Detailed instruction
of FAST SM/ FAST SA
exterior walls insulation system

-- 2006 --

I. General characteristics of FAST SM/ FAST SA exterior walls insulation system

Insulation of external buildings' walls using FAST SM/FAST SA has a Technical Approval ITB AT-15-3513/2005.

The system is a layers' structure which consists of foamed polystyrene plates, reinforced layer made of glue mortars, glass fibre net and plaster undercoats.

In the FAST SM/FAST SA system foamed polystyrene plates are glued to the base of insulated wall with a glue mortar. Additional fixing of foamed polystyrene plates with mechanical joints (screw anchors) is used dependent on: the kind of base, its condition and foreseen loads and guiding principles of technical project.

The FAST SM/ FAST SA systems consist of the following materials:

- Mortar glue FAST NORMAL S
- Mortar glue FAST SPECIAL or FAST SPECIAL M
- Self-extinguishing foamed polystyrene plates with accordance to PN-EN-13163:2004, EPS 70 040 or EPS 100 038 form
- Mechanical joints
- Glass fibre net VERTEX 145A/ AKE 145 by AT-15-3833/2005
- Grounding preparation - FAST GRUNT M plaster undercoat
- Acrylic plaster mortar FAST BARANEK AKRYL/ FAST KORNIK AKRYL (apply to FAST SA)
- Silicate plaster mass FAST BARANEK/ FAST KORNIK (apply to FAST SM)
- Grounding agent used under silicate paints FAST GRUNT S/ silicon FAST GRUNT SIL (apply to FAST SM)
- Silicate paint FAST F-S/ silicon paint FAST SILIKON/ oxosilane paint FAST SI-SI (apply to FAST SM)
- And supplementary elements i.e. slats, corners, sealing materials etc.

FAST SM/ FAST SA insulation systems can be applied to insulate external walls in newly raised buildings as well as existing ones.

In accordance with Technical Approval AT-15-3513/2005 issued by ITB FAST SM/ FAST SA insulation systems are classified as no spreading fire at the foamed no more than 25 cm .

FAST SM/ FAST SA insulation systems are to be applied in accordance with:
- technical documentation for a given object, defining preparation of base, foamed polystyrene layer thickness, kind, quantity and distribution of mechanical joints, finishing of special places of elevation (windows and doors jambs, balconies, pedestals, dilatation),
- the given detailed instruction of insulation,
- instruction ITB No. 334/2002,
- decisions of Technical Approval ITB AT-15-3513/2005,
- valid Polish Norms and regulations.

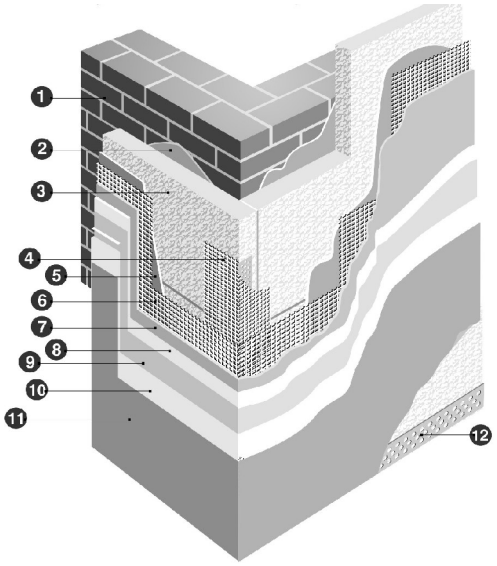
FAST SM/FAST SA insulation systems is in compliance with hygienic requirements Hygienic Certificate HK/B/0846/01/98.
Construction work, connected with applying of FAST SM/FAST SA insulation systems should be executed by specialised companies, which have a certificate of FAST system and guarantee proper quality of executed insulation work. Materials are delivered in original manufacturer's package. Transportation and storage of materials are to be executed in accordance with manufacturer's instructions in order to protect them from damage.

