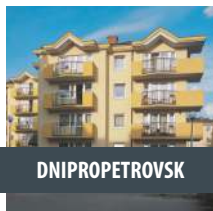




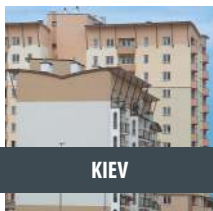
RELIABLE INSULATION SYSTEMS **BASED ON EXPERIENCE**

ABOUT SOLTHERM

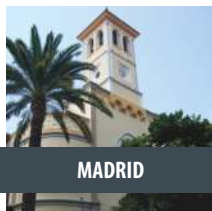
- We are one of the most experienced EWI producers in Europe
- We have 25 years of experience in effective popularizing of new building technologies in the field of building chemicals
- We put the highest quality as our main priority. All our products are manufacture on one of the most advanced production lines in Europe under the on-going control of technologists from the company laboratories. The production process is ISO certified and supervised by TUV Nord
- We are the holder of NSAI approval
- Our products are regularly tested by an external accredited research body
- We have cooperated for many years with the biggest chemical corporations
- We offer a wide range of building chemicals, which is constantly broadened, since our products reflect technological and stylistic trends in architecture and meet the most specific customer's requirements
- We provide the most comprehensive installation trainings
- We offer innovative and advanced solutions and complex systems
- We are available in 15 European countries
- We have won the trust of our customers, commercial partners and contractors



DNIPROPETROVSK



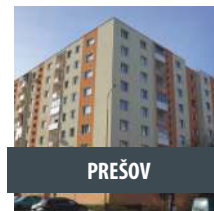
KIEV



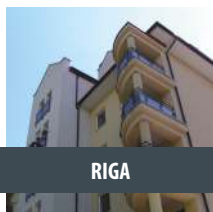
MADRID



PRAGUE



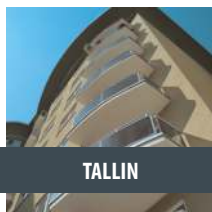
PREŠOV



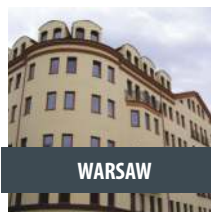
RIGA



SAINT PETERSBURG



TALLIN



WARSAW



VILNIUS

KEY FEATURES OF SOLTHERM SYSTEMS



WASH-OFF RESISTANCE

Perfectly matched products which cure in high humidity conditions



IMPACT RESISTANCE

Impact resistant walls, including acts of vandalism



ANTI-FUNGAL PROTECTION

Prevention of algal and fungal growth



SELF-CLEANING EFFECT

Self-cleaning effect by rainfall



UV BLOCKING

Lasting and vivid colours, which do not fade



VAPOUR PERMEABILITY

System which ensures that the moisture is driven to the exterior



LOW WATER ABSORPTION

No damage inside the wall caused by water absorption and accumulation



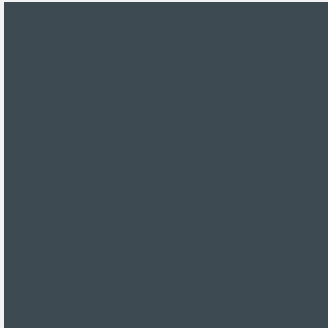
NO SALT EFFLORESCENCE

No salt efflorescence and colour variations



SOLTHERM

PREMIUM ACRYLIC



PROVEN AND ECONOMICAL WALL INSULATION

The most popular insulation system, durable, tried and tested for years, which provides the best value for money. The Soltherm Premium Acrylic System is one of our very best sellers. This insulation system meets all basic performance requirements at high level. This universal solution is suitable for virtually any type of buildings, and in particular for single-family houses, vulnerable to dirt and harsh weather conditions.

