TECHNICAL SPECIFICATION – ARK 300,600 & 900 Series

1 DIMENSIONS

The portable flat pack containers are available in customizable floor plans;

Container Type	External dimensions (mm)			Internal dimensions - *without partition walls* (mm)		
	Length	Width	Height	Length	Width	Height
1) ARK 300 series	3000	2400	2600	2810	2210	2300
2) ARK 600 series	6000	2400	2600	5810	2210	2300
3) ARK 900 series	9000	2400	2600	8810	2210	2300
4) ARK 600w series	6000	3000	2600	5810	2810	2300
5) ARK 700w series	7000	3000	2600	6810	2810	2300

The above given dimensions are valid for standard container configurations.

2 DESIGN CODES, STANDARDS, MATERIALS and LOADS

2.1 CODES and STANDARDS

Design	Codes and Standards
Building Code	Eurocode – Basis of Structural Design, EN1990, 2002
Gravity Loading	Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings; EN 1991-1-1, 2002
Wind Loading	Eurocode 1: Actions on structures – Part 1-4: General actions – Wind actions; EN 1991-1-4, 2005
Steel Design	Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings; EN 1993-1-1, 2005 Eurocode 3: Design of steel structures – Part 1-3: Design of Cold formed Steel Structures; EN 1993-1-3, 2012

2.2 MATERIALS

Shape	European Standard	Yield Strength, F_y	Tensile Strength, F_u
Cold-formed sections	S235	235 MPa	360 MPa
Trapezoidal sheet	S235	235 MPa	360 MPa

NOTES:

- Modulus of Elasticity of Steel; E_s = 210,000 MPa
- Unit Weight of Steel; ρ_s =78.5 kN/m^3
- Structural Bolts : High-strength bolts shall be pretensioned bearing-type bolts (X - threads eXcluded) per European Standards EN 14399, unless otherwise noted.
- Grade 8.8 : up to M24 {Fy = 640 MPa; Fu = 800 MPa}
- Grade 10.9 : over M27 {Fy = 940 MPa; Fu = 1040 MPa}
- Anchor Bolts Ø25 diameter, Grade 8.8 { Fy = 640 MPa; Fu = 800 MPa }.

2.3 DESIGN LOADS

Description	Design Value
Snow Load	95 kg/m^2
Wind Speed and Load	102 km/h &50 kg/m^2
Live Load for Floor Frame	200 kg/m^2

2.4 STRUCTURAL FRAME

Floor frame, corner posts and roof frame are made of cold formed steel profiles as below:

Structural Component	Material
1 - FLOOR FRAME	Made of cold rolled, welded steel profiles. Four places of the floor frame at each corner are welded.
a) Longitudinal floor frame	3.0mm thick cold formed steel profile.
b) Short edge floor frame	2.0mm thick cold formed steel profile.
c) Cross beams	1.2 & 1.5 mm thick galvanized cold-formed metal sections
2 - CORNER POSTS	Made of cold-rolled, welded 3.0 mm thick steel profiles and bolted to the floor and roof frames. Bolts : M12
3 - INTERMEDIATE COLUMNS	Made of cold-rolled, welded 3.0 mm thick steel profiles and bolted to the floor and roof frames. Bolts : M10
4 - ROOF FRAME	Made of cold rolled, welded steel profiles. Four places of the roof frame at each corner are welded.
a) Longitudinal floor frame	3.0mm thick cold formed steel profile.
b) Short edge floor frame	2.0mm thick cold formed steel profile.
c) Cross beams	1.2 & 1.5 mm thick galvanized cold-formed metal sections.

