



**DENYA  
LAKE**



# STRUCTURE

The load-bearing structure is made of:

- Foundation: Composed of a network of foundation beams arranged perpendicularly with a height of one meter.

Superstructure: The building's load-bearing structure is a dual system consisting of a combination of walls and frames. The structural frame is made up of a system of concrete diaphragm walls and reinforced concrete beams, with reinforced concrete slabs. All slabs are solid, with a beam network, and are 13-15 cm thick.



# PARTITIONS

- Exterior walls are made of 25 cm thick reinforced concrete, filled in the empty spaces with 25 cm thick vertically hollow ceramic blocks such as Porotherm or Leier. The exterior walls are thermally insulated with 15 cm expanded polystyrene or 12 cm graphite polystyrene. The terraces are thermally insulated with 20-24 cm thick extruded polystyrene, depending on the area, and waterproofed with two layers of hot-applied bituminous membranes.
- Dividing walls between villas are made of ceramic blocks, ensuring a soundproofing condition of 51dB and are clad with dry plaster (gypsum board) with thermal and acoustic insulation using mineral wool.

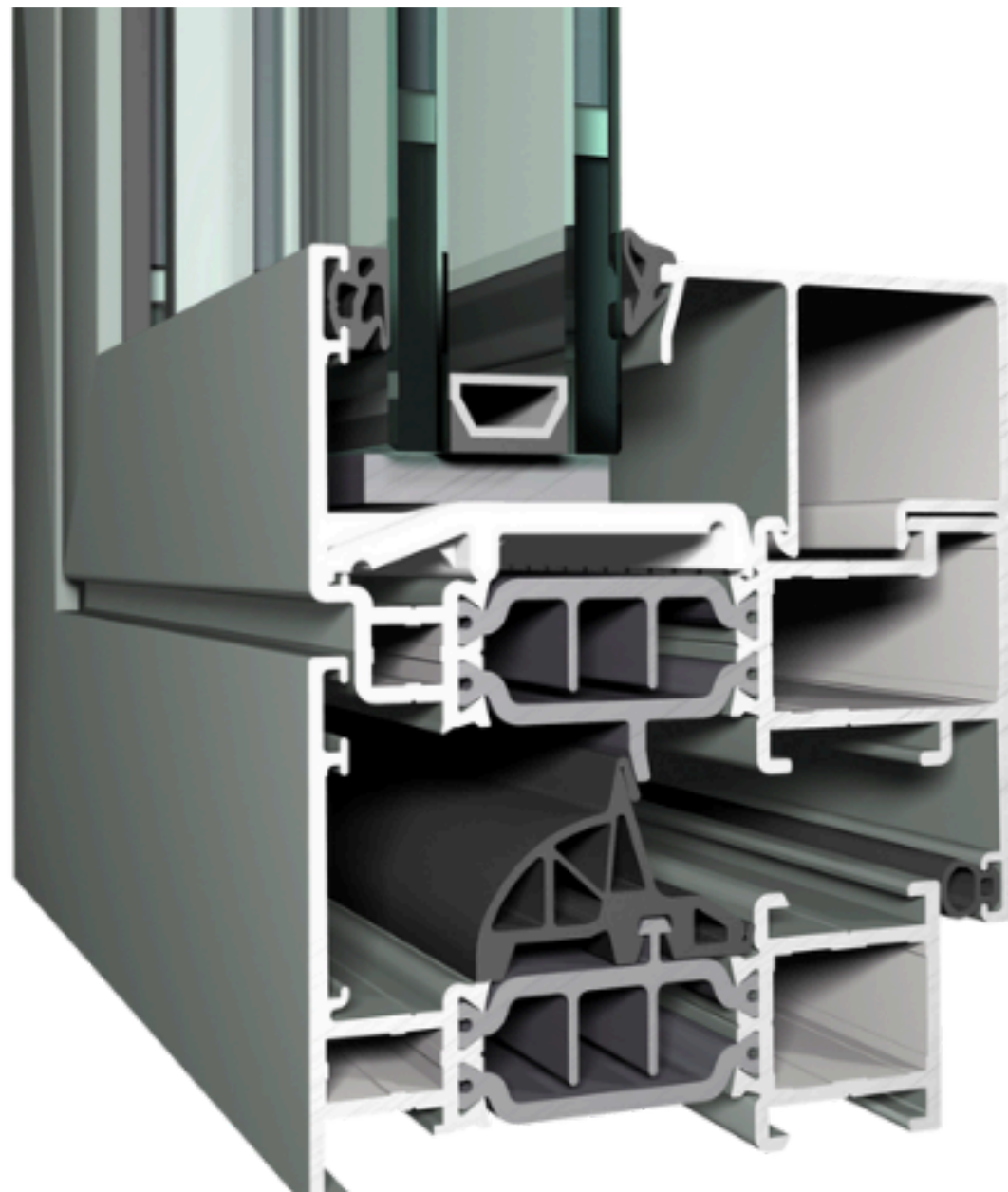
Interior walls of villas are made of 12.5 cm thick gypsum board with thermal and acoustic insulation using mineral wool. Interior walls are double-plated with 1.25 mm thick gypsum board.





