July 2025

MODULAR HOUSE ASSEMBLY INSTRUCTION

The client/distributor/user is required to familiarize themselves with these guidelines prior to transporting and assembling the modular home.

1. Storage

- Modules can be stored before assembly in a designated area, protecting them from weather conditions and ground moisture.
- The ground (of temporary storage area) must be hardened and leveled. Modules cannot be placed directly on the ground. They should be placed on steel or wooden beams at least 6 cm in height. A layer of roofing felt should be laid along the entire length of the beams to protect the module walls from moisture absorption. The width of the roofing felt should be at least equal to the width of the module's load-bearing wall.
  The beams on which the module is placed must be leveled to an accuracy of ±0.5 cm. Storing the module on uneven ground is not permitted, as it may cause deformations in the module’s finishing elements.
- Modules should be protected from weather conditions. Single-module homes with completed facades and roofs can be stored unwrapped from foil, provided that all windows and external doors are closed.
  Multi-module homes with partially completed facades and roofs can be stored in protective foil. The foil should only be removed during assembly and after sealing the joints between modules.
- Multi-module homes without completed facades and roofs can be stored in protective foil. The foil should only be removed during assembly. Immediately after assembly, the connections between modules must be sealed, and the facade and roof must be completed.
- It is not permissible to store modules in a manner that allows water to accumulate on the module's roof. This also applies to modules wrapped in protective foil.
- It is not permissible to store modules in a manner that allows snow to accumulate against their walls.
- During storage, the interior of the module should be periodically ventilated.

2. Foundation

- Modules should be placed on a foundation designed by a qualified designer, appropriate to the ground conditions and building loads shown in the Static Report in the "Foundation Guidelines" drawing. The foundation structure

should be designed so that all load-bearing walls indicated in the "Foundation Guidelines" drawing are supported linearly, unless another type of foundation is permitted.

- The foundation design is outside the scope of Emiter Sp. Z o.o.
- It is not permissible to place the structure in a way that allows the CLT construction to come into direct contact with the ground or for water or snow to accumulate at the contact points with the CLT structure.
- The bottom level of the CLT construction must be at least 15 cm above ground level.
- The CLT structure must be isolated from the foundation using horizontal insulation under the entire surface of the load-bearing walls (e.g., foundation roofing felt). The continuity of the insulation must be maintained throughout the lifespan of the building.
- The upper surface of the foundation where the module's load-bearing walls rest should be leveled to within +/- 2mm. Surface evenness should be confirmed prior to installation by taking geodetic measurements.

3. Access

- A hardened access road must be provided, with sufficient width and curves/bends to allow passage for a low-loader trailer up to the module installation site. The road's load-bearing capacity must be adequate for the passage of the trailer with the load.

4. Assembly

- The assembly of modules can only be carried out by trained assemblers.
- The minimum assembly team required for module installation is 3 people + crane operator.
- Power or a generator must be provided on the construction site during assembly.
- The assembly must follow the sequence shown in Static Report in the "Module Layout" drawing.

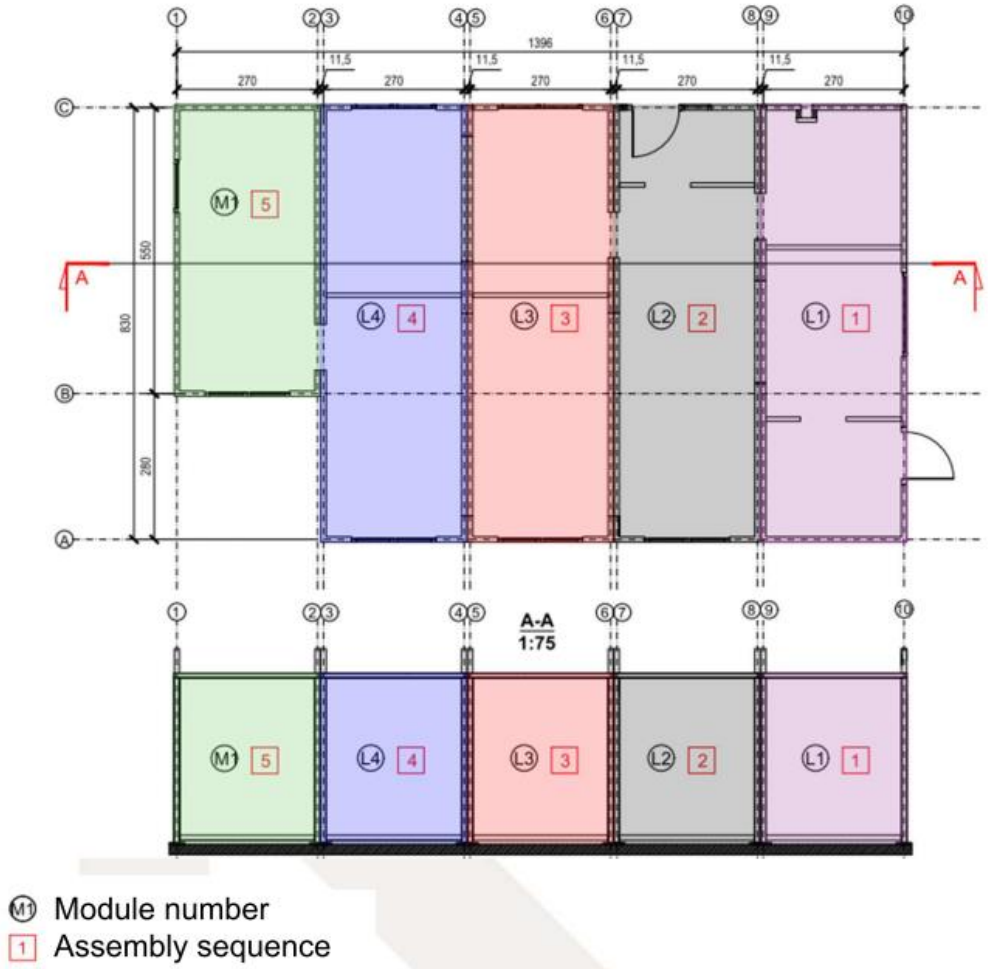

Fig. Example of the module assembly sequence.

