



EPS DECORATIVE FACADE SYSTEM

INSULATED PROFILES AND CUSTOM
ARCHITECTURAL ELEMENTS

[ECOSMART-GROUP.COM](https://ecosmart-group.com)

ENGINEERED WITHIN.



The catalogue

A direct path from product definition to specification and installation

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EcoSmart Solutions

Architecture, materials and project support in one coordinated journey



EcoSmart Solutions combines architectural consulting, manufacturing partnerships, premium building materials and digital tools in one coordinated project journey. We support material selection, specification, approved samples and delivery for Saudi projects.



Consult



Select



Specify



Deliver

01

Saudi market focus

Solutions selected for local project requirements, climate and architectural character.



02

Project support

Technical coordination from early material selection through approved samples and delivery.



EPS decorative façade system

Lightweight, non-load-bearing architectural elements for interior and exterior applications



CNC-cut EPS profiles receive a durable polymer-sand or acrylic protective coating. The system supports repeatable details, custom forms and faster installation than carved architectural elements.



Wall cladding



Window frame



Cornice

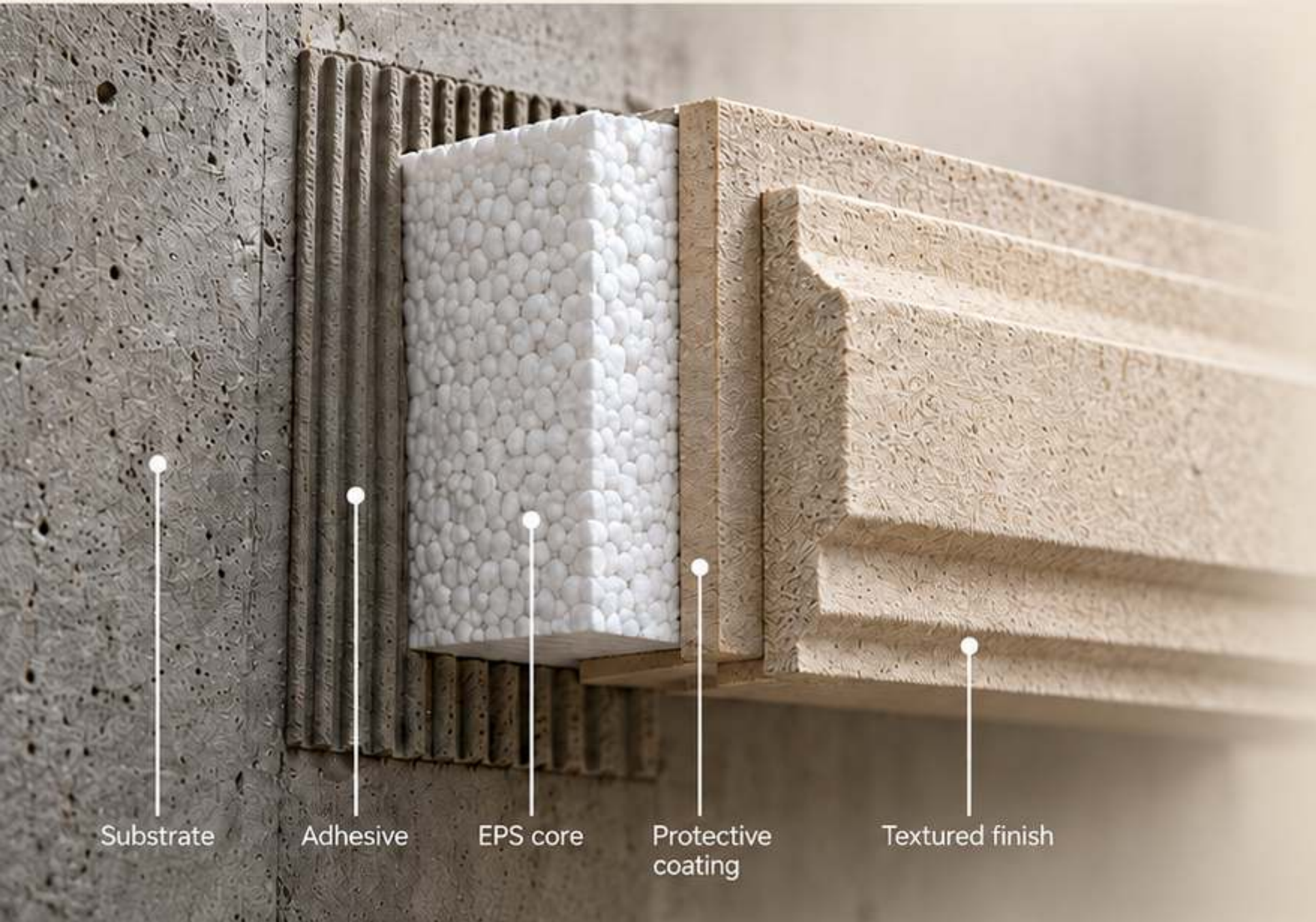
TYPICAL APPLICATIONS

Wall cladding
Cornices and bands
Window and door surrounds

Pilasters and columns
Decorative screens
Custom architectural profiles

System composition

A lightweight CNC-shaped EPS core protected by a reinforced exterior coating



01



CNC-shaped EPS core

Profiles are cut to the approved geometry. EPS density: 18–22 kg/m³.



02



Protective coating

A 3–5 mm polymer-sand or acrylic layer protects the shaped EPS core.



