



PROTECTIVE LAYERS

STRUCTURAL PROTECTION MATTING & PAVE PADS

All Rubbertech Protective Layers are supplied by market leaders Regupol.

These will not only provide good insulation values but will also protect membrane and insulation boards from damage, drastically reducing the risk of damage to the main roof structure.



KEY BENEFITS OF OUR RANGE:

ELASTICITY

The material adapts to all unevenness in surfaces, thereby doing away with complicated cuts.

CORROSION RESISTANCE

Insulation and Building Protection does not become electrostatically charged, and chemical reactions between metals are prevented.

RESISTANCE TO CORROSIVE AGENTS

Almost completely resistant to contaminated water and other influences in the soil and air.

RESISTANCE TO CHEMICALS

Highly resistant to acids and alkalis.

MICROBE RESISTANCE

Resistant to termites, fungal attack, insects and microbes.

Our range includes a number of Regupol products which can be seen in more detail throughout the brochure.

REGUPOL RESIST

Regupol Resist is suitable for the below:

Flat Roofs

under gravel, flower pots, slab paving, roof plantings, etc.

Terraces and Balconies

under concrete slabs, (wooden) tiles, etc.

Parking Decks

under concrete or bituminous surfacing

Inverted Roofs

under gravel, slab paving, raised floors, etc.

Building Construction and Civil Engineering

for concrete construction, bridge construction, covered parking decks, underground car parks, head race tunnels, tunnel constructions, avalanche galleries, bunkers, hangars, ammunition dumps

Pipeline Construction

for covering of dome-shaped cuts and pipelines made of concrete, metal or synthetic material

Modular Houses and Construction of Pre-assembled Units

for partition walls, soundproofing sandwich elements and doors (soundproofing)

Air Duct Construction

as soundproofing material for the outer lining of ducts made of steel metal, asbestos cement, synthetics, etc.

Membrane

for protection of bituminous waterproof sheeting, synthetic sheeting

Insulating Materials

to protect insulation materials such as polystyrene, polyurethane, glass and mineral fibres, etc.

For more detailed information see pages 12-13

REGUPOL RESIST FH

On the membranes of flat roofs underneath gravel filling, tile material, etc., underneath solar modules and as hard roofing.

For more detailed information see pages 14-15

REGUPOL RESIST 9510

On roof membranes on high-load building membranes, flat roofs, under terrace floors, etc.

For more detailed information see pages 16-17

REGUPOL RESIST SOLAR AK

On roof membranes on flat roofs under solar systems and other installations. No plasticiser migration also when used on PVC membranes.

For more detailed information see pages 18-19

REGUPOL DRAIN PLUS

Beneath roof plantings and terrace slabs.

For more detailed information see pages 20-21



REGUPOL[®] RESIST



Regupol resist is the most versatile product to protect membranes and insulations.

It is made of PUR-bonded rubber fibres and granules. Regupol resist is classified as a protective layer in accordance with DIN 18531. In comparison to protective screed and concrete, Regupol resist possesses clear technical, physical and financial advantages.

It is easy to install and can be optimally bonded to any kind of sub-bases by means of hot bitumen, special adhesives and plastic adhesives.