The layers of FAST SM /FAST SA insulation systems have precisely defined functions:
- the suitable thickness of foamed polystyrene plates assures required thermal isolation,
- mortar glues and joints, which fasten foamed polystyrene panels to walls assure constructional stability of insulation
- glue mass spread onto whole surface of foamed polystyrene panels alongside with the glass fibre net is a protective layer, which protects the insulation system from mechanical damages,
- glass fibre net limits deformations of thermal protective layer, prevents from cracks and enlarges the resistance of glue mass to mechanical damages,
- lining plaster is a finishing line to insulation system surface, it protects from damaging influence of atmospheric factors, enlarges endurance onto hitting, proper selection of colouring and surface quality and contributes to aesthetical appearance of a whole building.

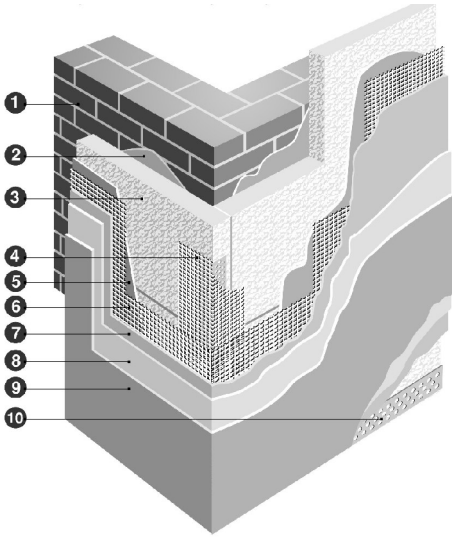
FAST SM /FAST SA insulation systems fulfill requirements of required thermal isolation under condition of proper realization of insulation.
Following the proper technology of realization permits to obtain the proper quality of work and insulation durability of 30 years.

FAST SM /FAST SA insulation systems require application of defined materials exclusively. Individual materials of FAST SM /FAST SA insulation systems must not be replaced with different ones.

Insulation with mineral plaster



Insulation with acrylic plaster



Elements of FAST SM system:

1- insulated wall
2- mortar glue FAST NORMAL S
3- foamed polystyrene panel
4- protective corner with the glass fibre net
5- mortar glue FAST SPECIAL
6- glass fibre net
7- mortar glue FAST SPECIAL or FAST SPECIAL M
8- plaster undercoat FAST GRUNT M
9- thin layer, silicate plaster mass FAST BARANEK/ KORNIK
10- grounding agent under silicate paints
11- silicate paint FAST F-S/ silicone paint FAST SILIKON/ siloxane paint FAST SI-SI
12- plinth board

Elements of FAST SA system:

1- insulated wall
2- mortar glue FAST NORMAL S
3- foamed polystyrene panel
4- protective corner with the glass fibre net
5- mortar glue FAST SPECIAL
6- glass fibre net
7- mortar glue FAST SPECIAL
8- plaster undercoat FAST GRUNT M
9- thin layer, silicate plaster mass FAST BARANEK/ KORNIK
10- plinth board

In order to perform insulation work in accordance with FAST SM/ FAST SA typical tools are to be used.

The tools and equipment are as follows:
- wire handbrush and mechanical wire brush as well as horsehair brush to clean, wash and ground walls' surface,
- trowels, spatulae, metal floats stainless and from artificial material to apply mortar glues and plaster masses,
-floats with abrasive paper to level a surface and the edge of foamed polystyrene plates,
-long floats to tighten foamed polystyrene plates to walls and corners' surface
- patches, short and long (2m) mason's levels to check the walls' surface and pion of corners and walls,

- saws, knives and scissors to cut foamed polystyrene panels,
- electric slow-speed drill with mixer to prepare mortar glues and plaster undercoats as well as containers for mortars and masses,
-hammers and screwdrivers,
-devices to wash walls surface with water under pressure,
-scaffolding and devices for vertical transportation.

II.Technical requirements and technological performing of external walls using FAST SM/ FAST SA insulation systems.