2.5 FLOOR & ROOF COVERINGS and INSULATIONS

Description	Material
1 - FLOOR	
a) Under sheeting	0.50 mm thick 27/200 formed trapezoidal galvanized steel sheet
b) Decking	18mm waterproof boards made of recycled tetrahedron-shaped plastic-coated material / 18mm chipboard *(optional)* / Cement board *(optional)*
c) Covering	2 mm thick PVC flooring (standard) / wooden laminate parquet *(optional)* / SPC – stone polymer composite parquet *(optional)*
2 - ROOF	
a) Ceiling	8 mm thick PVC wainscot
b) Thermal insulation	100 mm thick mineral wool, (12-14 kg/m^3 density)
c) Roof cover (top)	0.50 mm thick 27/200 formed trapezoidal galvanized steel sheet

2.6 EXTERNAL / PARTITION WALL PANELS

Description	Material
1 - EXTERNAL WALL PANELS	
a) Panel type, thickness and sizes	Wall sandwich panels, consist of two roll-formed steel sheets and polyurethane filling. **60 mm thick**, 1000 x 2350 mm sizes
b) Steel sheet claddings &colour	0.40mm thick galvanized RAL 9002 (grey-white) painted steel sheet (outer and internal surfaces of the panel)
c) Other colours (optional)	RAL 9006 Silver / RAL 7016 Anthracite / RAL 3000 Red / RAL 9007 Aluminium Grey / RAL 5010 Middle blue / RAL 1019 Grey-beige / RAL 1023 Yellow / RAL 2004 Orange / RAL 6017 Yellow-green
d) Thermal insulation values of the Panel	Polyurethane (PU), heat transfer coefficient: 0.357 W/m^{2}K, Fire Class F
2 - PARTITION WALL PANELS *(if any)*	
a) Panel type, thickness and sizes	Wall sandwich panels, consist of two roll-formed steel sheets and polyurethane filling. **60 mm thick**, 1000 x 2350 mm sizes
b) Steel sheet claddings &colour	0.40mm thick galvanized RAL 9002 (grey-white) painted steel sheet (outer and internal surfaces of the panel)
c) Thermal insulation	Polyurethane (PU), heat transfer coefficient: 0.357 W/m^{2}K

2.7 DOORS & WINDOWS

Description	Material
1 - EXTERIOR DOOR	
a) Door Frame	60 mm width, 1.20mm steel sheet, electrostatic powder coated RAL 9002.
b) Dimensions	D01 : 850 x 1900 mm
c) Door leaf	1mm thick, RAL 9002 electrostatic powder coated steel sheet cladded on both faces, total door leaf thickness 50 mm
d) Thermal insulation	EPS / Rockwool / PU infilled
e) Door accessories	Barrel lock, 3 nos hinges, weather-strip gasket. Metal door handle.
2 - INTERIOR DOORS *(if any)*	
a) Door Frame	60 mm width, 1.20mm thick steel sheet, electrostatic powder coated RAL 9002.
b) Dimensions	D02 : 800 x 2000 mm D03 : WC doors 740 x 2000 mm (wooden or PVC)
c) Door leaf	44 mm thick, honeycomb kraft infilled for wooden doors
d) Door accessories	Barrel lock, 3 nos hinges with metal handle
3 - WINDOWS	
a) Frame	uPVC window frame
b) Glazing	Double glazed insulating glasses, [4mm glass + 9mm Air Space + 4 mm glass] combination) (Frosted glazing for wc)
c) Dimensions	W01 : 975 x 1000 mm – W02 : 600 x 400 mm (WC) – W07 : 750 x1000 mm – W01 with roller blind : 975 x 1200 mm

2.8 ELECTRICAL INSTALLATIONS

The electrical installations are surface mounted on the walls. All cables running above the ceiling are hidden. Cables from the ceiling down to the switches and socket outlets will be installed within the PVC cable channel mounted on the sandwich panel wall surface.

Description	Material
a) Cables	*NYM cables – (300 V/500 V) will be used in power outlets, lighting fixtures and A/C cabling. 3x2.5 mm² NYM cables (300 V/500 V) for power outlets, 3x1.5 mm² NYM cables for lighting fixtures wiring.*
b) Lighting Fixtures	*Surface mounted circular 24W / IP20 LED fixtures for interior lighting. 9W LED / IP 44 wall mounted exterior lighting fixture.*
c) Switches and power outlets	*Power outlets (1x16 A)*
d) Distribution board	*Wall-mounted type electrical distribution board - 230 V / 400 V & 50 Hz. All boards will have 4 pole 300 mA earth current leakage relays for protection.*
e) Circuit Breakers (MCB)	*Lighting outputs: 1x10 A- B type, Socket outputs : 1x16 A- B type*
f) Low Current Systems	*Data cable, tv cable, smoke detector and motion detectors as per customer requirements (optional)*

2.9 HVAC and PLUMBING INSTALLATIONS

The plumbing pipes are surface mounted.