THE BEST VALUE FOR MONEY

CAN BE PRESSURE WASHED

WEATHER RESISTANCE (RAINFALL, FROST, SNOW, SUN)

HIGH FLEXIBILITY

GOOD IMPACT RESISTANCE

UNLIMITED COLOUR RANGE

USED FOR YEARS, PROVEN AND ECONOMICAL WALL INSULATION



PRESSURE WASHING TEST OF THE
SOLTHERM PREMIUM ACRYLIC SYSTEM



$p = 200 \text{ bar}$ $t = 60^{\circ}\text{C}$

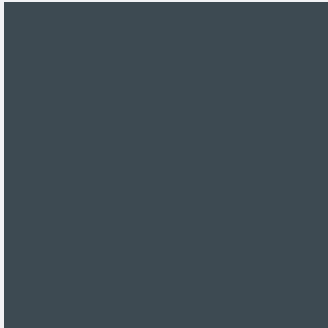
One of the major advantages of the Soltherm Premium Acrylic EWI system is that it can be pressure washed. By pressure washing you can easily and quickly refresh the facade and remove any grime, stains and dirt from it. It is also safe for the structure of the stucco. This property is vital for buildings exposed to dirt (situated in large cities or near industrial areas).



Building exterior has never been so easy to keep clean

SOLTHERM

HD WEATHER



PERFECT SOLUTION FOR DAMP WEATHER

The Soltherm HD Weather System is specially developed for damp and rainy weather. It consists of perfectly matched products, which can set and cure under high humidity and low temperature conditions.

Hydraulic binders (white cement) and natural fillers (rock minerals) make the render mineral. Water reacts with cement reducing moisture in the render in a natural way. Therefore, the render may set and cure even under high air humidity and the application is possible all year round. Since the system is highly water vapour permeable, the moisture from the wall is driven to the exterior. Water vapour passage prevents the risk of condensation within the building envelope and allows

the walls to breathe. This property affects system durability and provides healthy microclimate inside buildings.

The Soltherm HD Weather System also provides a self cleaning effect by rain water, increased resistance to salt efflorescence and UV radiation, thanks to which the colours are vivid, lasting and do not fade. The Soltherm HD Weather is economical and recommended for single-family houses (new and existing).

THE BEST SOLUTION FOR DAMP AND RAINY WEATHER

WASH-OFF RESISTANCE

VERY HIGH VAPOUR PERMEABILITY

HIGHLY WATER REPELLENT TOP COAT

RESISTANCE TO STAINING

CAN BE APPLIED TO EPS AND MW BOARDS

INCREASED RESISTANCE TO ALGAL AND FUNGAL GROWTH

WASH OFF RESISTANCE TEST OF SOLTHERM HD WEATHER



50% RH, 23°C - LABORATORY
good summer conditions

**NO WASH OFF
just after 2h!**

90% RH, 10°C - TESTING CHAMBER

**NO WASH OFF
just after 2h!**

100% RH, 10°C - CONTAINER WITH WATER
PLACED IN TESTING CHAMBER
typical winter conditions

**NO WASH OFF
just after 24h!**

WHY IS WASH OFF RESISTANCE IMPORTANT?



Since our climate is variable (changing from day to day) with high humidity fog and rainfalls, it is very difficult to predict the weather. Therefore, when we select the exterior wall finish, we should pay more attention to time the render needs to obtain the resistance to wash-out by long-lasting high humidity or light drizzle. When the render is even partly washed out, its structure is changed, what may lead to deterioration of its durability. Additional labour costs are also involved, since the washed-out render must be removed and the substrate prepared for re-rendering. This may multiply the investment costs and extend its completion deadline.



VERY HIGH VAPOUR PERMEABILITY

Water vapour permeability of a material determines how much water vapour will pass through the material per unit area in a specified period of time. It is well-defined by the diffusion equivalent air layer thickness "sd" value, which expresses how much greater the diffusion resistance to water vapour in the material layer is versus that of a layer of air of equal thickness. The lower the „sd“ is, the better water vapour permeability of a material is. In accordance with the laws of thermodynamics, damper air moves from the inside to the outside of the building. Damp causes the greatest damage in areas, i.e. in wall structure, what deteriorates technical and strength parameters of wall composing materials and increases the risk of microbial attack, which may be hazardous for the health of users.

In locations where water vapour emission level is high and air humidity is above standard level, it is essential to ensure efficient air circulation between the building envelope and the exterior. The Soltherm HD Weather system finish coated with the mineral render Soltherm MTC and Soltherm STC-P+ silicone top coat represents excellent vapour permeability. A microporous mineral system, which does not close micropores, enables free evaporation and moisture vapour transmission through the microporous coating to the exterior.