03



Project-specific installation

The approved method statement defines the substrate, adhesive, temporary support, joint treatment and finish coat.





Performance benefits

The value comes from prefabrication, low weight and controlled detailing.

*Lighter
Smarter
Greener Buildings*



01



Rapid installation

Factory-shaped elements reduce on-site forming and simplify repetitive work.



02



Low weight

Easier handling and lower dead load than many carved stone or concrete details.



03



Thermal contribution

EPS can improve the wall assembly U-value when the full build-up is correctly designed.



04



Water resistance

The coated system is designed for exterior exposure when joints and finishes are correctly executed.



05



Custom profiles

CNC fabrication supports project-specific dimensions, motifs and facade compositions.



06



Cost control

Standardized profiles can reduce fabrication and installation cost depending on project scope.



Dimensions and build-up

Standard dimensions shown; final sizes follow approved shop drawings



PROPERTY	STANDARD RANGE
Overall length	2000 mm
Standard width	400-600 mm
Typical EPS profile thickness	30, 40 and 50 mm
EPS density	18-22 kg/m ³
Protective coating	3-5 mm

Custom dimensions and thicknesses require approved shop drawings and technical confirmation.

Wall panels

Linear, textured and patterned coated EPS profiles

Lightweight panels create continuous façade surfaces, grooves and decorative reliefs for interior and exterior applications.

01 LINEAR PROFILES

Horizontal or vertical grooves establish a clean architectural rhythm.



Single groove



Two grooves



Multiple grooves

02 TEXTURED SURFACES

Fine mineral finishes reproduce stone, concrete and subtle linear textures.



