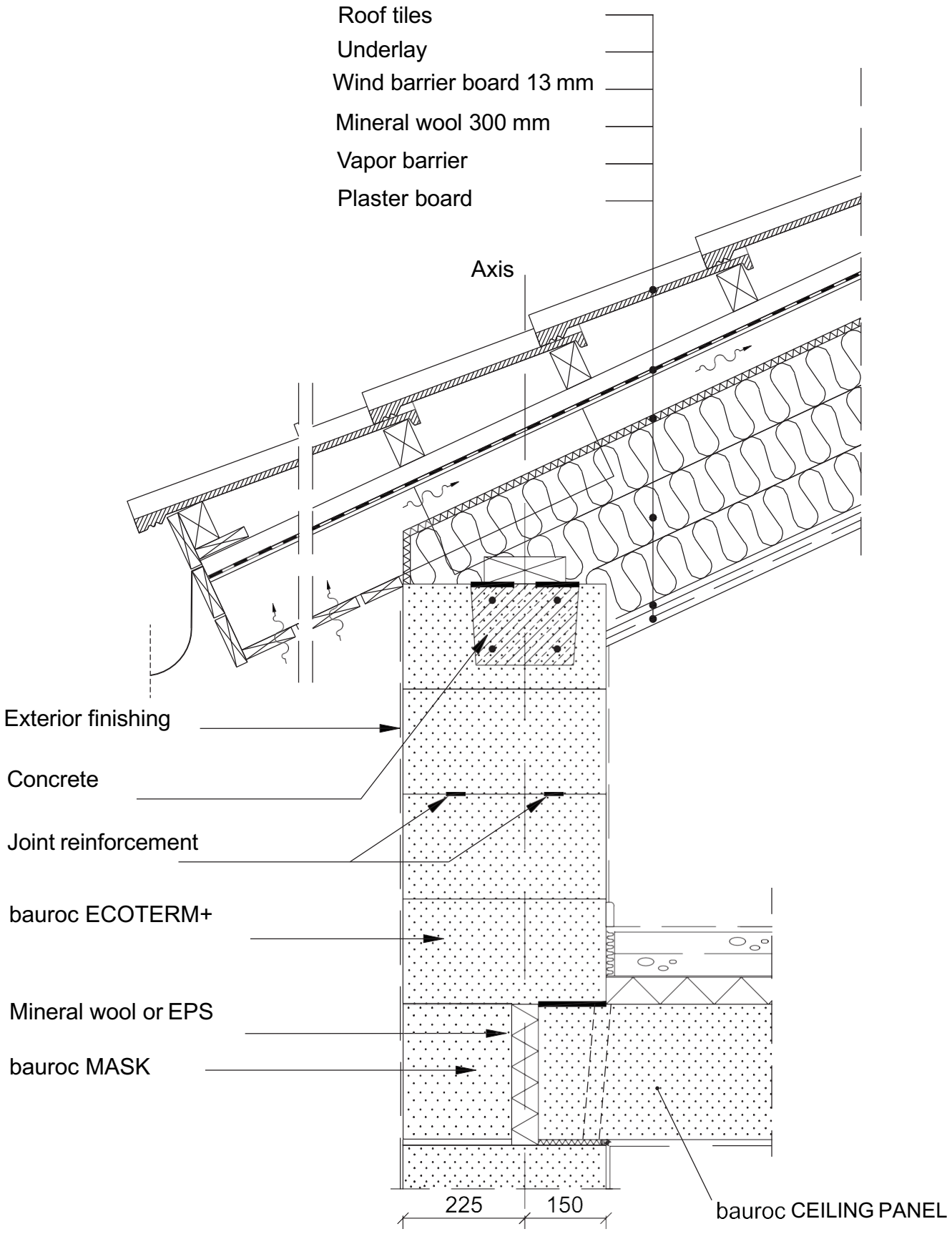
Client	Name of the figure Ceiling on wooden lintels bauroc ECOTERM+ exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Ceiling 5.2



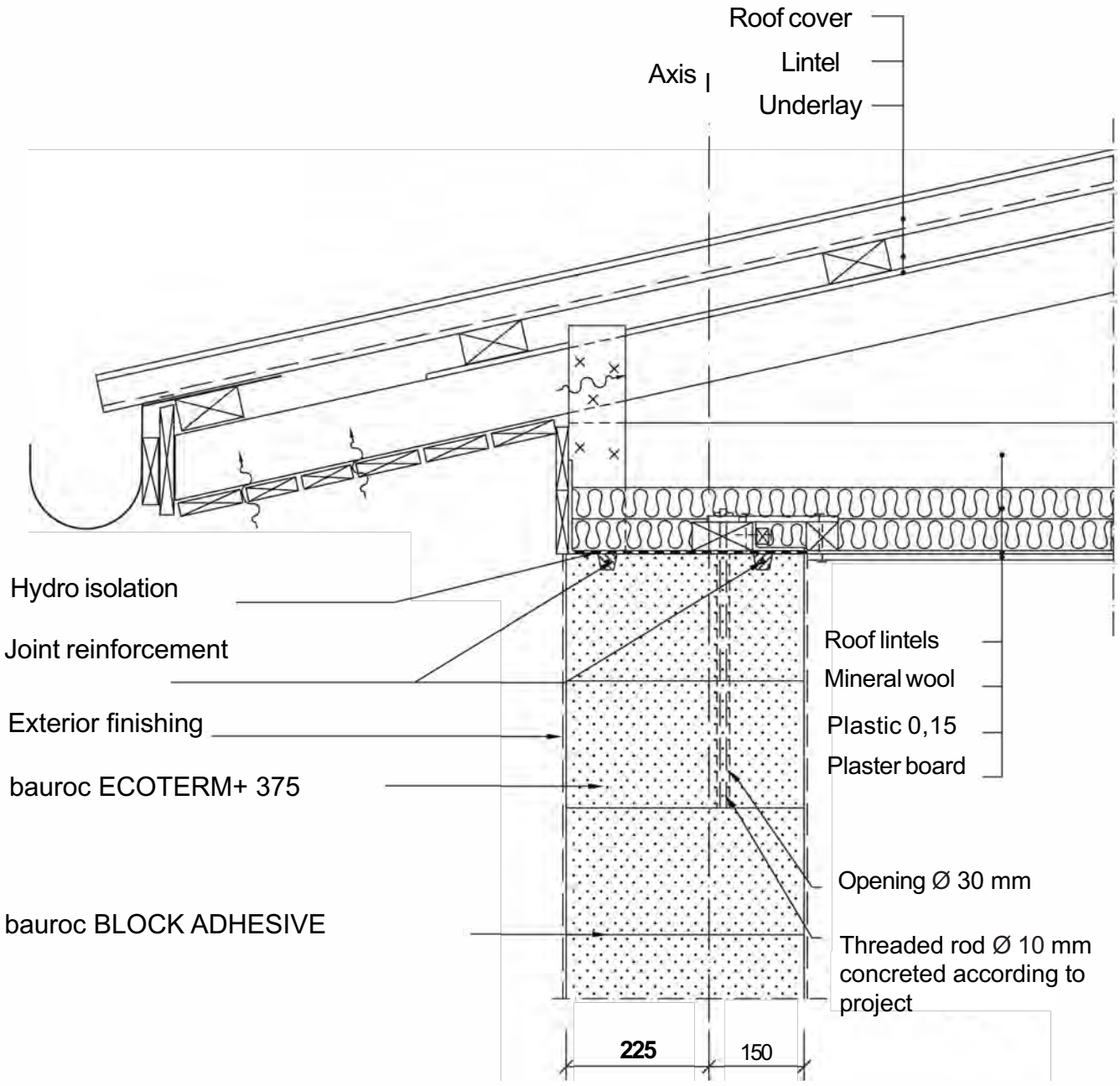
Client	Name of the figure	
	Eaves knot - sloped roof bauroc CEILING PANELS Exterior wall bauroc ECOTERM + 500 mm	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. 1.1 Roof



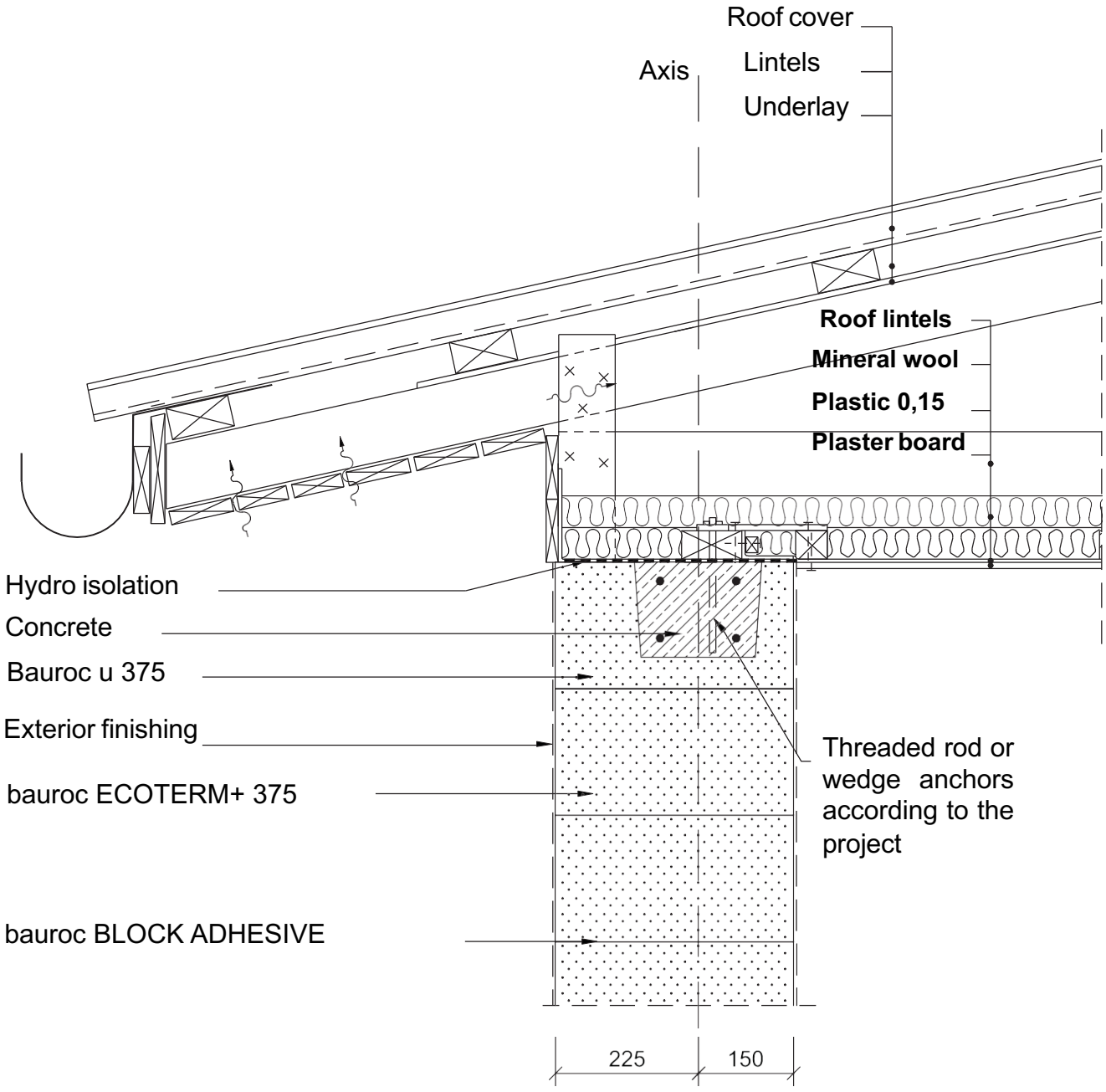
Client	Name of the figuure bauroc ECOTERM + 500 block wall flat roof bauroc CEILING PANELS	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Roof 1.4



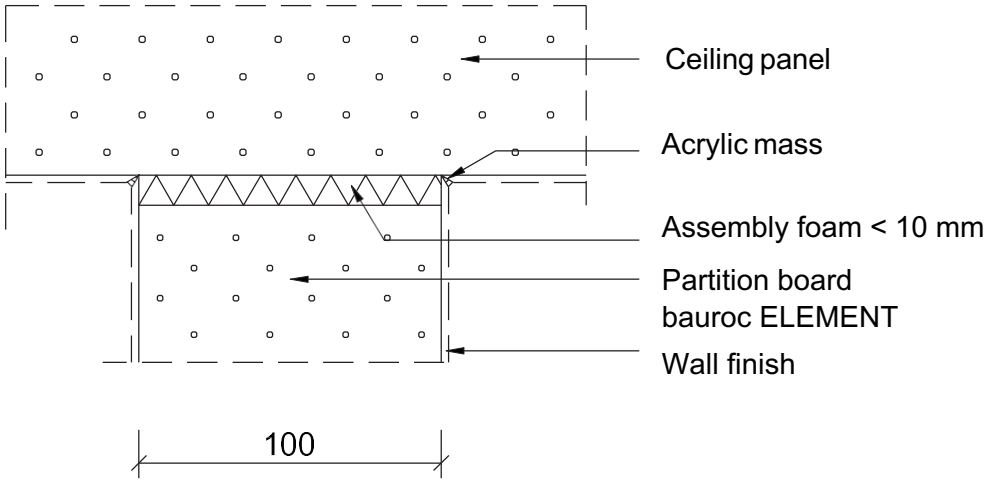
Client	Name of the figure Bauroc ECOTERM+ 375 exterior wall Roof on wooden rafters and bauroc CEILING	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Roof 2.1

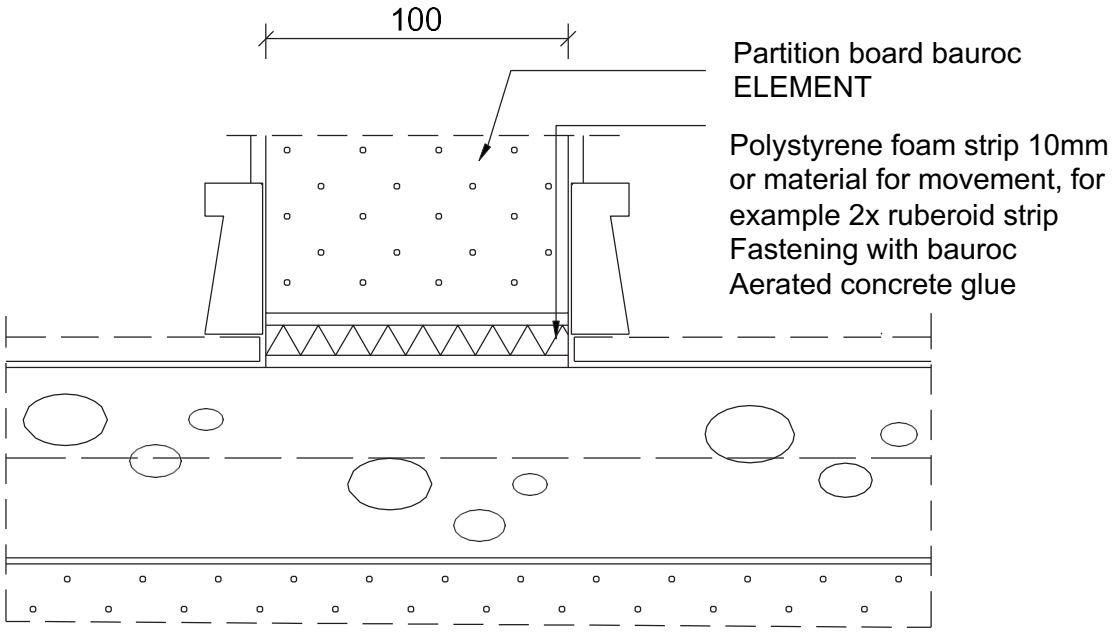


Client	Name of the figure Eaves knot, Roof ceiling on wooden lintels	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figurenr. Roof 4.2

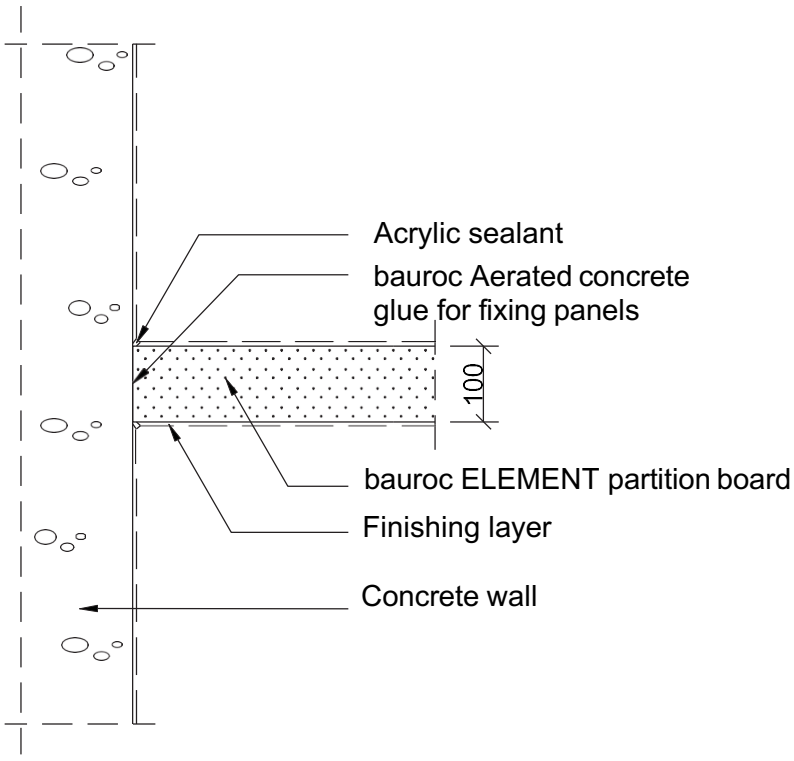


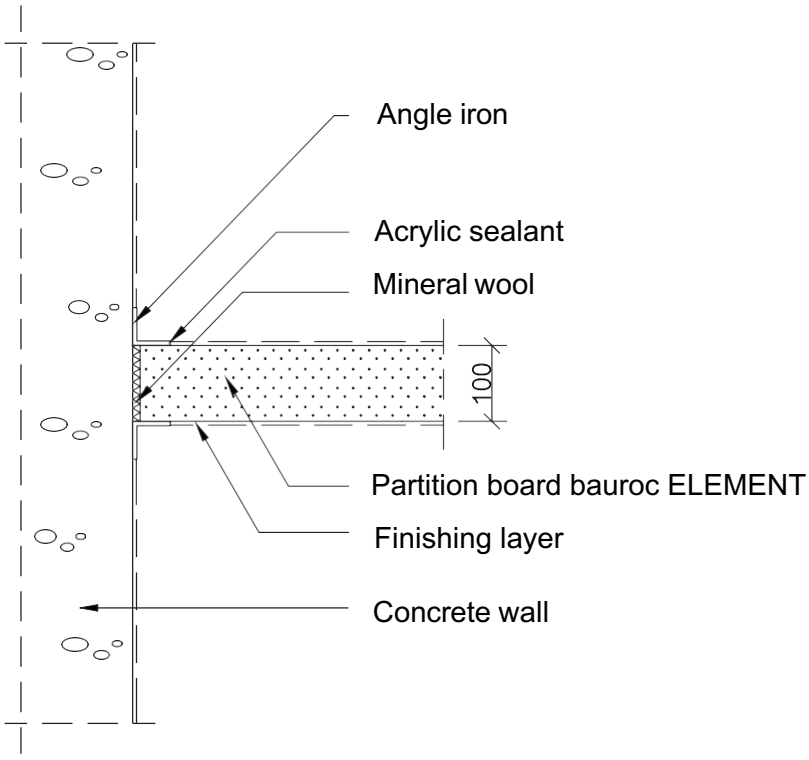
Client	Name of the figure Eaves knot, Roof ceiling on wooden lintels	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Roof 4.3



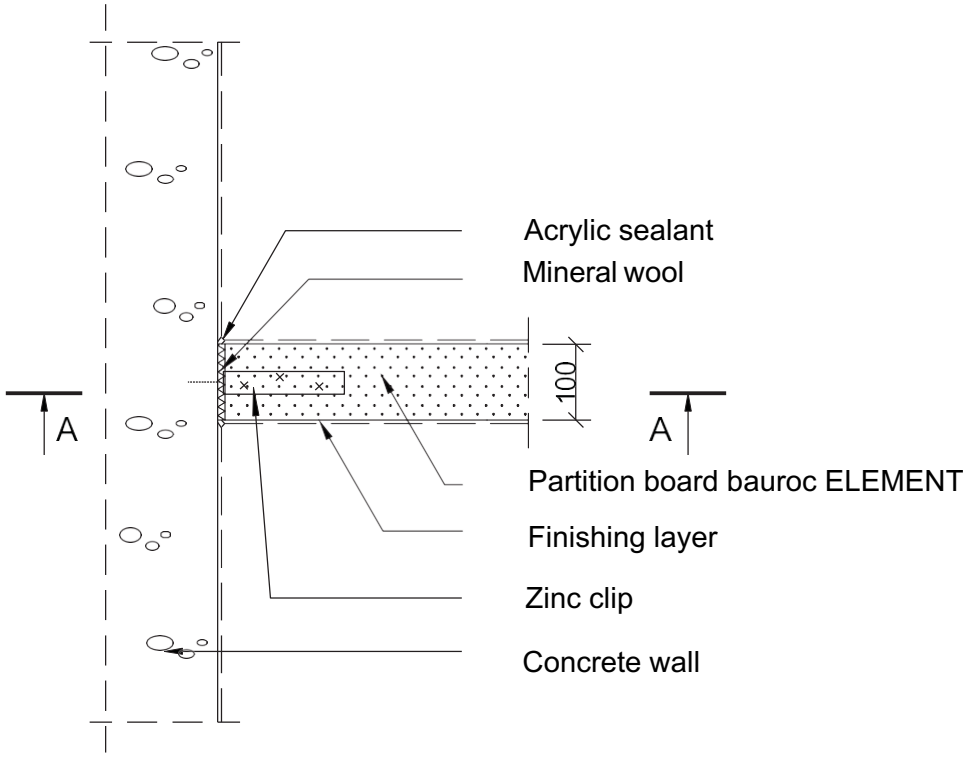


Client	Name of the figure	
	Bauroc ELEMENT partition wall	
bauroc	Drawn by	Scale M 1:2,5
	Date 05.2017	Figure nr. Partition wall 1.3