UV RESISTANCE INORGANIC PIGMENTS, UV ABSORBERS

UV (ultraviolet) radiation is a major cause for finish coats of the EWI systems to fade. Light that penetrates wall top coatings gradually and permanently changes their colour shade. If pigment is not well-protected, UV radiation damages it and while it degrades, the top coat colour fades. Designing the investment using organic pigment-based colours leads to pigment degradation and discolouration. Unfortunately, EWI producers still use organic pigments and the users are not aware of long-term effects. The Soltherm HD top coat has been protected against adverse effects of UV radiation with special ultraviolet absorbers. Additionally, finish coat colours in the Soltherm HD system have been developed exclusively based on high quality inorganic pigments, which are extremely UV resistant - they are safe to use and guarantee long-lasting and vivid colours for years.



NO SALT EFFLORESCENCE

Efflorescence appears on the external face of a wall as a result of the migration of calcium ions in solution to the surface. They react with carbon dioxide and moisture from air and form almost insoluble salts causing efflorescence and discolouration. This phenomenon takes place when a damp material dries out. The extent and rate of efflorescence formation depends on temperature and humidity balance between substrate and ambient. The higher balance is, the quicker is the drying process and migration of salts to the surface, where they crystallize unevenly. The Soltherm HD System guarantees durable coating, where efflorescence has been minimized. The top coat contains selected chemical compounds, which form additional barrier - calcium ions blockers i.e. salt inhibitors. These compounds "catch" calcium ions Ca^{2+} migrating from the substrate, while water vapour permeability of the system remains the same.



LONG LASTING AND VIVID COLOURS FOR YEARS

Soltherm STC-P+ silicone top coat, which has silicone resin as a binder, contains high quality inorganic pigments of extreme UV resistance, what affects the durability of our EWI system colours. Additionally, high UV-resistance is provided by UV absorbers added to the top coat, which protect pigments from discolouration and colour fade (sunlight is reflected from the surface and the colour stays vivid).

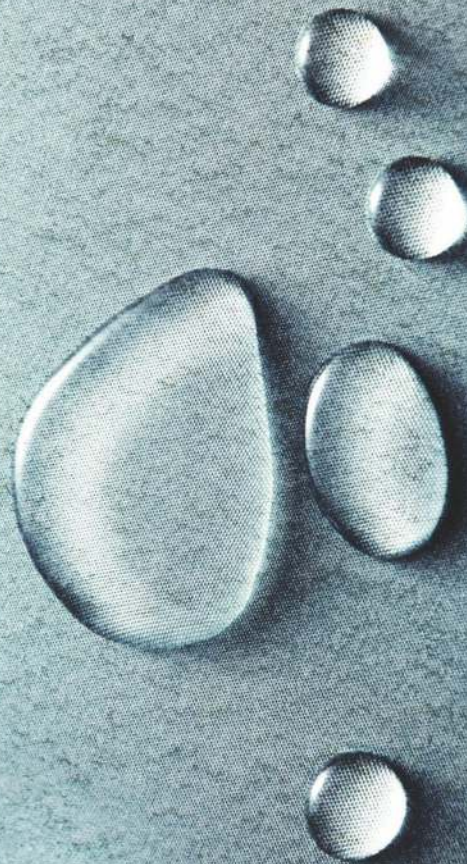
Soltherm HD is highly water-repellent, vapour permeable and low-absorbent, which makes it extremely resistant to efflorescence. Additionally, the Soltherm STC-P+ silicone top coat contains additives, which eliminate efflorescence formation on wall surface. Selected chemical compounds, the top coat is composed of i.e. salt inhibitors, create an additional barrier. These compounds "catch" calcium ions Ca^{2+} migrating from the substrate, while water vapour permeability of the system remains the same.



SELF-CLEANING EFFECT

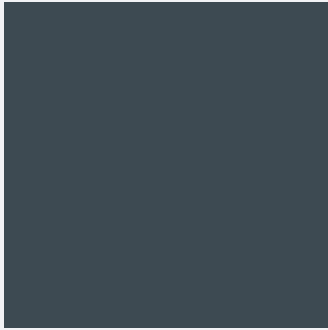
Hydrophobic properties of a material surface consists of surface resistance to wetting as water beads are repelled. Water droplets bead on the surface, they do not wet it but roll down the façade washing away dirt or dust. The self-cleaning effect is best visible on the areas, which are particularly exposed to weather conditions. As a result, the façade stays dry and clean. Additionally, perfectly hydrophobic surface inhibits bacteria as well as algal and fungal growth.