Technical requirements and technological realization of external walls insulation using FAST SM/ FAST SA systems are based on guiding principles included in: Instruction ITB 334/2002, Technical Approval ITB AT 15-3513/2005, technical literature and other publications from technical periodicals.

Order of executing insulation work using FAST SM/ FAST SA is as following:

1) completion of equipment and technical devices, assembly of scaffoldings,
2) preparation of walls' base, disassembly of downpipes' holders, installation of new enlarged length holders (apply to insulation of used buildings),
3) performing of new roof work,
4) sticking of foamed polystyrene panels, additional foldings if needed,
5) applying mortar glues on foamed polystyrene panels and then on glass fibre,
6) realization of lining plaster
7) realization of plasters from acrylic plaster mass (apply to FAST SA)
8) realization of plasters from mineral plaster mass (apply to FAST SM)
9) realization of grounding layer under paint and painting works(apply to FAST SM)
10) disassembly of scaffoldings.

1. Completing of equipment and technical devices, assembly of scaffoldings

List of tools, equipment and devices have been described in Section 1 of the Instruction.

Use of metal scaffoldings from ready-to-use elements allows easy and fast assembly. In exceptional cases it cradle scaffoldings may be used.
While using cradle scaffoldings there is no possibility to protect insulated walls against rain, wind and sun.
Protection of walls assures appropriate temperatures (defined in the Certificate) and avoidance of excessive sun and drying up of walls' surface as well as protection of insulated layers against rain through a period of **at least 1 day** since their realization and plaster **at least 3 days.**

While using cradle scaffoldings, foamed polystyrene shields are to be attached. It should be done in such a way that while changing swinging cradle's altitude one does not damage glued foamed polystyrene, reinforcement layer or plaster.

2. Preparation of walls' base.

IFAST SM/ FAST SA insulation systems can be used on newly raised buildings' walls as well as on existing buildings (used from years). In both cases proper preparation of walls' base is a basic requirement.

2.1 Preparation of new buildings walls' base.

Walls' base made of: ceramic bricks, concrete, ceramic plastered bricks and prefabricated units are to be cleaned from dust, washed off under high pressure.
If defects or faults in surfaces of walls and on prefabricated elements joints exceed 10mm occur the place is to be leveled with mortar.
Faults exceeding 30mm are to be leveled with applying foamed polystyrene layer, which changes thickness. Adhesiveness of plastered walls should be checked. Deaf, muffled sound means that the plaster is not connected with base and from such places plaster sound be removed new one should be applied. Damage of plaster surface should be also removed and leveled with mortar.
Base made of cellular concrete, hollow bricks, silicate bricks, which strongly absorb water should be cleaned of dust with steel brushes and washed off under pressure. Defects in walls' planes and faults more than 10 mm should be leveled with mortar.
Walls' surfaces, which strongly absorb water should be grounded using FAST GRUNT G.

After drying of the base bed – after washing off– a test of applying foamed polystyrene is to be done. 8-10 samples of foamed polystyrene , size 10x10cm should be glued in different places. FAST NORMAL S mortar of a layer thickness – 10 mm, is used to glue samples. Foamed polystyrene samples with mortar should be pressed down to marked walls' planes.
After 4 to 7 days one should try to tear off the glued foamed polystyrene If foamed polystyrene tears off it means sufficient endurance of base and adhesiveness of glue. If foamed polystyrene samples tears off alongside with glue layer it means that the base had not been cleaned properly or that the top layer does not have sufficient
endurances. In such case surfaces should be cleaned more carefully and the test of gluing foamed polystyrene should be performed again.
If samples tears off alongside with the base layer, one should foresee using of mechanical links – with reference to calculation but no less than two joints onto foamed polystyrene plate (size 50x100cm).

Precise number of joints on 1m2 and their length must be defined by the design engineer considering kind and condition of the base (walls) and existing loads.

Before performing insulation work clamps, which regard insulation thickness, are to be installed.

No chemical agents are to be used to was off walls because they could come into reaction with FAST NORMAL S.