REGUPOL RESIST TECHNICAL DATA

Material	PUR-bonded rubber fibres and granules
Dimensions	2,300 × 1,150 × 6 mm 2,300 × 1,150 × 8 mm 2,300 × 1,150 × 10 mm 2,300 × 1,150 × 12 mm 2,300 × 1,150 × 15 mm 2,300 × 1,150 × 20 mm
Tile Measurements	10,000 × 1,250 × 6 mm 8,000 × 1,250 × 8 mm 6,000 × 1,250 × 10 mm
Weight per unit	Approx. 6 kg/m ² at 8 mm thickness
Low-Temperature Stability	To -40 °C
Thermostability	To +120 °C, when installing under bituminous base course/ hot bitumen, please keep the linear thermal expansion coefficient in mind
Tensile Strength	Under tensile load $\sigma_R \geq 0.60 \text{ N/mm}^2$, in accordance with DIN EN ISO 1798
Elongation at Break	YR $\geq 60 \%$, in accordance with DIN EN ISO 1798
Compression Stress	At 30 % deformation $\geq 2.19 \text{ N/mm}^2$ at 8 mm thickness, DIN EN ISO 3386/2
Thermal Conductivity	Calculation value $\lambda_Z = 0.14 \text{ W/mK}$
Reaction to Fire Classification	E In line with DIN EN 13501-1
Coefficient of Thermal Expansion	Approx. $23.1 \times 10^{-5} / ^\circ\text{C}$
Resistance to water vapour diffusion factor μ	21.6. (water vapour diffusions equivalent air layer thickness sd: 0.21 m)
Migration of Plasticisers	Installation on membranes which are not rubber-compati- ble may cause migration of plasticisers. Please use Regupol resist solar FH AK to avoid migration of plasticiser.
Protective layer	According to the norm DIN 18531

Other sizes and thicknesses on request.

Customized goods in different lengths, thicknesses (possible thicknesses up to 20 mm) and widths (beginning from 50 mm) are also available on request.



REGUPOL[®] RESIST FH



The Regupol Resist FH building protection sheet is the new product from BSW to protect membranes and insulation, and to reduce the fire load on flat roofs. The flame-retardant equipment makes the sheets made of PUR-bound rubber granulates resistant against flying sparks and radiant heat.

The fire resistance rating is considerably enhanced from a fire protection point of view. Regupol Resist FH insulation and building protection with a thickness of 8 mm is classified as BRoof (t1) and therefore considered to be hard roofing.

Under certain circumstances, Regupol Resist FH insulation and building protection hence considerably reduces the use of gravel filling and tile material, and hence the entire roof live load. This is a crucial advantage, particularly in the field of roof restoration.

Regupol Resist FH is important as a complement to membrane products which do not themselves meet the requirements of hard roofing. Regupol Resist FH Insulation and Building Protection with the general appraisal certificate at 8mm thickness. The general appraisal certificate confirms that Regupol Resist FH is resistant to flying sparks and radiant heat according to DIN V ENV 1187.

General appraisal certificates are solely issued by the test centres accredited to do so by the German Institute for Civil Engineering (DIBt), in this case MPA Dresden.