## EXTERIOR CLOSURES AND FINISHES

- Exterior finishes will be in the form of a thermal insulation system finished with decorative plaster from brands like Caparol, Baunit, or similar, or with Feldhaus clay clinker tiles or similar. The villa terraces will feature outdoor ceramic tiles from the Mirage range or similar. Additionally, local accents made from HPL cladding, such as Fundermax or similar, will be added to the façade.

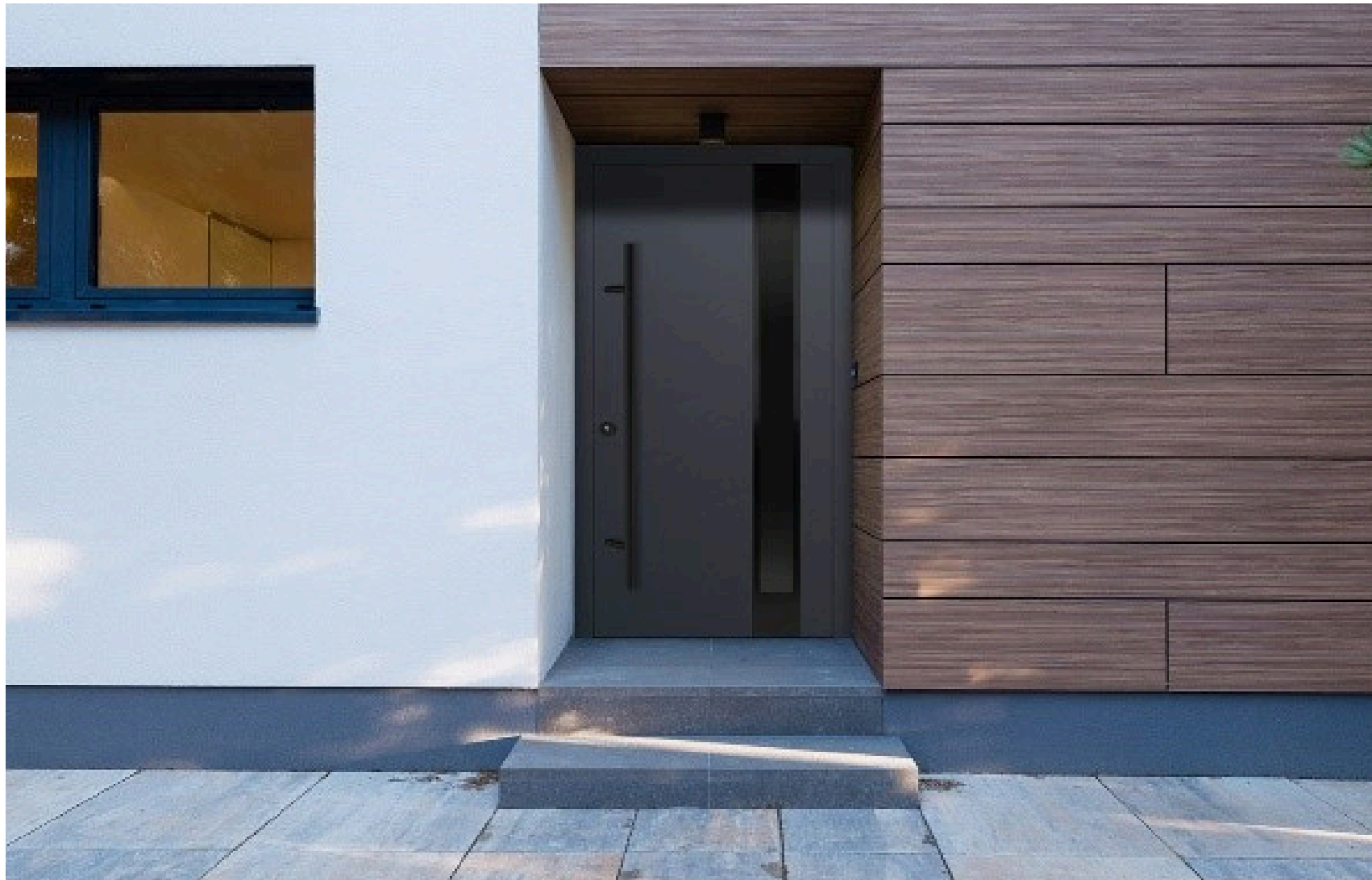


## EXTERIOR JOINERY

- Exterior joinery is made from Reynaers CS 77 HI aluminum profiles painted in RAL 7016, with triple-glazed windows featuring LowE coating on the interior side. The courtyard access panel is an exception, using the Reynaers CP 155 lift-and-slide system. Exterior glass is tempered, while interior glass is laminated for all lower panels. The exterior sill is gray aluminum, RAL 7016.