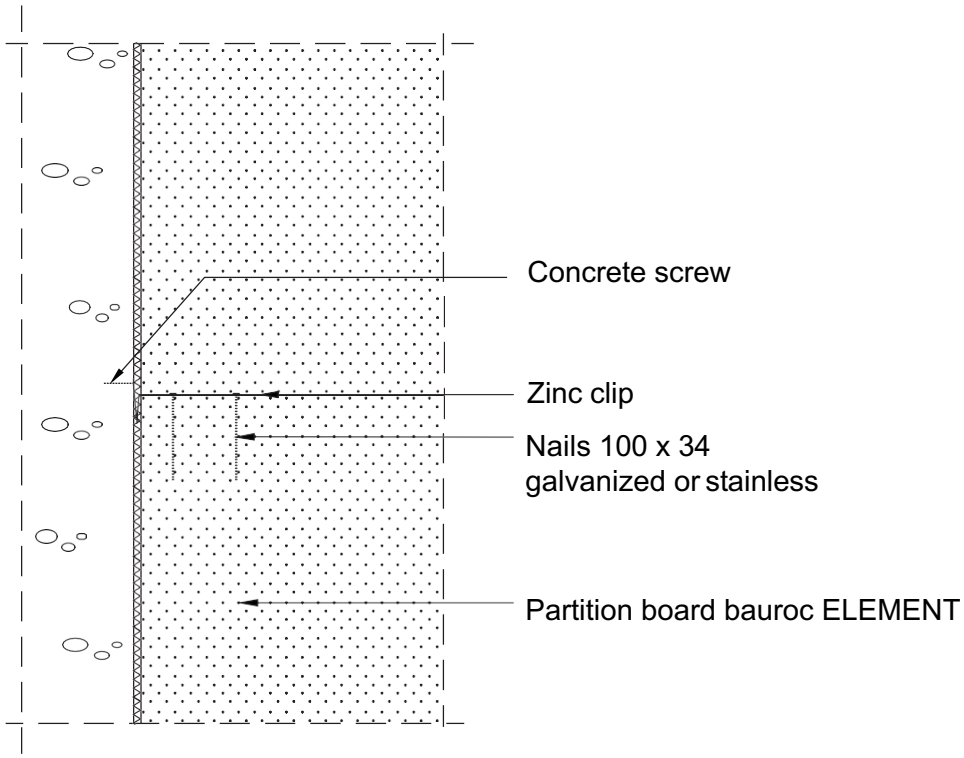




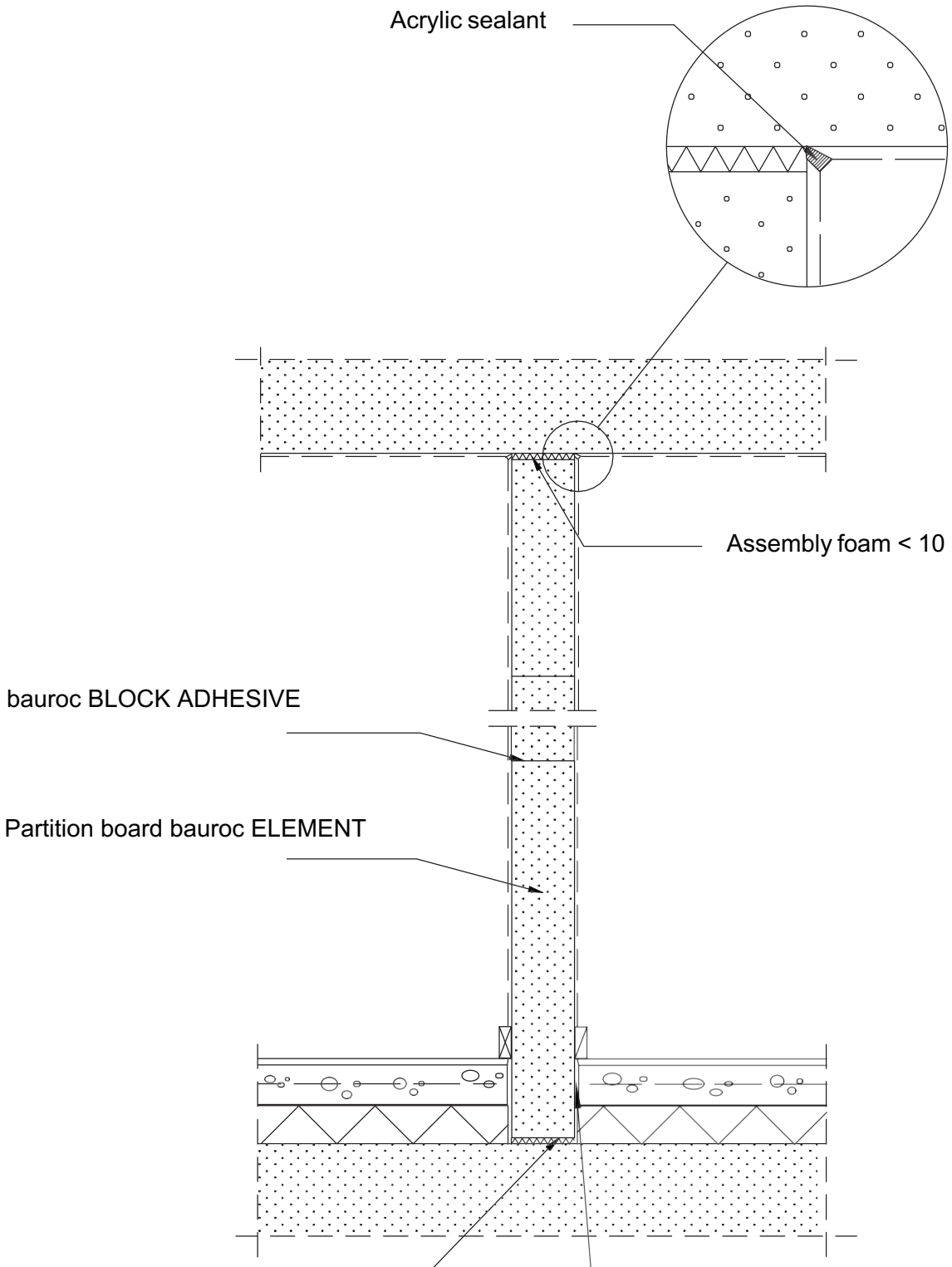
Client	Name of the figure Attaching a non-bearing bauroc wall to an adjacent concrete wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Partition wall 1.4



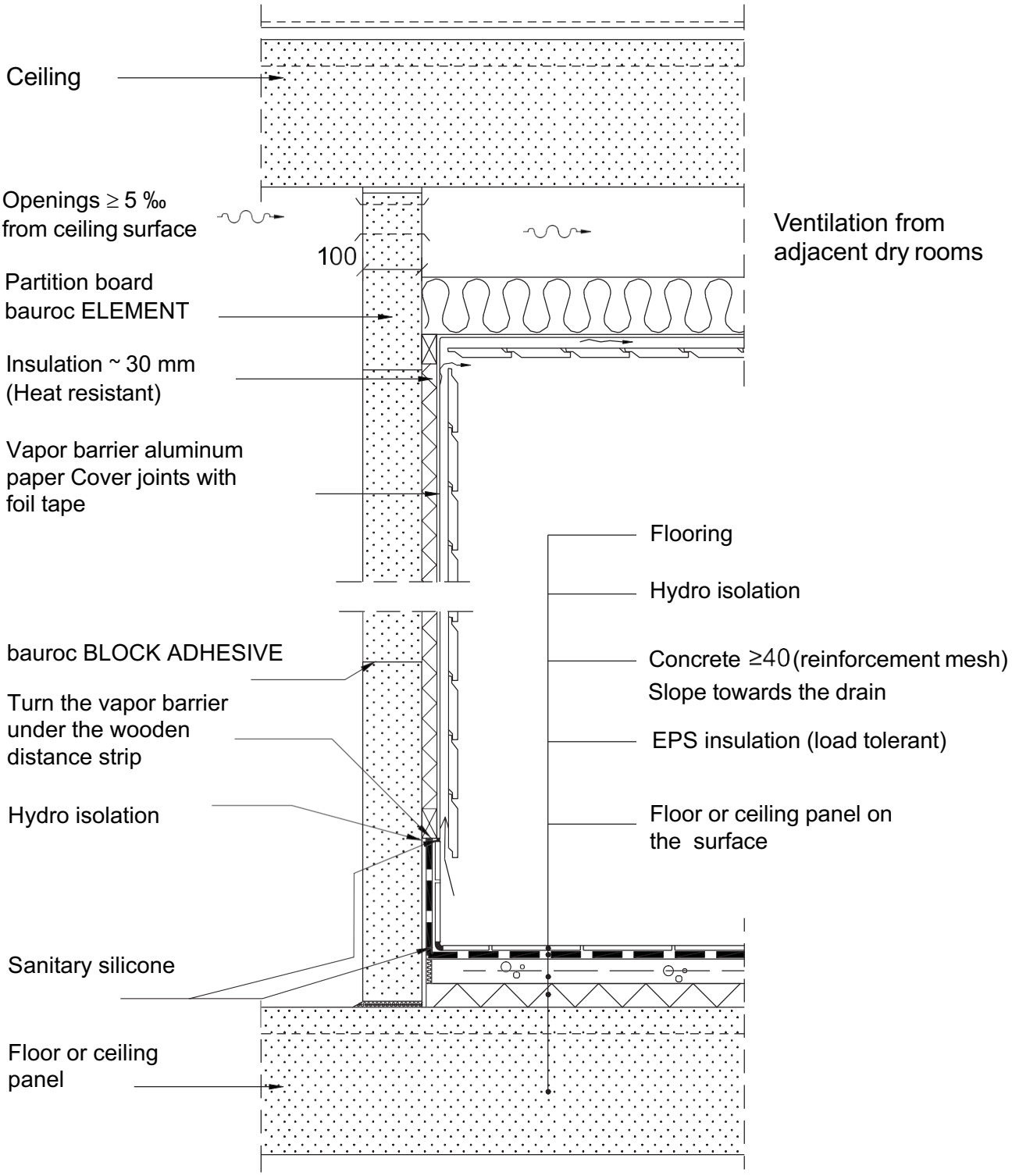
A - A



Client	Name of the figure Attaching a non-bearing bauroc wall to an adjacent concrete wall	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Partition wall 1.5



Client	Name of the figure Attaching a non-bearing bauroc wall to the floor and ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Partition wall 2.3



Client	Name of the figure	
	Bauroc partition wall in sauna steam room	
bauroc	Drawn by	Scale M 1:10
	Date 05.2017	Figure nr. Partition wall 2.4

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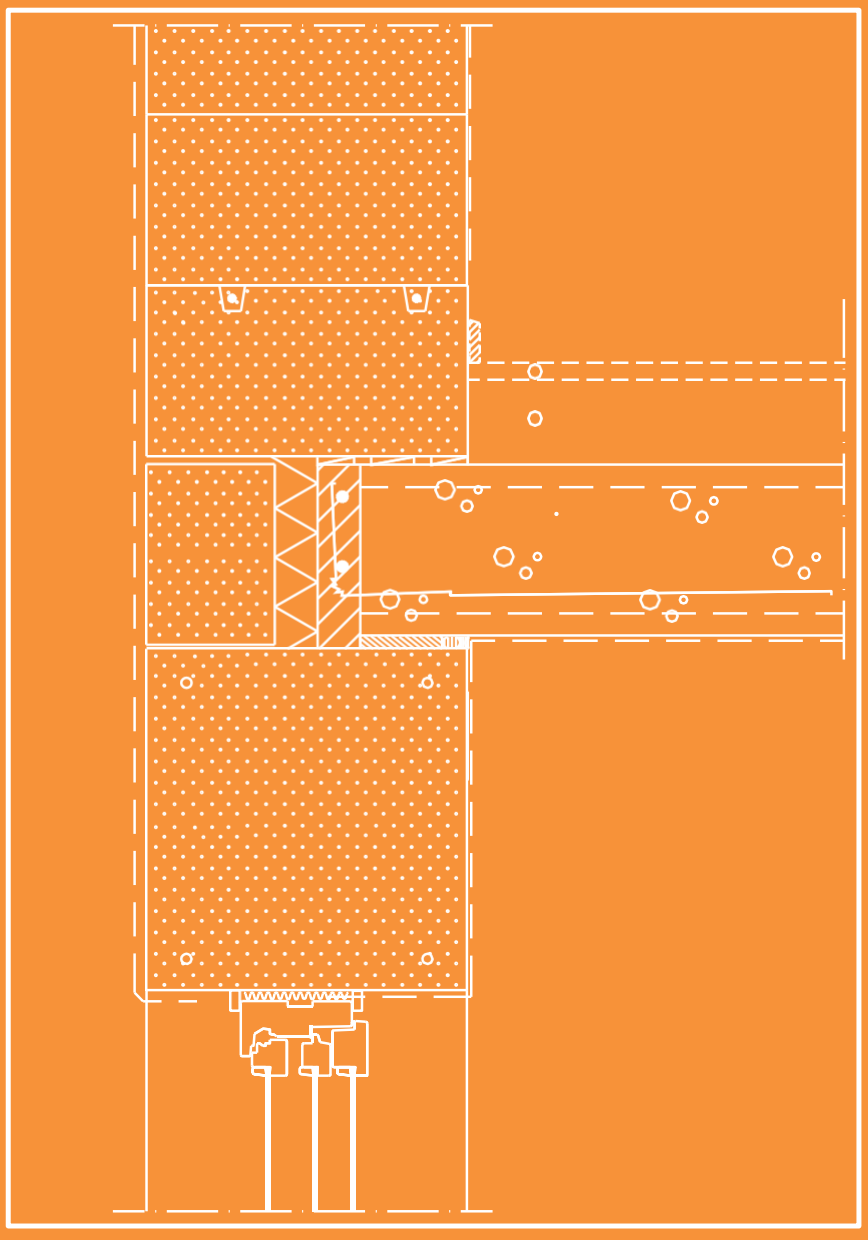
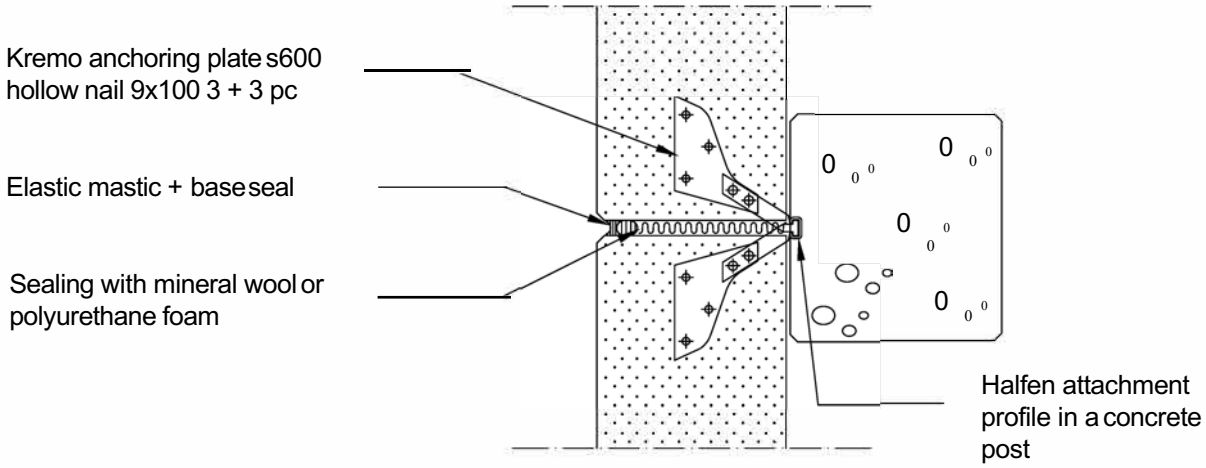
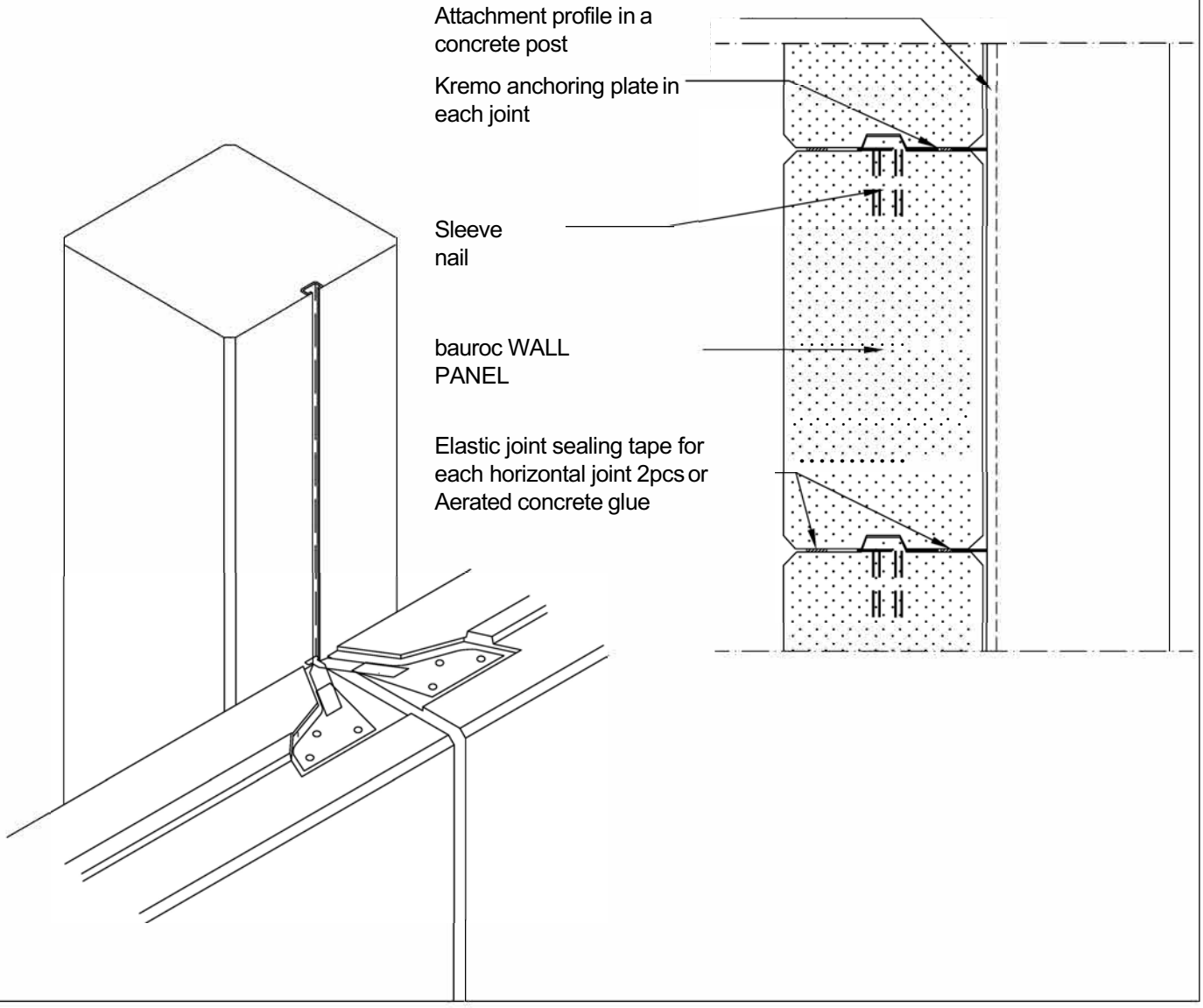
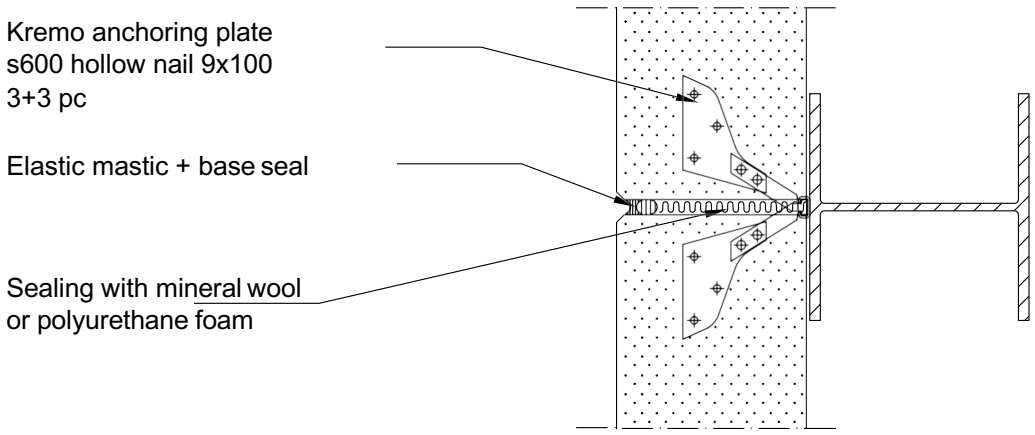


