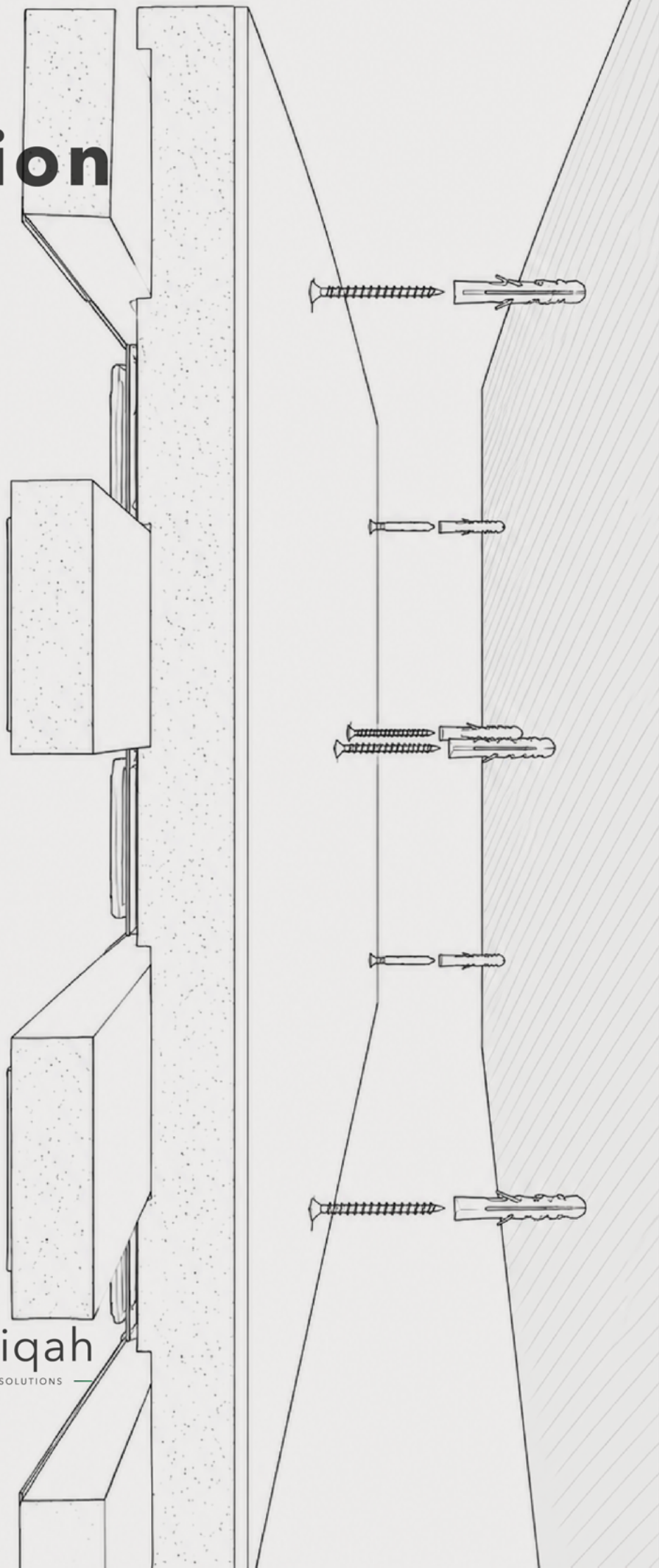
Installation Guide

Step by Step.
Built to Last.



Afdal Tariqah
THERMAL PANELS & FACADE SOLUTIONS

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1. Scope and Application

The Afdal Tariqah Façade Thermal Panel System (FTPS) is intended for thermal insulation and decorative finishing of external walls of newly constructed buildings, reconstructed buildings, or buildings undergoing major renovation, for various functional purposes, including:

- single-family residential buildings;
- multi-family residential buildings;
- public buildings and structures;
- industrial buildings in accordance with SP 56.13330.

The FTPS may be used on buildings and structures operated in all climatic regions and all humidity zones, at outdoor air temperatures from −60 °C to +60 °C.

This manual applies exclusively to Afdal Tariqah façade thermal panels incorporating a rigid polyurethane (PU) thermal insulation core with a fixed nominal insulation thickness of 60 mm. EPS/polystyrene panel variants are outside the scope of this document.