Soltherm STC-P+ silicone top coat contains silicone resin and has a special hydrophobic film, it repels water, which beads on the surface and rolling down, take dirt with it, thus preventing dirt penetration into the insulation system.



SOLTHERM

HD WEATHER PLUS



EXCELLENT ALGAE RESISTANCE AND DURABILITY

EXCELLENT FLEXIBILITY

EXCELLENT RESISTANCE TO MICROBIAL GROWTH

HIGH AGEING RESISTANCE

HIGH IMPACT RESISTANCE

HIGH WATER REPELLENT PROPERTIES

WIDE RANGE OF COLOURS

CAN BE PRESSURE WASHED

GOOD VAPOUR PERMEABILITY

SUITABLE FOR POLYSTYRENE AND MINERAL WOOL

WEATHER RESISTANCE (RAIN, FROST, SNOW, SUN)

Thin-coat silicone renders composing Soltherm HD Weather Plus are top-notch state of the art renders in EWI. They ensure excellent protection and durability. The renders combine high flexibility with excellent vapour permeability and resistance to precipitation, what has a particular importance for slightly damp and old walls. The valuable properties the system provides make it the most universal solution, suitable for an unlimited range of buildings and façades. The insulation system offers enhanced properties and can meet the expectations of the most demanding customers.

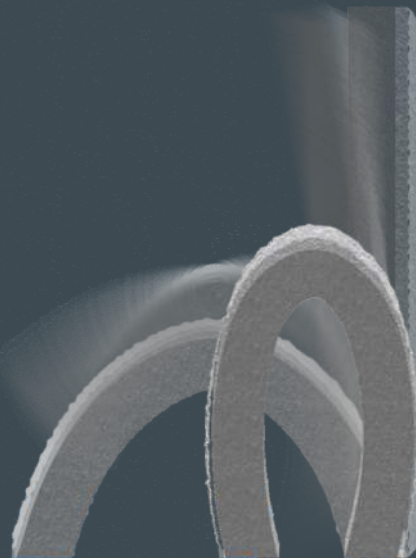
**RELIABLE AND ROBUST
INSULATION FOR
DISCERNING CUSTOMERS**

SYSTEM FLEXIBILITY

High flexibility of the silicone render from the Soltherm HD Weather Plus insulation system enables the render to accommodate a high degree of movement, thermal expansion and contraction, whilst at the same time preventing surface crazing and cracking. Therefore, silicone renders are highly resistant to mechanical damage, washing, changes in air humidity and abrupt changes in temperature as well as temperature extremes (extremely low during heavy frosts to very high during heat waves).

HIGH AGEING RESISTANCE

Silicone renders are low-absorbent, what protects them against the penetration of dirt and destructive chemical substances. It also prevents render degradation in low temperatures. Silicone resins composing the render make the Soltherm HD Weather Plus system extremely resistant to UV radiation. The above features and properties guarantee that the system will last for years.



Algae, mould, lichen and fungi are microorganisms, which form green brown growth on façades. They feed on organic pollutants deposited on the wall surface (dirt and dust) and organic compounds, which are present in soil. They grow in damp and low-temperature conditions such as: shaded spots, lower parts of north and west facing walls. Humid climate and building location in the vicinity of a forest or water reservoir also create favourable conditions for them to grow. Algae and fungi colonies need water for their growth. Water sources are: precipitation, water vapour condensation on shaded surfaces, bad/incorrect flashing or shortening of breaks between subsequent insulation stages - walls or EWI components not fully dry. Our climate creates favourable conditions for microbial growth on building exteriors. High humidity and changeable weather conditions, rain, wind, low temperatures create the conditions for a fungal and algal growth.

In a bid to increase insulation durability and provide attractive finish to building exteriors and out of concern for the health of users, we apply advanced products with biocides, which inhibit fungal and algal growth on building façades. At the same time our products exhibit high water vapour permeability – the SOLTHERM HD WEATHER PLUS guarantees that the moisture from the wall is driven to the exterior.