Fine stone



Sandstone



Concrete



Subtle linear stone



Rough mineral



Smooth mineral

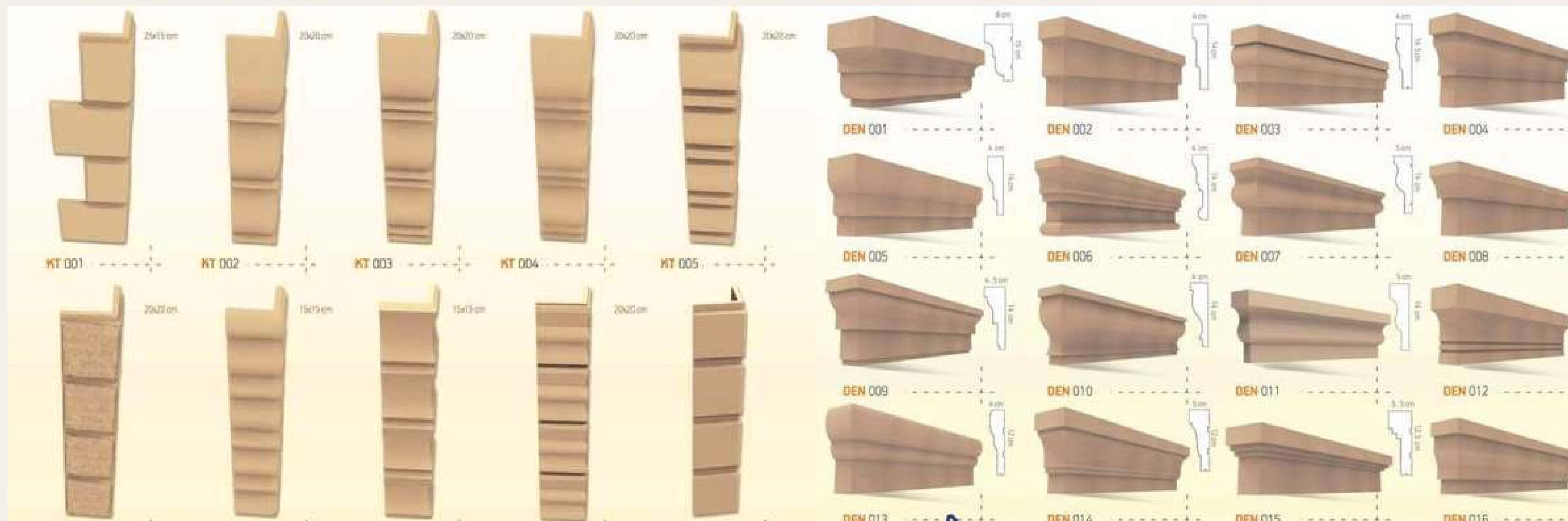
03 PATTERNED PANELS

Geometric reliefs create feature walls, screens and accent surfaces.



Cornices and facade bands

Standard linear profiles for horizontal articulation



Select the reference profile, then confirm width, projection and return conditions in the shop drawings.

Cornices and decorative profiles

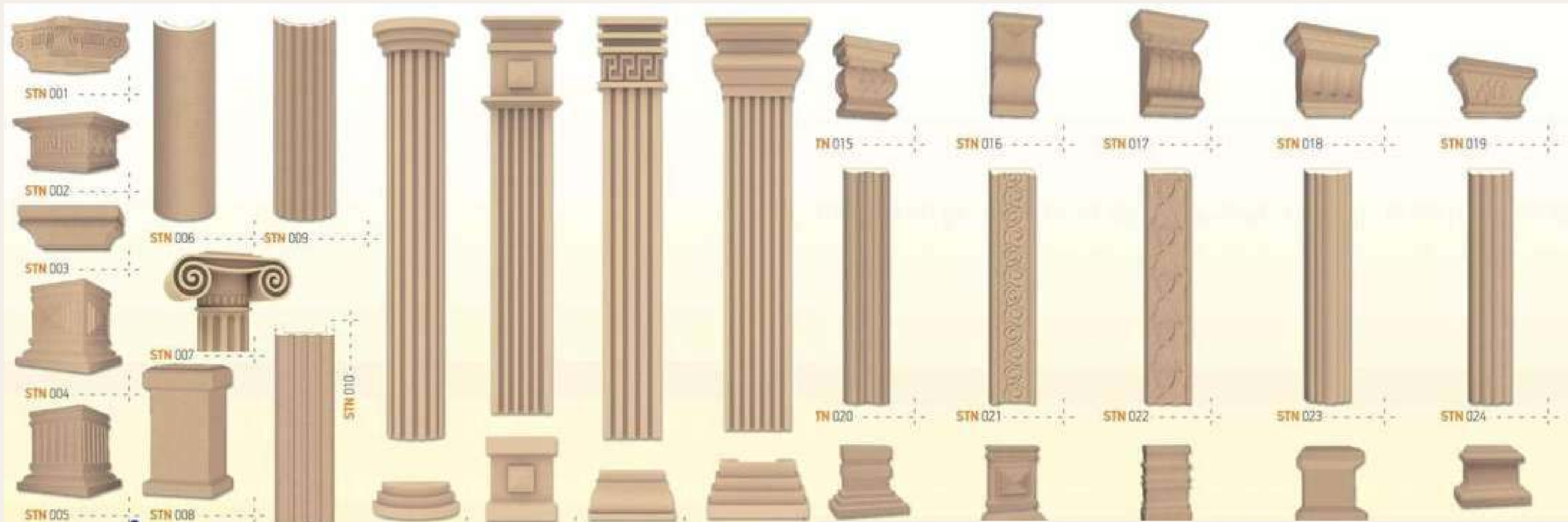
Classic and detailed profiles for layered facade compositions



Custom CNC profiles can be developed from approved elevations and sections.