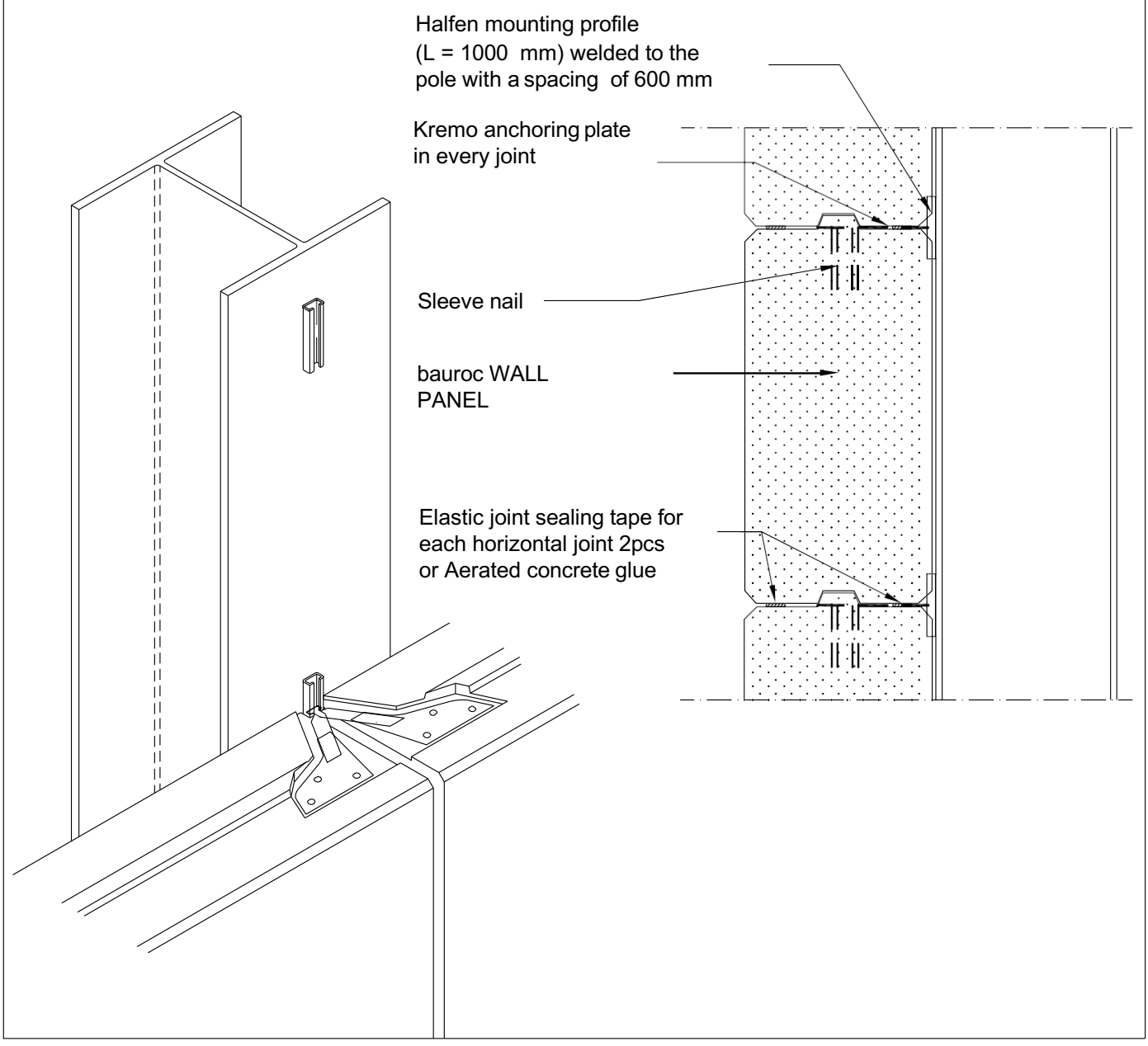
TECHNICAL SOLUTIONS



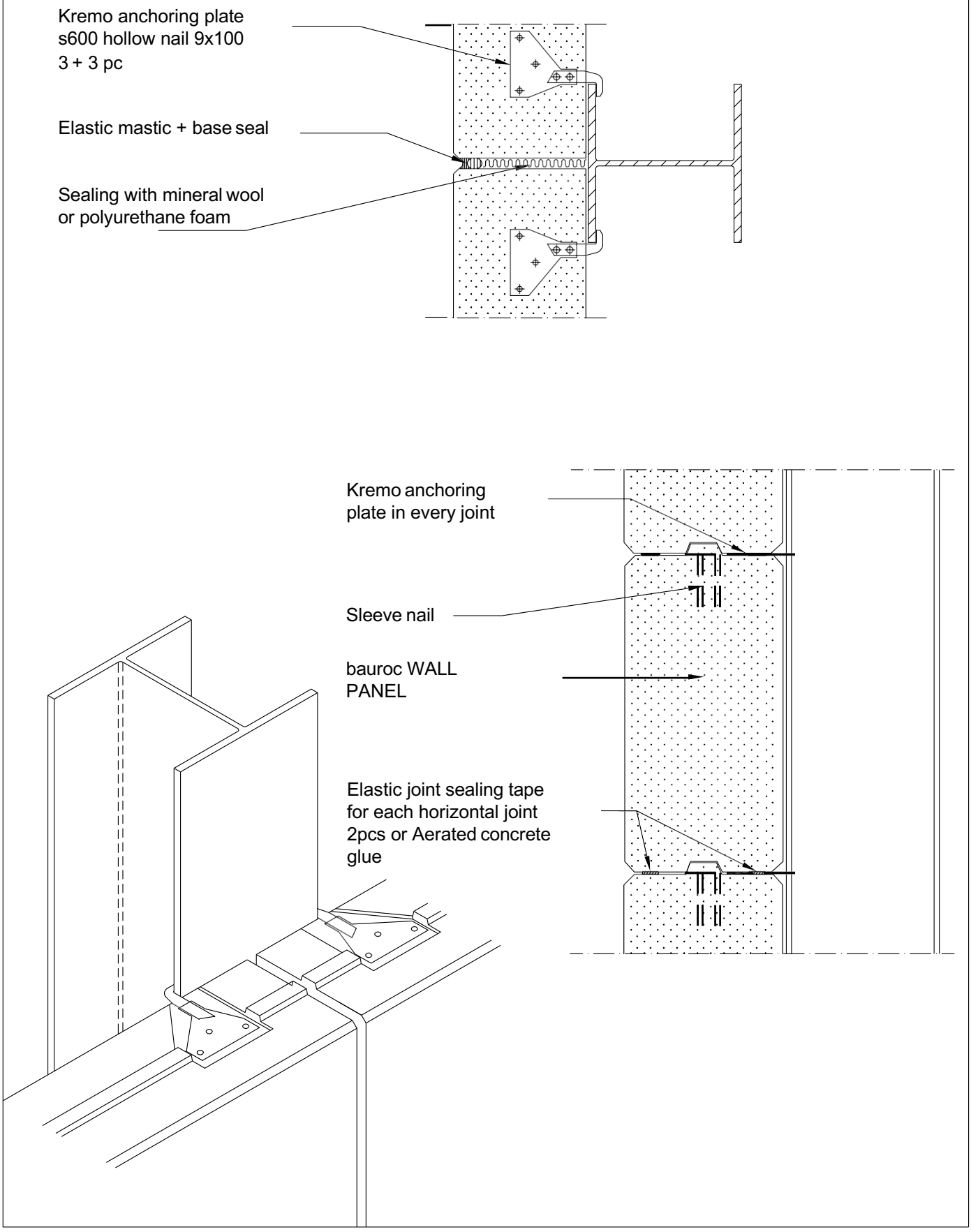


Client	Name of the figure bauroc WALL PANEL 250 mm; concrete post Hidden attachment Kremo, fire resistance EI-M 180
bauroc	Drawn by
	Scale M 1:10
	Date 01.2018
	Figure nr. Wall 2.1.1

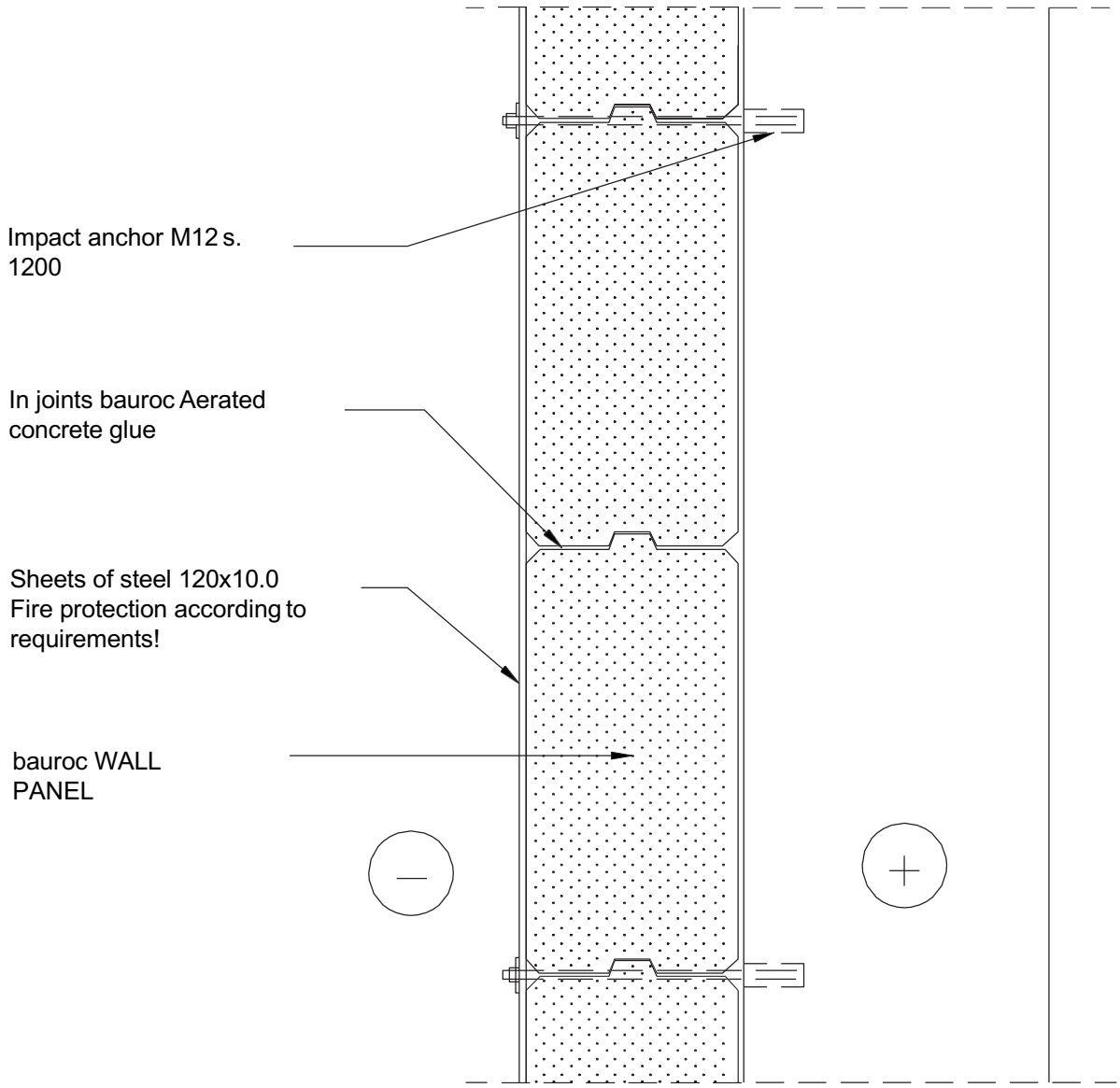


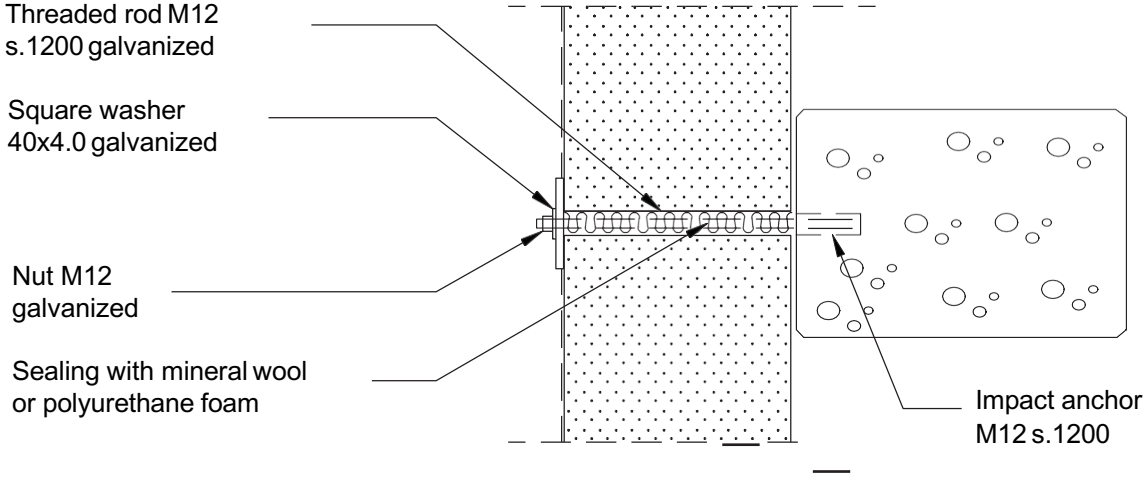


Client	Name of the figure bauroc WALL PANEL 250 mm; concrete post Hidden attachment Kremo, fire resistance EI-M 180	
bauroc	Drawn by	Scale M 1:10
	Date 01.2018	Figure nr. Wall 2.1.2

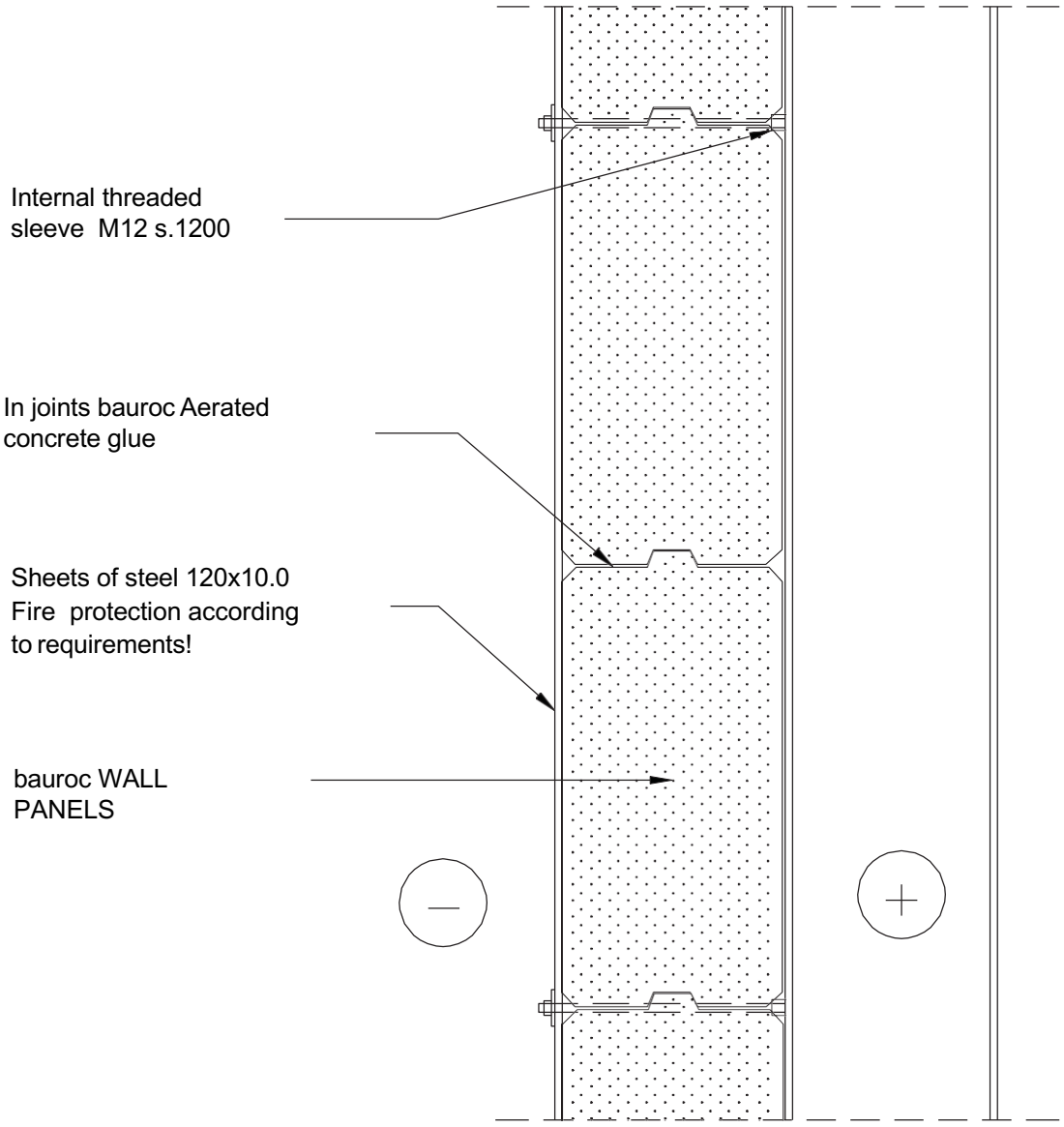


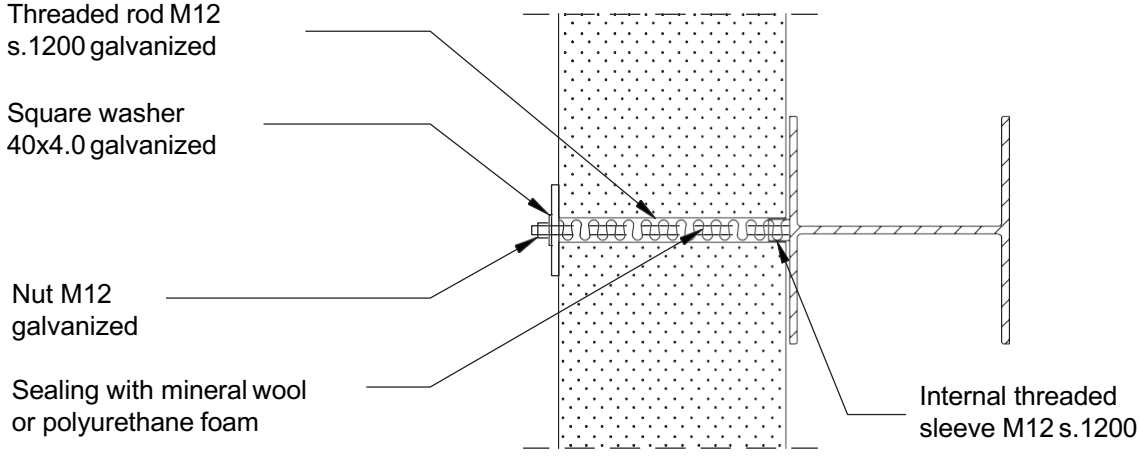
Client	Name of the figure bauroc WALL PANEL 250 mm; concrete post Hidden attachment Kremo, fire resistance EI-M 180	
bauroc	Drawn by	Scale M 1:10
	Date 01.2018	Figure nr. Wall 2.1.3



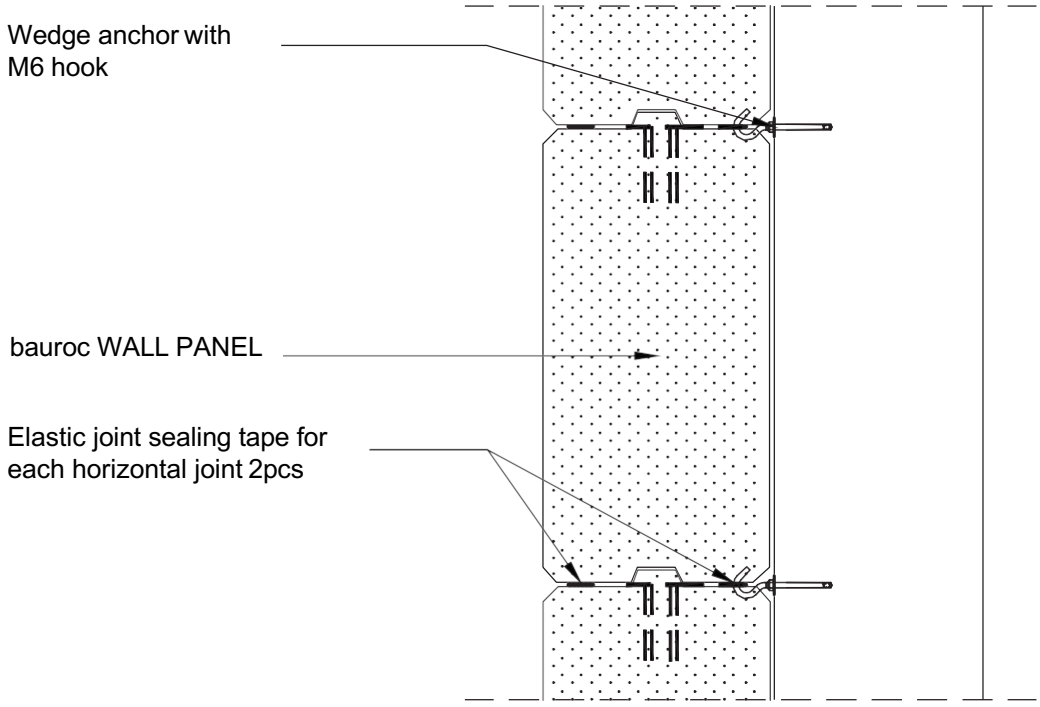


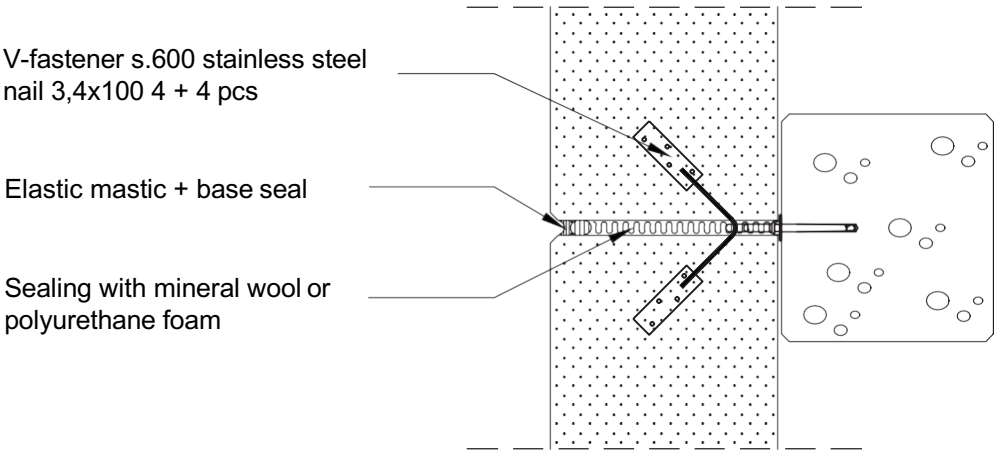
Client	Name of the figure bauroc WALL PANEL attachement with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.2.1