Microbial growth on the exterior of the building



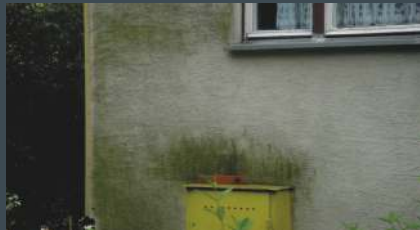
TESTING OF THE SOLTHERM HD WEATHER PLUS AFTER THREE DAYS OF INCUBATION



TOP COAT WITHOUT BIOCIDAL AGENTS



TOP COAT WITH BIOCIDAL AGENTS



Render without antimicrobial coating



Render with antimicrobial coating

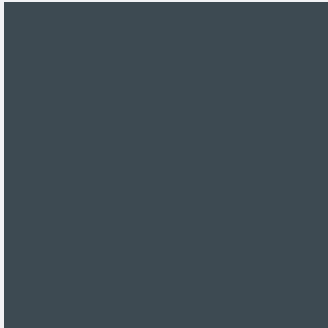
HEALTH OF USERS IS IMPORTANT TO US

Selected biocides significantly limit the risk of algal growth on the elevation and do not affect vapour permeability of the system



SOLTHERM

HD ULTIMATE



INDESTRUCTIBLE SYSTEM WITH EXTREME FLEXIBILITY

Soltherm HD Ultimate features all the benefits of standard insulation systems, but also provides a unique competitive advantage that is unmatched in the European market - impact resistance of 130 J. It offers exceptional flexibility, which is ensured by a combination of silicone render and fibre-reinforced dispersion adhesive. The system flexibility combined with a unique reinforcement (standard and armour mesh) provides unrivalled impact resistance, which makes the system resistant to virtually any act of vandalism. The bond

strength of the dispersion adhesive to concrete substrate is 4 x higher than required by ETAG 004. If we apply only one standard glass fibre mesh, we obtain the impact resistance almost 13 times higher than provided by standard insulation systems. Due to its exceptional properties the system is recommended for areas most exposed to damage such as plinths, walls facing streets or playgrounds, schools and other commercial buildings.

**INDESTRUCTIBLE SYSTEM –
THE ONLY ONE IN THE EUROPEAN
MARKET WITH IMPACT
RESISTANCE OF 130 J**

INDESTRUCTIBLE SYSTEM

EXTREME FLEXIBILITY

VERY LOW WATER ABSORPTION

CAN BE PRESSURE WASHED

INCREASED RESISTANCE TO ALGAL AND FUNGAL GROWTH

HIGH AGEING RESISTANCE

HIGH VAPOUR PERMEABILITY

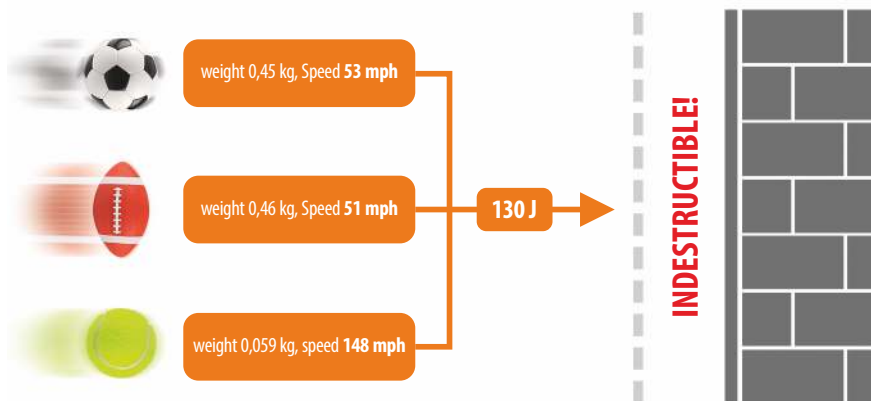
FULL WEATHER RESISTANCE (RAINFALL, FROST, SNOW, SUN)

SELF-CLEANING EFFECT



MECHANICAL IMPACT RESISTANCE

Mechanical impact resistance of the Soltherm HD Ultimate system to 130 J impacts is **13 times higher** than the ETAG 004 requirements for the highest impact resistance, with **over 130 times** excess for the minimal class. Striking the system surface with 130 J kinetic energy may be compared with the energy of a football flying at more than 53mph or a tennis ball at more than 148mph!



