

# Recommendations for Designing and Constructing a Bio Fireplace

- When designing a bioethanol fireplace, it is essential to consider that it is a real fireplace that uses liquid fuel instead of solid fuel. One burner emits up to 3.5KW of thermal energy, equivalent to a 12000 BTU air conditioner.
- It produces a real open flame through the combustion of bioethanol, where the combustion by-products are CO<sub>2</sub>, CO, and a certain amount of water vapor. The levels of CO and CO<sub>2</sub> produced are well below the limits established by the EN 16647:2015 standard and can be compared to the presence of another person breathing in the room. Ventilation or air intake is not required or desirable for these fireplaces due to their impact on combustion.
- The crucial recommended dimension is the distance from the top plate of the burner to the ceiling of the fireplace, which is 55cm, with the visible opening dimension being 50cm.
- Ensure proper ventilation for the lower cube to prevent condensation caused by temperature changes within the cube. Plan ventilation openings in the lower cube, especially when using automatic burners that need ventilation to prevent overheating and permanent damage.
- For proper airflow within the fireplace, it is advisable for the front edge of the upper cube to be in the same plane as the front edge of the lower cube. If not, glass protective screens may be necessary.
- Note that installation and usage instructions for each individual burner provide recommendations regarding fireplace positioning and the application of burners.

by Nova Vizantija

## Materials for Construction

- The entire fireplace, especially the combustion zone, must be made of fire-resistant and thermally resistant materials (fire-resistant plasterboard, brick, concrete, etc.). If the combustion chamber is made of sheet metal, stainless steel must be used. Painted steel, despite its color, may corrode over time due to heating and cooling and the presence of water vapor, a by-product of burning bioethanol.
- Materials for cladding the combustion zone can include non-combustible, non-flammable, and thermally stable materials.
- Do not clad the ceiling of the combustion zone; instead, apply only a pure pigment for tinting wall paint.
- All materials in direct contact with the burner must withstand temperatures of at least 100 degrees Celsius. If the burner is placed in an environment with flammable materials like MDF, it's necessary to create a barrier using a glass fiber braid.

