

BRONYA[®]

SUPERFINE HEAT INSULATION

Dew point.
Dew point location.

Application Comments
to eliminate condensation.



liquid ceramic insulation
Bronya series



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Dew point. Definition.

The dew point is the temperature at which condensation occurs (moisture from the air turns into water). The point with this temperature is located in a certain place (on the outside wall, somewhere in the thickness of the wall or on the inside wall). Depending on the location of the **dew point** (farther or closer along the wall thickness to the interior), the wall is either dry or wet inside.

The dew point (condensation temperature) depends on:

- indoor humidity
- indoor air temperature

Dew point location.

And the **position of the dew point** in the wall depends on:

- thickness and material of all layers of the wall,
- indoor temperature,
- outside temperature,
- humidity inside the room,
- humidity outside the room.

Further we will rely on these two concepts: **dew point and dew point position** in the wall.

Let's see what happens to the position of the dew point:

- in the wall is not insulated at all
- in a wall insulated from the outside
- in a wall insulated from the inside

Immediately, for each option, we will consider the consequences of such an arrangement of the dew point.

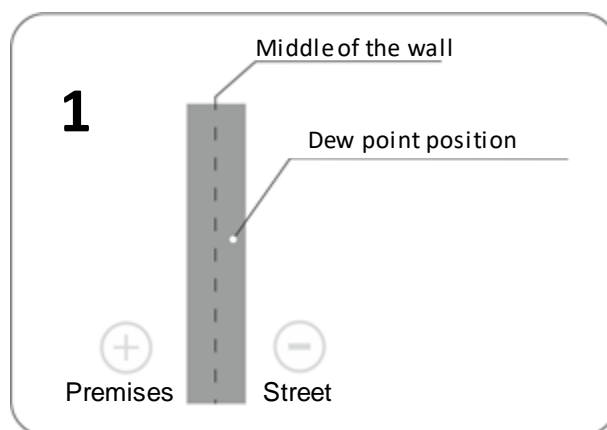
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The location of the dew point in a non-insulated wall.
By the location of the dew point, there may be such options for a non-insulated wall:

1. Dew point location between the middle of the wall and the outer surface of the wall.

In this case, the wall is dry.



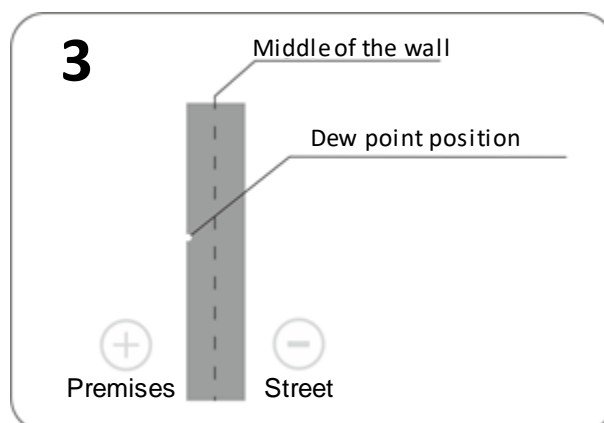
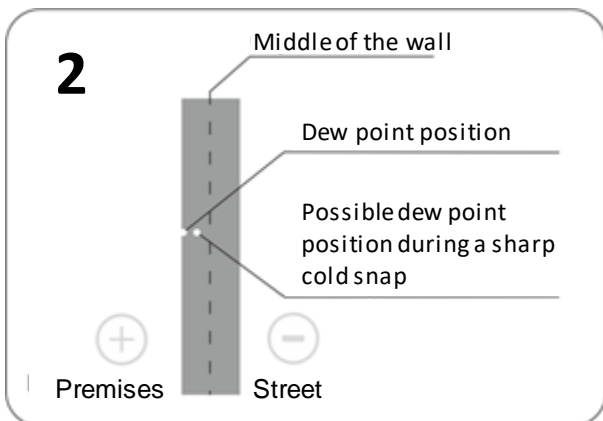
2. Dew point location between the middle of the wall and inner surface.