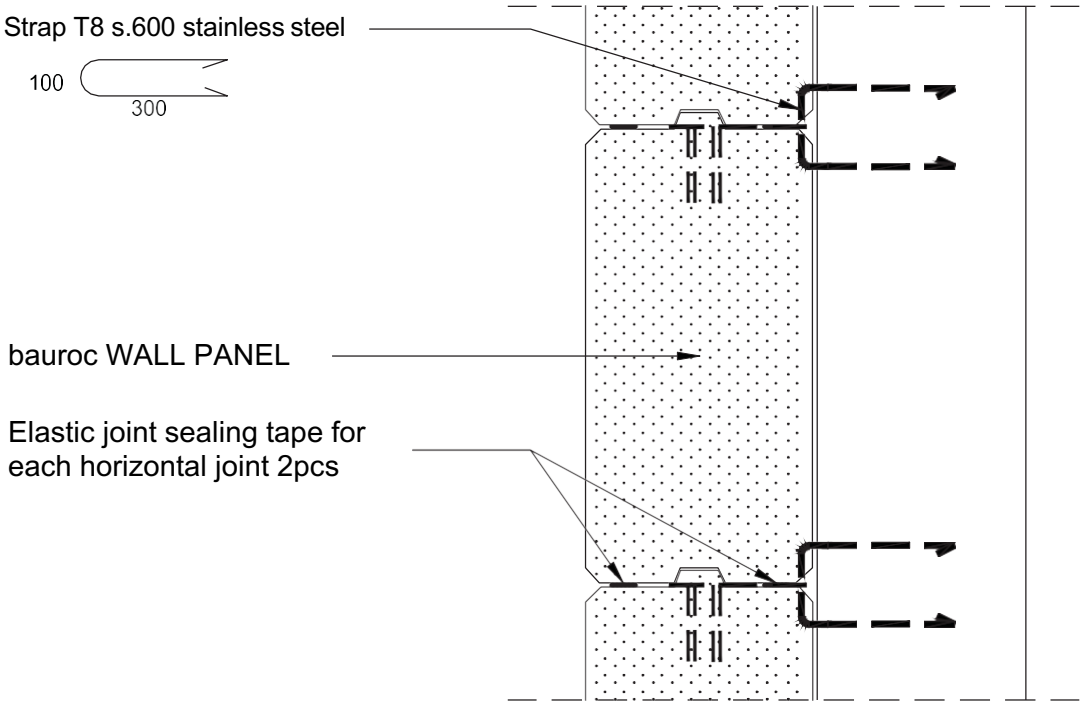


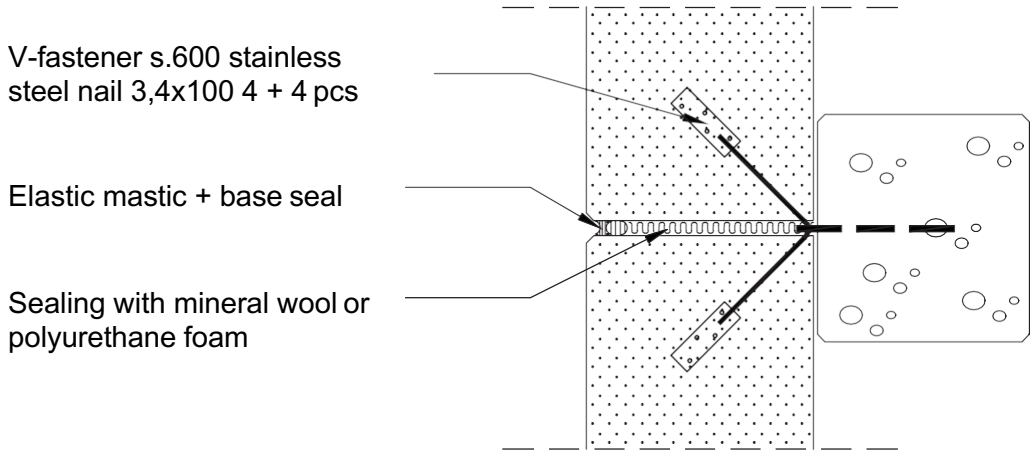
Client	Name of the figure bauroc WALL PANEL attachement with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.2.2



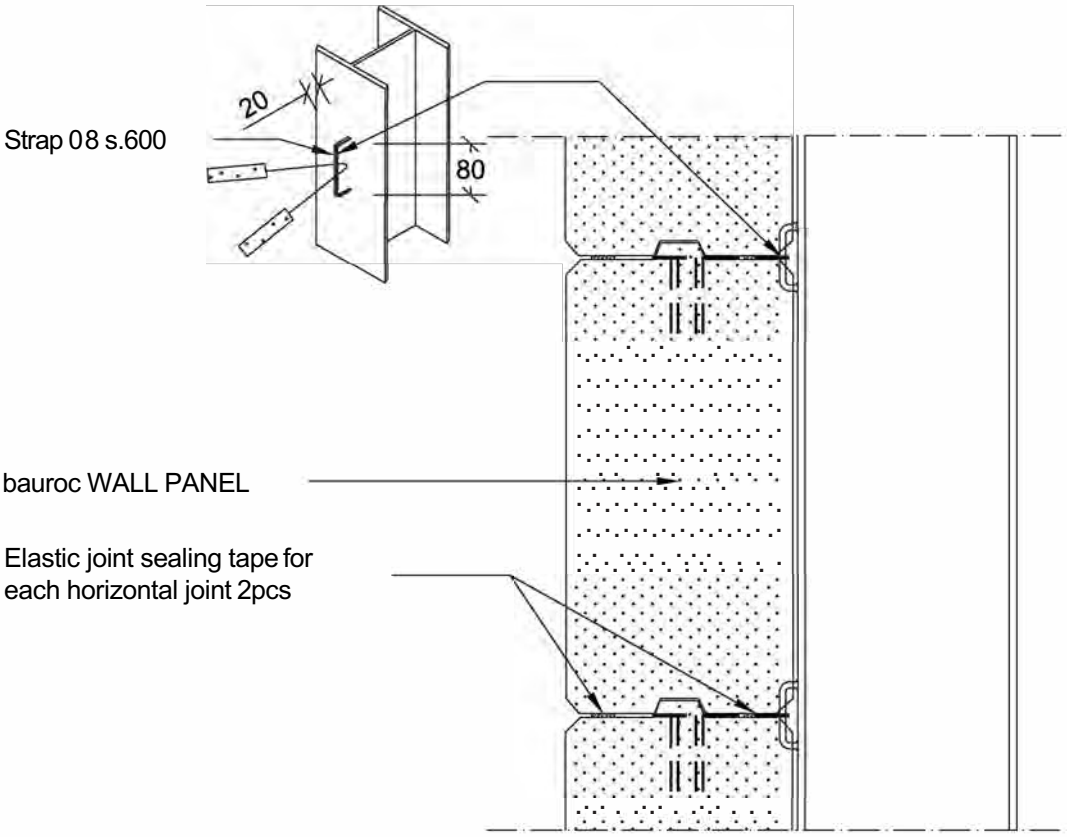


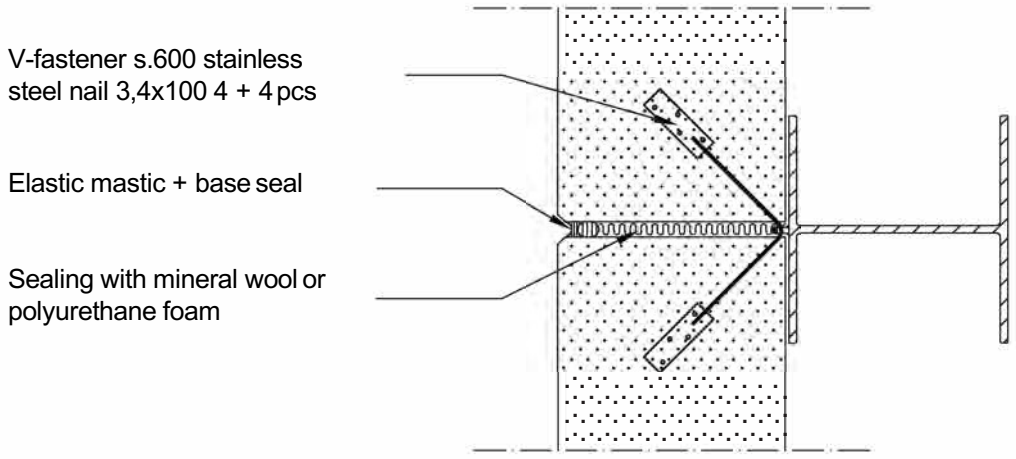
Client	Name of the figure bauroc WALL PANEL attachement with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.1.1



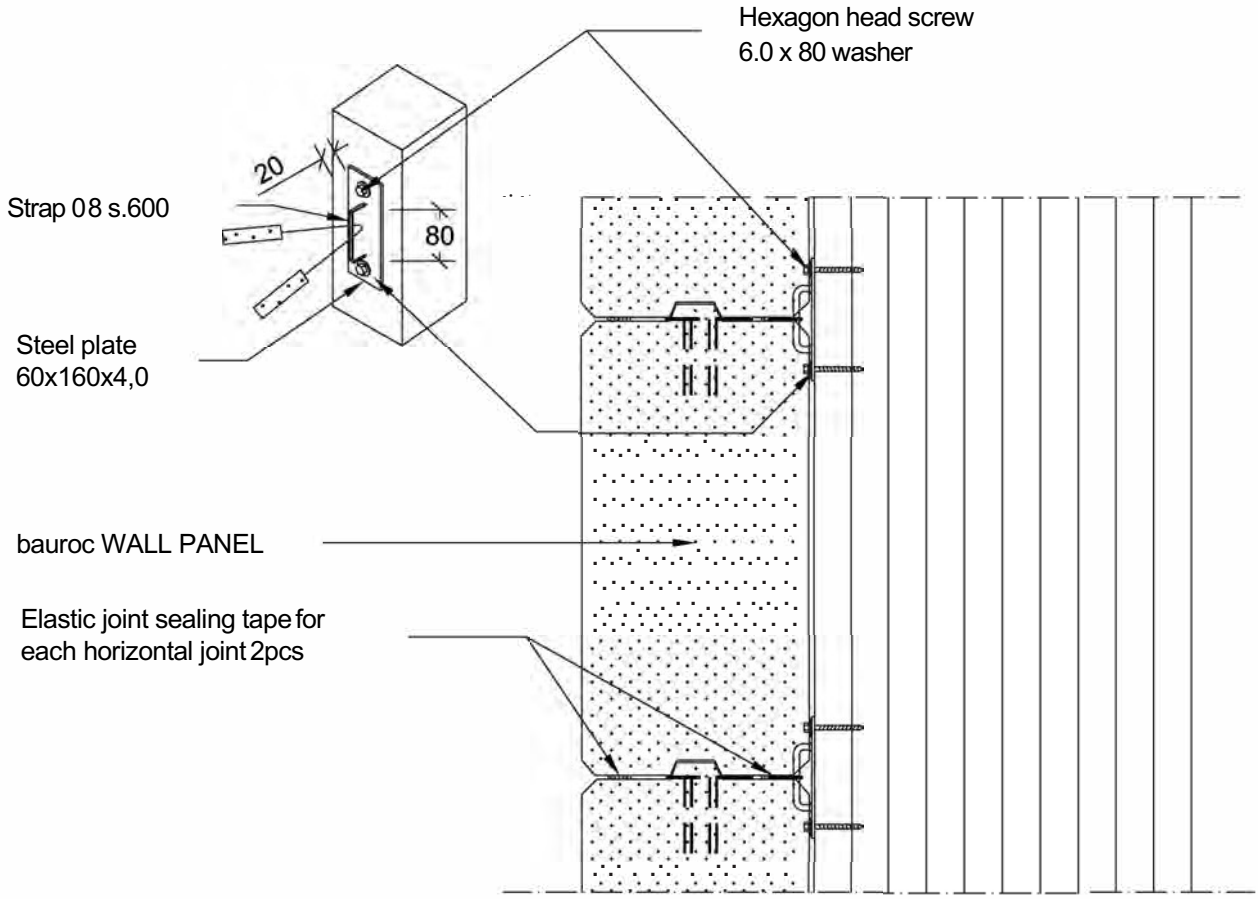


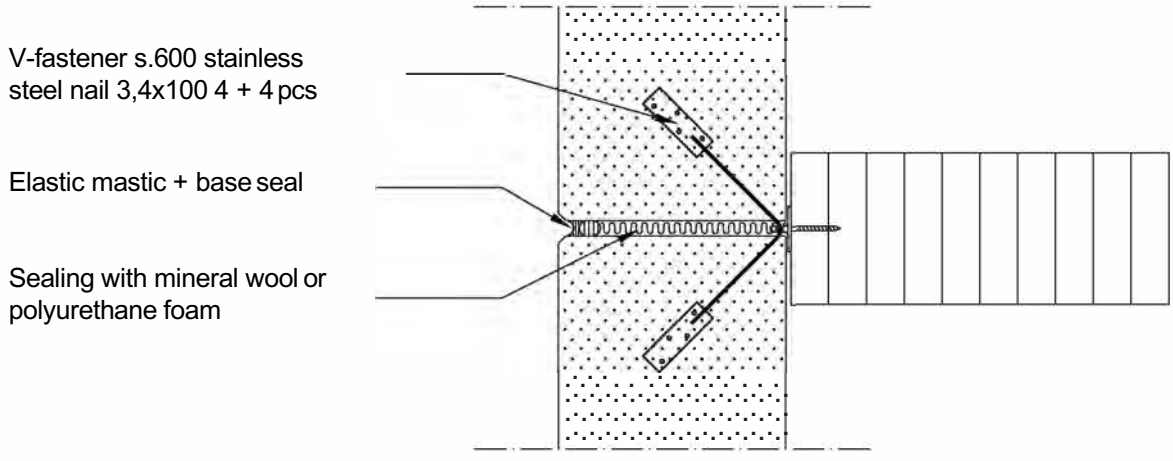
Client	Name of the figure bauroc WALL PANEL attachement with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.1.2



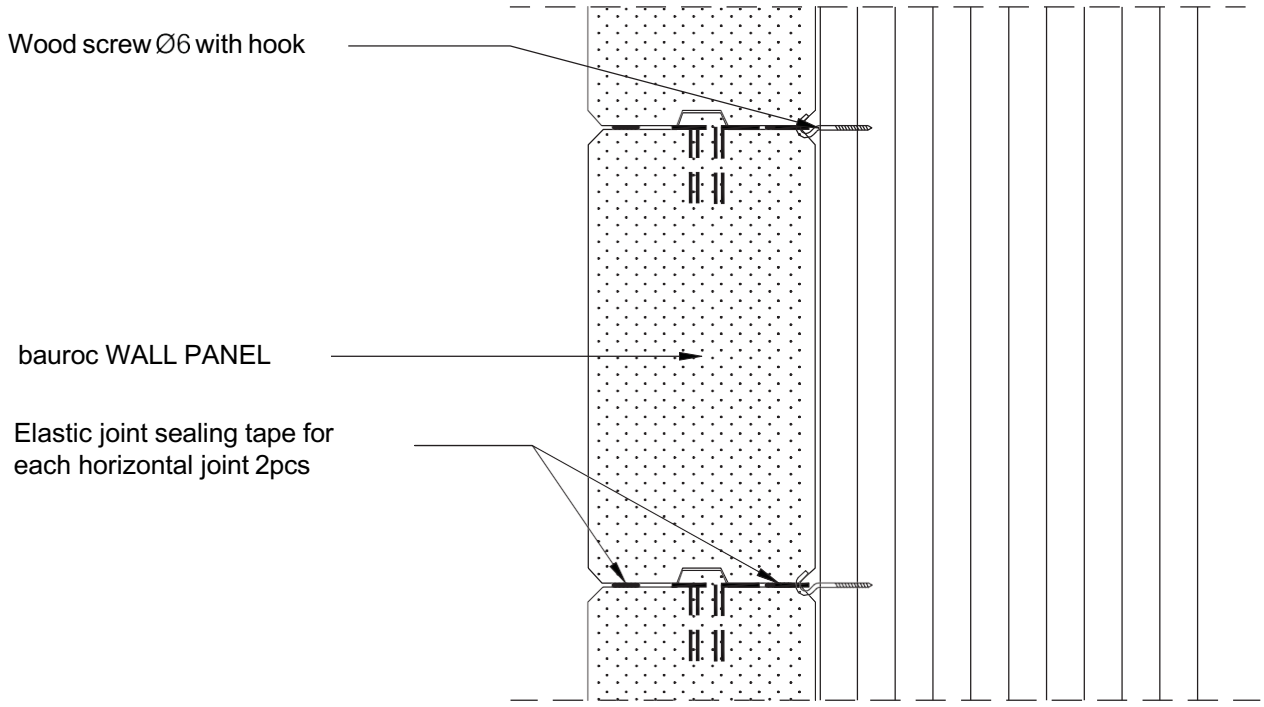


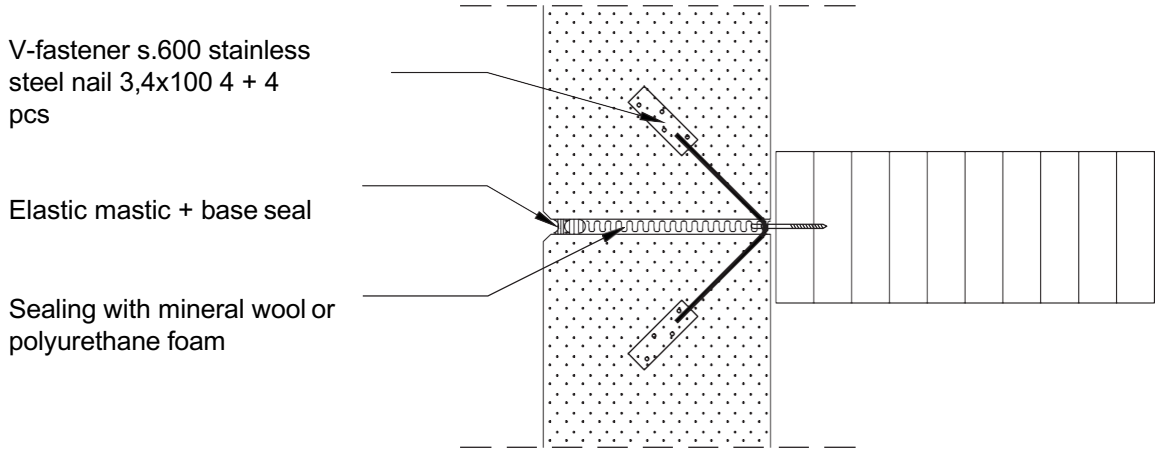
Client	Name of the figure bauroc WALL PANEL attachment with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.1.3



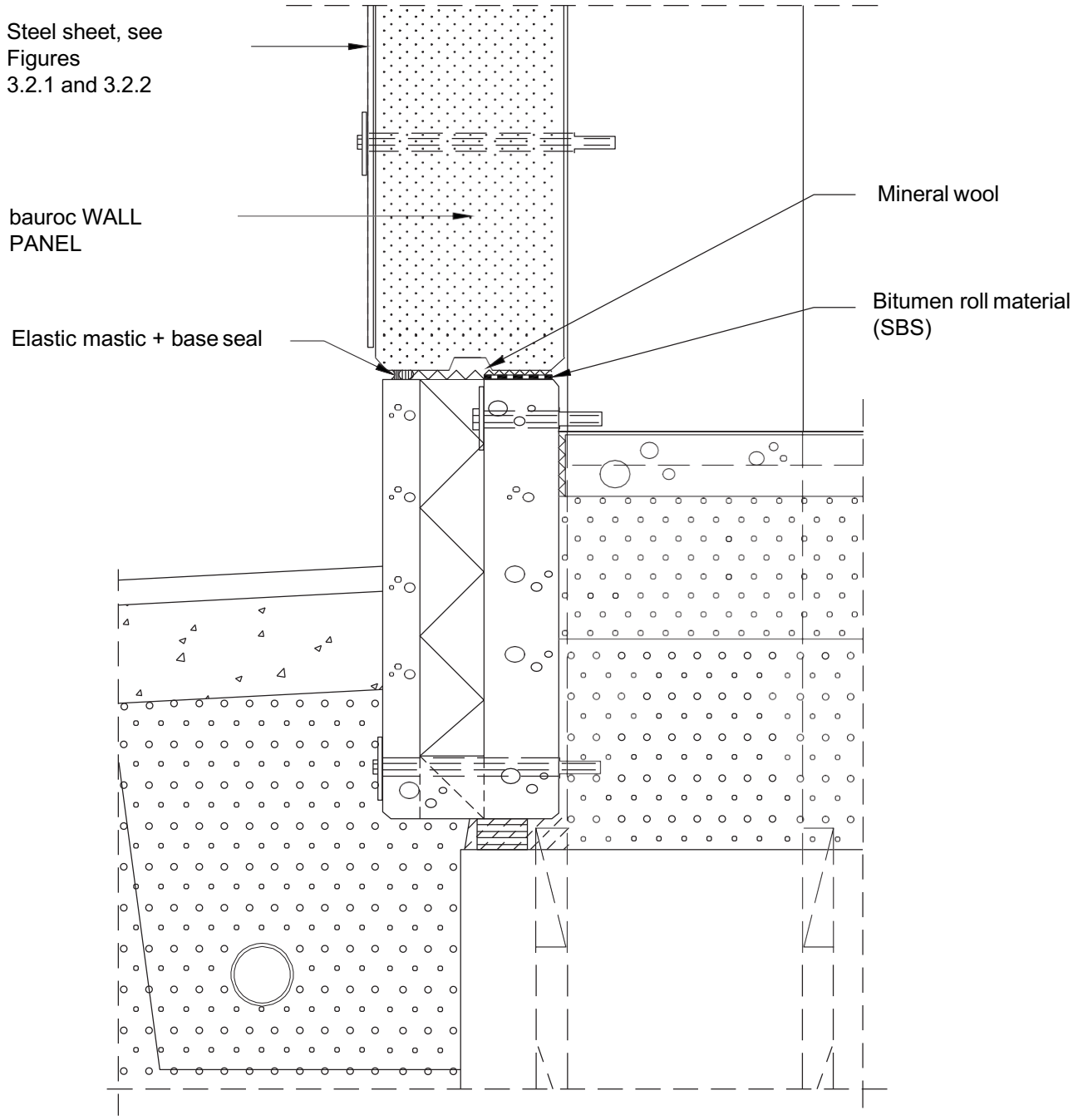


Client	Name of the figure bauroc WALL PANEL attachment with reinforced concrete post, EL-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.1.4