Description	Material
a) Wastewater pipes	*PVC (Containers with wet spaces & kitchens)*
b) Potable water pipes	*PPRC (Containers with wet spaces & kitchens)*
c) Sanitary fixtures	*Lavatory, WC, electric water boiler and acrylic shower tray as per customer requirements and container model (optional)*
d) AC	*9000 btu as per customer requirements (optional)*
e) Heating	*2000 W electric heat convector (optional)*
f) Kitchen cupboard with sink	*100 cm width (optional)*
g) Exhaust fans	*optional*

3 SAMPLE PHOTOS

All photos below shown are for illustration purposes only. Actual products may vary as per model and customer preferences.

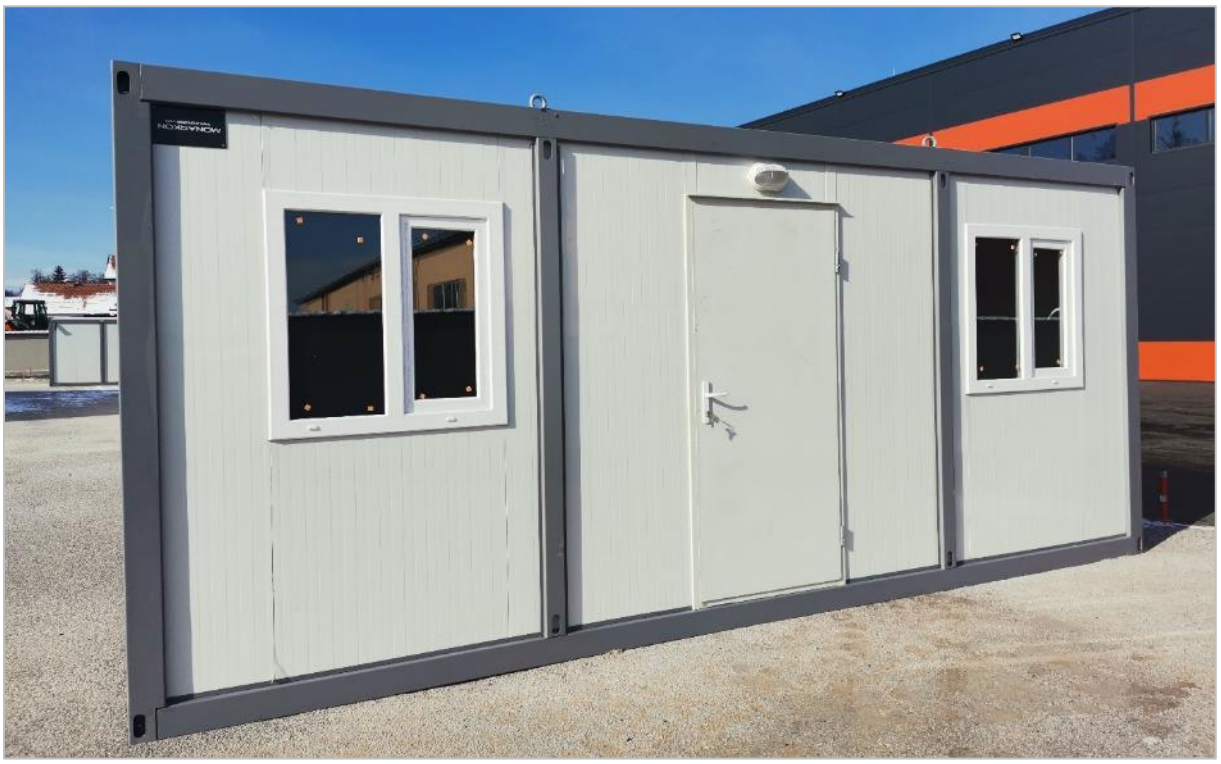


Photo 1- ARK 601

Photo 2- ARK 610

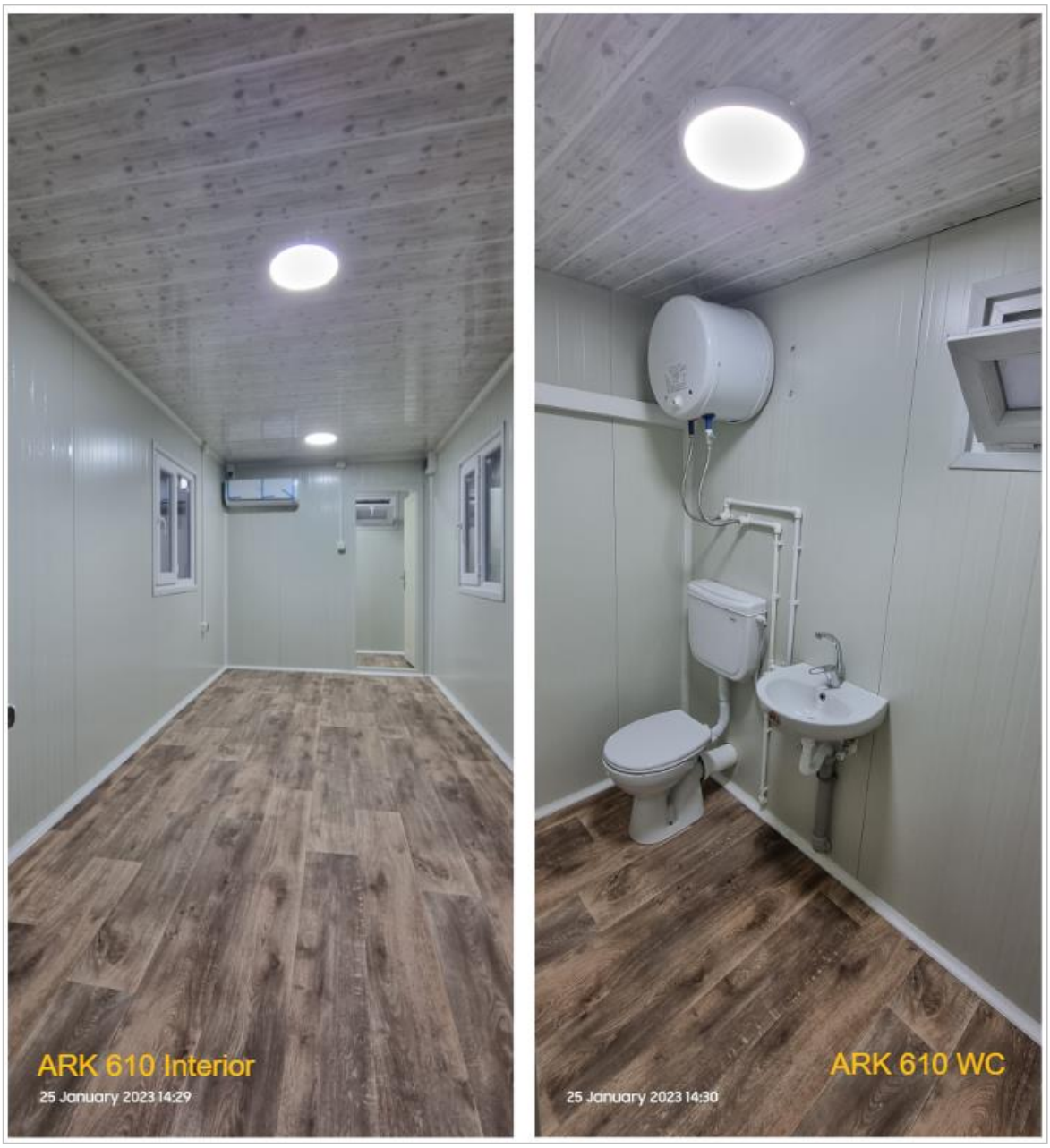


Photo 3- Interior photos of ARK 610

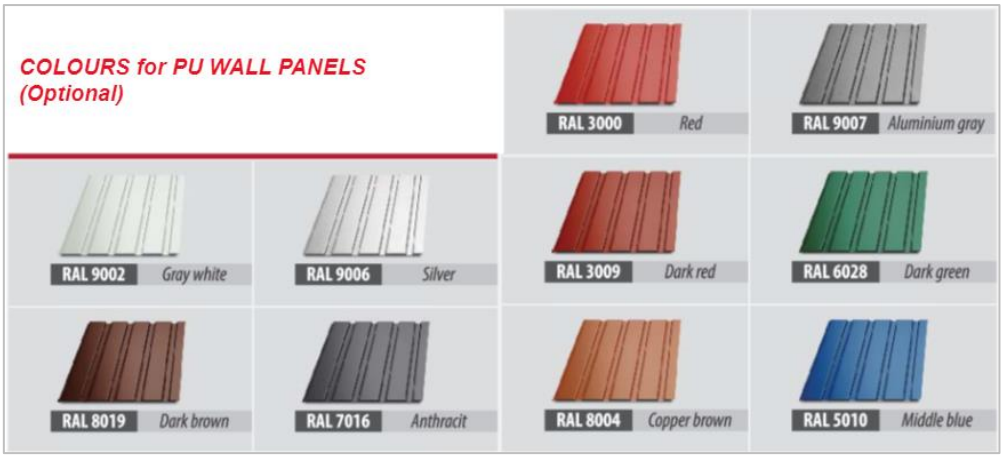


Photo 4- Colour Options for PU Wall Panels