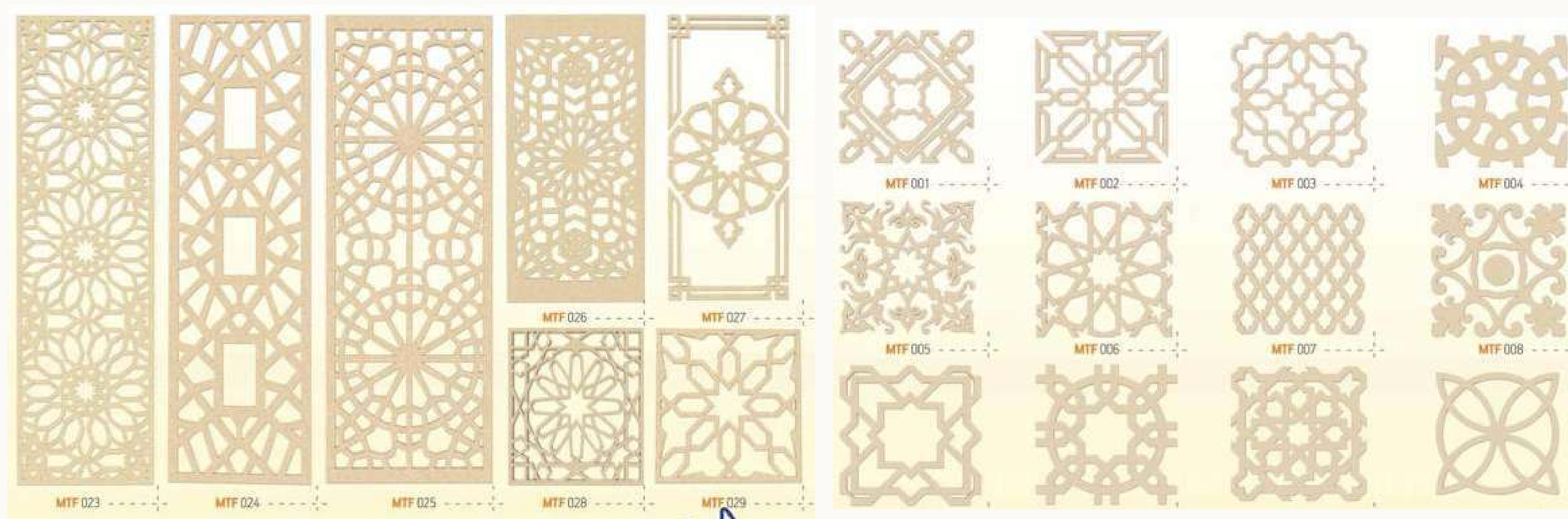
Pilasters, columns and capitals

Modular components for vertical facade rhythm



Openings, screens and custom elements

Window surrounds, arches, mashrabiya panels and decorative motifs



Project documentation

A concise catalogue summary supported by the current factory document package



01 Certificates and registrations

Selected documents supporting factory and product compliance.

02 Laboratory reports

Test records covering material, coating, bonding and performance properties.

03 Thermal calculations

Reference wall assembly calculations for early design coordination.

04 Project documents

Technical data, adhesive specification and installation method issued per project.

Complete originals are issued on request and remain subject to the latest approved factory revision.

Selected laboratory reports

Bonding, water exposure and durability records

Appendix Report

U-value

Report No. 05

Saudi Standards

Annex 1. Specimen Configuration and Material

Sample for the testing is provided from the applicant and corresponds as follows:

A. Size of Specimen, width: 2000 mm x Height: 2000 mm x Thickness: 230 mm

B. Finish of Specimen

Item	Comments	Notes
Specimen	Concrete wall 120 mm (with steel mesh 8 mm) + glue 5 mm + expanded polystyrene board 75 mm + acrylic seal 5 mm	
Insulation System	SDP expanded polystyrene board (BADAEL) 75 mm with density 22 kg/m ³ & thermal conductivity 0.030 W/m.K	Refer to Annex-4 Drawing
Auxiliary Component	Polysulfone for joints	

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Appendix Report

U-value

Report No. 06

Saudi Standards

Annex 2. Thermal Transmittance RAW DATA

Date: 2021-11-29 - 2021-12-01

Item	Guard box (m)	Cold side chamber (m)	Measuring box (m)	Heat Transfer measuring area (m)
Dimension	3.2 x 3.7 x 3.2 (W x H x T)	3.2 x 3.1 x 2.5 (W x H x T)	2.9 x 2.9 x 0.7 (W x H x T)	3.6 x 2.0 (W x H)

Temperature (°C)	Guard box	1st	2nd
	Environmental Temperature for Hot Side	20.17	20.19
	Environmental Temperature for Cold Side	6.19	6.20
	Environmental Temperature Difference	13.95	13.95

Heat Flow Rate (W)	Supplied Heat, Total (W)	1st	2nd
	Calculated Heat Q2	9.54	9.77
	Heat Flow Rate through Specimen	20.18	20.91

Thermal Transmittance (W/m ² .K)	1st	2nd
	0.37	0.38

Thermal Transmittance Resistance (m ² .K/W)	1st	2nd
	2.70	2.63

30.44

1. Set up parameter for Guard box and Measuring box: 23 °C
2. Set up parameter for Cold side chamber: 5 °C
3. Air Flow: Horizontal
4. Test and recovery chamber specimen only

*1. Supplied heat, heat actually supplied from by fan and heater in heating chamber
*2. Calculated heat: adjusted heat of heating chamber according wall and specimen fixture

