



SERVILLA ENGINEERING · STEEL FRAME VILLA

LUXURY LIGHT GAUGE STEEL VILLA SYSTEMS MASTER TECHNICAL SPECIFICATION & CATALOGUE



2026

SERVILLA ENGINEERING · STEEL FRAME VILLA
İstanbul / Türkiye

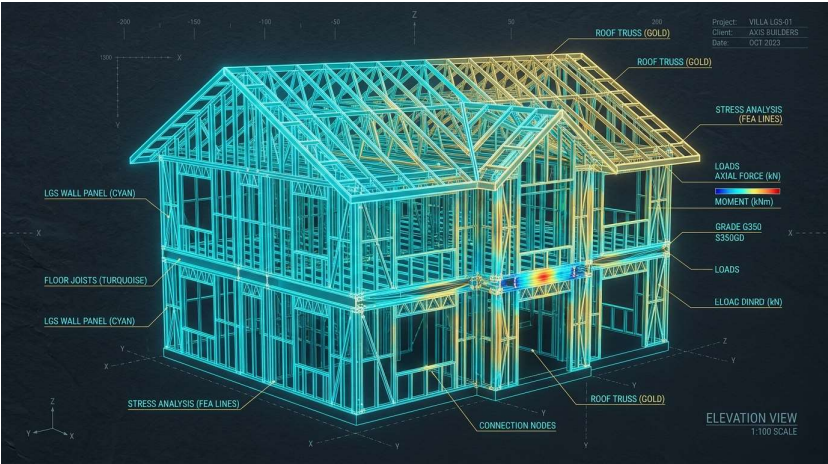
SERVILLA ENGINEERING · STEEL FRAME VILLA

EUROCODE 3 & 8 CERTIFIED · PASSIVHAUS READY · RE2020 · DIN EN 1090-2 · CE MARKED

LUXURY LIGHT GAUGE STEEL VILLA SYSTEMS
MASTER TECHNICAL SPECIFICATION & CATALOGUE

Prepared for Architects, Structural Engineers, General Contractors, and International Private Investors. Comprehensive Building Envelope Layers, Certified U-Values, Acoustic Decoupling, 4 Core Delivery Packages, Global Installation Management, and Transparent Project Budgeting Guide.

Head Office & Showroom	Cevizli Mah. Orhan Gazi Cd. No: 24/B Maltepe / Istanbul
Office Phone & Support	+90 216 614 04 34 · WhatsApp: +90 505 507 04 18
Manufacturing Plant	Gebze / Dilovasi Industrial Free Zone, Kocaeli / Istanbul
International Structural Codes	Eurocode 3 (EN 1993-1-3), Eurocode 8 (EN 1998-1), CE
Customs Tariff Exemption	0% Customs Duty to EU via A.TR · EUR.1 FTA for UK & EFTA



3D BIM Parametric Structural Steel Modeling & CNC Direct Production

CHAPTER 1: THE FUTURE OF RESIDENTIAL ARCHITECTURE — SERVILLA LGSF SYSTEMS

SerVilla Light Gauge Steel Framing (LGSF) elevates residential construction from slow, weather-dependent, and brittle on-site masonry into an ultra-precise, engineered industrial manufacturing process. Shaped with sub-millimeter precision on automated 8-station CNC roll-forming lines at our modern Istanbul industrial plant, every villa delivers absolute seismic safety, Passivhaus-level thermal efficiency, and complete turnkey hand-over in just 90 to 120 days.

This master catalogue is formulated to provide architects with unconstrained geometric freedom, structural engineers with verified Eurocode compliance, and property developers with a transparent, fixed-price procurement dossier.

1.1. Integrated Tri-Partite Engineering Standards

ARCHITECTURAL FREEDOM & DESIGN	STRUCTURAL INTEGRITY & BUILDING PHYSICS	LIVING COMFORT & ASSET VALUE
• 8–10 m clear spans without interior columns • Double-height living rooms, cantilevers & voids • Slim 265 mm walls yielding +8–10% Net Living Area • Unlimited facade cladding: Stone, porcelain, wood, metal	• S350GD+Z275 structural high-yield galvanized steel • Eurocode 3 (EN 1993-1-3) & Eurocode 8 seismic cert. • L/500 floor deflection limit (Zero bounce or vibration) • 45 kN chemical epoxy anchors per structural node	• Zero collapse risk under maximum ground acceleration • Up to 70% reduction in heating/cooling utility bills • Rapid 90-day turnkey handover to move-in • Moisture-proof, mold-free breathable wall assemblies
• Expansive floor-to-ceiling glass & sliding doors • Concealed internal rainwater downpipes & minimalist gutters • Full BIM / Revit / IFC digital model interoperability • Complete flexibility in non-bearing partition layouts	• U = 0.11 – 0.15 W/m²K thermal transmittance • Rw = 54–62 dB airborne acoustic noise attenuation • REI 60–120 certified fire resistance (A1 mineral wool) • Psi = 0.00 W/mK external thermal barrier (Zero bridge)	• Fully transparent, contractually fixed turnkey budget • 50+ year maintenance-free corrosion design life • Whisper-quiet acoustic privacy between rooms • Superior commercial bank valuation and resale liquidity
Thin wall engineering yields +12 to +15 m² of additional usable interior floor space for every 150 m² built (the size of an extra master bedroom).	Structure self-weight is only 1/10th of reinforced concrete, reducing seismic inertial forces by 90% during severe earthquake tremors.	Precision dry-construction eliminates tons of water on site, allowing year-round, 4-season erection regardless of sub-zero temperatures.