2.2 Preparation walls of used buildings (for a longer time).

On elevations (walls) of used buildings for longer time FAST SM/ FAST SA insulation systems can be applied. Careful preparation and check of walls' base is a basic requirement.

In order to prepare old base the following steps are to be done:
-in case of durable walls moistness or their fragments - remove the cause of moistness and dry the place.
- remove places of fungal attack and eliminate the places,
- clean from dust, tarnish, bloom (FAST MUR), next wash off under pressure,
- remove flaked paint or flaked plaster with brushes,
- wash off greasy and decorated walls fragments,
- smooth surfaces are to be given roughness with brushes or sand-blasting
- oily and emulsive paints and other with poor adhesiveness are to be removed
sand-blasting,
- where there is a deaf sound remove plaster and apply new one,
- surface-damaged plasters should be removed and leveled with mortar,
- if openings' frames after insulation work have been covered, the plaster from frames should be removed in such a way that in this place foamed polystyrene (min. 2-3cm) insulation is possible
- complete plaster loss,
- if there are different set-offs and losses with depths over 10mm – the places are to be leveled with mortar
- no-plastered walls' baseform cellular concrete blocks, hollow bricks and silicate bricks should be not only cleaned from dust and algaee but also they should be given a rough surface in order to obtain better mortar adhesiveness,
- absorbable bases (such as cellular concrete, silicate bricks, calcareous-cement plaster) should be grounded with FAST GRUNT G
- disassemble existing downpipes' holders and roof work.

Having done the above mentioned activities, a glue test described in 2.1 is to be performed. Depending on results while tearing off, the procedure is similar to point 2.1 of the Instruction.

4. Sticking of foamed polystyrene panels.

Before performing FAST SM/ FAST SA insulation in new buildings the following works are to be finished.

- all inner plasters and floor must be finished. If mass moisture of dry plasters and floors does not exceed 5%, it is acceptable.
- windows, doors and blinds must be installed,
- windowsills, pipe holders, plug-in sockets, air grates etc. must be installed.

Bases, where foamed polystyrene panels are to be sticked must be dry.
It is essential that the bases, which had been washed and cleaned with water are dry.
If the base moisture does not exceed 5% of mass moisture foamed polystyrene panels can be glued.

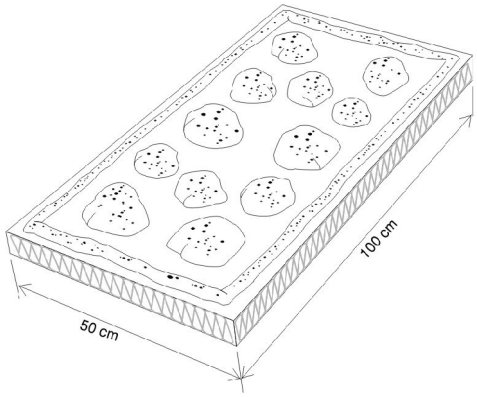
Walls made of absorbable materials (such as cellular concrete, silicate bricks) checking the condition of the walls' surface and plaster is not enough. Moistness of the inner walls should be checked as well.

Foamed polystyrene panels should be glued when ambient temperature is from +5°C to +25°C and walls' temperature is +5°C to 25°C, when it is dry weather. When there is strong wind and excessive walls' insulation, where foamed polystyrene panels will be glued one should use net shields or foil, which will protect from too fast water evaporation from the mortar.

To glue foamed polystyrene panels one should apply FAST NORMAL S. In spring-autumn period, despite ambient temperature +5°C to +25°C walls' temperature should be checked because there is possibility of their cooling due to night temperatures drop (even below 0° C). The work is to be continued provided that 24 hours after gluing foamed polystyrene panels the ambient temperature does not drop below +5°C.