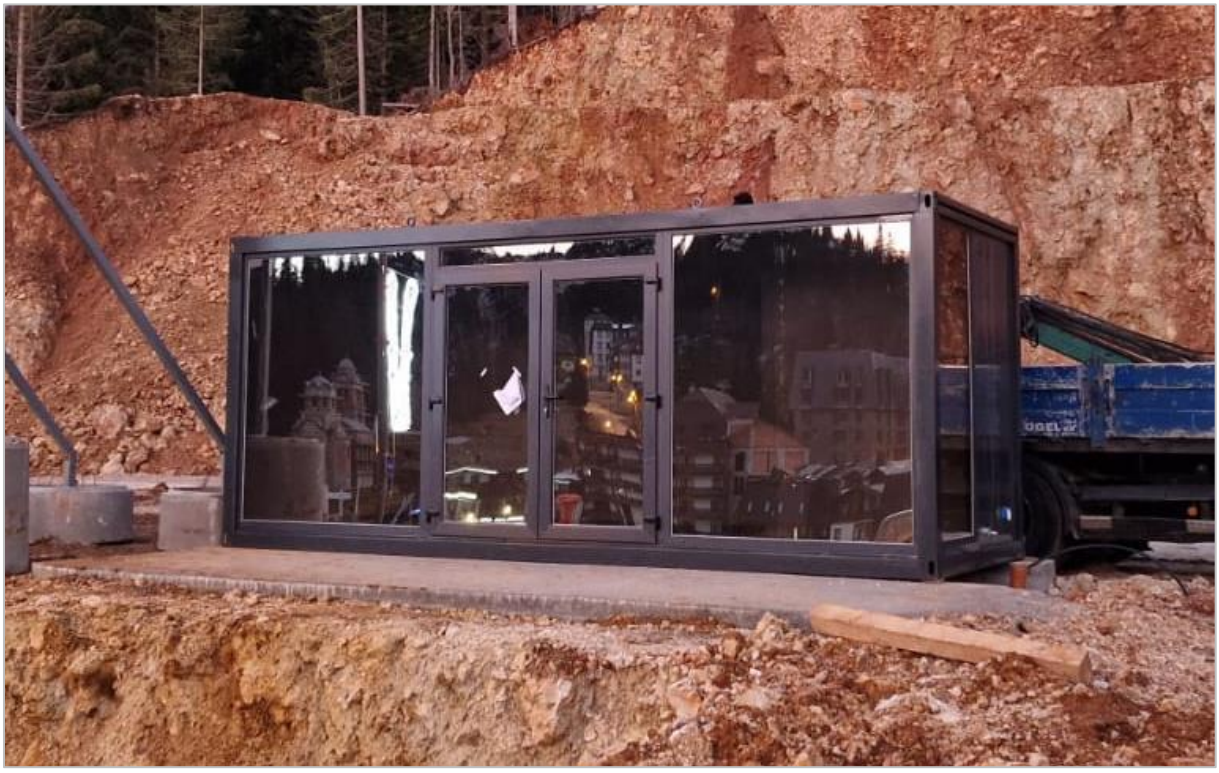


Photo 5- Custom made 6m sales office container

Photo 6- Custom made technical equipment container with handrails on the roof

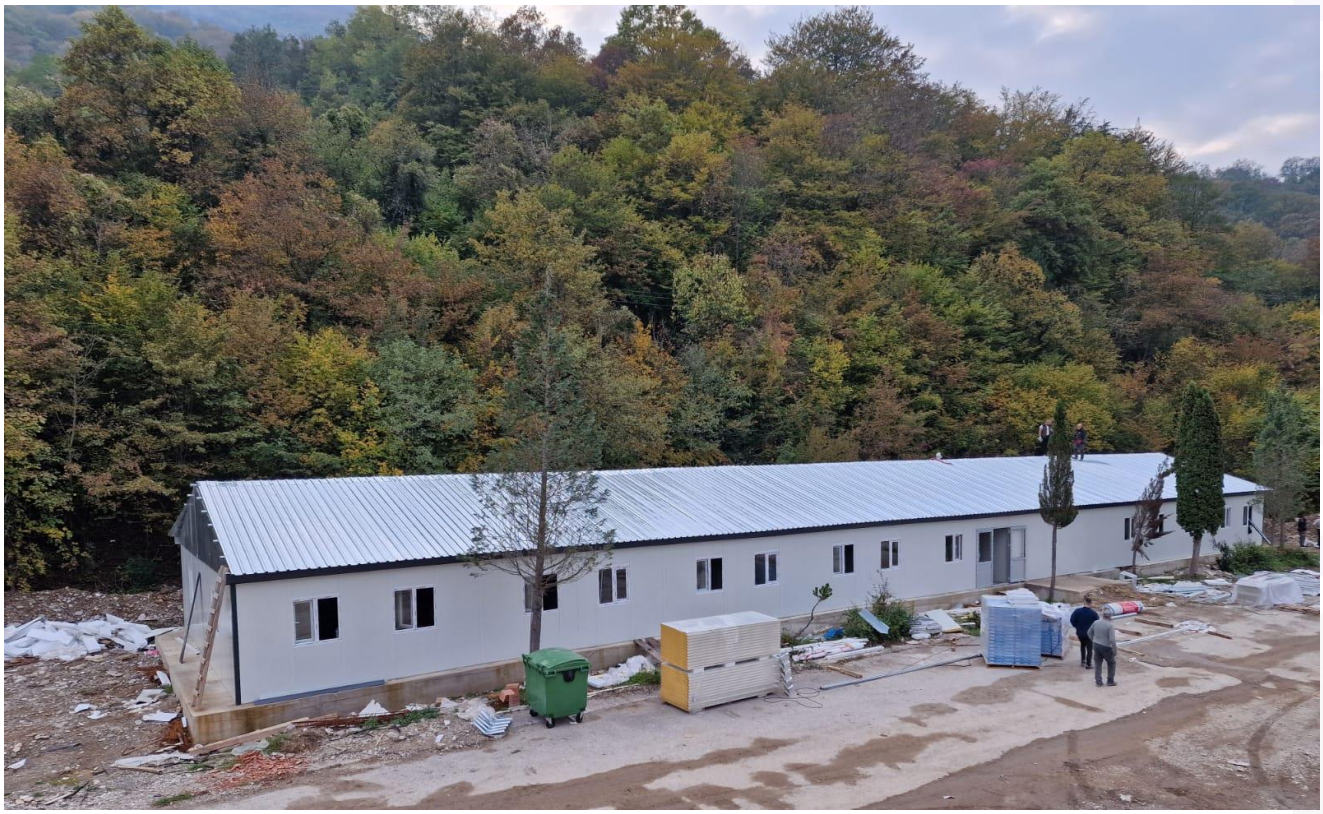
Photo 7- ARK 910 container

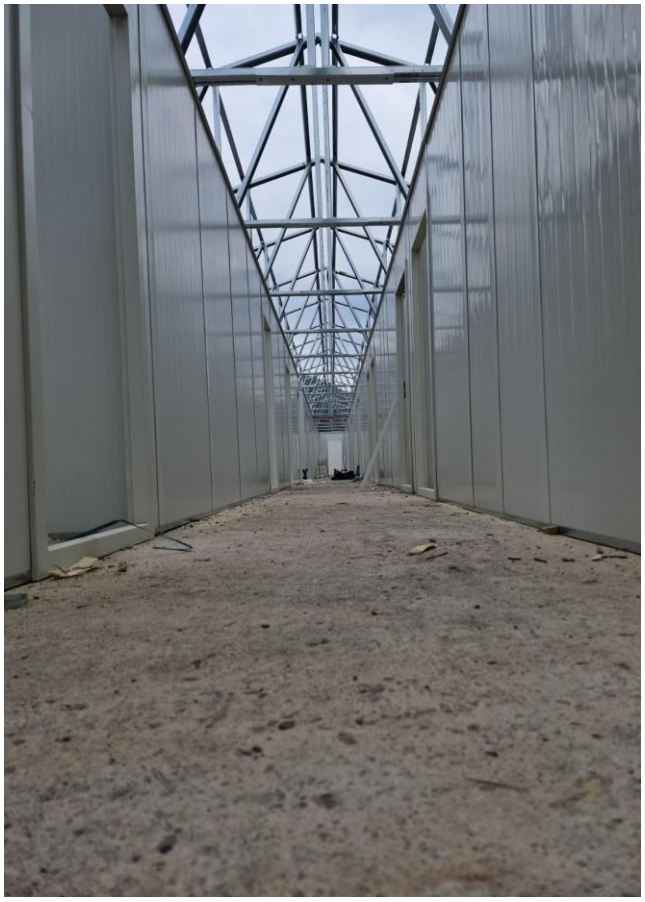
Photo 8 - Sanitary containers