[EUROCODE 8 COMPLIANCE] Structural Engineering Note: Why Light Gauge Steel Prevents Earthquake Collapse

Seismic inertia is directly governed by Newton's second law: $F = m \times a$ (Mass x Acceleration). While a massive concrete villa weighing 400 tons pulls destructive destructive forces into its columns, a SerVilla steel villa weighs only 40 tons, experiencing only 10% of the seismic inertial load. The ductile elasticity of S350GD structural steel absorbs and dissipates dynamic energy, preserving structural integrity and protecting human life with zero risk of progressive collapse.

CHAPTER 2: 15-POINT COMPREHENSIVE PERFORMANCE & INVESTMENT BENCHMARK

Performance & Investment Metric	Traditional Reinforced Concrete	Timber Frame Construction	SerVilla Light Gauge Steel
1. Total Self-Weight (150 m² Villa)	350 – 450 Tons (Heavy mass)	60 – 80 Tons	35 – 45 Tons (90% Lower Seismic Load)
2. Seismic Safety & Resilience	Brittle failure, progressive collapse risk	Flexible but weak structural connection joints	Eurocode 8 q=2–4 high ductility, zero collapse
3. On-Site Construction Timeline	12 – 16 Months (Slow curing wet trades)	5 – 8 Months	90 – 120 Days (Fast industrialized handover)
4. Wall Thermal Transmittance (U-Value)	0.35 – 0.50 W/m²K (High energy loss)	0.18 – 0.24 W/m²K	0.11 – 0.15 W/m²K (Passivhaus / Net-Zero Ready)
5. Thermal Bridging & Condensation	Structural columns cause cold spots & mold	Timber studs form localized thermal bridges	Continuous exterior thermal break (Psi = 0.00)
6. Fire Safety Classification	A1 (Concrete resists, rebar degrades)	B / C (Organic timber is combustible)	A1 Non-Combustible Basalt Wool + Steel (REI 120)
7. Acoustic Insulation (Airborne Rw)	48 – 52 dB (Mass dependent)	42 – 46 dB (Resonant cavity noise)	54 – 62 dB (Mass-Spring-Mass EPDM isolated)
8. Floor Deflection & Dynamic Rigidity	L / 300 (Subject to long-term creep)	L / 350 (Subject to bouncy footstep squeaks)	L / 500 Deflection Standard (Solid concrete feel)
9. Corrosion, Rot & Pest Resistance	Rebar spalling and carbonation over time	Vulnerable to termites, rot, fungi, moisture	Z275 Hot-Dip Zinc Coating (50+ years rust-free)
10. Usable Net Floor Area Gain	Baseline reference (100%)	+4% Usable interior space	+8% to +10% Extra Net Living Area (+12–15 m²)
11. Construction Water Consumption	Thousands of liters & chemical admixtures	Low water usage	0 Liters (100% Clean Industrial Dry Assembly)
12. Manufacturing Dimensional Precision	± 20 to 30 mm manual formwork variance	± 5 to 10 mm	± 1 mm Automated Factory CNC Roll-Forming
13. Carbon Footprint & Sustainability	High embodied carbon (Cement clinker)	Low carbon if locally certified	180 kg less CO₂ per m² compared to concrete
14. Material Recyclability	Low (~10% concrete rubble downcycled)	Partial (Incineration / biomass)	98% Infinitely Recyclable Structural Steel
15. Architectural Clear Spans & Voids	Heavy downstand beams needed for spans	Spans limited to 5–6 m without deflecting	8–10 m wide clear spans for open-plan living

CHAPTER 3: STRUCTURAL ENGINEERING, METALLURGY & CNC FABRICATION

Structural Steel Grade	S350GD Structural Steel (EN 10346 / EN 10149 certified)
Yield Strength (Re)	Re ≥ 350 N/mm² (Minimum tensile strength Rm ≥ 420 N/mm²)
Galvanization Coating Mass	Z275 (275 g/m² double-sided hot-dip zinc protective layer)
Design Life & Durability	50+ Year Structural Warranty (100+ years in C1–C3 climates)
Profile Thicknesses	0.90 mm – 2.00 mm precision cold-formed C and U profiles
Structural Design Norms	EN 1993-1-3 (Eurocode 3 Cold-Formed), EN 1998-1 (Eurocode 8 Seismic)



Automated 8-Station CNC Roll-Forming Facility (Sub-Millimeter ±1 mm Precision)

- **Precision Screw & Dimple Punching:** All screw pilot holes, corner swages, dimples, and lip cuts are punched directly in the CNC line. No site cutting, drilling, or welding required.
- **Integrated Factory MEP Service Holes:** Pre-punched 34 mm flared service holes spaced every 600 mm allow seamless routing of electrical conduits and PEX plumbing pipes.
- **100% Laser Inkjet Part Coding:** Every stud, track, joist, and truss element receives an indelible laser inkjet position code matching the 3D assembly shop drawings.