Mortar preparation:

Bag content is to be poured slowly into a vessel with cool water, while pouring one should mix it using slow-speed drill with suitable mixer till the consistency of uniform paste is obtained. The mass is to be left for about 10 minutes and then mixed again. About 5,5l of water is used for a 25 kg sack. It is advisable to mix the mortar occasionally when it is ready.
The ready mortar should be used in a next 2,5 to 3 hours.
One mustn't add water to ready-to-use mortar in order to improve her consistency.
Before gluing foamed polystyrene panels, board laths should be fixed.
Board laths are aluminium profiled sections whose width is suitable to foamed polystyrene panels' width. Using board laths allows to level bottom edge of insulation. The board laths are installed with strecher pins.
Glue mortar should be applied on the foamed polystyrene panels' edges, as 3-4cm width strips, about 3 cm from the boards' edge in such a way that while sticking the glue mortar do not squeeze outside foamed polystyrene panels' edges.
On the central part of the panel 50x100cm size, about 10-12 pats, diameter 8 cm each, should be placed.
The rule that pats cover no less than 40% of panel's surface must be followed.
The whole of glue layer should cover about 60% of panel's surface.



The way of applying mortar glue FAST NORMAL S into foamed polystyrene panel

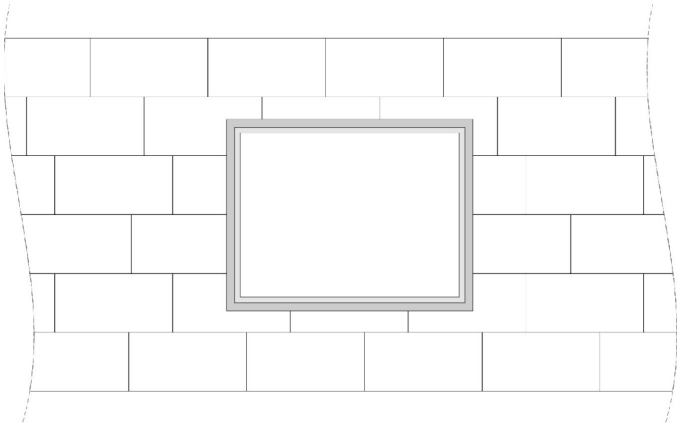
Having the glue mortar applied the foamed polystyrene panel should be placed to the wall in a marked place, fixed butt to glued panels and tighten with long float till the even surface with boards is obtained.
The mortar which has squeezed outside the panel must be removed.

One mustn't tighten foamed polystyrene panels over again or move glued panels due to commenced process of bonding.

The panels are glued precisely one into another, from board laths to eaves, maintaining passing arrangements of joints.
While gluing foamed polystyrene panels near openings' corners the boards should be chosen in such a way that horizontal and vertical joints do not meet.

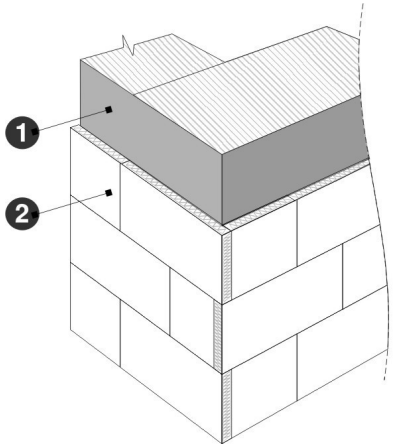
The drawing represents proper panels' arrangement near openings.

The proper location (sticking)
of foamed polystyrene panels near openings



While insulating walls made for prefabricated units, the foamed polystyrene panels should be placed in such a way that joints between panels do not cover with prefabricated units' joints.

Arrangements of corner walls panels is as following:



Arrangement of corner walls panels:
1 – exisiting wall
2 – foamed polystyrene panel

Joints between foamed polystyrene panels bigger than 2 mm are to be filled with cut foamed polystyrene panels' stripes.

Filling the joints with used mortar is non-allowable due to thermal bonds.

Glued foamed polystyrene panels must have a plain surface.