The FTPS may be used for thermal insulation and decorative finishing of external load-bearing and self-supporting walls made of masonry (ceramic units, including porous ceramic units, cellular-concrete blocks, etc.), cast-in-place reinforced concrete, timber, as well as framed panel walls.

2. General Provisions

As a general rule, the FTPS comprises:

- thermal panels;
- joint-grouting compounds;
- mechanical fasteners and adhesive compounds for fixing thermal panels to the substrate;
- starter profiles for installation of the first panel course;
- Non-combustible stone wool fire barriers/fire stops shall be incorporated into the façade system at all locations required by the approved fire-safety design. The fire barrier shall interrupt the 60 mm PU insulation layer and shall be continuous, tightly fitted and mechanically retained as required by the approved detail. The stone wool product, density, dimensions, fire classification and fixing arrangement shall be those demonstrated by the approved/tested system or project fire-stopping design;
- ceramic tiles for finishing fire barriers and window reveals;
- decorative elements for external reveals;
- sealants for joints between window units and external reveals.

All materials and components used for the FTPS, as well as materials used in thermal-panel manufacture, shall be supplied with quality documentation confirming compliance with applicable regulatory requirements.

The Afdal Tariqah system guarantees the declared performance of the FTPS, its components, and installation materials throughout the service life only when the transportation, storage, installation, and operation requirements stated in the approved project drawings and details, and other technical documentation are followed.

System durability and service-life declarations shall be supported by the manufacturer's technical documentation, applicable test evidence, project exposure conditions and maintenance requirements.

3. System Components

3.1.Thermal Panels

The Afdal Tariqah FTPS product range covered by this manual consists exclusively of rigid polyurethane (PU) façade thermal panels.

- PU thermal panels with a polyurethane-foam thermal-insulation layer;

The nominal rigid polyurethane (PU) thermal-insulation core thickness is fixed at 60 mm.
Each panel type may be manufactured as a field panel. Specific panel geometry (dimensions, shape, cross-section) and the type of facing layer are defined in the Afdal Tariqah system technical documentation.

Afdal Tariqah PU thermal panels comprise an external ceramic facing layer, a 60 mm rigid polyurethane thermal insulation core and an internal backing/reinforcing layer. The exact panel build-up shall correspond to the approved product technical data and project submittal.

The facing layer may use ceramic tiles, 245 × 65 mm, or 300 × 150 mm, with tile thickness from 5 to 20 mm. Clinker tiles, concrete tiles, or natural stone manufactured to duly approved regulatory documentation may also be used.

For the reinforcing/backing layer of PU panels, magnesium oxide boards (standard or premium grade), typically as specified in the approved product technical data thick, are used.