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Appendix Report

U-value

Report No. 07

Saudi Standards

Annex 3. Specimen Drawing

BADAEL INSULATION CLADDING

ACRYLIC SEAL

POLYSTYRENE BOARD

GLUE 5 mm

CONCRETE WALL 120mm

STEEL MESH 8mm

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Appendix Report

U-value

Report No. 08

Saudi Standards

Annex 4. Specimen Photos

Photo 1: Contrast Temperature Side View

Photo 2: Cold Temperature Side View

End of Report

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REPORT 05

REPORT 06

REPORT 07

REPORT 08

Selected laboratory reports

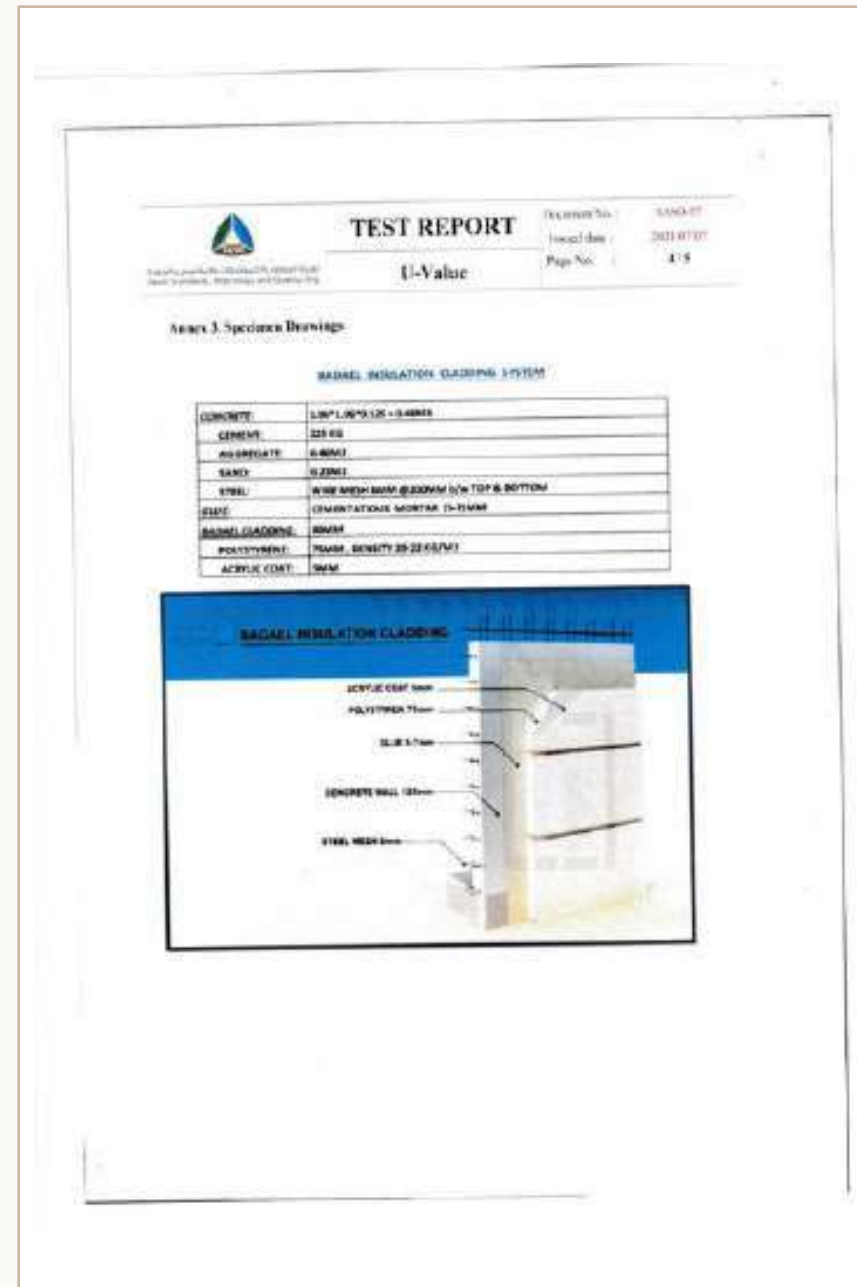