**CHECK IT FOR YOURSELF!
ASK YOUR DISTRIBUTOR FOR HAMMER-TEST**

WATER ABSORPTION OF THE SOLTHERM HD ULTIMATE EWI SYSTEM IS THREE TIMES LOWER THAN THE ETAG 004* REQUIREMENTS

Water absorption is a property of a material to absorb and accumulate water. In high humidity conditions there is a great risk of water accumulation in insulation which results in a substantial decrease of insulating properties of the system. Water infiltration and penetration into insulation system is extremely dangerous, since water particles freeze in temperatures below 0°C and increase their volume. While expanding they interfere with and destroy the integrity of other elements of the system.

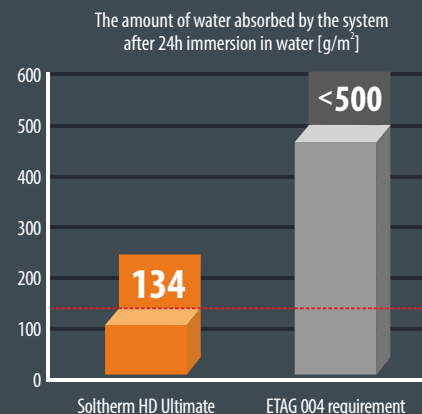
It is well known that water ingress and penetration into building materials have other irreversible consequences such as:

- Weakening of intercoat adhesion
- Penetration of harmful substances present in water into the system e.g. "acid rains"
- Salt deposits - efflorescence
- Washout of important elements composing the top coats
- Washout of pigment – colour changes, discolouration, streaking
- Dust accumulation and dirt penetration into stucco
- Facade impossible to clean up



TESTING WATER ABSORPTION OF THE SYSTEM

DETERMINING AMOUNT OF WATER ABSORBED BY THE SYSTEM AFTER 24H IMMERSION IN WATER



The standard for water absorption after 24h immersion is according to ETAG < 500 g/m²

Water absorption of the system Soltherm Ultimate is 134 g/m²

Moisture accumulation also encourages microbial growth on the system exterior and interior, which has an adverse effect on the health of residents

*ETAG 004 - guideline for european technical approval of external thermal insulation composite systems (ETICS) with rendering.



	PREMIUM ACRYLIC	HD WEATHER	HD WEATHER PLUS	HD ULTIMATE
ADHESIVE TO EPS BOARDS	SOLTHERM SA	SOLTHERM SA	SOLTHERM SA	SOLTHERM SA
EPS BOARD	SOLTHERM EPS	SOLTHERM EPS	SOLTHERM EPS	SOLTHERM EPS
FIXING	STANDARD	STANDARD	STANDARD	EJOT STR U 2G, TFX 8S
GLASS FIBRE MESH	SOLTHERM 145g/m ² or 158g/m ²	SOLTHERM 145g/m ² or 158g/m ²	SOLTHERM 145g/m ² or 158g/m ²	SOLTHERM 158g/m ² and 335g/m ²
BASE COAT	SOLTHERM UB, UB-P	SOLTHERM UB	SOLTHERM UB-P	SOLTHERM DA-P
KEY COAT	SOLTHERM SNP COLOUR	SOLTHERM AP COLOUR	SOLTHERM SNP COLOUR	DOES NOT HAVE TO BE PRIMED
FINISHING COAT	SOLTHERM AF-P	SOLTHERM MTC	SOLTHERM SFC-P+	SOLTHERM SFC-P+
PRIMER	-	(SOLTHERM SNP)	-	-
DECORATIVE COAT	-	SOLTHERM STC-P+	-	-

ADHESIVES	SOLTHERM SA	SOLTHERM UB-P	SOLTHERM DA-P
Adhesion to concrete	> 0,3 MPa	> 0,5 MPa	-
Adhesion to EPS	> 0,1 MPa	> 0,1 MPa	-
Estimated coverage	approx. 4,0 kg/m ²	to install EPS boards and to apply as base coat approx. 4,0 kg/m ²	Base coat (single mesh): 2,4-3,5 kg/m ² Base coat (double mesh): 4,8-7,0 kg/m ²
Mixing proportions	4,8-5,3 l of water per 25 kg of adhesive	5,5 – 6,0 l of water per 25 kg of adhesive	-
Packaging	25kg	25kg	30kg