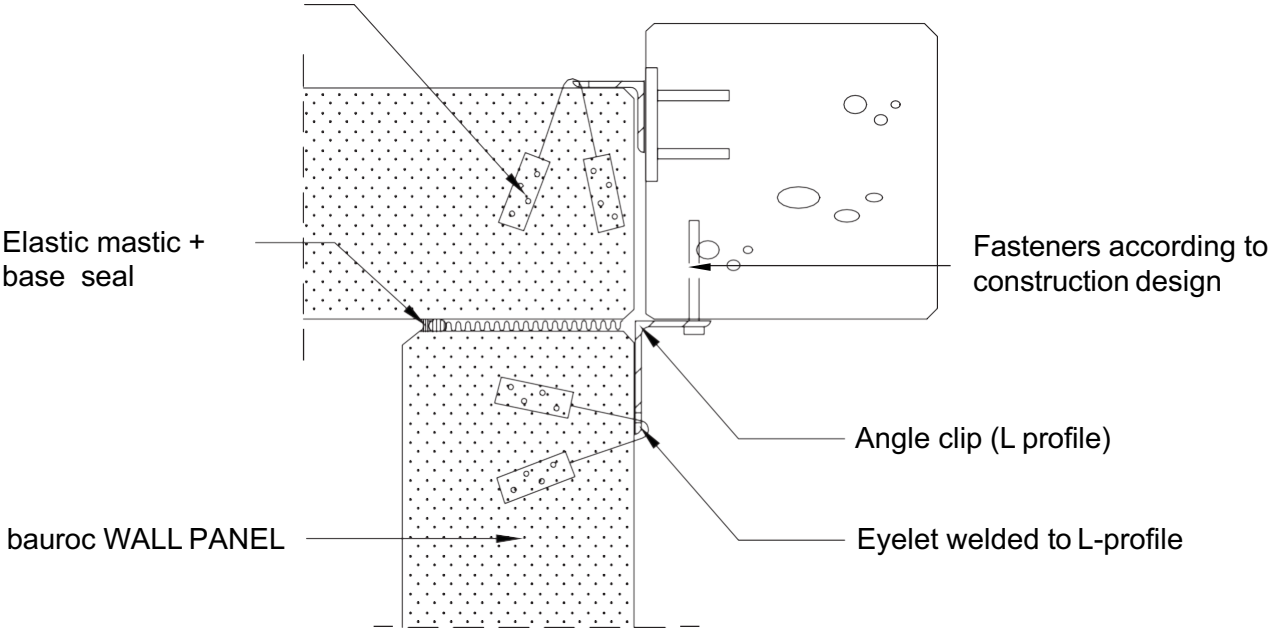


Client	Name of the figure bauroc Wall panel attachment with glued timber frame, EI fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 3.1.5

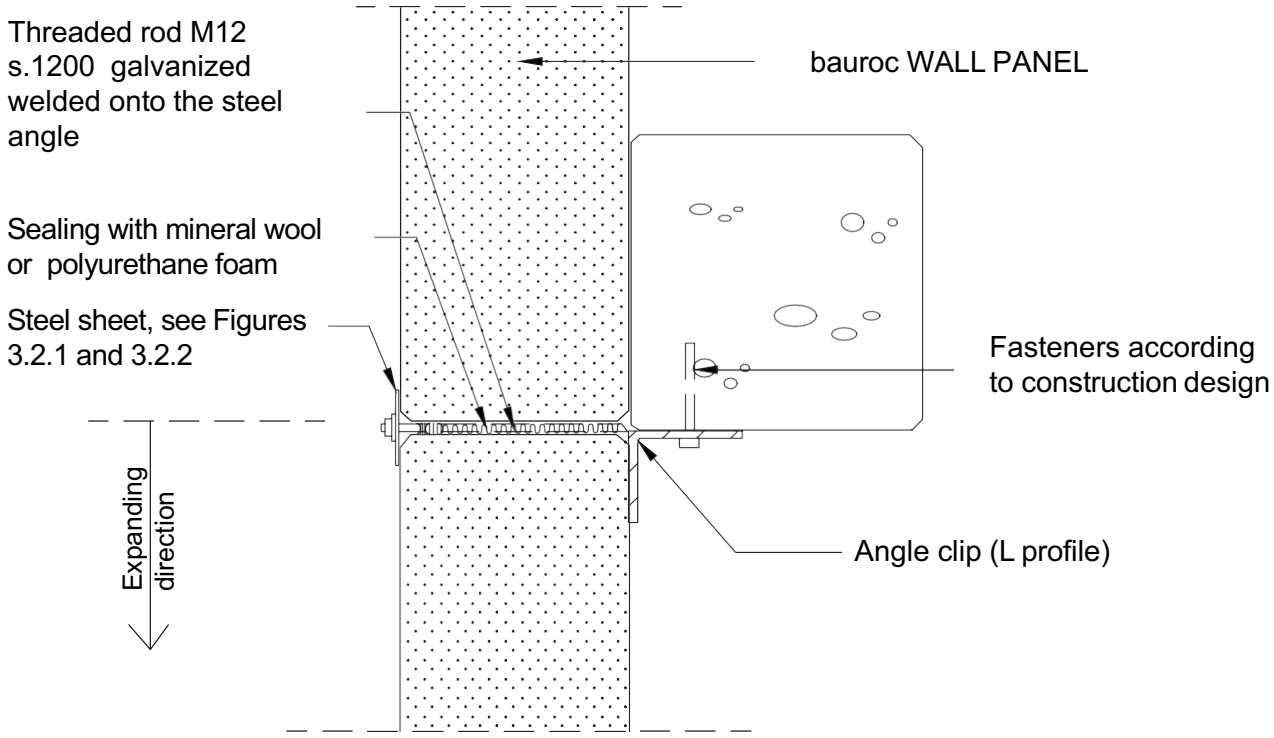


Client	Name of the figure bauroc WALL PANEL; Foundation knot	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Foundation 1.1.1

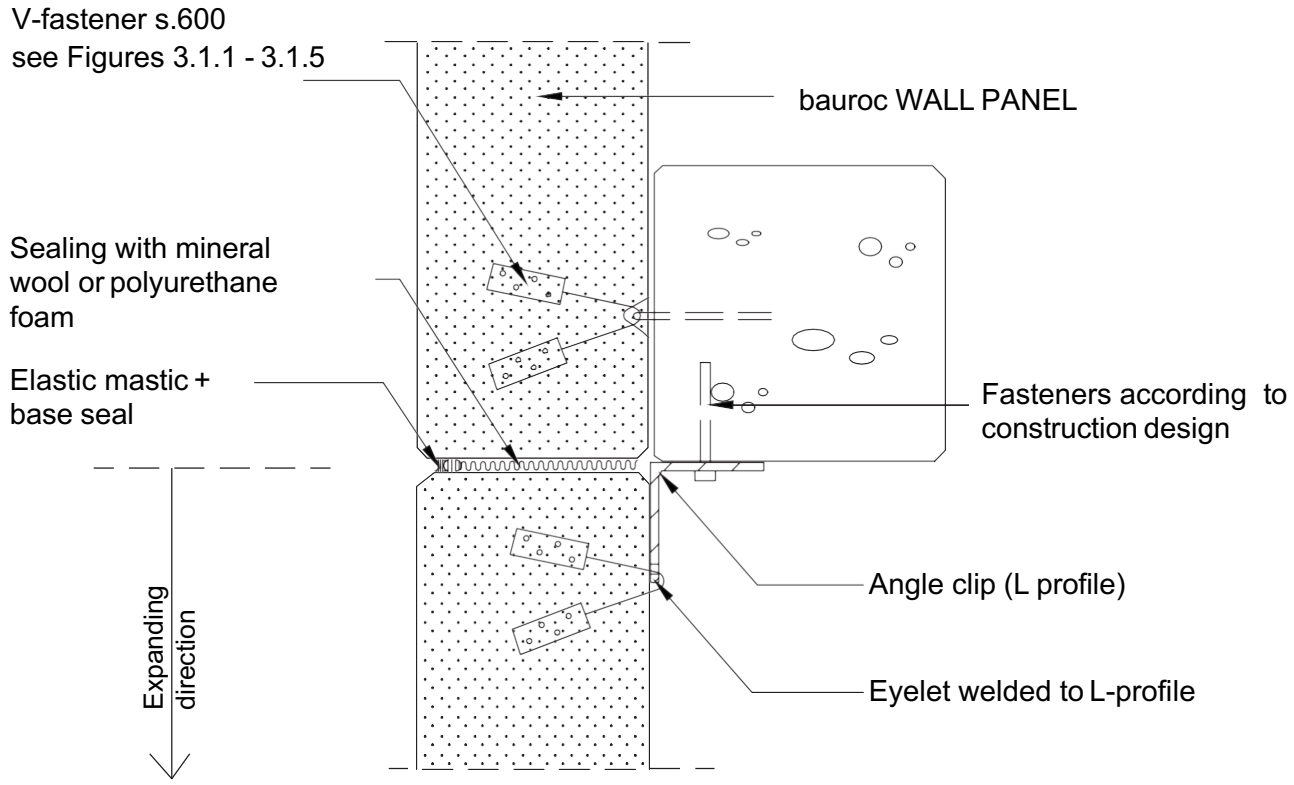
V-fastener s.600
see Figures 3.1.1 - 3.1.5



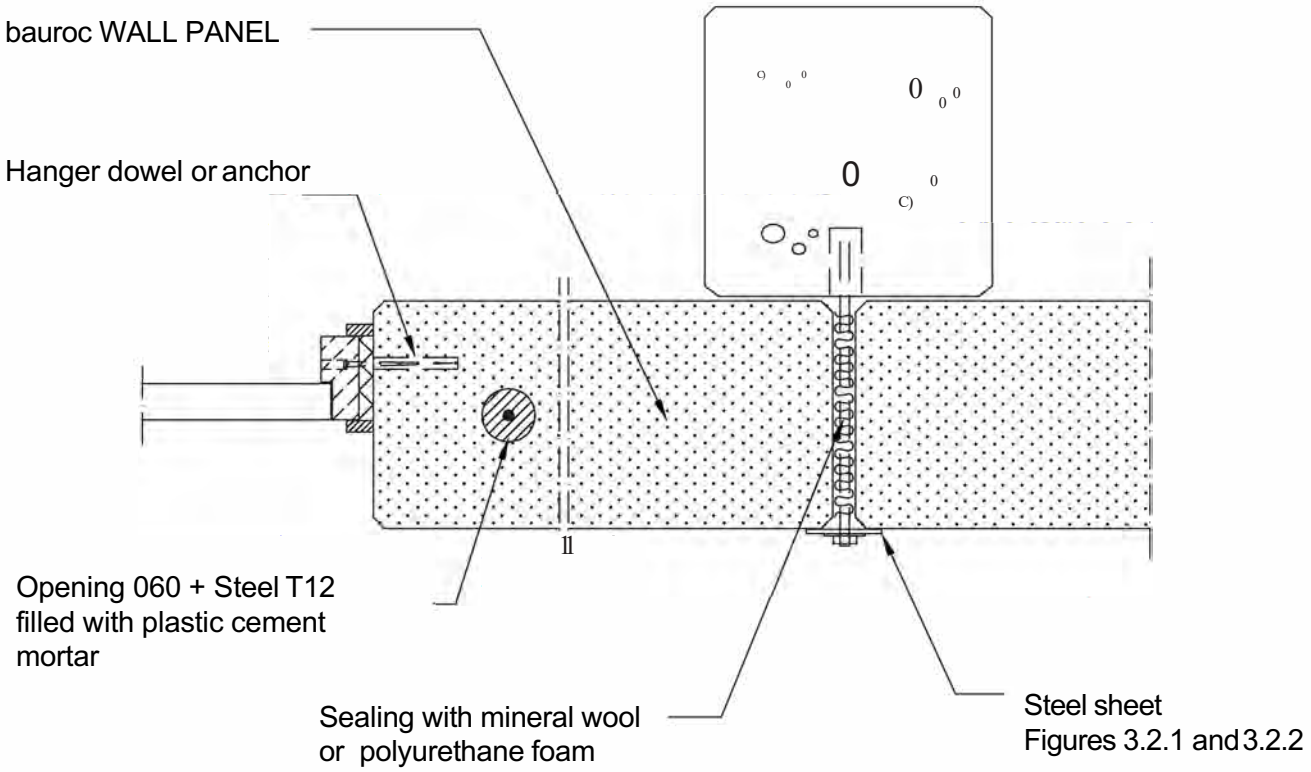
Client	Name of the figure bauroc WALL PANEL, Angle solution; EI fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 1.2.1



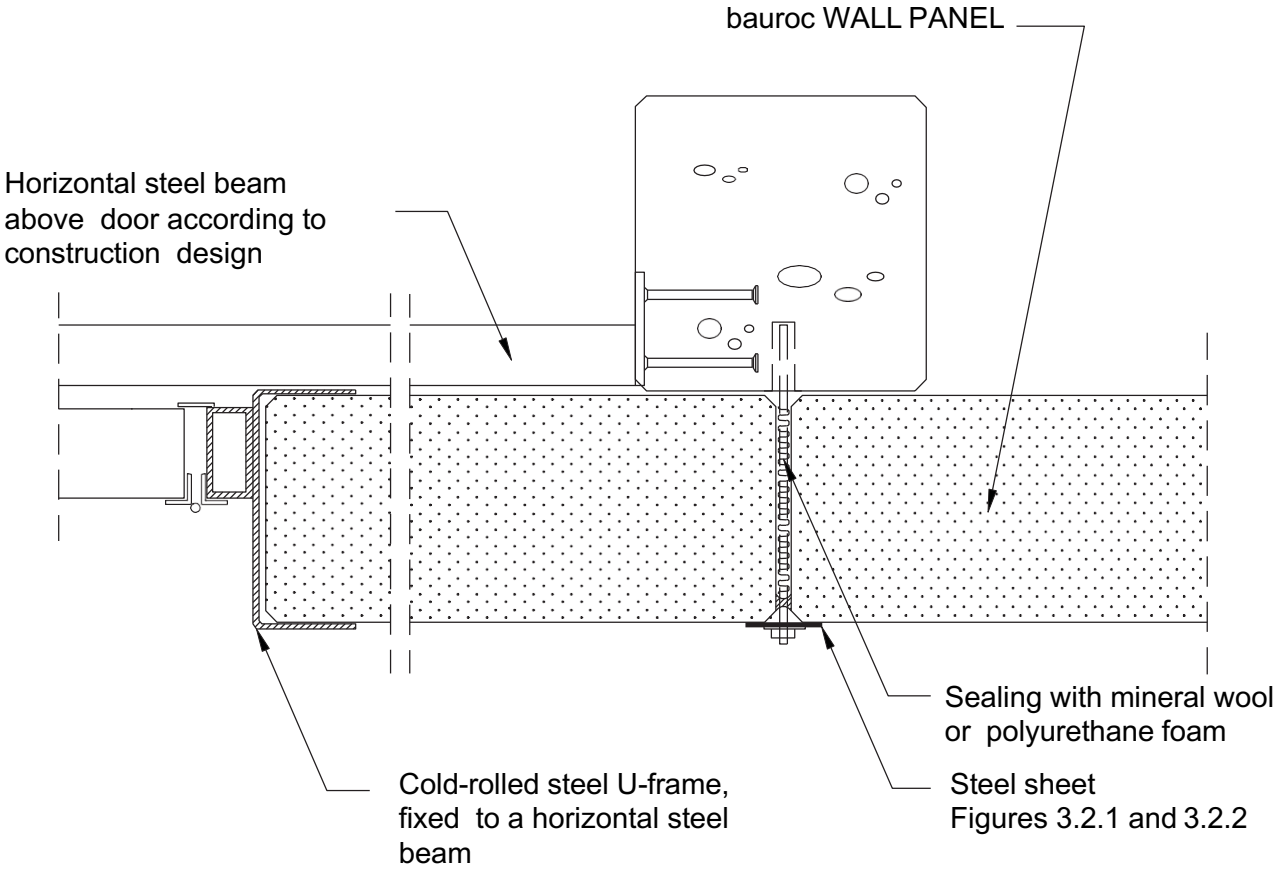
Client	Name of the figure bauroc WALL PANEL; the opportunity to expand, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 2.1.2



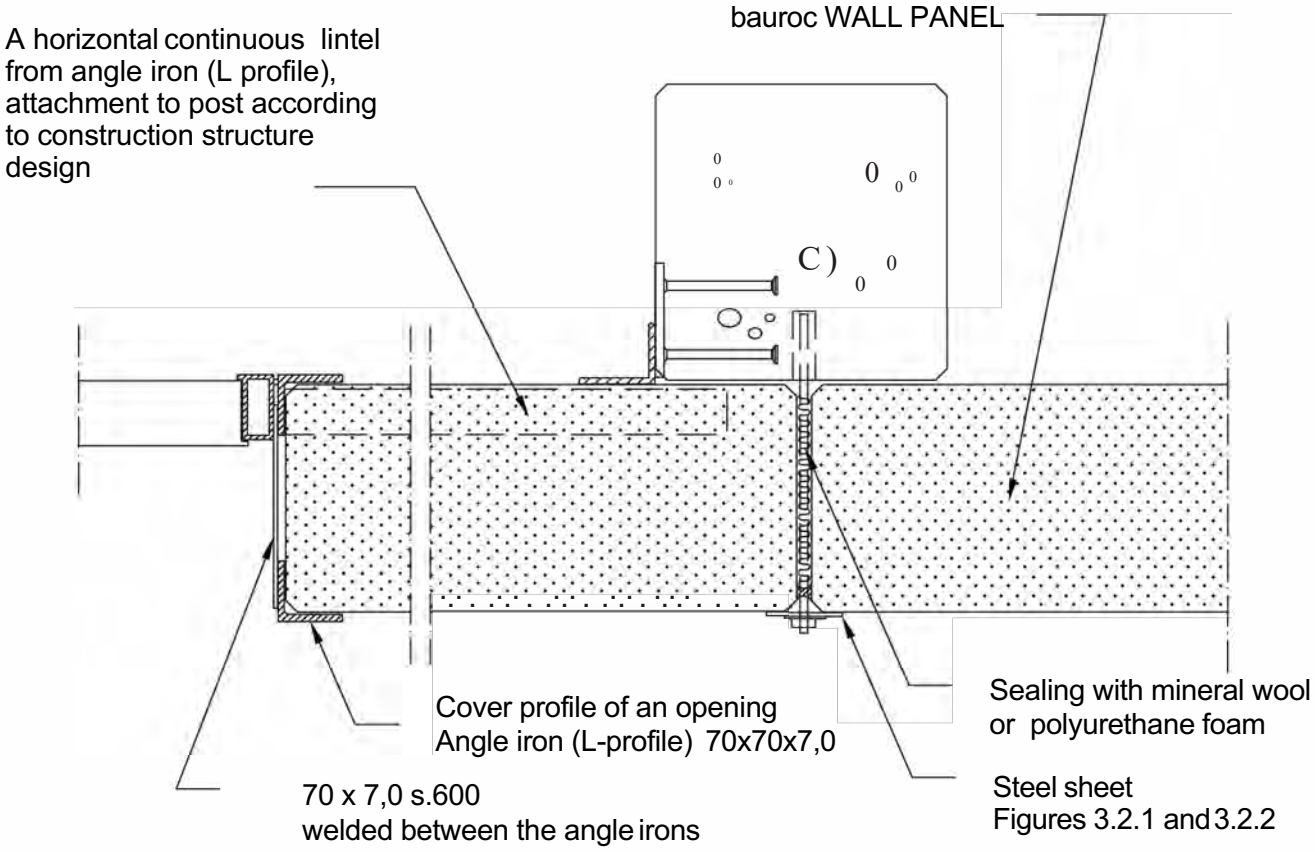
Client	Name of the figure bauroc WALL PANEL; the opportunity to expand, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 1.2.3



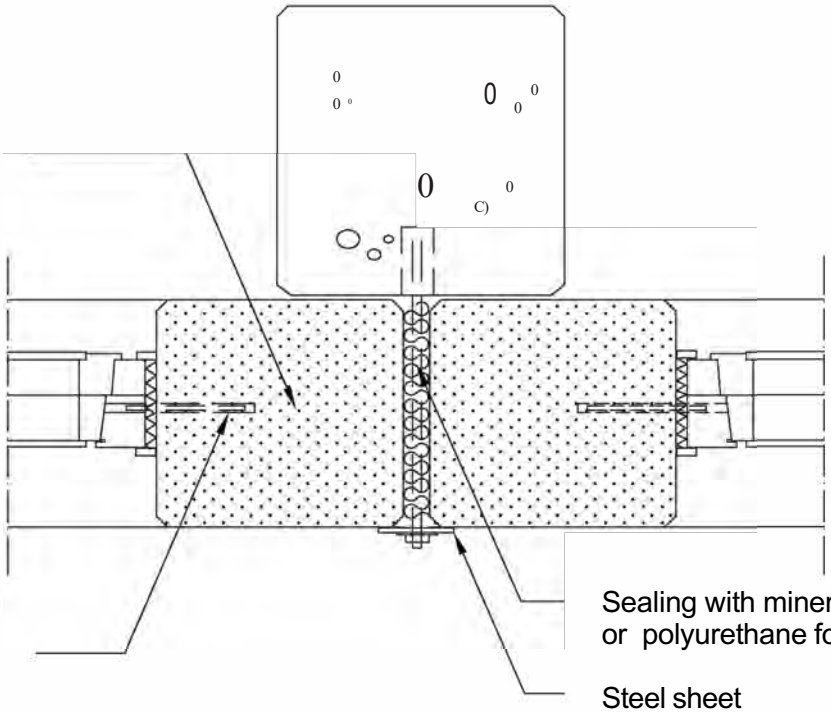
Client	Name of the figure bauroc WALL PANEL; Door openings up to 1200 mm, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figurenr. Wall 1.2.4