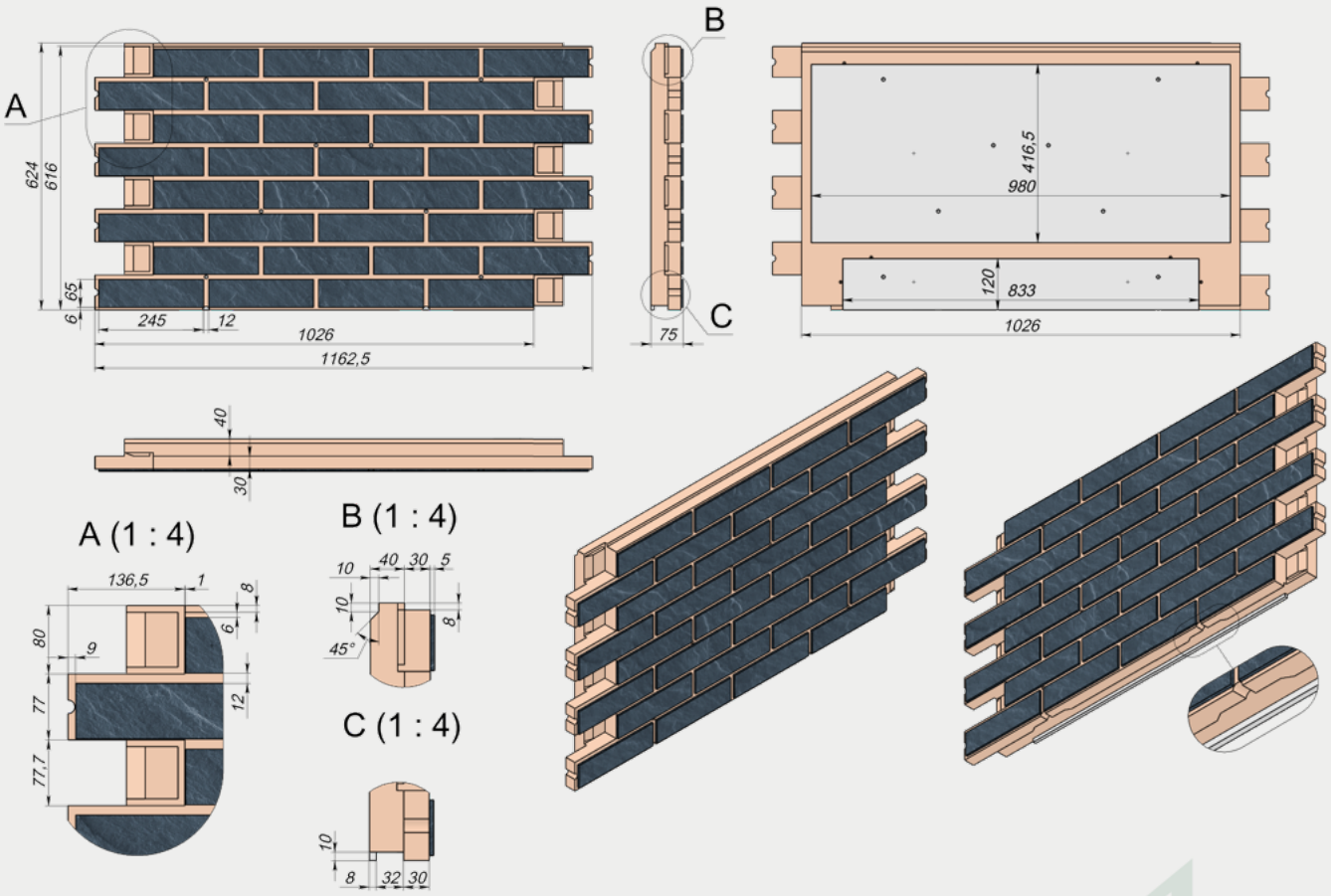


Figure 1 - Typical construction of a PU thermal panel

3.2.Mechanical Fasteners

The following fasteners may be used to secure thermal panels to the substrate:

- dowel nails, minimum size 8 × 80 mm with flat heads;
- plastic dowels, minimum size 8 × 80 mm, with round-head screws or flat-head self-tapping screws.

Flat-head self-tapping screws may be used to fasten FTPS window reveals.

For starter profiles and plinth-panel flashings, the following may be used:

- dowel nails, minimum size 6 × 60 mm, with flat heads;
- plastic dowels, minimum size 6 × 60 mm, with round-head screws or flat-head self-tapping screws.

For temporary positioning of thermal panels in their design position, countersunk adjustment screws may be used. They shall be removed after the panels have been fully fixed to the substrate; the resulting holes shall be filled with polyurethane foam.

All FTPS fasteners shall have corrosion protection selected for the service conditions. The fasteners' service life shall be no shorter than the FTPS service life.

3.3.Adhesives, Sealants, and Grouts

Thermal panels may additionally be bonded to the substrate using polyurethane adhesive foam. Adhesive fixing shall only be used together with mechanical fixing.

Decorative window-reveal elements (moulded elements or tiles) may be fixed using adhesive foam.

Joints between thermal panels may be filled with cement-based or acrylic grouting compounds manufactured under duly approved regulatory documentation. The use of a specific grout type shall be agreed with the Afdal Tariqah system supplier, and application shall follow the Afdal Tariqah technical recommendations.

3.4.Other FTPS Components

External window reveals may be finished using:

- decoratively coated galvanized steel sheet;
- moulded decorative elements made of gypsum or foamed ceramic;
- ceramic tile, clinker tile, concrete tile, or natural stone;
- decorative compounds for external thermal-insulation composite systems;
- profiled elements.