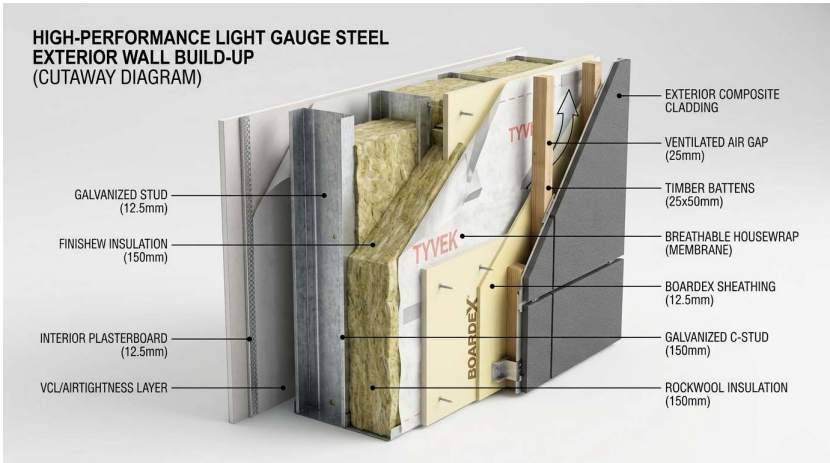
CHAPTER 4: BUILDING PHYSICS, ENERGY EFFICIENCY & ACOUSTIC ENGINEERING

Glaser Dew Point Simulation & Breathable Envelopes:

ProClima Intello Plus smart humidity-variable vapor retarder prevents interior moisture from entering the stud cavity during cold winter months, while promoting drying toward the interior during summer. The continuous exterior mineral wool jacket eliminates all thermal bridging through steel studs (Psi = 0.00 W/mK), making interstitial condensation and toxic mold growth physically impossible.

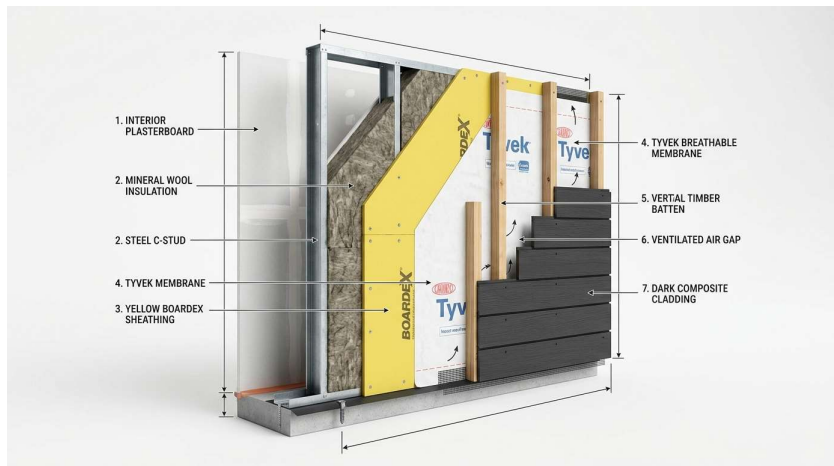
Summer Heat Wave Phase Shift (11.5 Hours Thermal Lag):

In hot Mediterranean or Gulf climates, intense 45°C daytime solar radiation is delayed by 11.5 hours through high-density basalt wool and ventilated facade stack effect. By the time heat reaches the inner envelope, cool night temperatures naturally purge it via convection, slashing cooling HVAC loads by up to 70%.



Continuous Thermal Bridge Break (Psi = 0.00 W/mK) & Envelope Shield

CHAPTER 5: CERTIFIED CROSS-SECTIONS ATLAS (BUILDING ENVELOPE SYSTEMS)



SFV Multi-Layer High-Performance Acoustic & Thermal Wall System

SerVilla certified exterior wall assemblies combine structural cold-formed steel framing, high-density exterior rockwool continuous thermal insulation, A1 non-combustible fiber glass-mat gypsum sheathing, smart humidity-variable membranes, and Knauf Diamant impact-resistant interior lining. The following tables detail layer-by-layer specifications, thermal conductivities (λ), and fire ratings:

SFV-EW-01: Standard External ETICS Rendered Wall System (European Standard)