PRIMERS	SOLTHERM AP COLOUR	SOLTHERM SNP	SOLTHERM SNP COLOUR
Use	Before applying acrylic and mineral render	Before applying silicone paints and silicone thin-coat render	Before applying silicone thin-coat render
Colour	white or compliant with SOLTHERM Colour Palettes	milky	white or compliant with SOLTHERM Colour Palettes
Consumption for one layer	0,25-0,40 kg/m ²	0,10-0,20 kg/m ²	0,25-0,40 kg/m ²
Drying for one layer	4-6h	4-6h	4-6h
Packaging	5, 10, 25 kg	5, 20 kg	5, 25 kg

RENTERS	SOLTHERM AF-P	SOLTHERM MTC	SOLTHERM SFC-P+
Render texture	grained	grained, ribbed	grained, ribbed
Render thickness	1,5mm, 2mm	1,5mm, 2mm, 2,5mm, 3mm	1,5mm, 2mm, 2,5mm
Colour	compliant with SOLTHERM Colour Palettes	white/grey	compliant with SOLTHERM Colour Palettes
Consumption	ca 2,0 – 3,5 kg/m ²	ca 2,2 – 4,0 kg/m ²	ca 2,0 – 3,5 kg/m ²
Packaging	30kg	25kg	30kg

TOP COAT	SOLTHERM STC-P+	
Gloss	mat	
Resistance to wet scrubbing	>2000 brush strokes	
Consumption for one paint layer	on even and non-absorptive substrates 0,12÷0,20 l/m ²	on uneven substrate 0,20÷0,28 l/m ²
Colour	compliant with SOLTHERM Colour Palettes	
Packaging	5, 10, 18 l	



DASH RENDER

Soltherm SDR is cement based, polymer modified and self-coloured dash receiver, requiring only the addition of potable water and 5 minutes mixing time. Normally applied as an excellent background for any dry dash or roughcast finish for new build or refurbishment. Soltherm SDR is suitable for use on external wall insulation (EWI) systems (based on EPS and mineral wool) as a part of EWI system.

- Breathable
- Water resistant
- Good adhesion
- Cement based, requiring addition of water before use
- Excellent background for any dry dash or roughcast finishes
- Suitable for different substrates
- Attractive colours



DECORATIVE EFFECTS

Soltherm TR is a thin-layer roll-on render, which creates a wood or brick effect finish on your façade. The render application is extremely easy and provides attractive finish to your façade. This way, we save on complex maintenance (when wood is installed) and increase building envelope durability and weather tightness.

- Increased resistance to algae and fungal growth
- Weather tightness
- Flexibility
- High colour durability
- Easy to work and trowel
- Low water absorption



INNOVATIONS

'Cross-knot' is a unique EWI solution, which combines full forces of the reinforcement and insulation material. In this solution a special mechanical fixing goes through two crossed fibreglass mesh strips to provide extreme resistance to wind loads. A standard fixing provides reinforcement area restricted to the support washer area, but in 'Cross-knot' this area has been extended since the crossed strips are both attached to insulation material and fixed to the reinforcement. Moreover, the mechanical fixing used in 'Cross-knot', has the capability to mechanically hold down the insulation due to screw-in fixing which can be tightened. It ensures full control over efficient installation of each fixing and eliminates the effects of dynamic action, occurring when the pin is hammered in, since the hammer may damage the anchoring area, especially when the substrate is weak. This is crucial for retrofit insulation, where it is necessary to obtain optimal stress in the insulation structure (fixing strength basically relies on mechanical fixing). KWM has been designed to fasten thermal insulation (mineral wool or EPS foam) in solutions requiring enhanced durability and absolute reliability of the mechanical fixing. It is recommended for fixing the thermal insulation:

- of high thickness
- on gable walls or other with no window openings
- on walls of high buildings
- on high wind suction load areas
- on weak substrates
- when heavy cladding (e.g. stone) is applied to thermal insulation
- when thermal insulation is applied to the existing one (DOUBLE THERM EWI technique)

If applied correctly, 'Cross-knot' makes the façade practically fully resistant to damaging wind forces.





**ADVANCED RESEARCH
AND DEVELOPMENT**



**THE MOST COMPREHENSIVE
INSTALLATION TRAININGS**



**EXTERNAL WALL INSULATIONS
CERTIFICATES AND APPROVALS**



**THE HIGHEST QUALITY
ON THE FIRST PLACE**

LET US DESIGN YOUR FACADE

BEFORE



Our architects and designers will prepare a visualisation to meet your expectations

AFTER







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