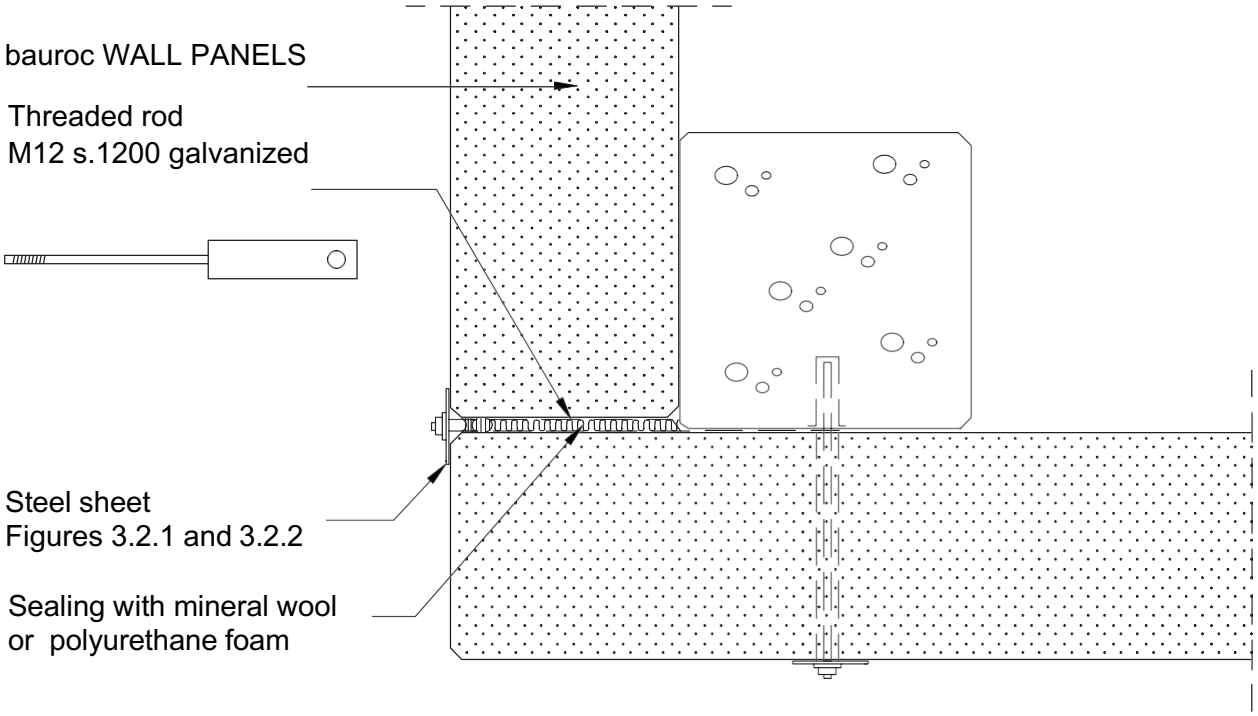
Client	Name of the figure bauroc WALL PANEL; Door openings, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 1.2.5



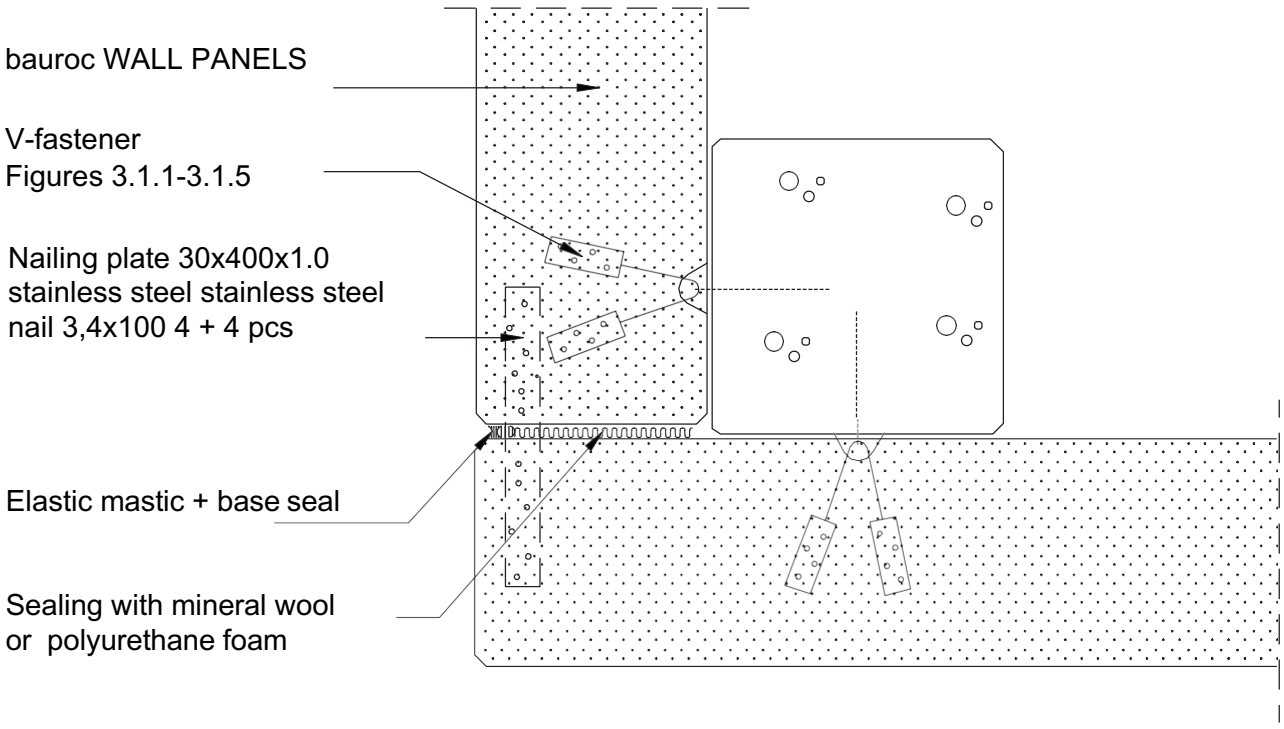
Client	Name of the figure bauroc WALL PANEL; Door openings, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figurenr. Wall 1.2.6



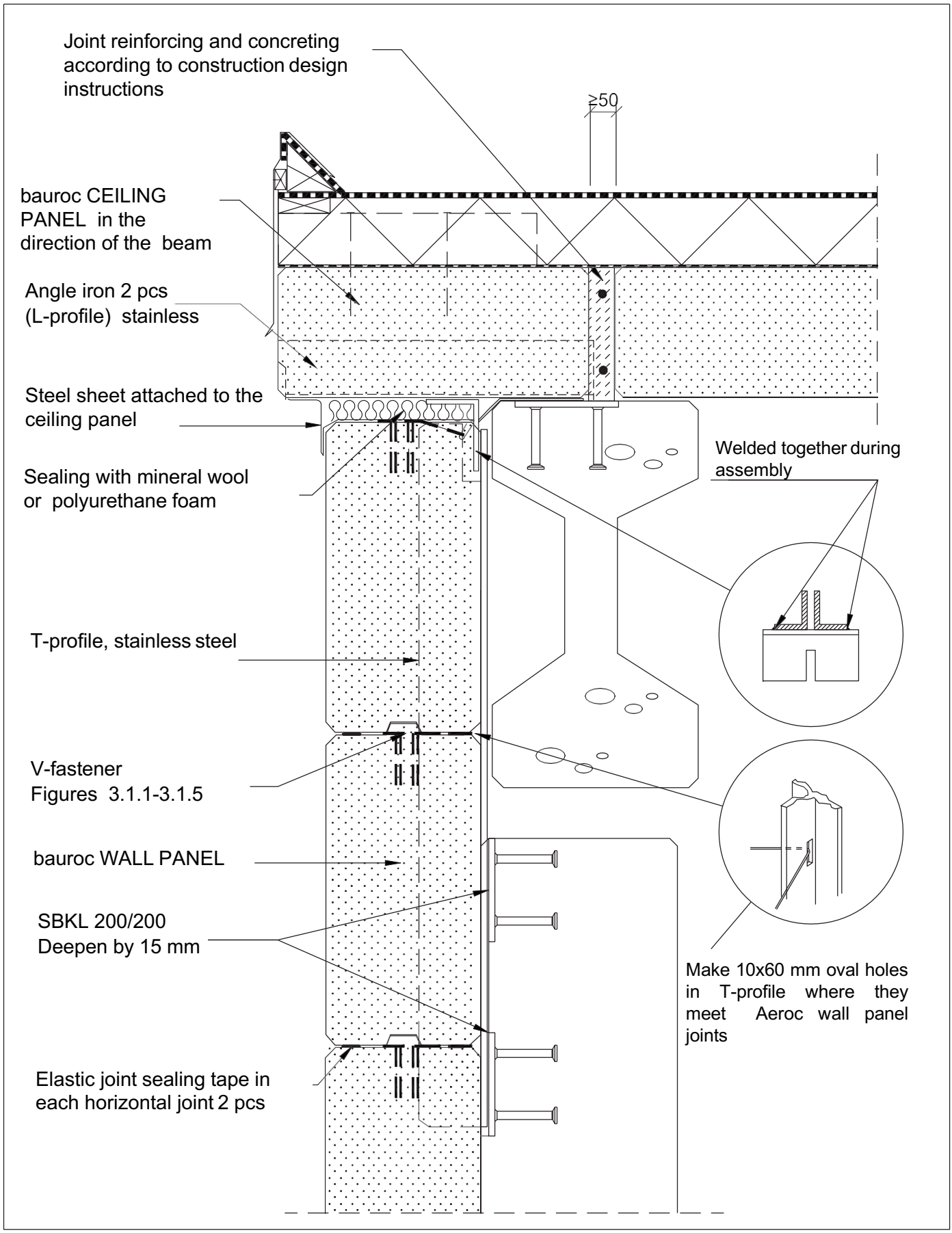
Client	Name of the figure bauroc WALL PANEL; Window gap post installation, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figurenr. Wall 1.2.7



Client	Name of the figure bauroc WALL PANEL; Outer corner, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 1.2.8

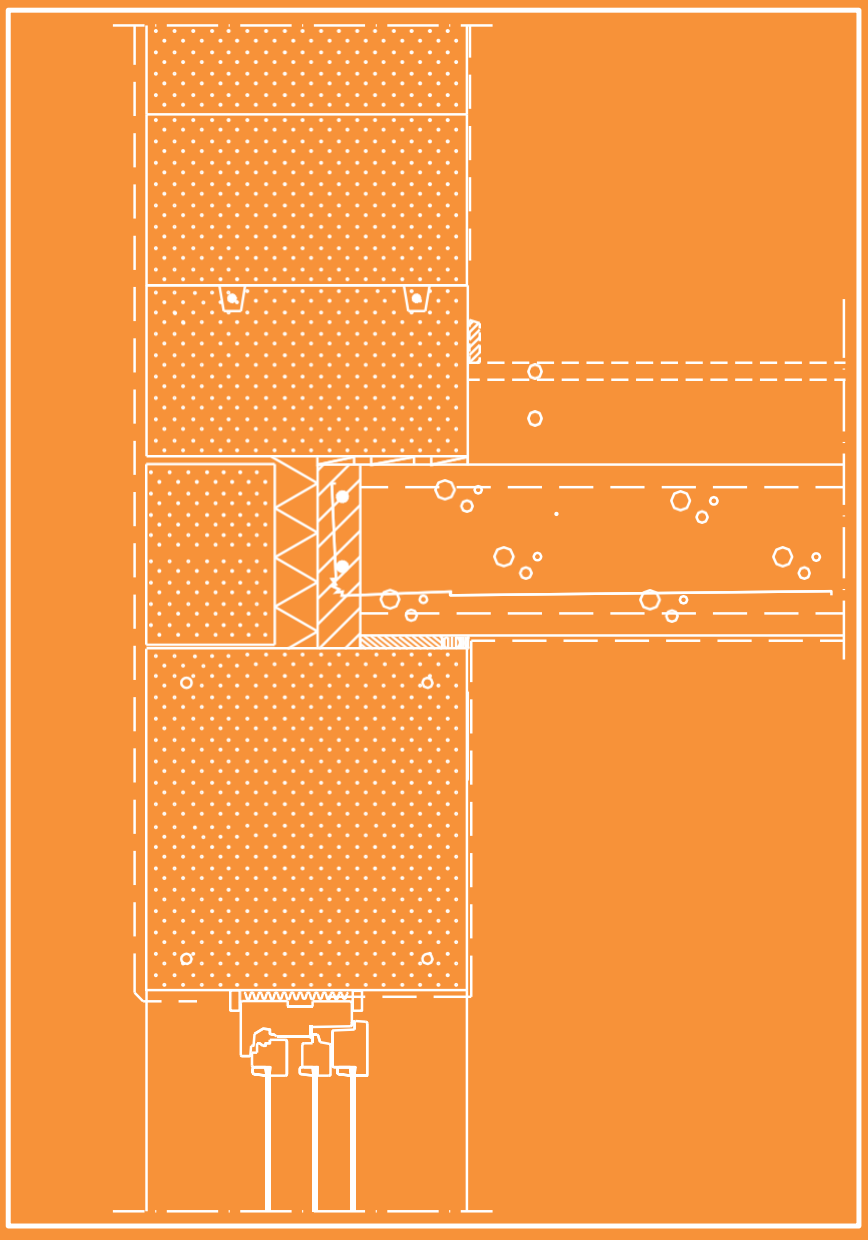


Client	Name of the figure bauroc WALL PANEL; Outer corner, EI-M fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Wall 1.2.9

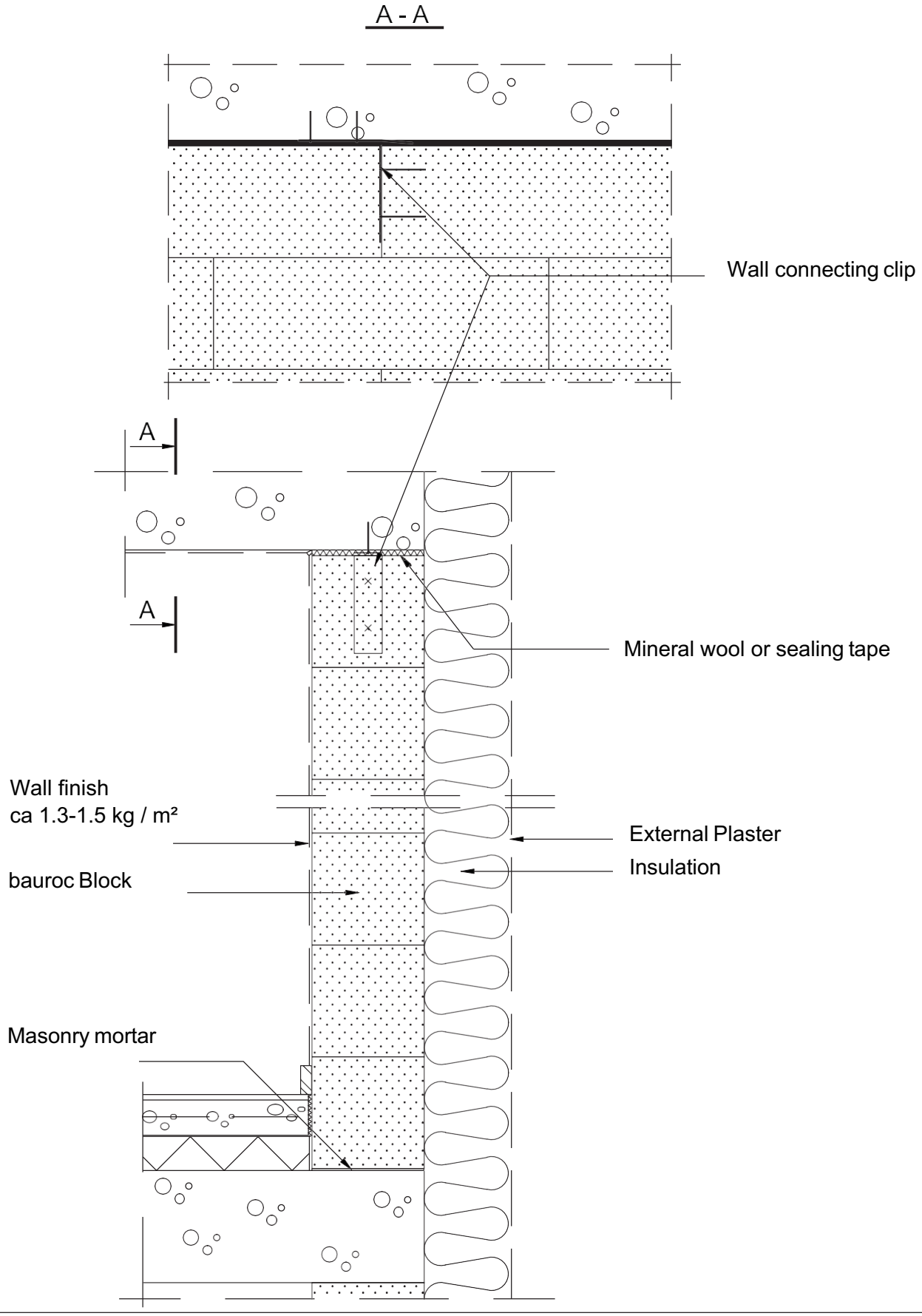


Client	Name of the figure bauroc wall panels, eaves knot, EI fireproof wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Roof 1.3.1