Any inequalities are to be grinded with a long float with a glass-paper. Grinding of the boards can be done no sooner than three days after gluing the panels. Grinding of the panels is an essential activity when reinforced layer wasn't done, or foamed polystyrene was exposed to sun ant he process of panels' oxygenation has begun.

Mechanical joints can be used on those walls' surfaces where wall's top layer does not have enough resistance. The way how to check surface resistance has been described in section 2.1 of the Instruction.

The precise number of joints for one square meter of insulation and their length is defined by a design engineer . If there is no design 4 items for 1 m2 is generally accepted.
For walls higher than 20m use of mechanical joints is obligatory – whether there is good bearing capacity of the ground or not. Even if there is good bearing capacity of the ground, but situated in windy zones or air blast against insulated walls, mechanical joints must be installed.
The mechanical joints can be installed 3 days after gluing the panels.

While using mechanical joints, one must remember that only those joints with ITB certificate can be used.

It is crucial to define the right joints' length. The basic condition is that the joint (screw anchor) is settled at least 6 mm in the concrete wall or ceramic brick.

Use of 6cm foamed polystyrene panels, taking in to account the mortar thickness (1cm) and plaster (1,5cm) the joint's length should be at least 15cm.

Insulating walls made of gas concrete the anchor's depth (min 8cm) is based on pulling out the joint from the base in accordance with rules defined in ITB approval certificates.
Irrespective of the anchor depth the effectiveness of fastening should be checked. It is done through 4-6 attempts of pulling out in accordance with rules defined in ITB approval certificates.

Screw anchor installation must be performed in a neat way. Screw anchors' heads cannot stick out the foamed polystyrene base – they must be carefully befited. Head pockets 4 mm deep should be cut in a foamed polystyrene panel.

It is inappropriate to hammer heads into the foamed polystyrene panels. Too excessive immersion of screw anchors' heads in foamed polystyrene panel may cause foamed polystyrene panel cracks (rupture) which weaken their bearing capacity. Lutting in the foamed polystyrene panels with mortar glue may cause dropping off the thin-layer plaster in the places.

The area contact of isolation panels and opening work with windowsills and tin should be sealed with elastic materials e.g. silicone gap filling adhesive or impregnated tapes.
It is necessary to seal carefully the area contact because tin work and joinery widen in a different way than plaster. In such places there are abrasion marks, where during rain, water comes in,

which as a result causes walls' moistness and lower the insulation effectiveness. In autumn and winter the process of lowering the insulation effectiveness in doubled by cold. In order to seal the foamed polystyrene panels 6 mm-width triangular gaps should be cut (contact area of tin work and joinery).

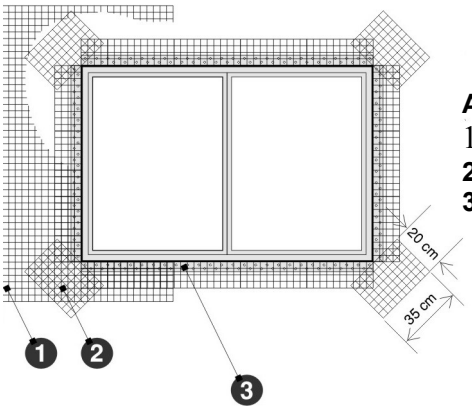
5. Applying of mortar glues on foamed polystyrene panels and setting of glass fibre net. (realization of reinforced layer).

The main aims of reinforced layer are protection of foamed polystyrene panels insulation, preparation of a solid and lasting plaster base as well as taking the thermal loads connected with insulation (heating and cooling down). The reinforced layer is done no sooner that 3 days after gluing the foamed polystyrene panels. The layer can be done only in rainless weather and the ambient temperature above +5°C and no higher that +25°C.
If there is a forecast of temperature drop below 0°C in the next 24 hours – work connected with reinforced layer should be stopped, thought the temperature at that time is higher than 5°C. If the foamed polystyrene panels are glued in late autumn and works were paused due to winter time – before setting the net it is necessary **to check the quality of the panels' surface**. If the quality is good (the foamed polystyrene doesn't flake, there are no cracks) but it is yellow, panels' surface regrinding is enough.

