

### LIGHT STEEL PREFAB BUILDING TECHNICAL SPECIFICATIONS



### CALCULATION CRITERIA

- ◆ Manufacturing based on considering 80 kg/m<sup>2</sup> snow load, 102 km/hour wind speed, first-degree seismic zone and three climatic zones.

### LOAD-BEARING SYSTEM

- ◆ H (carrier) and U (Roof Truss) profiles produced in roll forming machines are made from galvanized steel. They make up building's main frame. In order to join trusses and make the building rigid. Omega purlins produced also in roll forming machines are used

### STRUCTURAL STEEL

- ◆ On SAP2000, material cross sections are designed and AutoCAD is used to draw building plans. All load-bearing system consists of special H, C, U model galvanized profiles.

### PLAN

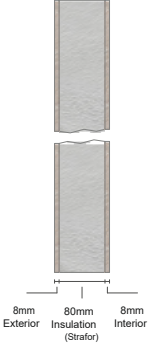
- ◆ Width and length of pre-produced prefabricated buildings are estimated as multiples of 125 cm. Prefabricated buildings are composed of the modulation of 4 different panels including filled, window, transom and door. Heaviest panel is the one with exterior door (90 kg). All architectural drawings and calculations are done by Villa Yap's technical staff with using AutoCAD and SAP2000.

EXTERIOR WALL (H:2500 MM THICKNESS: 100 MM) PRESS PANEL



Outer Surface	8 mm thick Cementboard & Fibercement
Inner Surface	8 mm thick Cementboard & Fibercement
Fire Resistance(Euro. Standards)	Fire: B - Smoke: S1 - Falling particles : D0
Heat Insulation	0.21W/mk (8mm)
Fire Endurance Period	TS 1263 (DIN 4102-2)

Junction Components	Galvanized, formed by roll forming machines (1 mm - 1.5 mm)
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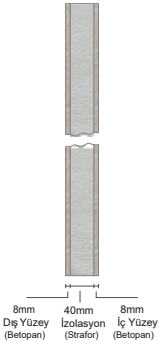
Insulation	EPS Styrofoam
Size	80mm x 1250mm 2500mm
Compressive Strength(En 826)	80 Kpa
Bending Strength	125 Kpa
Apparent Density	(EN 1602) : 16Kg/m <sup>3</sup>
Heat Conductivity	(EN 12667) : 0.039w/mk

INTERIOR WALL (H:2500 MM THICKNESS: 60 MM) PRESS PANEL



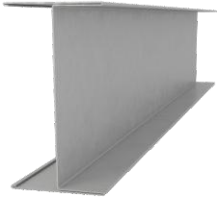
Outer Surface	8 mm thick Cementboard & Fibercement
Inner Surface	8 mm thick Cementboard & Fibercement
Fire Resistance(Euro. Standards)	Fire: B - Smoke: S1 - Falling Particles :D0
Heat Insulation	0.21W/mk (8mm)
Fire Endurance Period	TS 1263 (DIN 4102-2)

Junction Components	Galvanized, formed by roll forming machines (1 mm - 1.5 mm)
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Insulation	EPS Styrofoam
Size	40mm x 1250mm 2500mm
Compressive Strength(En 826)	80 Kpa
Bending Strength	125 Kpa
Apparent Density	(EN 1602) : 16 Kg/m <sup>3</sup>
Heat Conductivity	(EN 12667) : 0.039 w/mk

## WALL JOINT



- ◆ Galvanized components such as U and H profiles are bent and joined with each other.

## CEILING



Plasterboard

Covering

Dry Area

12mm thick Plasterboard



Betopan

Covering

Wet Area

8mm thick Cementboard & Fibercement



Plasterboard Joining H

Plasterboard Joining

Painted sheet produced in roll forming machine

Junction components: Elektrostatic painted galvanized sheet



Mineral Glasswool

Knauf - Mineralwool

100 mm thick, 1200 mm wide, 8000 mm long

Heat Conduction Coefficient

0.044 (W/mK)

Heat Conduction Resistance

2.27 R( m²k/W)

Reaction to Fire

Euroclass A1 ( TS EN 13501 - 1)

## ROOFING



0.50 mm. Trapez Steel Sheet (STANDARD) or Trapez Metal Tile Sheet (EXTRA)

+



◆ 12 mm. OSB (EXTRA)

+

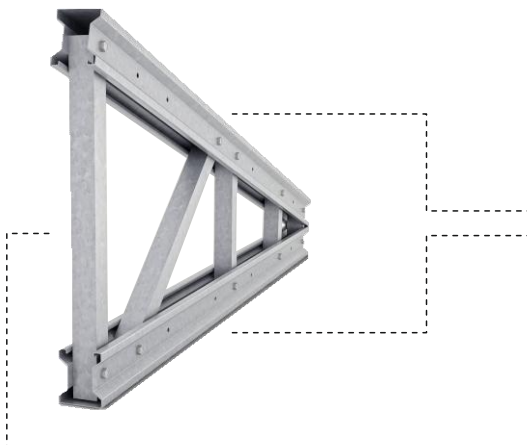


◆ Membrane or Tyvek (EXTRA)