Additional product performance records



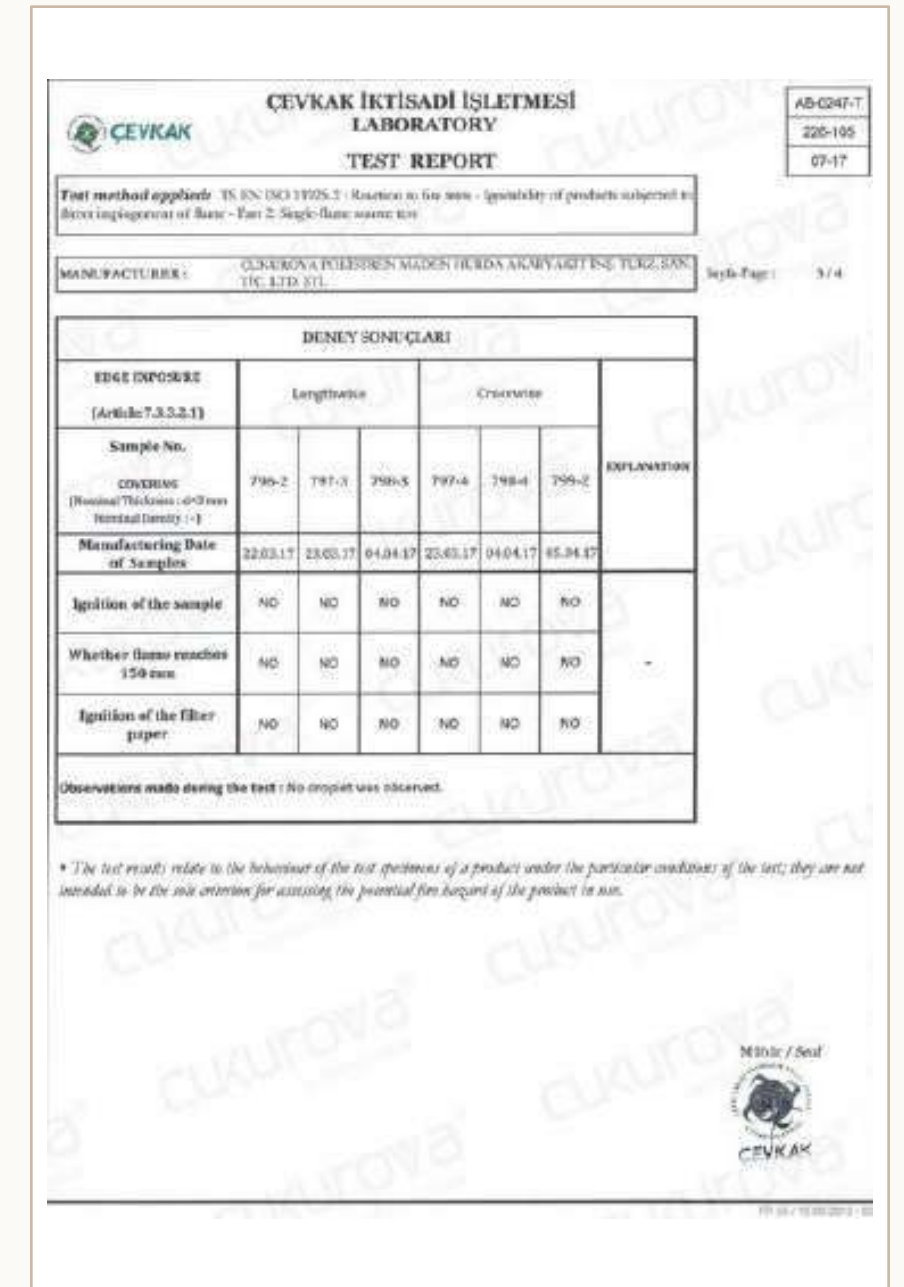
Report 09



Report 10



Report 11



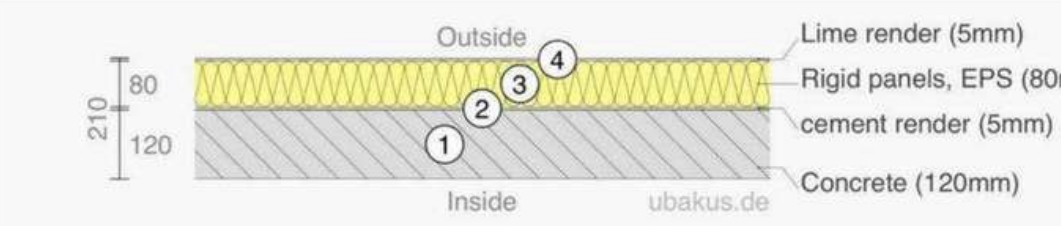
Report 12

Reference wall assemblies

Supplier calculation examples for early design coordination

Concrete Wall 120mm, Cement Render 5mm, EPS 80mm, Cement Lime / Acrylic

Exterior wall, U Value =0.324 W/m²K



Material	Thickness (m)	K- Value (W/m.K)	R- Value (m2.K/W)	U- Value (W/m2.K)
Concrete Wall	0.120	1.200	Rsi= 0.100	
Cement Render	0.005	1.200	Rs1= 0.004	
Polystyrene	0.082	0.030	Rs2= 2.733	
Lime cement / Acrylic	0.005	0.020	Rs3= 0.250	
Thermal Transmittal (U)				0.324