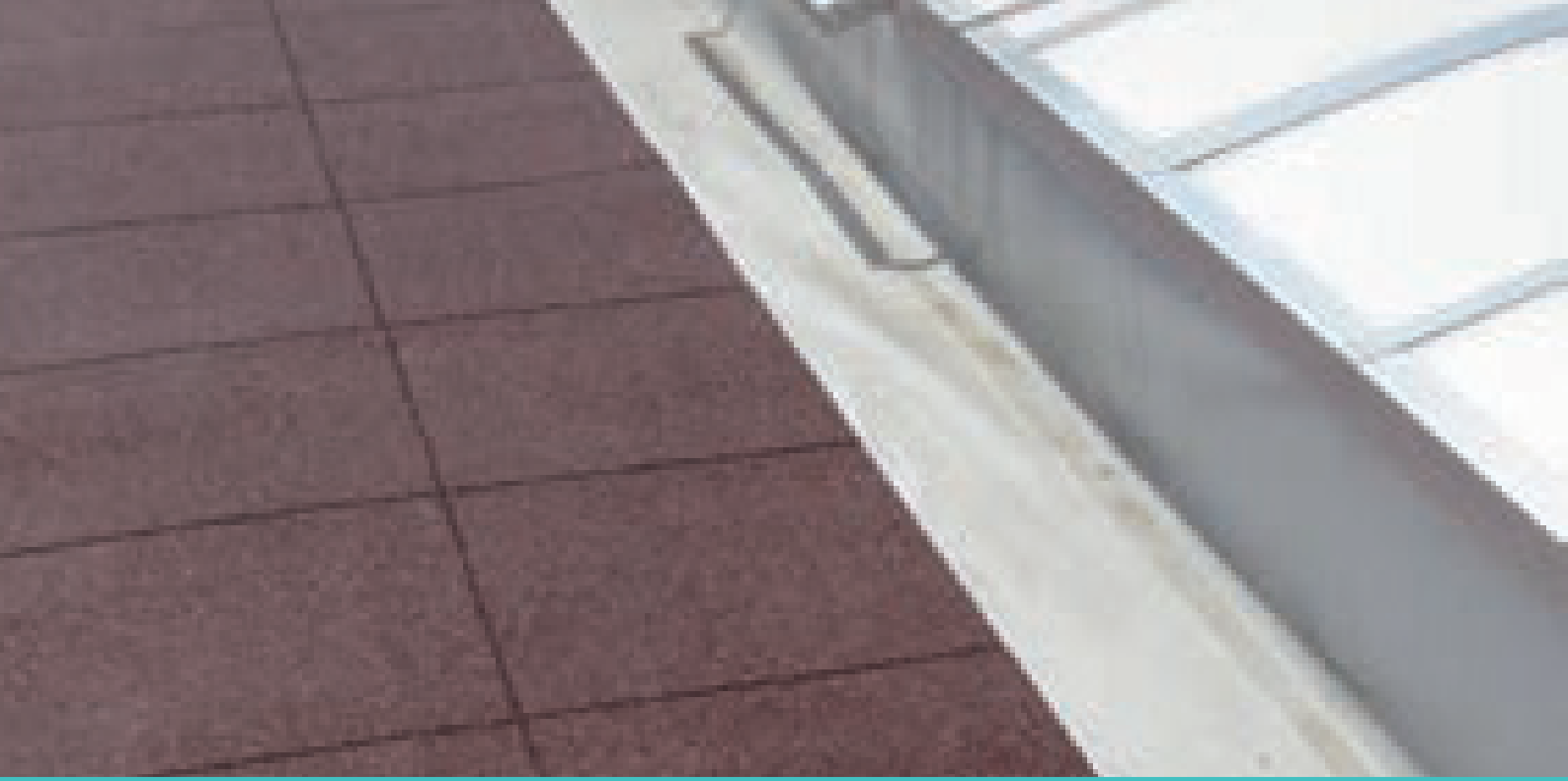
The test was performed on both standard old roof varieties, FPO and bitumen membrane. Regupol Resist FH considerably reduces the fire load. Regupol Resist FH insulation and building protection greatly helps to prevent the outbreak of fire and its spreading to adjacent roofs.

REGUPOL RESIST FH TECHNICAL DATA

Material	PUR-bound rubber granulate with fire protection finish
Tile Measurements	8,000 x 1,250 x 8 mm
Weight per unit	Approx. 6 kg/m
Low-Temperature Stability	To -40 °C
Thermostability	To +120 °C, when installing under bituminous base course/hot bitumen, please keep the linear thermal expansion coefficient in mind
Tensile Strength	Under tensile load $\sigma_R \geq 0.50 \text{ N/mm}^2$, in accordance with DIN EN ISO 1798
Elongation at Break	YR $\geq 40 \%$, in accordance with DIN EN ISO 1798
Compression Stress	at 25 % deformation 0.55 N/mm ² , DIN EN ISO 3386/2
Electromagnetic Shield at 1 GHz	max. approx. 35 dB
Thermal Conductivity	Calculation value $\lambda_Z = 0.14 \text{ W/mK}$
Coefficient of Thermal Expansion	Approx. $23.1 \times 10^{-5} / ^\circ\text{C}$
Reaction to Fire Classification	B _{Roof} (t1) in line with DIN EN 13501-5
Coefficient of Thermal Expansion	approx. $23.1 \times 10^{-5} / ^\circ\text{C}$
Migration of Plasticiser	Installation on membranes which are not rubber-compatible may cause migration of plasticisers. Please use Regupol Resist Solar FH AK to avoid migration of plasticiser.
Resistance to water vapour diffusion factor μ	21.6 (Water vapour diffusion equivalent air layer thickness sd: 0.21 m)
Protective layer	According to the norm DIN 18531