In this case, the wall is dry, can jam at sharp

a decrease in the outside temperature (lower than the calculated temperature according to DBN / SNiP in the region, for several days). The position of the dew point during these few days can move to the inner surface of the wall.

3. Dew point location on the inner surface.

The wall is almost wet inside the whole winter period. As already sorted out, the position dew point depends on 5 factors described in the part above.



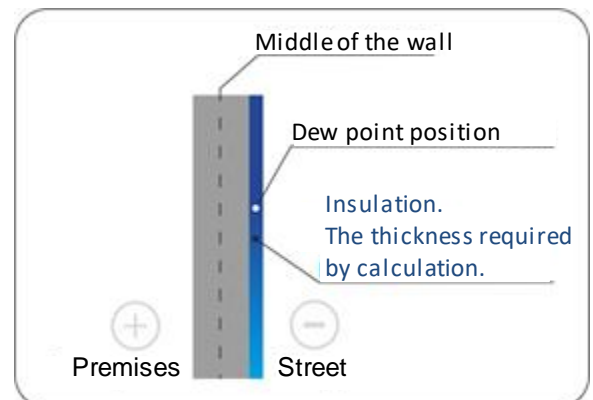
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Dew point location in a wall insulated from the outside.

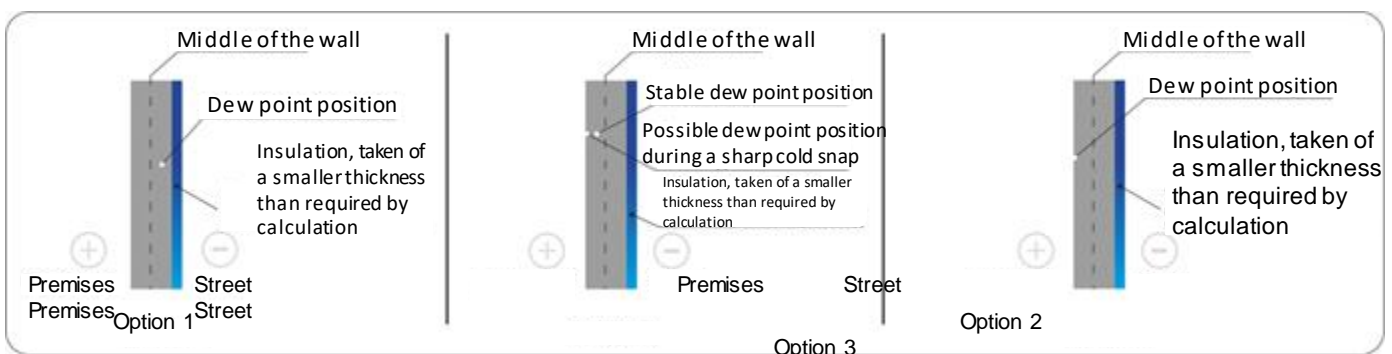
According to the location of the dew point in the wall, insulated **from the outside**, there may be the following options:

1. If the insulation is taken of the thickness required by the thermal engineering calculation, then the position of the dew point is inside the insulation.



This is the correct dew point position. The wall in this version is dry.

2. If the insulation is taken of a smaller thickness than it should be according to the thermal engineering calculation, then all three options described above for an insulated wall are possible. The consequences are described in the same place.