The reinforced layer should be protected against strong winds due to excessive drying up during bonding. If there is too much sun – but the temperature doesn't exceed +25°C- the reinforced layer should be protected as well for the same reason.

Before executing reinforced layer work, the following activities should be done on walls:

- settling protective corners with net on building walls' corners, entrance coor's corners and balcony door's corners and window's corners.
- strengthening of openings' corners by sticking net (20x35 cm) – sticked at an 45° angle. The below drawing presents the proper way of doing this.



Applying the glass fibre net near windows and doors:
1- **glass fibre net (cut to the corner's edges)**
2- pieces of the net, strengthen the openings' corners
3- the protective corner with the net

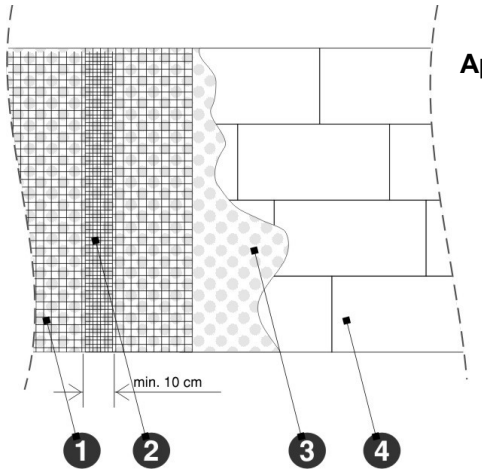
The reinforced layer work should start with walls' corners, openings' jambs and dilatation.

FAST SPECIAL mortar glue is applied on foamed polystyrene panels with a 3 mm-thick layer. To apply mortar use long floats (teeth size 10mm). The mortar is applied as a vertical stripes with net's width. After applying of the mortar, the net should be set in a upper part of the wall, lower part of the net should be stretched. Then it should be squeezed from the top on the whole width in order to avoid waves, humps and blubs.

The net should be squeezed carefully in the middle of the mortar's thickness. Its aim is to take over thermal loads (tensions) which are in a mortar's layer. If the net is settled too deep or too shallow it will cause the net working eccentric not axial. Such working may cause cracks and peeling of reinforced layer (humps). The net must be totally squeezed
Into the mortar. Net's clearance is unacceptable. In order to cover the net, which has been inaccurately squeezed, settle another 1 mm-thick mortar (before bonding the first one).

The layer's thickness when using one layer net should be no less than 3 mm and no more than 5 mm.
Filling the net with a thin layer after a few days will not have any effect due to its drying up.
In extreme cases additional 2-3 mm-thick mortar layer can be applied on the, the total thickness of reinforced layer would be 5-6 mm. In such cases the additional layer's adhesiveness must be checked.

During setting the net into the layer, the minimum of 10 cm of horizontal and vertical overlaps must be followed. The rule of waving the net on jambs and window sills and for the vertical walls' corners – in case when protective corners without net are used – swaying the net to the next wall for about 15 cm.



Applying the glass fibre net on walls without openings:

1. **glass fibre net**
2. **net stripes connection**
3. **FAST SPECIAL/ FAST SPECIAL M mortar glue**
4. **foamed polystyrene panels**

In case when building walls are exposed to impacts and mechanical damages due to location close pavements, passages, crossings, playgrounds etc. double net should be used on the whole ground-floor walls. After hardening the glue mortar, where the first glass fibre layer was set – the next mortar layer should be applied and the second glass fibre layer should be set. The reinforced layer thickness with the double net should be 6-8 mm.

Stretching the net on foamed polystyrene panels and covering it with mortar is unacceptable - it threatens the safety of the whole insulation system.

The reinforced layer must be filled carefully, because inaccurate performance and inaccurate leveling the surface impact the elevation outlook.

If there are any surface's roughness, notches and sharp refractions of parts of the reinforced layer – roughness must be grinded with glass-paper – otherwise they will be visible on plaster's structure. The grinding can be done provided that the mortar is not too hard.