AREAS OF APPLICATION

On the membranes of flat roofs underneath gravel filling, tile material, etc., underneath solar modules and as hard roofing.



REGUPOL® RESIST 9510



Regupol Resist 9510 is an alternative to Regupol Resist for protective roof membranes and insulation, as well as for higher loads.

Regupol Resist 9510 consists of PUR-bonded butyl rubber and is classified as a protective layer in accordance with DIN 18531. In comparison to protective screed and concrete,

Regupol Resist 9510 possesses clear technical, physical and financial advantages. It is easy to install and can be optimally bonded to any kind of sub-bases by means of hot bitumen, special adhesives and plastic adhesives. The material is virtually odourless in terrace floors with open joints.

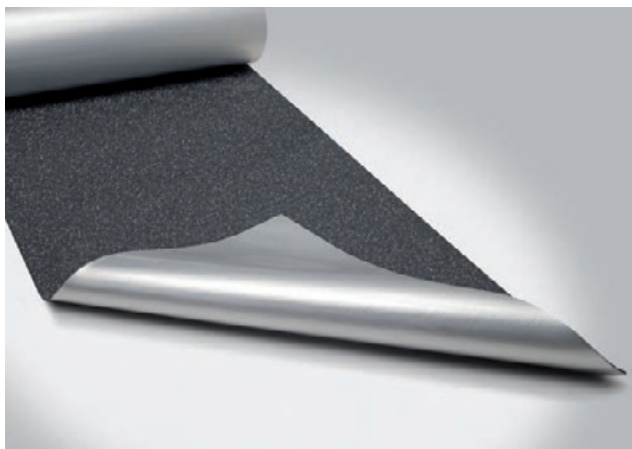
REGUPOL RESIST 9510 TECHNICAL DATA

Material	PUR-bonded butyl plastic
Tile Measurements	10,000 × 1,250 × 6 mm 8,000 × 1,250 × 8 mm 6,000 × 1,250 × 10 mm Other sizes and thicknesses on request.
Weight per unit	approx. 8.4 kg/m ² at 8 mm thickness
Low-Temperature Stability	To -40 °C
Thermostability	To +120 °C, when installing under bituminous base course/ hot bitumen, please keep the linear thermal expansion coefficient in mind
Tensile Strength	Under tensile load $\sigma_R \geq 0.60 \text{ N/mm}^2$, in accordance with DIN EN ISO 1798
Elongation at Break	YR $\geq 60 \%$, in accordance with DIN EN ISO 1798
Compression Stress	at 30% deformation 0.55 N/mm ² , DIN EN ISO 3386/2
Thermal Conductivity	Calculation value $\lambda_Z = 0.14 \text{ W/mK}$
Reaction to Fire Classification	E in line with DIN EN 13501-1
Coefficient of Thermal Expansion	approx. $23.1 \times 10^{-5} / ^\circ\text{C}$
Migration of Plasticiser	Installation on membranes which are not rubber-compatible may cause migration of plasticisers. Please use Regupol Resist Solar FH AK to avoid migration of plasticiser.
Resistance to water vapour diffusion factor μ	21.6 (Water vapour diffusion equivalent air layer thickness sd: 0.21 m)
Protective layer	According to the norm DIN 18531



REGUPOL[®] RESIST SOLAR AK

PROTECTIVE LAYER UNDERNEATH SOLAR SYSTEMS



With this product, Regupol Resist Solar AK offers a selection of protective layers that has been specifically developed for the installation of photovoltaic systems on flat roofs.