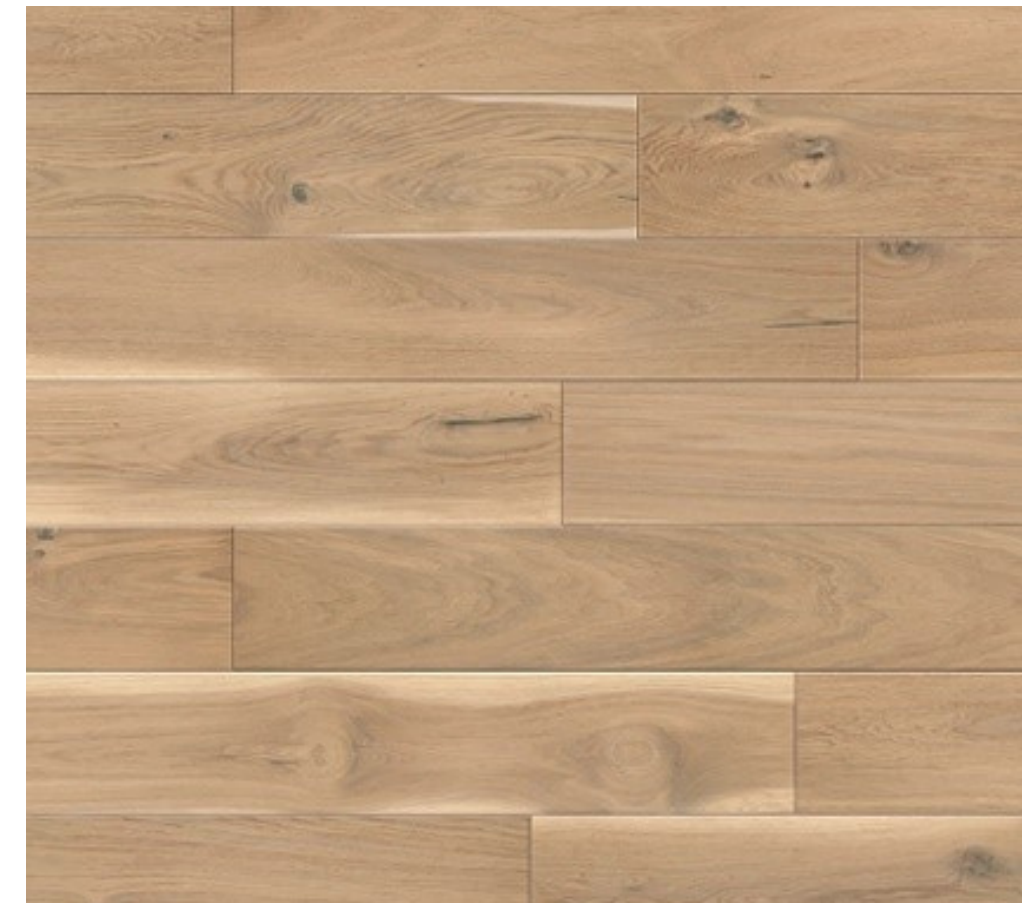
# INTERIOR JOINERY AND ACCESS

- Interior and access joinery: The main entrance door is a swing door with a glass panel, Pinum Linia Al+Steel PO 92, model PD-OL03, in anthracite color, with frosted glass, 92 mm thick, equipped with AGB Scudo 5000 lock and a round stainless steel bar. Interior wooden doors are from the Pinum Suite Plus range with magnetic contact, CPL-coated, hidden hinges, and in white. Interior wooden doors are from the Pinum Suite Plus range with magnetic contact, CPL-coated, hidden hinges, and in white.



# FLOOR FINISHES – PARQUET

- Parquet: Triple-layered parquet, 14 mm thick, from the Barlinek range.
- All bedrooms and living rooms have wooden parquet flooring, triple-layered, 14 mm thick, from the Barlinek range or similar.



# BATHROOM WALL FINISHES – CERAMIC TILES

- All wet areas (kitchens, bathrooms, technical rooms) will have 60x60 cm ceramic floor tiles from the Mirage range or similar.



# SANITARY FIXTURES

- All bathrooms are equipped with fully furnished sanitary items (washbasins, toilets, bathtubs) provided by Villeroy & Boch, Geberit, or similar suppliers.
- The faucets for bathtubs and showers are Monobloc types, supplied by Hansgrohe or a similar provider.
- Ceramic sanitary items (toilet, washbasin) are from the Scarabeo, Duravit range, or similar, with wall-hung toilets and built-in cisterns mounted on frames, and flush plates with TECE or similar support.
- The faucets for washbasins, bathtubs, and showers will be from the Hansgrohe range or similar. The bathtub will be made of antibacterial acrylic from the Villeroy & Boch range or similar.





# UNDERFLOOR HEATING SYSTEM

- Underfloor heating (from a heat exchanger) is distributed via manifolds with a maximum of 12 circuits (made from galvanized and electrostatically painted steel, RAL 9010 unless otherwise specified in the project), with pipes installed at a spacing of 10 cm. The pipes will be insulated for up to 2 meters from the manifold exit or where the distance is shorter (in shared paths near the manifold).