Total Thickness: 265 mm · U-Value: 0.15 W/m²K · Acoustic Isolation: Rw = 54 dB · Fire Rating: REI 60/90 · Weight: 48 kg/m²

Layer	Layer Description & Material Specification (Outside to Inside)	Thickness	Lambda (λ)	Structural & Physics Function
1	Silicone / Acrylic Hydrophobic Exterior Topcoat Finish Render	3 mm	0.70 W/mK	Weatherproof, UV-resistant decorative architectural finish
2	Polymer-Modified Basecoat Adhesive Mortar + Alkali-Resistant Mesh	5 mm	0.80 W/mK	Impact resistance, crack mitigation, and substrate reinforcement
3	Continuous Exterior Rockwool / Graphite Neopor Insulation Board	60–80 mm	0.034 W/mK	Unbroken continuous thermal mantle; breaks steel stud thermal bridge (Psi=0.00)
4	Moisture-Resistant Exterior Sheathing Board (BoardeX Glass-Mat)	12.5 mm	0.13 W/mK	Structural diaphragm racking shear resistance & A1 fire barrier
5	S350GD+Z275 Galvanized Steel C-Studs (140x45x1.2 mm @ 600 mm)	140 mm	50.0 W/mK	High-yield 350 MPa vertical structural framing members
6	In-Cavity Hydrophobic Basalt Rockwool Insulation (50 kg/m³)	140 mm	0.035 W/mK	Core thermal resistance & high-density acoustic sound absorption
7	Smart Humidity-Variable Vapor Retarder & Air Barrier Membrane	0.5 mm	0.20 W/mK	Prevents winter vapor entry while permitting safe summer interior drying
8	High-Density Interior Gypsum Board (Knauf Diamant Heavy Duty)	12.5 mm	0.25 W/mK	Smooth paint finish, high impact resistance & internal fire shield

SFV-EW-02: Ventilated Rain-Screen Facade Wall (Porcelain / Wood / Metal Cladding)

Total Thickness: 295 mm · U-Value: 0.14 W/m²K · Acoustic Isolation: Rw = 56 dB · Fire Rating: REI 90 · Weight: 54 kg/m²

Layer	Layer Description & Material Specification (Outside to Inside)	Thickness	Lambda (λ)	Structural & Physics Function
1	Architectural Cladding (Large-Format Porcelain / Thermowood / Zinc)	8–20 mm	1.30 W/mK	Primary weather shield & luxury contemporary facade aesthetics
2	Continuously Ventilated Cavity & Engineered Aluminium Substructure	30–40 mm	0.00 W/mK	Chimney stack effect vents driving rain and purges summer solar radiation
3	Breathable Water-Resistant & UV-Stable Wind Barrier (DuPont Tyvek)	0.5 mm	0.17 W/mK	Prevents driving rain penetration while letting interior vapor escape freely
4	Continuous Exterior Rockwool Board (Black Glass Tissue Facing)	50 mm	0.034 W/mK	Exterior thermal mantle enveloping all steel framing members
5	Structural Exterior Sheathing (12.5 mm BoardeX Glass-Mat Sheathing)	12.5 mm	0.13 W/mK	Transfers wind suction and earthquake racking forces to foundation
6	S350GD Cold-Formed Steel Framing + 140 mm A1 Rockwool Cavity Fill	140 mm	0.035 W/mK	Primary load-bearing studs and dense acoustic/thermal core
7	Airtight Vapor Barrier + 25 mm Independent Service Cavity Battens	25 mm	0.04 W/mK	Allows running wiring and backboxes without puncturing airtight envelope
8	Double-Layer 2x12.5 mm Knauf Fire & Acoustic Gypsum Plasterboards	25 mm	0.24 W/mK	Rw = 56 dB acoustic attenuation, impact strength & REI 90 fire rating

SFV-EW-03: Passivhaus Ultra-Low Energy Envelope Wall (Twin Thermal Break)

Total Thickness: 345 mm · U-Value: 0.11 W/m²K · Acoustic Isolation: Rw = 59 dB · Fire Rating: REI 120 · Weight: 62 kg/m²

Engineered for German KfW 40 Plus, Swiss Minergie-P, and Nordic sub-zero winter climates.