Non-combustible stone wool fire barriers/fire stops shall be incorporated into the façade system at all locations required by the approved fire-safety design. The fire barrier shall interrupt the 60 mm PU insulation layer and shall be continuous, tightly fitted and mechanically retained as required by the approved detail. Fire barriers shall be made of mineral-wool insulation, with a density of at least 90 kg/m³. Fire barriers shall be installed in accordance with the system holder's technical documentation.

Starter profiles for plinth/base panels shall comply with applicable approved standard.

4. Installation Procedure for the Afdal Tariqah FTPS

4.1.Marking the Top and Bottom Elevations of Plinth Panels

Set out the elevation marks for the top and bottom edges of the plinth thermal panels on the walls. The top elevation shall be defined by the project documentation. Provide a clearance of at least 20-30 mm between the bottom edge of the plinth panel and the pavement/blind area.



Figure 2 - Marking the top elevation of plinth thermal panels



Figure 3 - Marking the bottom elevation of plinth thermal panels

4.2.Installing the Starter Profile

Install the top edge of the starter profile at the elevation corresponding to the bottom edge of the plinth panels. Maintain a minimum clearance of 20-30 mm between the bottom of the starter profile and the pavement/blind area.

Install the starter profile strictly level. Fix it to the wall at centres not exceeding 600 mm. Leave a 2-3 mm gap between adjacent profile lengths.



Figure 4 - Levelling the starter profile



Figure 5 - Drilling fixing holes in the wall



Figure 6 - Installing starter-profile fixings



Figure 7 - Fixing the starter profile to the wall

4.3.Installing Plinth Thermal Panels

Begin installation at a building corner. Before installation, mitre-cut corner panels at 45°. Make the cuts so that the facing pattern remains continuous across the corner joint (Figure 8). For PU panels, it is recommended to form a vertical groove in the insulation at the mitred edge over the full panel height; the groove is subsequently filled with polyurethane foam (Figure 9).



Figure 8 - 45° mitre cut for a continuous corner pattern



Figure 9 - Groove formed in the cut edge for subsequent foam filling

Before installing the panels, assess wall irregularities and establish the required installation plane. On uneven walls, create the necessary gap between the wall surface and the rear face of the panel using adjustment screws and EPS or PU wedges (Figures 10 and 11).



Figure 10 - Preliminary positioning using PU wedges



Figure 11 - Preliminary positioning using adjustment screws

Before mechanical fixing, apply beads of adhesive foam to provide additional fixing and fill gaps between the wall and the panel (Figure 12). Drill fixing holes for the plinth panels (Figure 13). The locations and number of fixing points shall comply with the FTPS approved project drawings and details.



Figure 12 - Applying adhesive-foam beads for the first plinth panel



Figure 13 - Drilling holes for mechanical fixing

After mechanical fixing, seal any remaining voids between the wall and the panel, together with holes left by adjustment screws, using adhesive foam (Figure 14).
Install the first corner panel on the adjacent wall using the same procedure. Before placing it, apply additional adhesive foam to the corner joint (Figure 15). Check the geometry of the corner connection during installation (Figure 16).



Figure 14 - Filling remaining voids between wall and panel



Figure 15 - Applying adhesive foam to the corner joint

After the first corner panels have been installed, set out the installation plane for the remaining plinth panels (Figure 16). Install subsequent panels in the same manner. Join

adjacent panels within each course from left to right, applying adhesive foam to every panel-to-panel joint (Figure 17).



Figure 16 - Setting out the plane of the first panel course



Figure 17 - Sealing panel joints with adhesive foam

4.4.Installing Plinth Flashings

After completing the plinth-panel course, install the plinth flashings. Install them level and with a fall toward the exterior. Fix the flashing to the wall at centres not exceeding 600 mm. Fill the space between the flashing and the top of the plinth panels with adhesive foam.