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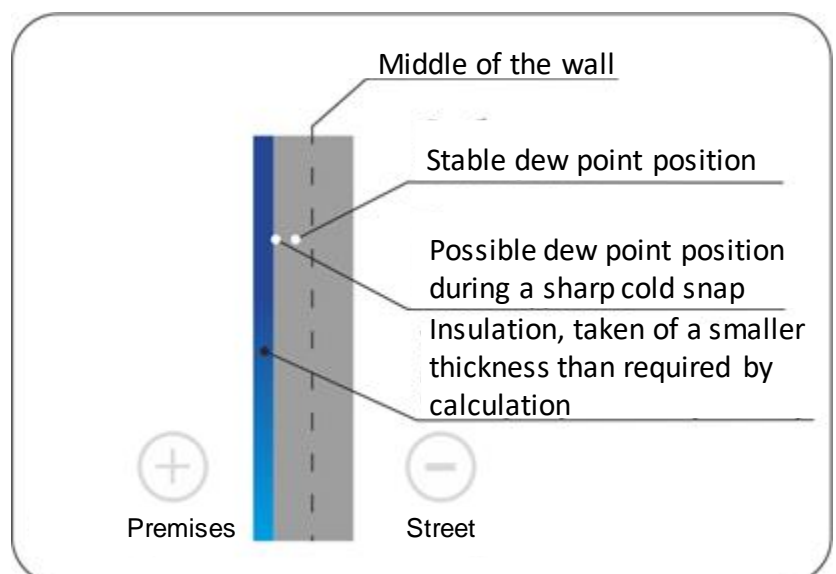
The location of the dew point in the wall insulated from the inside.

By the location of the dew point in the wall, insulated from the **inside**, we sort of “fence off” it from room heat. Thus, we shift the position of the dew point inside the room and lower the temperature of the wall itself under the insulation.

There may be such options:

1. The location of the dew point in the thickness of the wall.
In this case, the wall is dry, it can block up with a sharp drop in the outside temperature (lower than the calculated temperature according to DBN / SNIp in the region, for several days).

Dew point position these few days can move by inner surface walls.

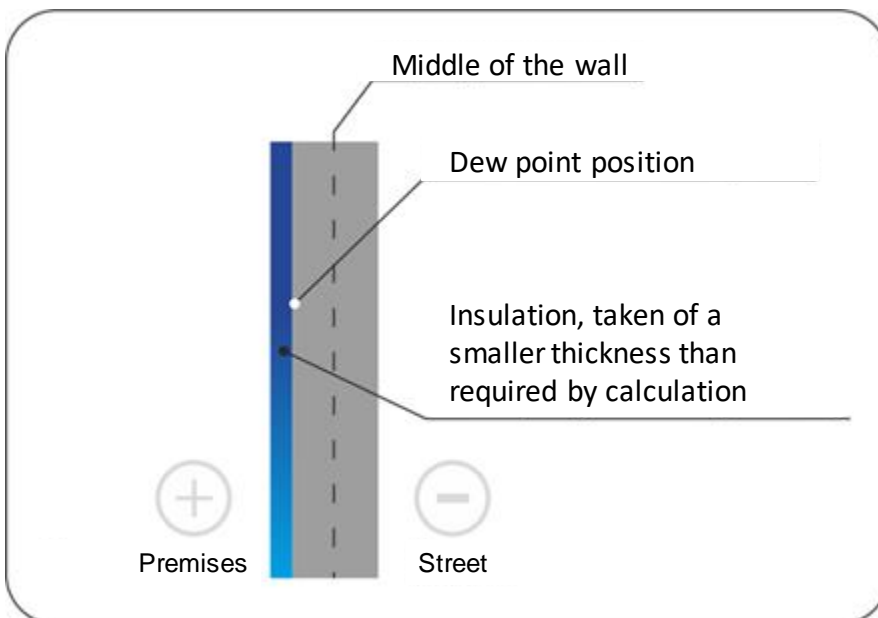


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The location of the dew point in the wall insulated from the inside.

2. The location of the dew point on the inner surface of the wall, under the insulation.



In this case, the wall is covered with insulation for the entire winter period.