Layer	Layer Description & Material Specification (Outside to Inside)	Thickness	Lambda (λ)	Structural & Physics Function
1	Silicone Mineral Plaster or Ventilated Architectural Rain-Screen	5 mm	0.75 W/mK	Exterior weatherable protective layer and UV-shield
2	Continuous 120 mm High-Density Exterior Rockwool (120 kg/m³)	120 mm	0.034 W/mK	Heavyweight thermal mantle; eliminates all cold bridging in arctic conditions
3	15 mm Structural OSB-3 / Fiber-Cement Structural Bracing Board	15 mm	0.13 W/mK	High-capacity shear wall diaphragm resisting severe lateral seismic loads
4	140 mm S350GD Steel Studs + 140 mm A1 Mineral Wool Cavity Fill	140 mm	0.034 W/mK	Primary vertical load-bearing frame and core thermal insulation
5	ProClima Intello Plus Intelligent Vapor Retarder (Blower-Door Cert.)	0.5 mm	0.17 W/mK	Airtight seal delivering Blower-Door test compliance n50 < 0.6 h⁻¹
6	50 mm Horizontal Service Battens + 50 mm Acoustic Rockwool Infill	50 mm	0.035 W/mK	Protected MEP service run cavity and secondary thermal/acoustic mass
7	Double-Layer 2x12.5 mm Knauf Diamant Heavy Duty Acoustic Lining	25 mm	0.25 W/mK	Exceptional impact resistance, Rw = 59 dB acoustics & REI 120 fire barrier

SFV-FL-01: Acoustic Cassette Floor with Dry Screed & Underfloor Heating

Total Thickness: 380 mm · Rigidity Limit: Strict L/500 · Airborne Sound: $R_w = 58 \text{ dB}$ · Impact Sound: $L'_{n,w} \leq 48 \text{ dB}$ · REI 60/90

Layer	Layer Description & Material Specification (Outside to Inside)	Thickness	Lambda (λ)	Structural & Physics Function
1	Floor Finish: Engineered Hardwood Parquet or 60x120 Porcelain Tiles	15 mm	0.17 W/mK	Wear-resistant architectural floor finish
2	Knauf Brio 23 mm Dry Screed / Fermacell + Underfloor Heating Pipes	23 mm	0.38 W/mK	Underfloor radiant heating conductivity, structural stiffness and dead load
3	High-Density EPDM / Rubber-Cork Impact Acoustic Isolation Mat	10 mm	0.04 W/mK	Decouples footstep impact noise transmission to lower level ($L_{n,w} \leq 48 \text{ dB}$)
4	22 mm Tongue-and-Groove Structural Subfloor (OSB-3 / Fibrocement)	22 mm	0.13 W/mK	Horizontal floor diaphragm distributing gravity and lateral loads
5	Continuous Heavy-Duty EPDM Acoustic Isolation Strip on All Joists	5 mm	0.15 W/mK	Prevents steel-wood micro-friction squeaks and structure-borne vibration
6	200–250 mm S350GD Steel Cassette Joists (400 mm On-Center Spacing)	230 mm	50.0 W/mK	Strict L/500 deflection limit; provides rock-solid walking feel
7	100 mm Basalt Rockwool Acoustic Cavity Sound Absorber	100 mm	0.035 W/mK	Eliminates drum reverberation and cavity resonance between floors
8	Acoustic Resilient Sound Channels (Federschiene) & CD Ceiling Channels	25 mm	0.00 W/mK	Acoustically suspends lower ceiling drywall from floor joist movement
9	15 mm Fire-Resistant Knauf Fireboard Ceiling Plasterboard	15 mm	0.24 W/mK	Smooth ceiling paint finish and REI 60–90 fire barrier

SFV-RF-01: Double-Ventilated Standing Seam Titanium Zinc / Aluminium Roof

Total Thickness: 365 mm · U-Value: 0.12 W/m²K · Acoustic Isolation: Rw = 52 dB · Fire Rating: REI 90 · Snow Load: 4.5 kN/m²

Layer	Layer Description & Material Specification (Outside to Inside)	Thickness	Lambda (λ)	Structural & Physics Function
1	0.70 mm Titanium Zinc / Pre-Painted Aluminium Standing Seam Roofing	0.7 mm	110.0 W/mK	100% watertight, non-corrosive A1 non-combustible primary roof skin
2	Structured Drainage & Separating Vapor Permeable Mat (Delta-Trela)	8 mm	0.17 W/mK	Prevents underside condensation corrosion; dampens heavy rainfall drum noise
3	18 mm Tongue-and-Groove Moisture-Resistant OSB-3 Roof Decking	18 mm	0.13 W/mK	Continuous structural substrate securely fastening standing seam clips
4	50x50 mm Counter-Battens Creating Continuous Ventilated Air Cavity	50 mm	0.00 W/mK	Rapid snow melt drainage and continuous purge of summer solar attic heat
5	Monolithic Vapor-Permeable Water-Resistant Underlayment (Tyvek Supro)	0.5 mm	0.17 W/mK	Secondary defense barrier against wind-driven snow dust and condensation
6	S350GD Steel Roof Trusses / Rafters + 200 mm Rockwool Core Infill	200 mm	0.034 W/mK	High snow load capacity (4.5 kN/m²) and primary thermal barrier
7	50 mm Cross-Battens + 50 mm Additional Rockwool (Total 250 mm)	50 mm	0.034 W/mK	Completely blankets truss bottom chords, eliminating 100% of thermal bridges
8	Airtight Smart Vapor Retarder + 12.5 mm Ceiling Gypsum Board	13 mm	0.25 W/mK	Airtight ceiling boundary and smooth architectural paint finish