*The General formula for U- Value is given as below:

$$U = \frac{1}{(R_{si} + R_1 + R_2 \dots)}$$

Where:

- Rsi is the fixed internal Thermal Resistance.
- and R1+ R2... is the sum of all the resistances of the building materials in the constructional element.

*The resistance of a building material is derived by the following formula:

$$R = \frac{D}{K}$$

- where k is the conductivity of the building material and D is the material thickness.

Reference assembly	EPS	U-value
120 mm concrete wall	80 mm	0.324 W/m²K
200 mm insulated block wall	40 mm	0.340 W/m²K
200 mm hollow block wall	80 mm	0.322 W/m²K
150 mm factory wall panel	50 mm	0.236 W/m²K

These values are examples, not universal product declarations. Final performance depends on the complete wall build-up, approved material properties, workmanship and project assumptions.

EPS core and facade performance

Stated values from the supplier technical table

Property	Unit	Performance index
Apparent density	kg/m³	18-22
Thermal conductivity	W/(m·K)	0.041
Dimensional stability	%	≤ 0.5
Tensile strength perpendicular to layer	MPa	≥ 0.10
Oxygen index	%	≥ 30
Combustion performance level	-	B2
Average combustion time	s	≤ 60
Average combustion range	mm	≤ 90

Facade / cornice test	Performance index
Water absorption, 24 h immersion	≤ 1000 g/m²
Impact strength	≥ 3.0 J
Anti-wind pressure	At least the project design wind load
Freeze-thaw resistance	≥ 0.1 MPa; no hollowing, cracks or detachment

Project wind design and fire compliance must be verified against the applicable authority requirements and approved reports.

Polymer mortar performance

Stated interface, water and durability indicators

Indicator	Condition	Performance
Bond strength	Normal temperature	≥ 0.10 MPa between EPS and mortar
Bond strength	Water exposure	≥ 0.10 MPa between EPS and mortar
Bond strength	Heat exposure	≥ 0.10 MPa between EPS and mortar
Bond strength	Freeze-thaw exposure	≥ 0.10 MPa between EPS and mortar
Water absorption	24 h immersion	≤ 500 g/m²
Operation time	Working period	≤ 3.0 h
Anti-crack property	Thermal stress	No visible cracks
Compression ratio	After 28 days	Maintains ≥ 95% integrity



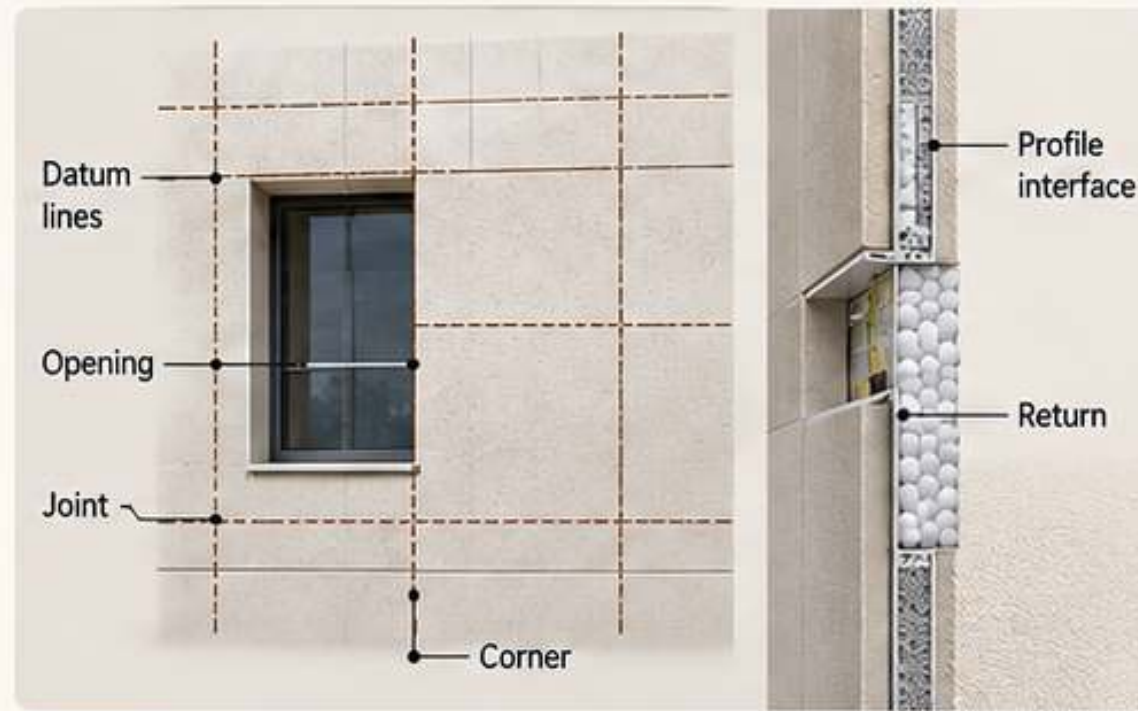
Detailed acceptance criteria shall follow the current approved laboratory report issued for the project.