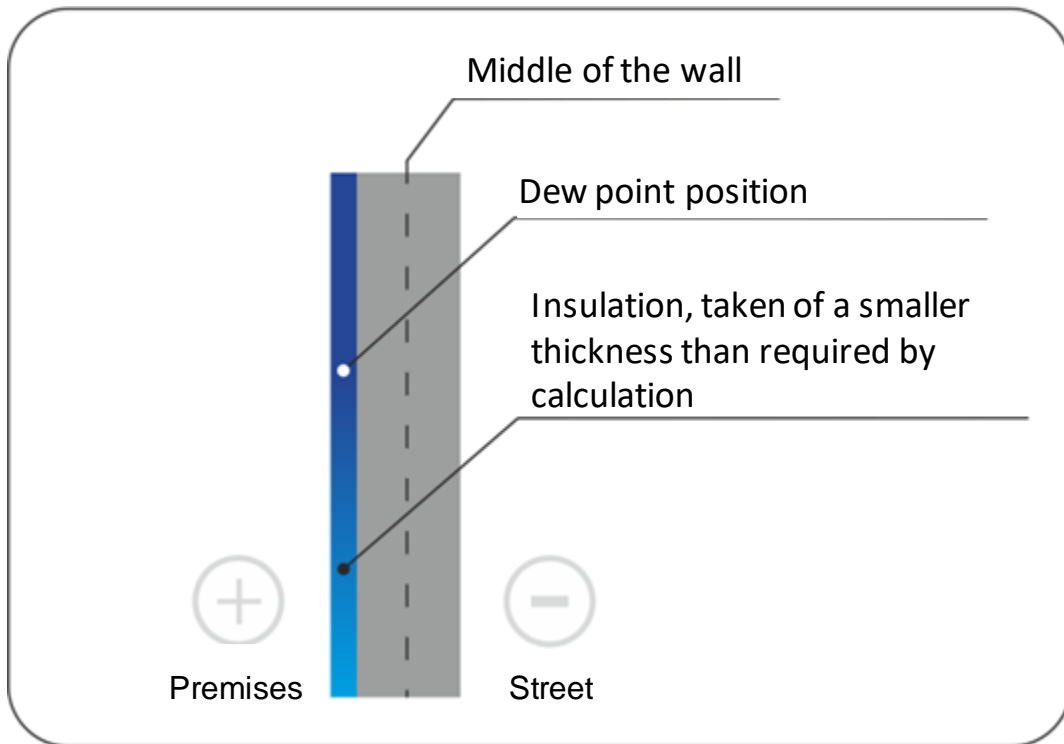
In the case of using **ultra-thin thermal insulation Bronya** this does not happen, since no cavities are formed during insulation with our material. Condensation, the material is homogeneous and forms a single whole with the wall. Thus, 2 phenomena are eliminated at once: The walls are not blocked when the outside temperature drops sharply (when the dew point is inside the wall, as in the previously described case), and there is also no moisture condensation between the wall and the insulation.

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The location of the dew point in the wall insulated from the inside.

3. The location of the dew point inside the insulation.



When insulated from the inside of a **super-thin wall heat-insulated Bronya**, we get the effect of complete elimination of condensation, even if the designers or the contractor made a mistake with the selection of the thickness of the insulation.

Insulation of the walls from the inside allows work to be carried out at any time of the year and in all weather conditions, and also reduces the labor intensity of the process when working at high altitudes.

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Thermal calculations made by our company comply with SP 23-101-2004, which allows you to get a guaranteed result of correct insulation, prevent condensation and avoid freezing of walls.

Ultra-thin thermal insulation Bronya Facade is a vapor-permeable material and allows both air and steam to pass through. Steam, as a result of human activity (breathing, cooking, water procedures, etc.), creates increased humidity in the room. High humidity, in turn, is fraught with various troubles: from fungus on the walls and ceiling to allergic reactions. Ultra-thin thermal insulation Bronya, has a high vapor permeability, which allows you to improve the microclimate, reduce the level of humidity, and prevent the likelihood of mold or mildew.

All this, in combination with highly effective thermal insulation properties and an unusually simple method of application, makes Bronya ultra-thin thermal insulation the best material for insulating walls of buildings and structures.