CHAPTER 6: 4 CORE DELIVERY PACKAGES — PROCUREMENT SCOPE & VISUAL GALLERY

SerVilla manufacturing is structured into 4 transparent standard delivery packages designed to align with the general contractor's procurement strategy. All pricing is Ex-Factory Istanbul (loaded onto Mega TIR trucks):

			
Package 1: Structural Frame Kit (Primary Superstructure)	Package 2: Frame + Insulation (Framing + Enclosure Envelope)	Package 3: Weather-Tight Shell (Enclosed Weathertight Shell)	Package 4: Complete Turnkey (Full Modular Construction Kit)
110 – 165 € / m² 450 – 600 m² / Mega TIR	195 – 270 € / m² 180 – 220 m² / Mega TIR	340 – 480 € / m² 120 – 140 m² / Mega TIR	550 – 780 € / m² 75 – 90 m² / Mega TIR
S350GD+Z275 CNC-punched steel frame, high-tensile bolts, anchor plates, Eurocode static calculation, and 3D assembly shop drawings.	Steel framing + 140 mm A1 non-combustible rockwool + BoardeX exterior glass-mat sheathing + breathable vapor-permeable membranes.	Best-seller for European export. Framing + insulation + triple-glazed Schüco/Rehau windows + steel entry door + standing seam metal roof.	All interior drywall + 60x120 porcelain floor tiles + engineered hardwood + sanitary fixtures + faucets + interior doors ready to install.

6.1. Comprehensive Inclusions & Exclusions Matrix

Construction & Manufacturing Scope Item	Pkg 1 (Frame)	Pkg 2 (+Insulation)	Pkg 3 (Shell)	Pkg 4 (Turnkey)
Eurocode 3 & 8 Certified Static Calculation Report for Permits	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
3D Part-Coded Assembly Shop Drawings & Laser Inkjet Profiles	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
S350GD+Z275 Structural Wall Panels, Floor Joists & Roof Trusses	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
All Structural Connection Bolts, Hold-Down Anchors & Self-Drilling Screws	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
Pre-Punched 34 mm Factory Service Holes for Electrical & PEX Plumbing	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
Exterior Gypsum Sheathing Boards (BoardeX Glass-Mat Sheathing)	EXCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
In-Cavity 140 mm A1 Basalt Rockwool Thermal & Sound Insulation	EXCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
Airtight Smart Vapor-Variable Retarder & Weather-Resistant Membranes	EXCLUDED	✓ INCLUDED	✓ INCLUDED	✓ INCLUDED
Triple-Glazed Schüco / Rehau Windows & Insulated Steel Entrance Door	EXCLUDED	EXCLUDED	✓ INCLUDED	✓ INCLUDED
Standing Seam Metal Roofing / EPDM Flat Roof Waterproofing System	EXCLUDED	EXCLUDED	✓ INCLUDED	✓ INCLUDED
Exterior Continuous Insulation Basecoat / Cladding Substructure	EXCLUDED	EXCLUDED	✓ INCLUDED	✓ INCLUDED
Interior Partition Wall Knauf Drywall Lining & Acoustic Screws	EXCLUDED	EXCLUDED	EXCLUDED	✓ INCLUDED
Interior Doors, 60x120 Porcelain Tiles & Engineered Hardwood Flooring	EXCLUDED	EXCLUDED	EXCLUDED	✓ INCLUDED
Sanitary Fixtures, Faucets, Walk-in Showers & Plumbing Trim Ware	EXCLUDED	EXCLUDED	EXCLUDED	✓ INCLUDED
Concrete Slab Foundation & Ground Excavation (By Client / Local Trade)	EXCLUDED	EXCLUDED	EXCLUDED	EXCLUDED

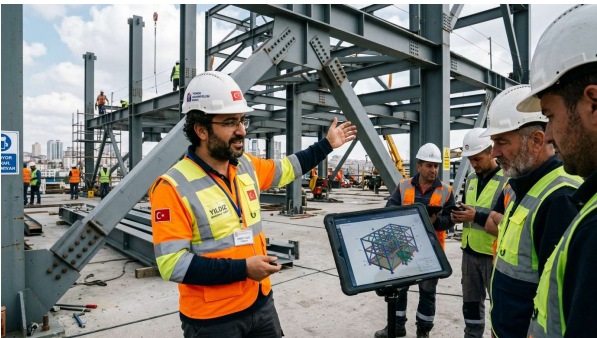
CHAPTER 7: INTERNATIONAL INSTALLATION & SITE MANAGEMENT MODES

To guarantee certified construction quality across global jobsites, SerVilla provides 3 flexible operational models. In adherence to our transparent costing policy, site assembly services are priced separately from manufacturing:



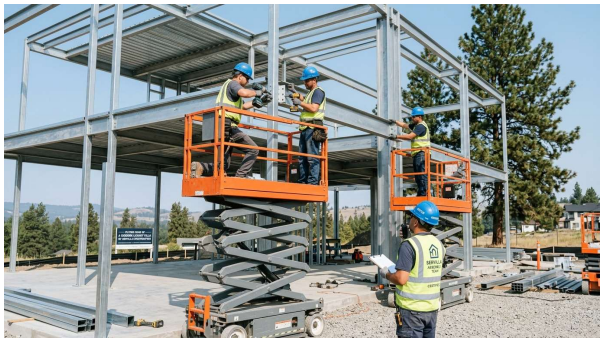
Mode 1: Supply-Only Self-Assembly
(Precision Flatpack Kit)
€0 (Labor Excluded)

All elements delivered part-coded matching 3D assembly drawings. Complete fastener schedule and 24/7 remote video engineering support included.



Mode 2: Site Supervision
(Dedicated Structural Engineer)
€4,200 Fixed Engineering Fee
(Travel & Lodging Included)

A bilingual Senior SerVilla Structural Engineer is deployed to your jobsite to train your local team, inspect anchor torques/levels, and sign off the certificate.



Mode 3: Certified Factory Erection
(Full Installation by SerVilla)
€3,500 Mobilization + Unit Rate
(See schedule below)

A dedicated 4-man certified SerVilla factory crew mobilizes to your European jobsite equipped with heavy-duty hydraulic tools to execute complete erection.

7.1. International Certified Installation Tariff (European Jobsites)

Standard unit installation rates when full site erection is executed by the official SerVilla certified factory crew:

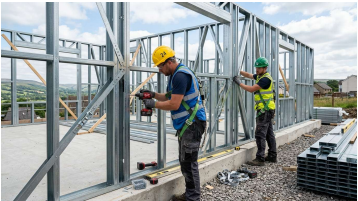
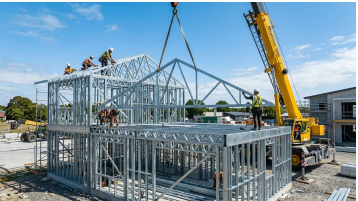
Procurement Package Scope	Erection Duration (150 m² Villa)	Unit Assembly Rate (€/m²)	Mobilization & Tooling Package
Package 1: Structural Frame Kit	4 – 6 Working Days (Rapid Mechanical Erection)	65 € / m²	€3,500 (Flights, Visas, Heavy Tool Crates)
Package 2: Frame + Sheathing + Insulation	8 – 10 Working Days	110 € / m²	€3,500 Fixed Mobilization Package
Package 3: Weather-Tight Shell	14 – 18 Working Days (Windows & Roof Complete)	175 € / m²	€3,500 Fixed Mobilization Package
Package 4: Complete Turnkey	35 – 50 Working Days (Interior Fit-Out Trades)	260 € / m²	€3,500 Fixed Mobilization Package

[INVESTOR RECOMMENDATION] International Recommendation: Package 3 + Site Supervision Synergy

For European projects, the most cost-effective and risk-free strategy is to have SerVilla’s factory crew erect the weather-tight shell (Package 3 — roof, triple-glazed windows, and weather barrier) in 15 days, while interior drywall, tiling, and electrical trim are executed by your local trades under the guidance of our Senior Supervising Engineer (€4,200). This optimizes international travel expenses and yields overall project savings of at least 25%.

CHAPTER 8: 5-STEP SITE ERECTION TIMELINE (FROM SLAB TO SHELL IN 15 DAYS)

SerVilla industrialized light gauge steel systems assemble rapidly on-site with zero dust, zero noise complaints, and zero curing delays. Step-by-step chronological erection sequence:

				
STEP 1 (Days 1–2) Foundation Anchor & Track	STEP 2 (Days 3–5) Wall Panel Erection	STEP 3 (Days 6–8) Cassette Joists & Trusses	STEP 4 (Days 9–12) Sheathing & Weather Barrier	STEP 5 (Days 13–18) Windows, Roof & Handover
Concrete slab leveled, EPDM capillary moisture barrier rolled out, heavy U-tracks anchored with Hilti HIT-HY 200 chemical anchors.	Factory pre-assembled wall panels hoisted in sequence according to 3D drawings; bolted and plumbed with laser alignment.	Rigid L/500 floor joists and roof trusses craned into place and fastened with heavy-duty structural connector plates.	BoardeX glass-mat sheathing fastened, DuPont Tyvek breathable membrane wrapped and taped airtight around all openings.	Triple-glazed windows and standing seam roof installed; weather-tight shell officially handed over with inspection sign-off.