Installation preparation



01 Substrate

Confirm that the wall is sound, clean, dry, level and free from dust, oil and loose paint.



02 Setting-out

Coordinate datum lines, corners, openings, joints, returns and profile interfaces from the approved drawings.



03 Materials

Use the approved primer, adhesive, joint sealant and finish system. Follow each product data sheet.

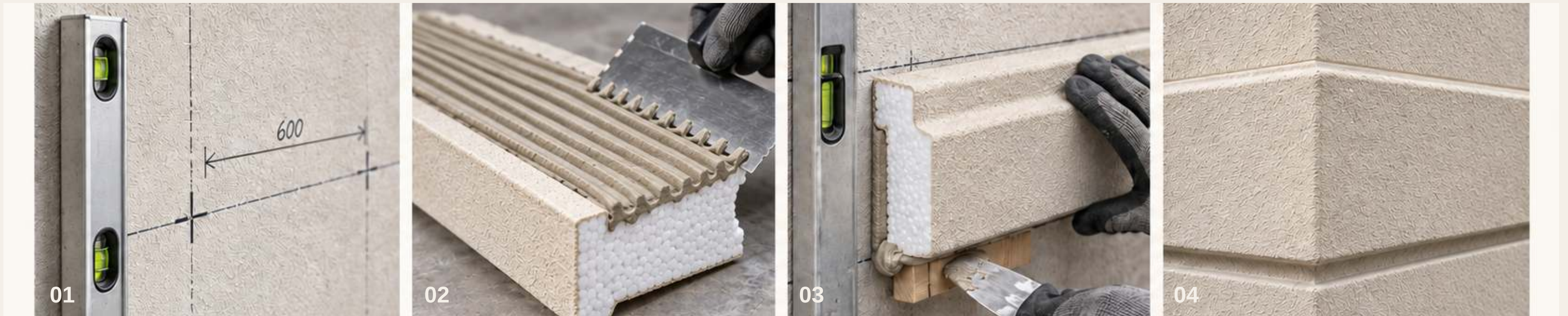


MOCK-UP CHECKPOINT

Complete a representative mock-up before mass installation. Confirm appearance, joints, interfaces and finish before proceeding.

Installation sequence

Four controlled stages from substrate preparation to final inspection



01 Prepare the surface

Clean, dry and level the substrate. Confirm dimensions and setting-out against the approved drawings.

02 Apply adhesive

Apply the approved construction adhesive evenly with a notched trowel. Discard adhesive that has skinned over.

03 Fix and align

Press each element firmly into place. Align it, support it temporarily when required, then remove excess adhesive and treat joints.

04 Cure and finish

Allow the adhesive to cure before coating. Inspect bonding, joints, alignment and final surface quality.

The source notes a 3-4 hour cure period. The approved adhesive data sheet and site conditions take precedence.

Selected reference projects

A sample of completed and in-progress installations supplied by the manufacturing partner



SWCC EXTENSION



ARIFI CAMP



AL TAIF PROJECT



MEDINA PROJECT

Selected reference projects

A sample of completed and in-progress installations supplied by the manufacturing partner



AL-HOFUF



RIYADH ANNEX



MOH DAMMAM



AL FAYSIA PROJECT



AZMEEL PROJECT



Specify EPS with EcoSmart

Clear product selection, approved samples and project-specific technical coordination.

ENQUIRIES

ECOSMART-GROUP.COM

Use the website to start a product or project enquiry.

SAMPLES

PHYSICAL SAMPLE REQUESTS

Sample panels are issued on request for project evaluation.

TECHNICAL

PROJECT DOCUMENTATION

Data sheets, adhesive guidance and installation details are issued per project.