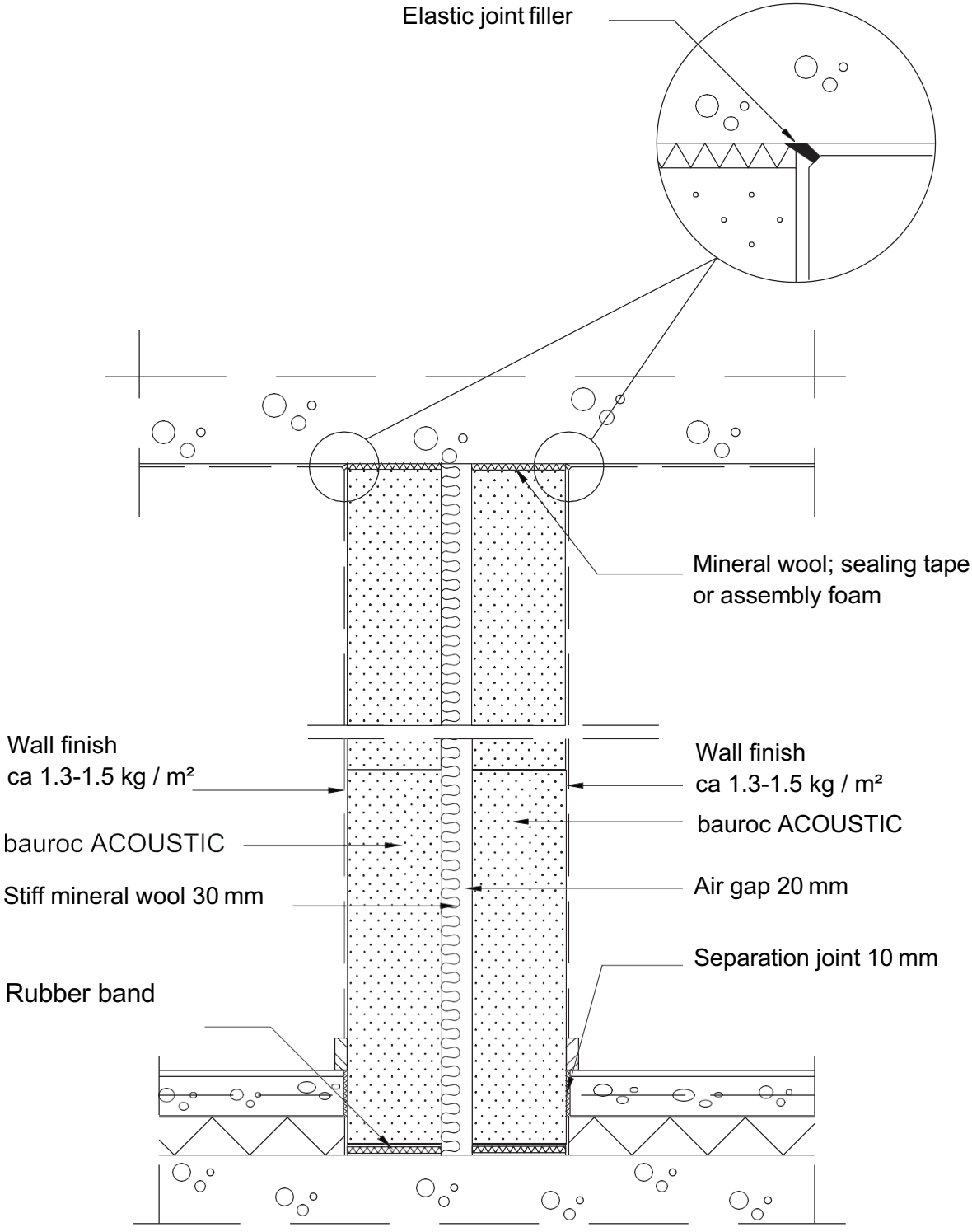
6



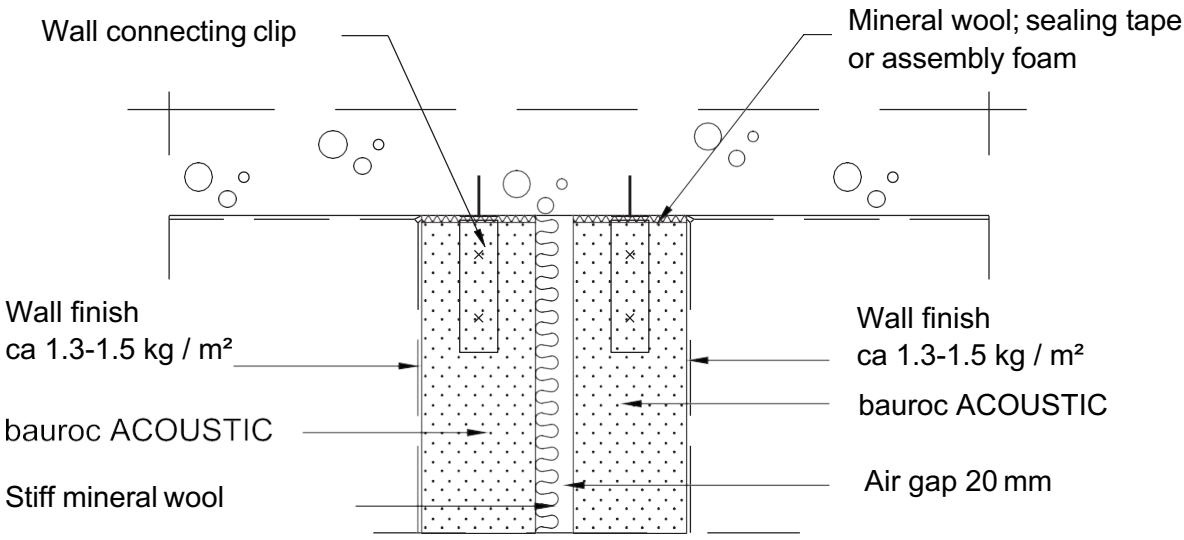
TECHNICAL SOLUTIONS

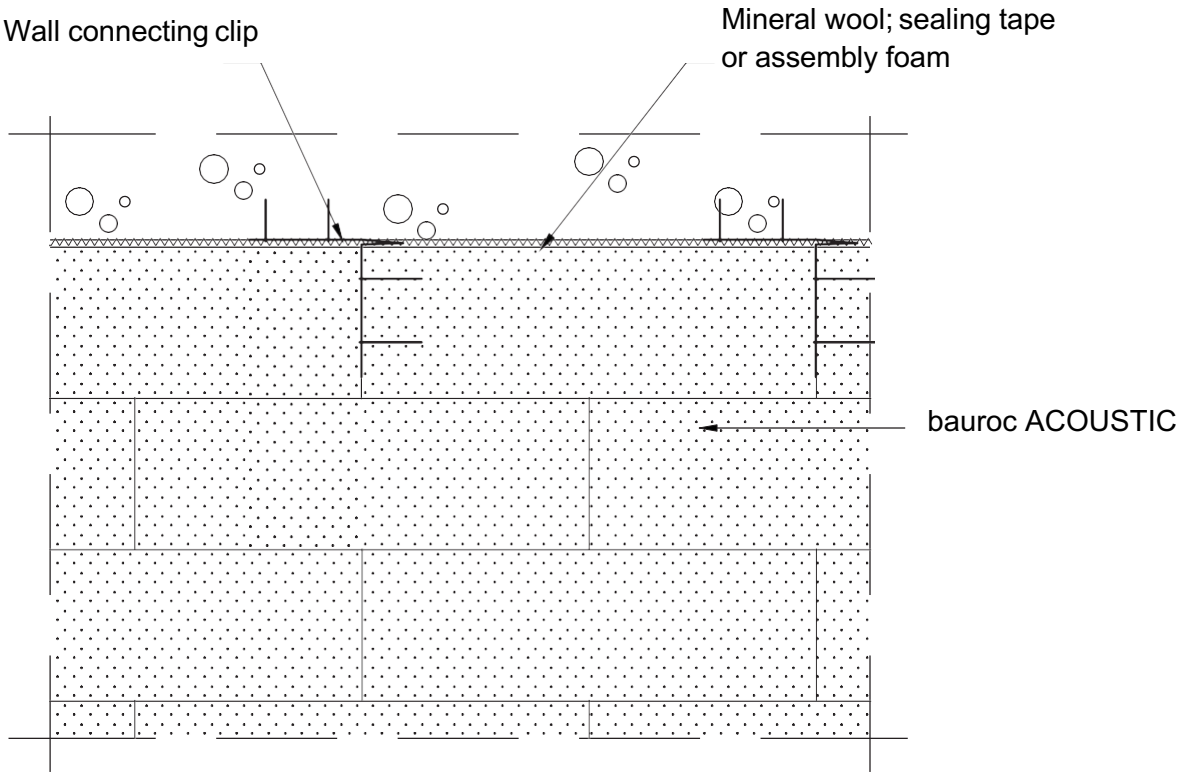


Client	Name of the figure Joining of an exterior wall, made from bauroc blocks, to the concrete ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Joonise nr. Soundproof partition wall 2.2



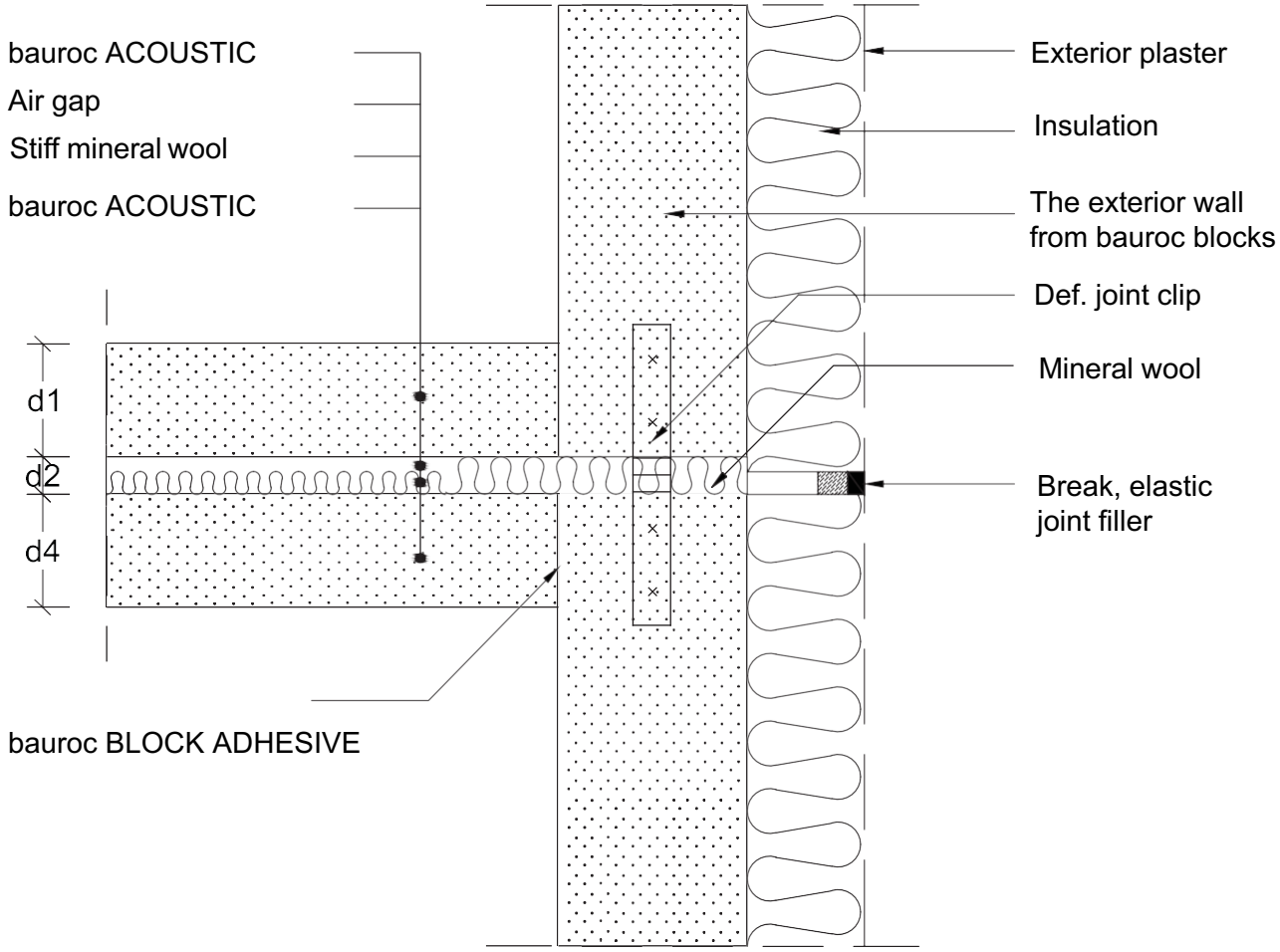
Client	Name of the figure Bauroc soundproof partition wall joining the concrete ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 1.1





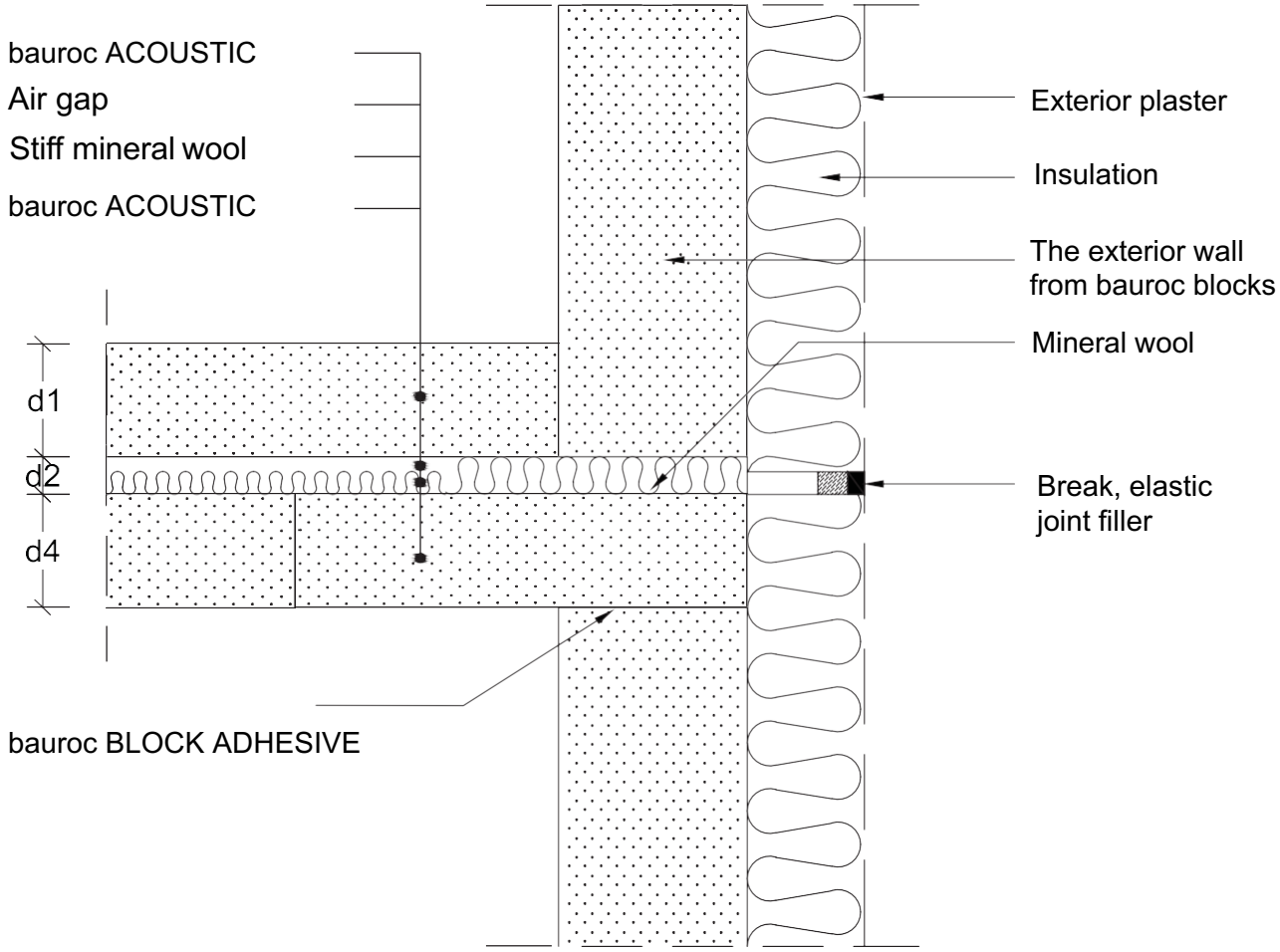
Client	Name of the figure Bauroc soundproof partition wall joining the concrete ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 1.2

a) Soundproof wall against exterior wall

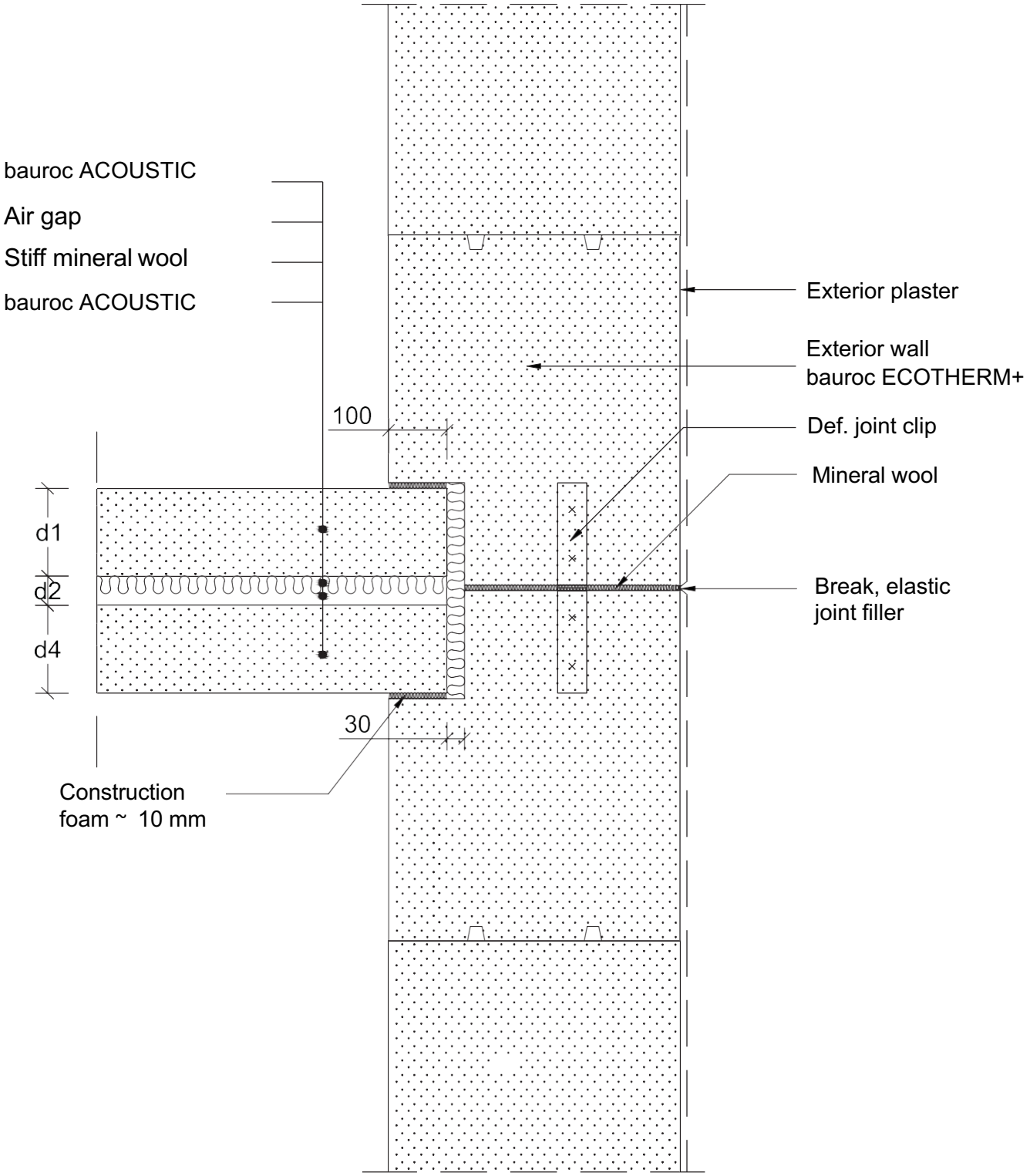


Client	Name of the figure Bauroc soundproof partition wall joining the exterior bauroc block wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.1

b) Soundproof wall bound to exterior wall

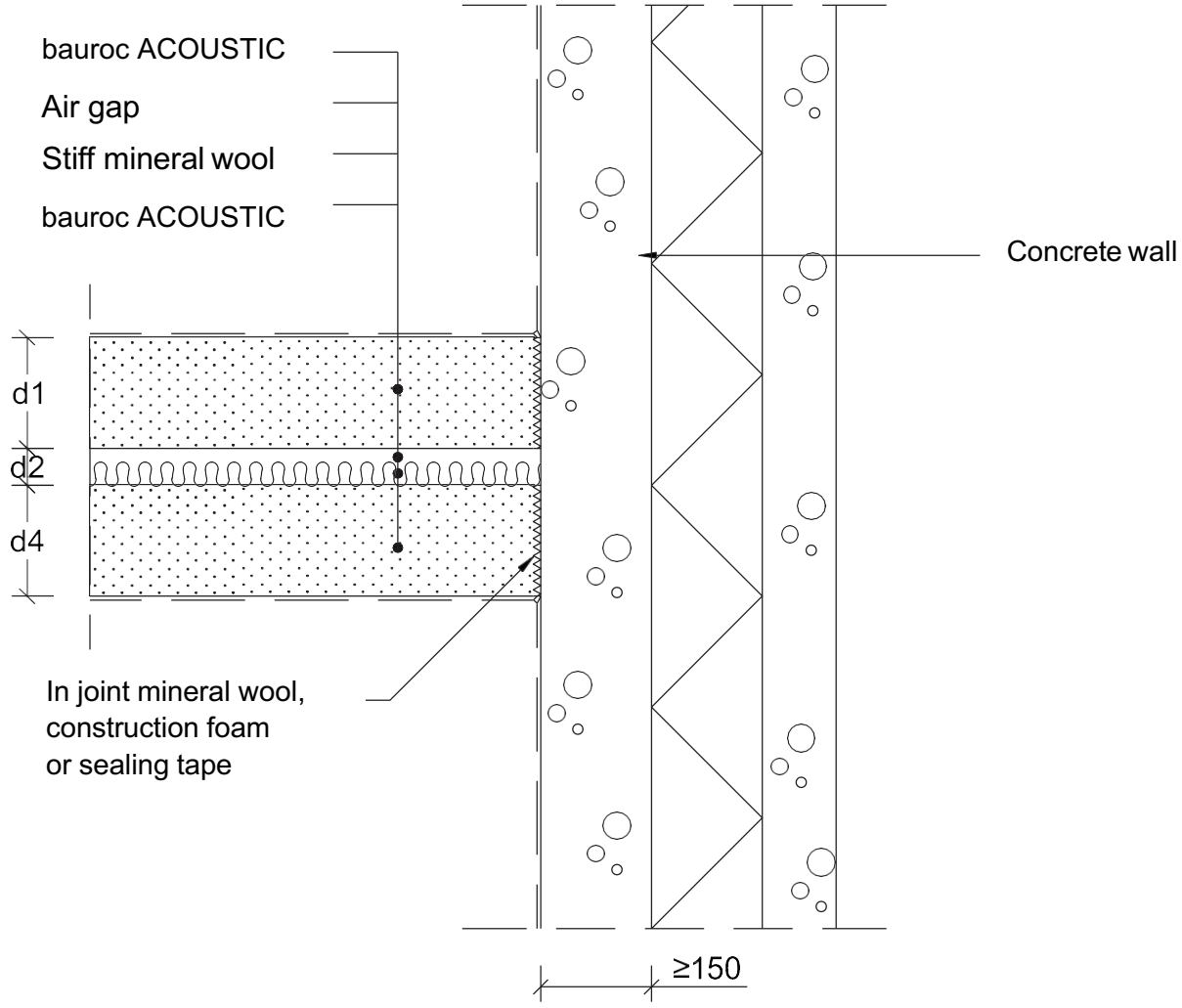


Client	Name of the figure Bauroc soundproof partition wall joining the exterior bauroc block wall (Block bond)	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.3