EECT

EVAPORATED ETHANOL COMBUSTION  
TECHNOLOGY

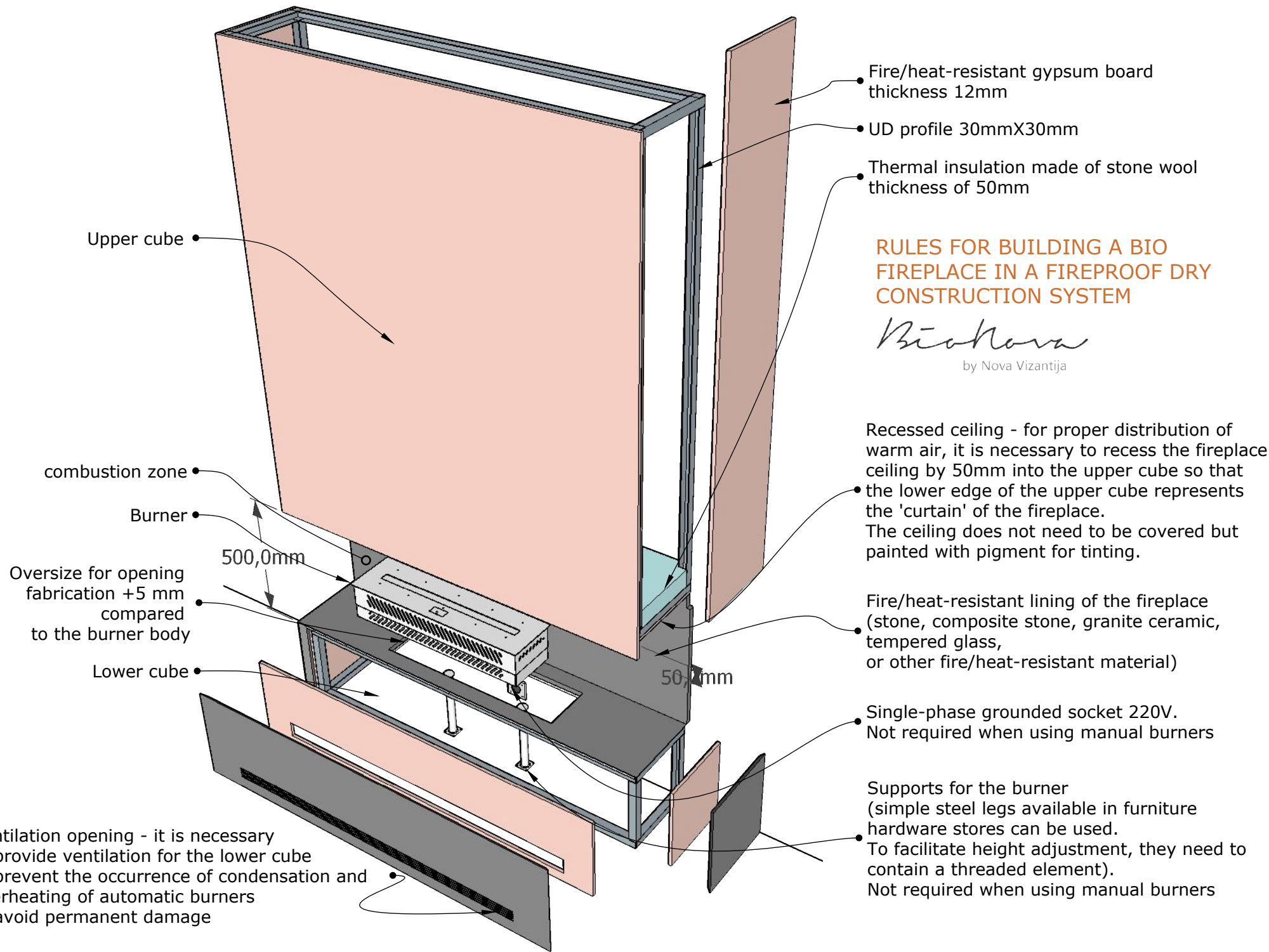
## Burner Installation

- When placing the burner in the opening of the lower cube, pay attention to:
  - The burner is horizontally aligned in both axes.
  - It is preferable for the burner to be placed in the middle of the upper surface in both axes, especially between the back and front edges of the fireplace.
  - For MANUAL burners, ensure it is leaning against the edges of the top plate.
  - AUTOMATIC burners must have support on which they lean inside the cube.
- Glass protective screens are standardly placed in front of the burner (standardly at two heights - 7 and 10 cm) only in case of irregular burning (flame bending backward or forward or chaotic burning) caused by specific air movements within the room. Any other closing of the burner may lead to improper burner operation. The glass protective screen, in the case of a bio fireplace, does not represent a protective barrier; the glass will heat up during burner operation and be equally dangerous to touch as other parts of the fireplace near the flame.

## Timing for Burner Installation

- The ideal time for burner installation is when all furniture and electronic devices are in place. Burners contain sensitive sliding and moving parts susceptible to construction dust. Also, if an automatic burner is connected to the electrical grid, subsequent work on the installation may damage the burner's control unit. Such damages, as well as those resulting from improper installation or installation in inadequate fireplaces (damages due to overheating), are not covered by the warranty, and the resolution of such issues is subject to regular service pricing.





- Fire/heat-resistant gypsum board thickness 12mm
- UD profile 30mmX30mm
- Thermal insulation made of stone wool thickness of 50mm

**RULES FOR BUILDING A BIO FIREPLACE IN A FIREPROOF DRY CONSTRUCTION SYSTEM**

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by Nova Vizantija

Recessed ceiling - for proper distribution of warm air, it is necessary to recess the fireplace ceiling by 50mm into the upper cube so that the lower edge of the upper cube represents the 'curtain' of the fireplace. The ceiling does not need to be covered but painted with pigment for tinting.

Fire/heat-resistant lining of the fireplace (stone, composite stone, granite ceramic, tempered glass, or other fire/heat-resistant material)

Single-phase grounded socket 220V. Not required when using manual burners

Supports for the burner (simple steel legs available in furniture hardware stores can be used. To facilitate height adjustment, they need to contain a threaded element). Not required when using manual burners

Upper cube

combustion zone

Burner

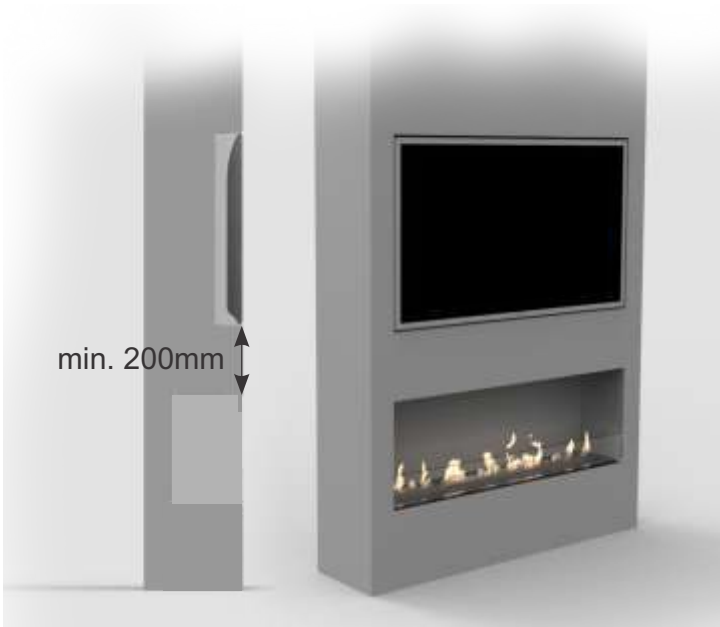
Oversize for opening fabrication +5 mm compared to the burner body

Lower cube

Ventilation opening - it is necessary to provide ventilation for the lower cube to prevent the occurrence of condensation and overheating of automatic burners to avoid permanent damage

500,0mm

50,0mm



## RULES FOR INSTALLING A TELEVISION ABOVE A BIO FIREPLACE

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