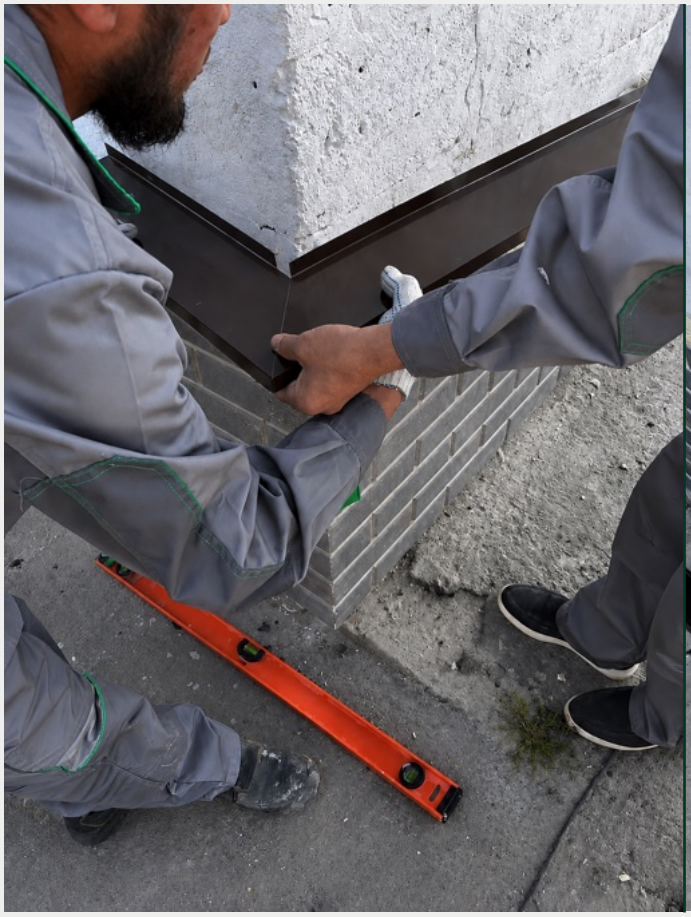


Figure 18 - Trial fitting a corner-cut plinth flashing



Figure 19 - Applying an adhesive-foam bead below the flashing



Figure 20 - Levelling the plinth flashing



Figure 21 - Fixing the plinth flashing to the wall

4.5.Grouting Tile Joints

Fill the tile joints in installed façade thermal panels using cement-based or acrylic grouting compounds.

Apply grout only to clean, dust-free panel surfaces. Cement-based grout is applied with a spatula/trowel; acrylic grout is applied with a sealant gun (Figure 22). After application, tool and level the grout with a spatula (Figure 23).



Figure 22 - Applying acrylic grout with a sealant gun



Figure 23 - Tooling and levelling the applied grout

4.6.Finishing Window and Door Openings

Frame window and door openings and treat all junctions between system elements and façade details in accordance with the project documentation and the requirements of the Afdal Tariqah approved project drawings and details.

Permitted reveal-finishing options include:

- clinker tiles;
- decorative moulded polymer-concrete elements;
- profiled galvanized-steel sheets with a decorative paint coating.

4.7.Quality Control and Inspection

Installation records shall include substrate acceptance, verification of the Afdal Tariqah panel and 60 mm PU core, anchor type and spacing, pull-out test results where required, stone wool fire-barrier product identification and locations, photographic records before concealment, joint/sealant inspection and final façade acceptance. Deviations from approved drawings shall be resolved before concealment.

5. Required Tools and Equipment

Use the tools and equipment listed below for FTPS installation.

Tool / brief specification	Purpose
Rotary hammer / drill with drill-bit set	Rotary hammer for drilling holes in the building substrate; drill for drilling holes in thermal panels.
Cordless/electric screwdriver	Driving screw-type expansion elements and screws.
Hammer with rubber striking face	Driving expansion elements of dowels with plastic heads.
Angle grinder	Cutting and machining thermal panels.
Diamond cutting discs for angle grinder	Cutting and machining thermal panels.
Applicator gun for polyurethane-foam cans	Applying installation adhesive and polyurethane foam.
Bucket or mixing tub, minimum capacity 5 L	Preparing grout.
30 mm spatula	Applying grout to tile joints.
8 mm spatula	Tooling/grouting tile joints.
Plumb line	Checking vertical deviation of the substrate/ building structure.
Spirit level	Checking horizontal position and level.
Steel ruler and square	Measurement and setting out.
Metal shears	Cutting profiled trim elements.
Sealant gun	Filling joints with sealant.