- The modules are assembled using a crane. The crane's lifting capacity should be chosen based on the dimensions and weight of the modules, the distance from the location where the trailers with the modules will be parked to the module installation site on the foundation, and any height restrictions (such as power lines, other buildings, or roofs when assembling modules inside another building).
- The crane may only be operated by a certified crane operator.
- A crane operator and assembly manager authorized to fasten the load to the crane hook.should be present during the assembly
- Before starting the assembly, the main building axes or the external outline of the modules should be marked on the foundation.
- The unloading of modules is done using textile transport belts, which should be placed under the module at designated locations where cuts are made or reinforcements are installed, or using steel beams placed under the module at prepared locations.

The belts' load-bearing capacity should be chosen according to the weight of the modules. The belt length should be selected based on the module dimensions and type of assembly (with or without a spreader bar).

- For unloading modules with completed facades, a crane and spreader bars should be used, selected according to the module's dimensions and weight. The spreader bar length must be chosen to ensure that the belts do not tighten the module. The example of unloading is shown in the picture below. Any other method of unloading is prohibited.

Fig. Example of unloading using a spreader bar.

Fig. Example of unloading using a H-type spreader bar.

- For unloading modules without a facade, a crane without a spreader bar can be used. In this case, the length of the belts and chains, as well as the lifting height of the crane arm, should be chosen so that the belts do not tighten/touch the module. An example of unloading is shown in the picture below. Any other unloading method is prohibited

Pic. Example of unloading without using a spreader bar.

- The module should be placed on a level foundation and anchored to the foundation using the connectors shown in the Static Report in the "Connections to the Foundation" drawing.

For multi-module houses, the connections between the modules should then be made according to the "Connections between Modules" drawing.

The use of other connectors or changing the number of connectors is not permitted.

After positioning the modules, fill the undercuts for the strips with wooden beams and seal them with EPDM tape.

- For single-module homes with completed facades and roofs, after anchoring the module, thermal insulation and skirting finishes should be completed, elements removed for transport should be reinstalled, and the installations in the installation shaft should be connected. After connecting the installations, the installation shaft should be sealed with mineral wool or polystyrene to a minimum thickness of 20 cm. The water and sewage connection between the shaft and the ground should be insulated to prevent freezing.

Before use, ensure that all elements removed during transport have been reinstalled.

- For multi-module homes with partially completed facades and roofs, the modules should be installed on the foundation with a 1-1.5 cm expansion gap between them. They should be anchored to the foundation and connected according to the "Connections Between Modules" drawing. The expansion gaps should then be filled along the entire length from the outside with mineral wool and sealed with waterproof tape. Internal connections between modules (e.g., in doorways and open passages) should be sealed with expansion tape. After installation, the facade and roof should be completed at the module junctions, thermal insulation should be installed, the skirting should be finished, transport elements should be reinstalled, and the building should be connected to utilities.

If the installation is in the external installation shaft, after the installations are connected, the shaft should be sealed with mineral wool or polystyrene to a minimum thickness of 20 cm.

For installations through the module floor, after connecting the installations, the opening in the CLT plate should be tightly sealed, and the floor layers should be completed: insulation, dry screed, and finishing layer (e.g., panels or tiles).

The water and sewage connection between the shaft and the ground should be insulated to prevent freezing.

All internal installations between modules should be connected, and finishing elements at the module junctions (floor fragments, threshold strips, doors, seals in module passages, etc.) should be installed.

Before use, ensure that all elements removed during transport have been reinstalled and verify the correctness of the connections between modules.

- For multi-module homes without completed facades and roofs, the modules should be installed on the foundation with a 1-1.5 cm expansion gap between them. They should be anchored to the foundation and connected according to the "Connections Between Modules" drawing. The expansion gap should then be filled along the entire length from the outside with mineral wool and sealed with waterproof tape. Internal connections between modules (e.g., in doorways and open passages) should be sealed with expansion tape. After installation, the facade and roof should be completed, and the building should be connected to utilities.

If the installation is in the external installation shaft, after the installations are connected, the shaft should be sealed with mineral wool or polystyrene to a minimum thickness of 20 cm.

For installations through the module floor, after connecting the installations, the opening in the CLT plate should be tightly sealed, and the floor layers should be completed: insulation, dry screed, and finishing layer (e.g., panels or tiles).

The water and sewage connection between the building entrance and the ground should be insulated to prevent freezing.

All internal installations between modules should be connected, and finishing elements at the module junctions (floor fragments, threshold strips, doors, seals in module passages, etc.) should be installed.

Before use, ensure that all elements removed during transport have been reinstalled and verify the correctness of the connections between modules.

- The assembly should be carried out in dry weather conditions. It is not permissible to assemble the modules in a way that allows water to enter the interior.
- Before starting the installations, check that all installation elements are properly connected.
- The installation should be carried out by qualified personnel.