- The temperature of the heating fluid for the underfloor heating will be 45/40°C, suitable for a 10 mm double-layered parquet. The manifold will include adjustment and shut-off valves for each circuit, air vents, and drain valves.



# UNDERFLOOR HEATING SYSTEM

- The thermal fluid distribution for underfloor heating will be done via cross-linked polyethylene pipes (PE-Xa), manufactured under high pressure using the Engel method, in compliance with DIN 16892 and EN ISO 15875, with expansion fittings using PVDF or brass sleeves and fittings made of PPSU or bronze. The system will include complete fittings, support systems, 9 mm thick PE foam insulation with waterproof PE film, etc. The pipes will be installed on grooved plates at 10 cm intervals (as per the beneficiary's specifications).
- The heated floor will be controlled by on/off zone thermostats. Each floor heating circuit will have a valve with an actuator.
- Towel radiators in the bathrooms will be supplied from the underfloor heating circuit.



# AIR CONDITIONING SYSTEM WITH FAN COIL UNITS

- Thermal comfort in summer will be ensured by uncased fan coil units, mounted in false ceilings with a two-pipe system. The equipment sizing has been done to account for heat generated by equipment, people, and solar radiation through glazed surfaces.
- The air conditioning system will operate in 100% recirculation mode.
- Conditioned air will be introduced through rectangular grilles, for vertical installation.
- Air recirculation will be done through rectangular grilles with mesh installed in the ceiling or through rectangular grilles, for vertical installation.
- The connection between the intake grilles, exhaust grilles, and air conditioning equipment (fan coil units) will be made with rectangular ducts.
- The cooling fluid needed for air conditioning, chilled water, will be supplied from the existing distribution network. The necessary pipes for chilled water distribution will be equipped with elastomeric thermal insulation, 19 mm thick.
- The cooling fluid, chilled water at 7/12°C, will be supplied via a heat pump.





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