CHAPTER 9: TRANSPARENT BUDGETING WORKSHEET (SELF-PRICING ENGINE)

Calculate your villa investment budget in 5 transparent steps. Every metric is backed by verified manufacturing and freight rates:

Budget Calculation Step	Selection Parameter & Multiplier	Subtotal Budget (€)
1. Total Floor Area & Storeys	[_____ m²] x [1 Storey: 1.00 2 Storeys: 1.05 3 Storeys: 1.12]	= _____ Effective m²
2. Manufacturing Package Choice	Pkg 1 (€140) / Pkg 2 (€230) / Pkg 3 (€410) / Pkg 4 (€665)	= _____ € (Ex-Factory)
3. Site Installation Mode	€0 (Self-Assembly) / €4,200 (Supervision) / Factory Erection	= _____ € (Assembly)
4. Mega TIR Freight to Jobsite	Germany: €3,800 Italy: €3,200 France: €4,200 Switzerland: €4,100	= _____ € (Freight)
5. Optional Engineering Upgrades	Underfloor radiant heating, standing seam zinc roof, Schüco triple-glazing	= _____ € (Options)
TOTAL ESTIMATED PROJECT INVESTMENT	All Manufacturing, Logistics & Installation Items (DAP Jobsite)	TOTAL: _____ €

CHAPTER 10: EUROPEAN & REGIONAL FREIGHT, TRANSIT TIMES & 0% CUSTOMS TARIFF

Leveraging Turkiye's geographic proximity to the European mainland, all flatpack crates are loaded directly onto Mega TIR trucks (13.6 m curtain-siders) and dispatched with rapid 2 to 5-day door-to-door transit times. Under the EU-Turkiye Customs Union, shipments to all EU member states are issued with an official A.TR Movement Certificate, granting complete 0% Customs Duty exemption. For Switzerland, Norway, and the UK, preferential EUR.1 Free Trade Agreement documentation applies.



International Mega TIR Direct Road & Maritime Ro-Ro Freight Transit

Destination Country	Mega TIR Freight	Transit Time	Customs Duty Rate	Transit Route
Italy (Bari / Trieste / Rome)	€3,200	4 Days	0% (A.TR Movement Certificate)	Ro-Ro Ferry (Pendik -> Trieste) + Overland Road
Germany (Munich / Frankfurt)	€3,800	4 Days	0% (A.TR Movement Certificate)	Overland Motorway Corridor via Hungary
France (Lyon / Paris / Nice)	€4,200	5 Days	0% (A.TR Movement Certificate)	Ro-Ro Sète / Northern Italy Motorway Transit
Switzerland (Zurich / Geneva)	€4,100	4 Days	0% (EUR.1 EFTA Preferential FTA)	Direct Overland TIR via Austria
Austria (Vienna / Salzburg)	€3,400	3 Days	0% (A.TR Movement Certificate)	Direct Central European Motorway Freight
United Kingdom (London)	€4,800	6 Days	0% (UK-Turkiye Free Trade Agreement)	Eurotunnel / Ro-Ro Calais-Dover to UK
Greece (Thessaloniki / Athens)	€2,400	2 Days	0% (A.TR Movement Certificate)	Direct Border Crossing Motorway TIR

CHAPTER 11: QUALITY ASSURANCE (QA/QC), 50-YEAR WARRANTY & ENGINEERING CONTACT

- **Ultrasonic Steel Thickness Verification:** Ultrasonic thickness gauges and micrometers measure every structural coil; out-of-tolerance steel is rejected before entering the line.
- **Z275 Galvanization Mass Testing:** Magnetic induction coating gauges verify minimum 275 g/m² zinc mass on every production batch to ensure 50-year corrosion protection.
- **Pilot Hole & Swage Calibration:** Bolt pilot holes and swage dimples are checked with precision gauges to guarantee zero friction and rapid assembly on-site.
- **Industrial Export Crating Standards:** Flatpicks are steel-strapped, reinforced with edge protectors, and wrapped in heavy-duty UV-resistant waterproof shrinkwrap for export.

11.1. Official Warranty Commitments

- **50-Year Structural Superstructure Warranty:** All S350GD+Z275 structural steel superstructures are warranted against rust, corrosion, structural fatigue, and defect for 50 years.
- **10-Year Water-Tightness Guarantee:** Factory-installed building envelopes, standing seam roofs, and window installations carry a 10-year weather-tightness guarantee.
- **Permit & Building Authority Approval Guarantee:** Every manufactured villa is delivered with wet-stamped Eurocode 3 and Eurocode 8 static calculations ready for municipal building permits.

11.2. Direct International Engineering Desk & Contact

Head Office & Showroom	Cevizli Mah. Orhan Gazi Cd. No: 24/B Maltepe / İstanbul, Türkiye
Office Landline Phone	+90 216 614 04 34 (Switchboard & Client Desk)
Senior Structural Engineer Direct	+90 505 507 04 18 (Direct Technical Desk & WhatsApp)
Manufacturing Plant & Hub	Servilla Corp. — Dilovasi / Gebze Industrial Free Zone, Kocaeli / İstanbul
Web Platform & RFQ Tenders	www.steelframevilla.com · www.servilla.com.tr · info@servilla.net