◆ Single Layer Panel (EXTRA)

## TRUSS

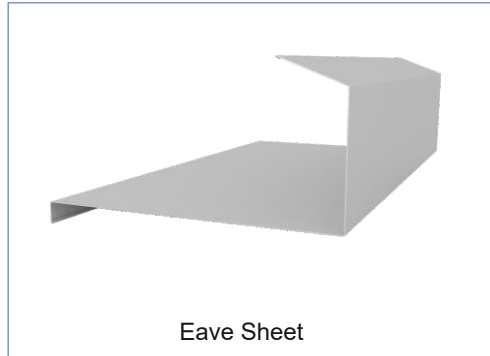


◆ It is a truss system designed using specially designed profiles made of DX51 or S320 galvanized sheet metal.

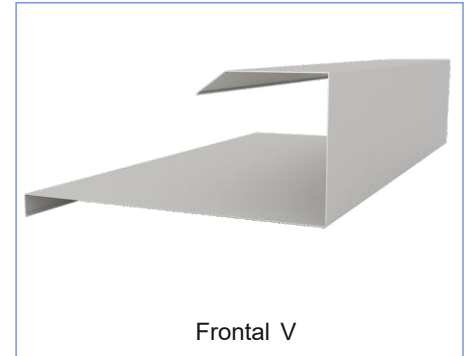
PURLINS - EAVES - EAVES TROUGH



- ◆ Purlin omega is covered with 25-30 cm wide special formed painted galvanized sheet



- ◆ Covered with 25-30 cm wide special formed painted galvanized sheet



- ◆ Covered with 25-30 cm wide special formed painted galvanized sheet

DOORS



- ◆ 90x198 cm steel door, (TSE standards)



- ◆ 80x198 cm, metal frame, American panel door

## WINDOWS - GLASS



7000 series

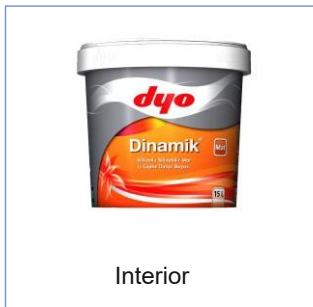
4+12,5+4 mm  
Double-glazing



7000 series

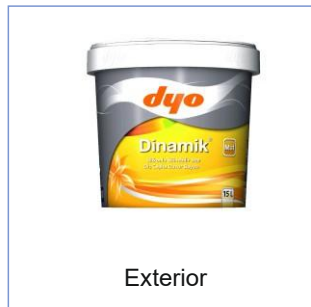
Windows	PVC (TSE standards)
Transom	PVC (TSE standards)
Window Frame	walvanized sheet.
Window Profile Width	70 mm - 5 Cells

## PAINT DYO OR POLISAN



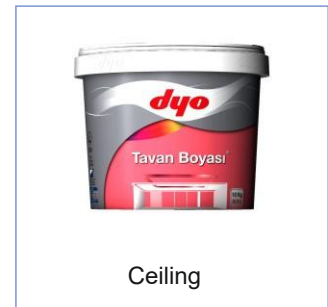
Interior

- ◆ Double layer plastic.  
(TSE standards)



Exterior

- ◆ Double layer acrylic  
(TSE standards)



Ceiling

- ◆ Double layer plastic.  
(TSE standards)

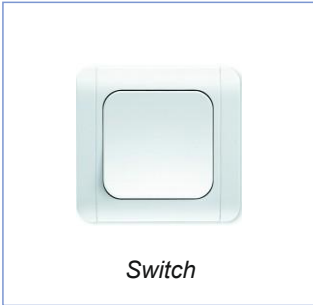
## ELECTRICITY INSTALLATIONS



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Wires	3*2,5 Nym (TSE Standards).
Socket and Switch	With TSE Certification
Lightning	Round Glop
WC-Bathroom	Round Glop
Doors	Glop Lightning Above Doors

◆ *Electricity installations are made flush mounted.*

## STAIRS

The diagram shows a cross-section of a framed structure. On the left, a blue arrow points right, labeled "Framed Structure". To its right is a light beige rectangular area labeled "Bearing frame made from steel carcass". The structure is divided into horizontal layers by thin white lines.

MEZZANINE FLOOR (FOR TWO-STOREY HOUSES )



Framed Structure	Formed by joining special bent galvanized sheet
Thickness	2. mm. galvanized sheet
Topping	16 mm thick Cementboard
Ceiling Floor	12 mm thick Gypsum board
Insulation	80mm thick Glasswool
Load-Bearing Capacity	Min. 200 kg/m <sup>2</sup>