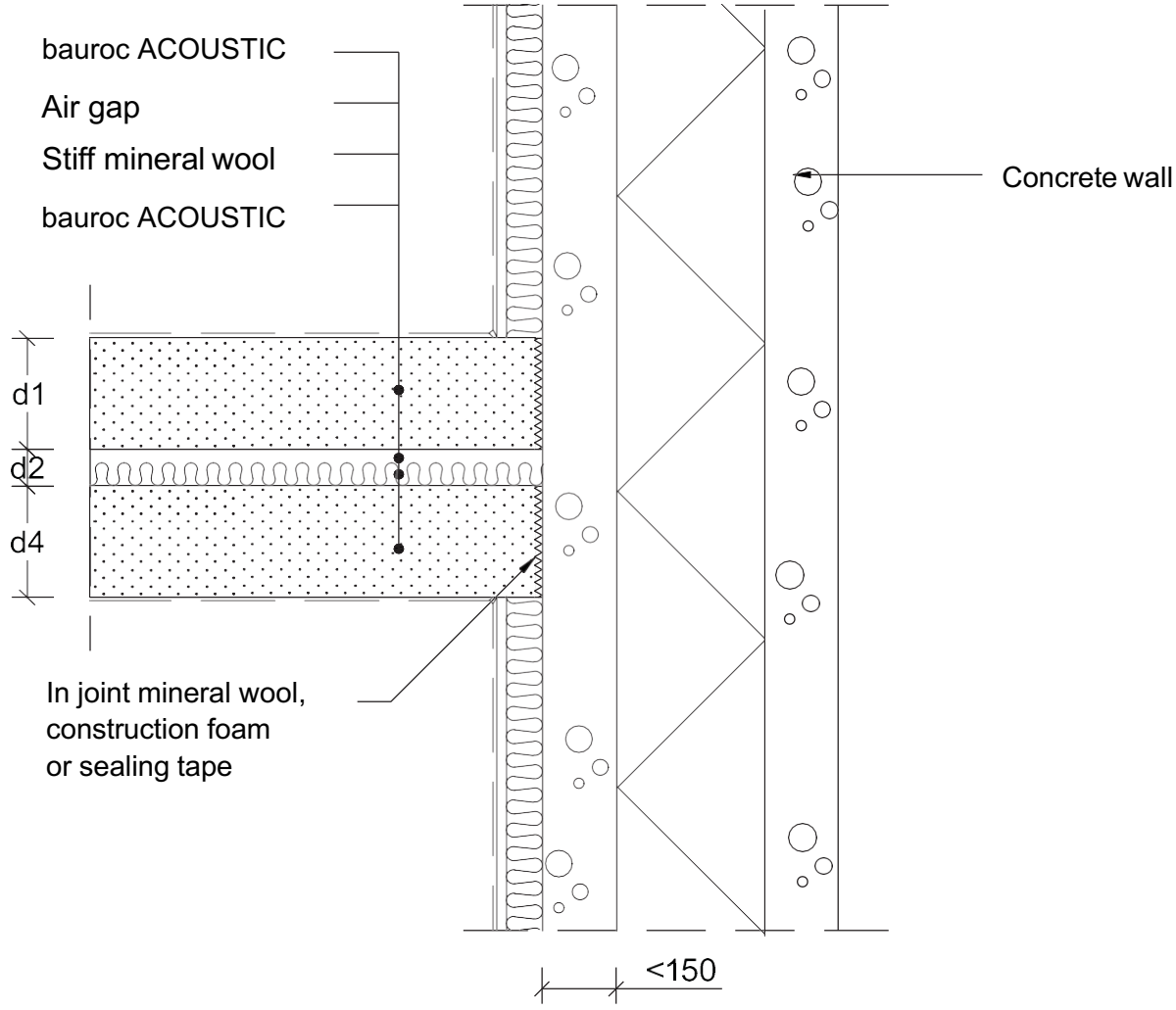
Client	Name of the figure Bauroc soundproof partition wall joining bauroc ECOTERM + blocks exterior wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.4

a) Soundproof wall against the exterior wall

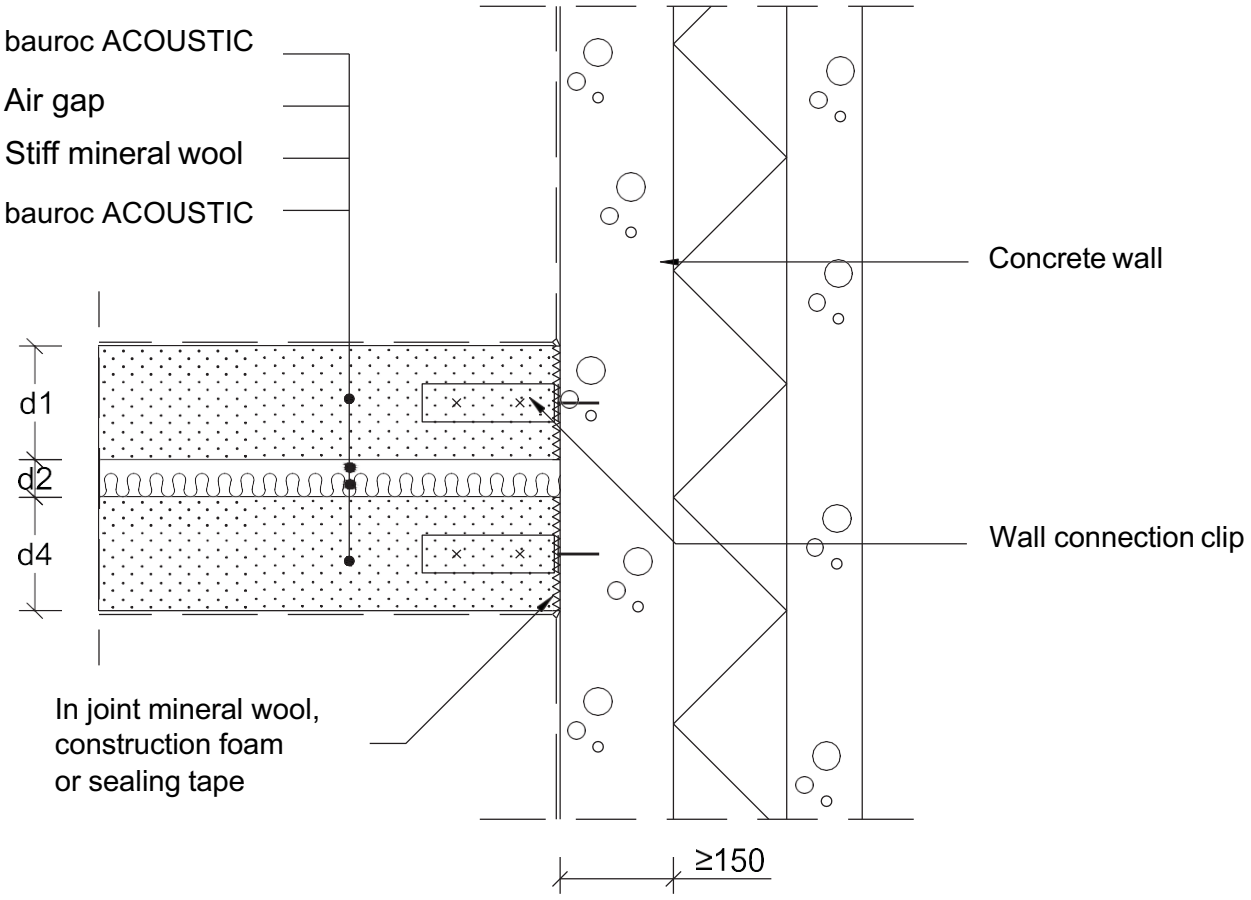


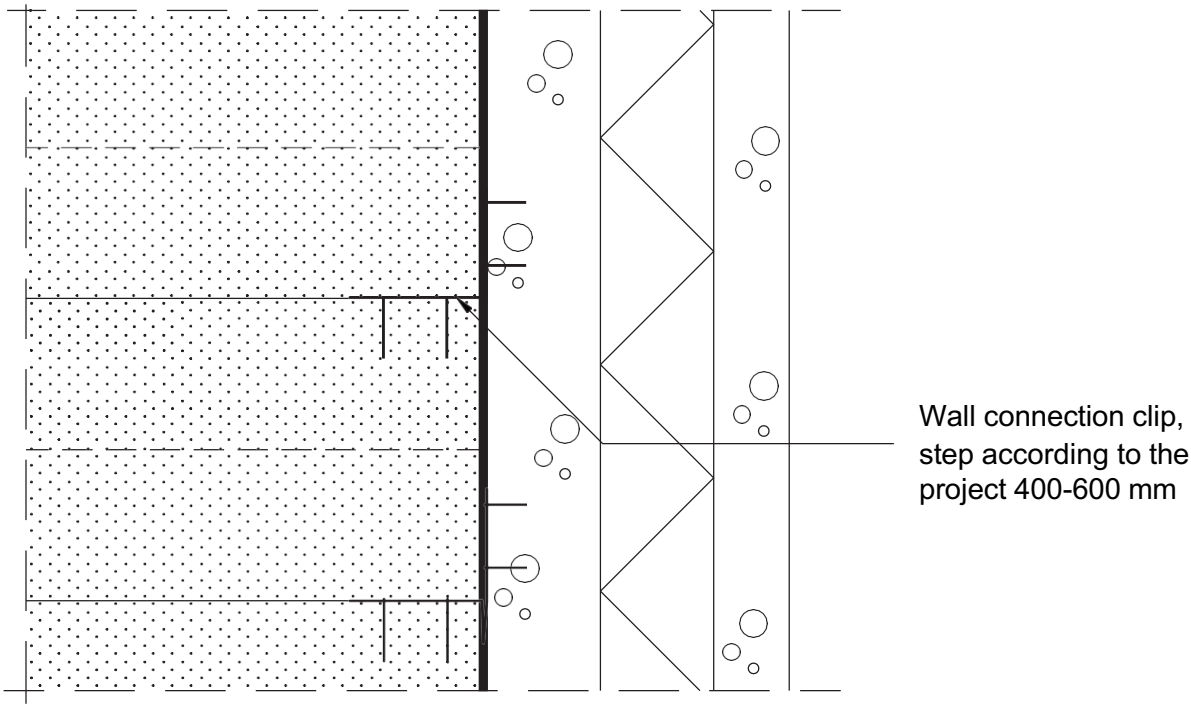
Client	Name of the figure Bauroc soundproof partition wall joining the concrete wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.5

b) Soundproof wall against exterior wall

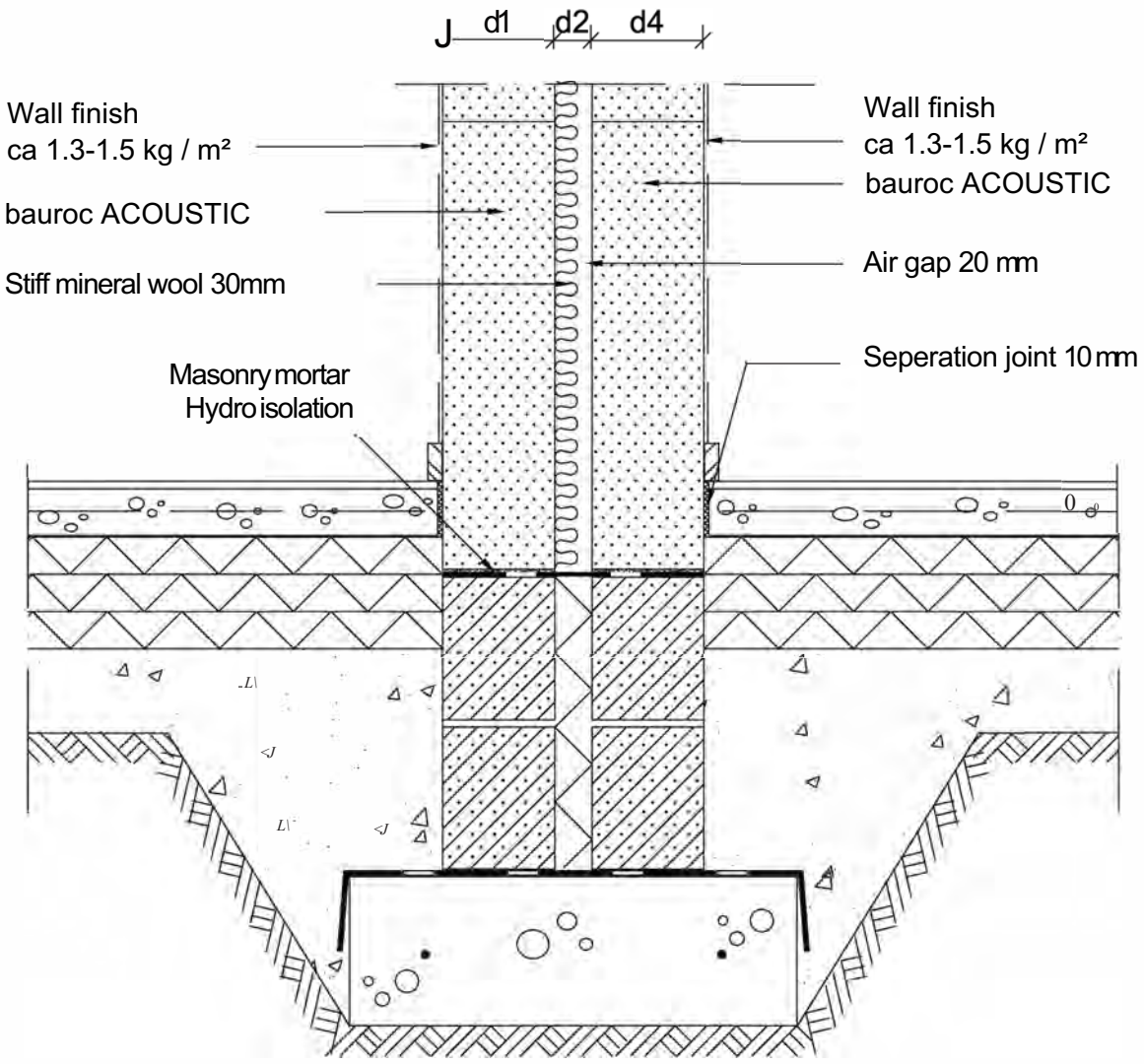


Client	Name of the figure Bauroc soundproof partition wall joining the concrete wall + additional insulation	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.6



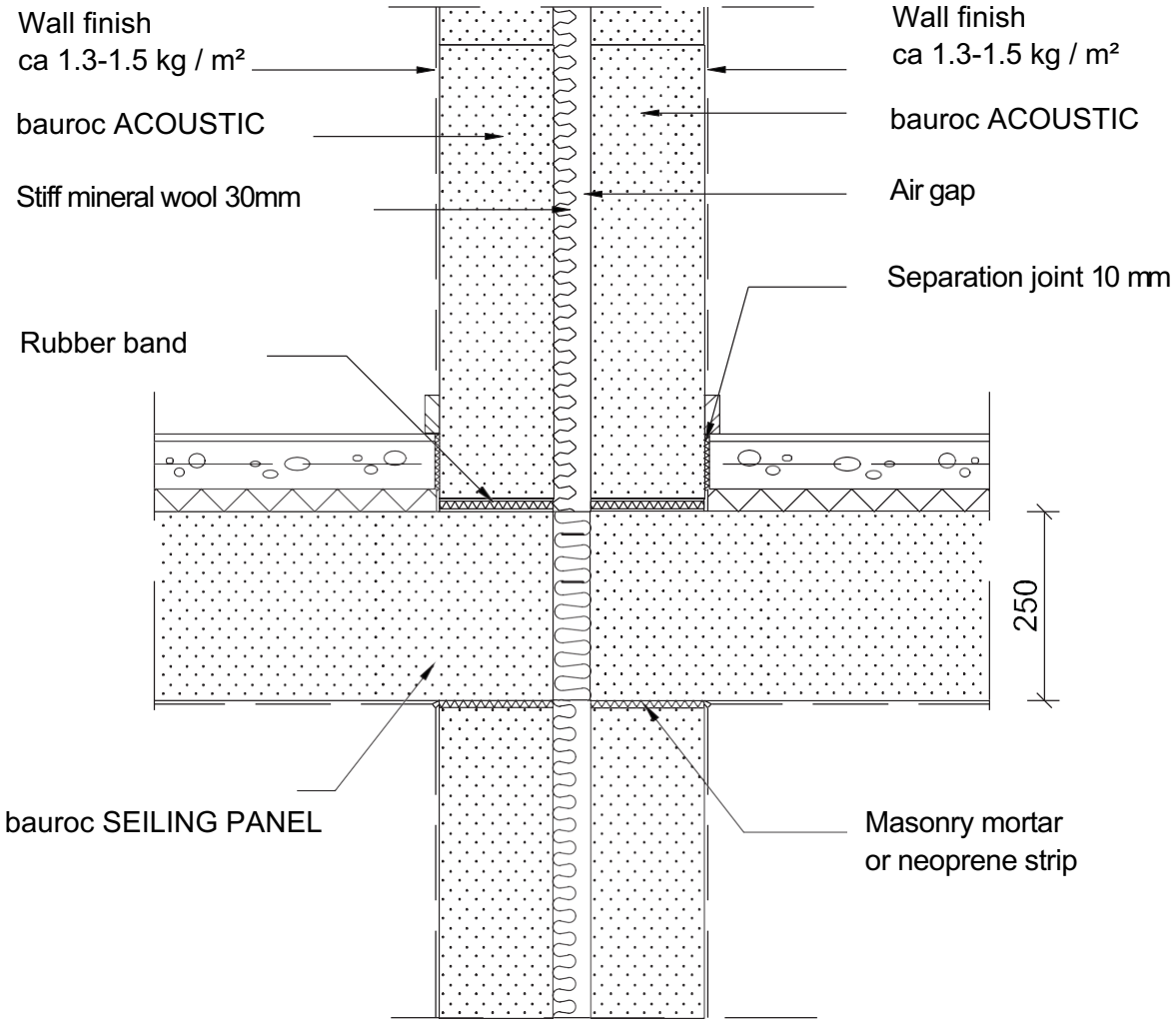


Client	Name of the figure Bauroc soundproof partition wall connection to the concrete wall	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 2.7



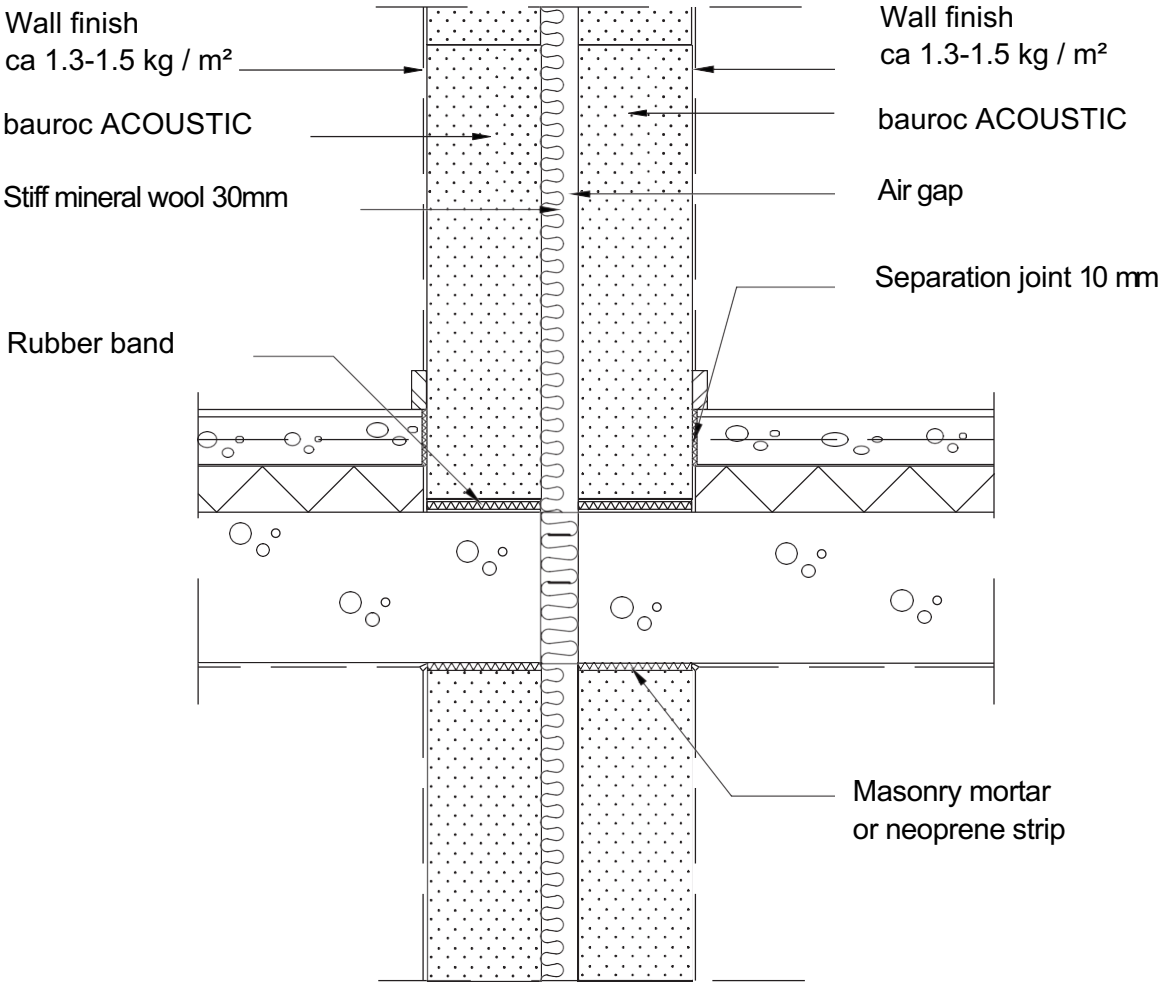
Client	Name of the figure bauroc soundproof partition wall based on the foundation (multilayered)	
bauroc	Drawn by	Scale M 1:10
	Date	Figurenr.

a) Soundproof wall and the ceiling on baroc panels

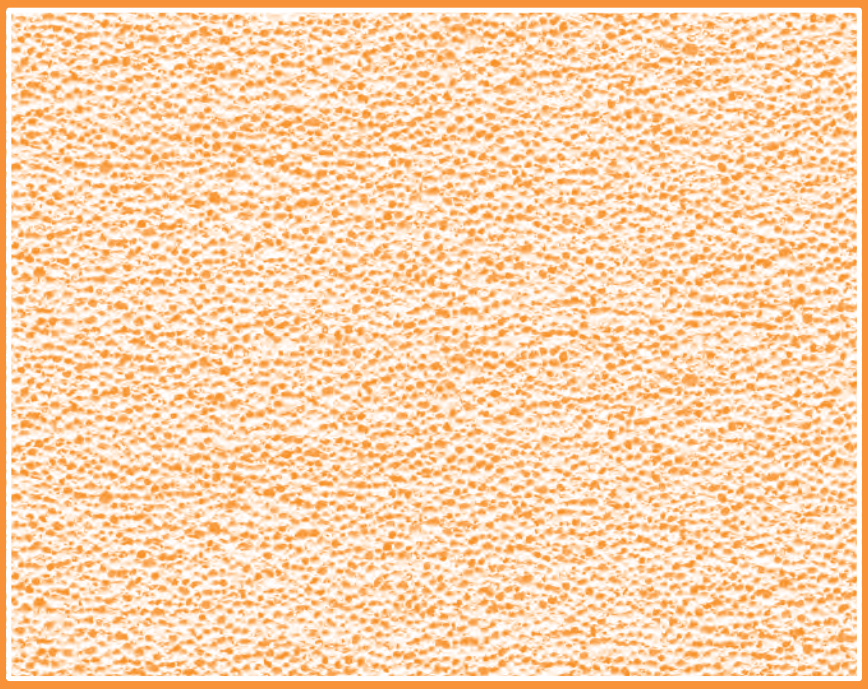


Client	Name of the figure bauroc soundproof partition wall joining bauroc panel ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figurenr. Soundproof partition wall 3.2

b) Soundproof wall and concrete ceiling



Client	Name of the figure bauroc soundproof partition wall joining concrete ceiling	
bauroc	Drawn by	Scale M 1:10
	Date 08.2017	Figure nr. Soundproof partition wall 3.3



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