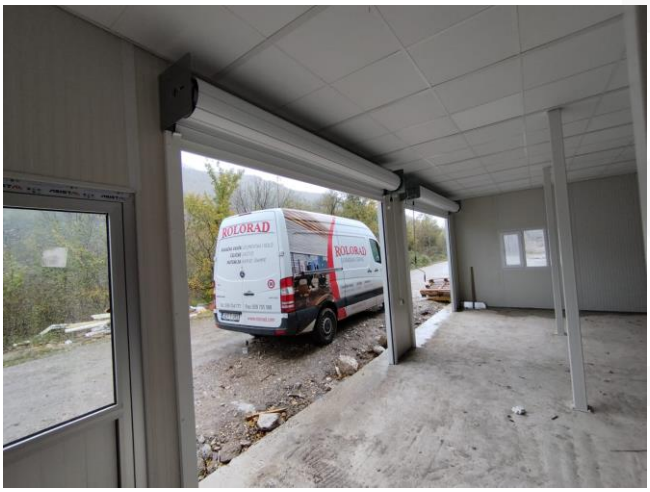
Photo 9- Modular Labor Accommodation Camps from containers

Photo 10- Modular Labor Accommodation Camps from containers

Photo 11- Combined sanitary unit containers







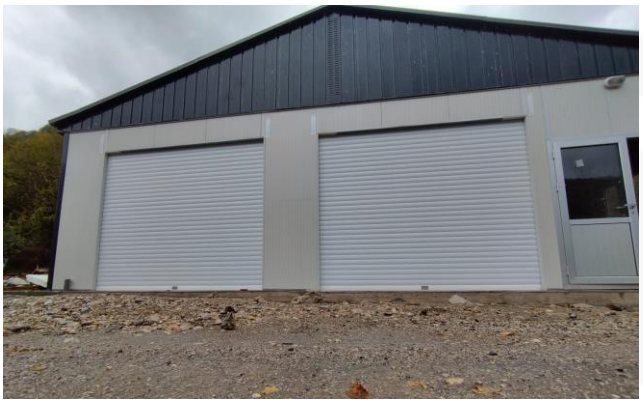


Photo 12 - Prefabricated buildings