Reinforced layer thinner than 3 mm eg 1,5 or 2mm thick is unacceptable due to faster and excessive drying up of the mortar during the bonding phase and lack of proper endurance of the protective layer.

Ad.6. Lining-work under plaster

The main aims of FAST GRUNT M plaster undercoat are: providing optimum plaster adhesivness, decreasing and leveling base absorption and providing fastness to alkali.
Walls grounding can be done provided that the base is dry – its moisture content does not exceed 4%. If work is carried in optimum weather conditions the undercoat can be applied on the reinforced layer 2-3 days after.

The work must be carried in temperature no lower than +5C and no higher than +25C.

The undercoat should be applied with paintbrush or furnishing roller, keep in mind evenly distribution on the whole surface.

Having the undercoat done – one should wait 24 hours and then start with plaster work.

Ad.7.Executing of plasters from acrylic plaster mortar.

Plaster work can begin no sooner than 3 days (in optimum coinditions) after finishing the reinforced layer. The reinforced layer should be dry (4-5% of base moisture content). Plaster work should be carried in a temperature no lower than +5ºC and no higher than +25ºC. The building walls shouldn't be too much sunny – the appropriate temperature should not exceed +25ºC.
Recommended walls' temperature is +20ºC due to optimum bonding conditions.

Suitable protections should be used in order to lower walls' temperature and avoid too fast plaster drying.

Performing plaster work when ambient moisture is above 70%, it's raining and during heavy winds is unacceptable. One mustn't perform plaster work when it is forecasted that the temperature drops below +5ºC in a next 24 hours after applying the plaster.

Having the plaster work finished it must be protected at least one day against rain and excessive drying up.

It is rule to use the plaster and the mortar in the same colour.

On the sunny building walls dark colours shouldn't be used.

It concerns south and south-west walls in particular. On sunny walls the temperature grows and therefore the reinforced layer takes the created thermal stress. The reinforced layer of the sunny wall, where dark colour plasters have been applied, cannot bear the created thermal stress. Due to heavy thermal stress cracks fractures may appear.

The right number of workers and scaffoldings should avoid the visible plane of contact of dried and applied mortars. One plane should be finished in one working cycle, following the main rule "wet on wet".

Preparing of the mortars and using appropriate tools with accordance to the mortars' technical manuals.
To avoid aggregate's classifying (bigger and heavier aggregate goes down the container) the content should be stirred before use.

To provide the same shade of applying mortar, the buckets (3-4) should be stirred in a bigger container. While mortar leavening one should fill and stir it using a drill with a proper mixer.

8 Executing of plasters from mineral plaster mortar.

The rules are similar to executing the acrylic plaster mortars with a small difference, the mineral plaster mortars can be in a white colour because it is going to be coloured later.

The mortar is to be prepared in accordance with the label instruction. The content of the sack should be stirred with 5l of water till the unified mass is achieved. The mass is left for about 10 minutes and stirred again. The mass should be used in a hour.

When applying the mortar the rule "wet on wet" is followed, the mass is applied from the edge to the edge. In case of mass thickening it should be stirred without adding water.

While applying the mortar one should avoid direct walls sunliting and performing work in too excessive ambient moisture (above 70%).

9. Realization of grounding layer under paint.

The grounding layer under paint should be done in order to strengthen the base and settle its absorption.

Grounding agents react chemically with base penetrating its structure. After drying up they create

colorless layer, which facilitates executing of paint coatings as well as improves their adhesiveness.

Freshly applied plasters can be grounded after 3 days (optimum conditions).

The grounding agent cannot be diluted – the agent should be applied on surface with paintbrush or roller.

Paint coatings can be done no sooner than 24 hours after grounding.

Then paint can be applied twice as a thin layer with paintbrush or roller.

The first paint layer can be diluted with recommended diluents, especially when work is carried in a high temperatures (+25°C).

The paint for the second layer cannot be diluted.