The protective layers are marked by their extremely long product life as well as their high mechanical load-bearing capacity. A large selection of product alternatives allows users to find the fitting protective layer for the different types of flat roofs and solar plants.

Regupol Resist Solar AK ensures that solar systems are solidly positioned due to high coefficients of friction while at the same time protecting the roof membrane against damage. Regupol Resist solar AK is available in standard sizes or is "custom cut" to the individual construction.

Regupol Resist Solar AK is available in different varieties. Suitable for a range of applications including roof membranes of flat roofs, underneath solar systems and much more.

Lamination with a triplex aluminium foil on the underside

This prevents plasticiser migration between non-rubber-compatible roof membranes (e.g. soft PVC) and the protective layer.

Flame-retardant finish

This alternative is considered "hard roofing" as it protects the roof against flying sparks, radiant heat and fireworks.

Self-adhesive finish

An adhesive layer serves as a mounting aid to secure the protective layer at the footprints and attach Regupol Resist Solar to the solar system even prior to its installation on the roof.

These finishes may be combined with one another, which makes for a broad range of product varieties.

REGUPOL RESIST SOLAR AK TECHNICAL DATA

Material	Prefabricated PUR-bound rubber granulate with optional fire protection finish and underside lined with triplex aluminium foil.
Dimensions	10,000 x 1,250 x 6 mm 8,000 x 1,250 x 8 mm 6,000 x 1,250 x 10 mm
Tile Measurements	10,000 x 1,250 x 6 mm 8,000 x 1,250 x 8 mm 6,000 x 1,250 x 10 mm
Weight per unit	approx. 4.5 kg/m ² , at 6 mm thickness
Low-Temperature Stability	To -40 °C
Thermostability	To +90 °C
Tensile Strength	Under tensile load $\sigma_R = 1.50 \text{ N/mm}^2$, in accordance with DIN EN ISO 1798
Elongation at Break	YR = 30 %, in accordance with DIN EN ISO 1798
Compression Stress	At 25 % deformation 0.70 N/mm^2 , DIN EN ISO 3386/2
Electromagnetic Shield at 1 GHz	Max. approx. 35 dB
Reaction to Fire Classification	E in line with EN 13501-1:2007
Migration of Plasticisers	Does not occur due to aluminium lining on underside.
Dynamic coefficient of friction (cohesive and dynamic friction)	Can be tested on our own test bench under laboratory conditions upon request (using the individual system weights / frame constructions).
Protective layer	According to the norm DIN 18531

Other sizes and thicknesses on request.

Customized goods in different lengths, thicknesses (possible thicknesses up to 20 mm) and widths (beginning from 50 mm) are also available on request.



REGUPOL[®] DRAIN PLUS



Regupol Drain Plus provides both a protection and drainage layer.

The top side is laminated with a fibre fabric which allows only liquids to seep through. The profiled underside makes sure that liquids can drain off.

Regupol Drain plus possesses high mechanical load capacity, does not corrode and is spade-resistant.

REGUPOL DRAIN PLUS TECHNICAL DATA

Material	PUR-bonded rubber granules and fibres (rough); fleece lamination
Roll Dimensions	10,000 x 1,250 x 8/12 mm
Weight per unit	Approx. 7.5 kg/m
Low-Temperature Stability	To -40 °C
Thermostability	To +90 °C
Tensile Strength	Under tensile load $\sigma_R = 0.83 \text{ N/mm}^2$, in accordance with DIN EN ISO 1798
Elongation at Break	YR = 40 %, in accordance with DIN EN ISO 1798
Compression Stress	At 25% deformation 0.40 N/mm^2 , DIN EN ISO 3386/2
Reaction to Fire Classification	E in line with DIN EN 13501-1
Protective layer	According to the norm DIN 18531

DRAINAGE CAPACITY

Because of its material structure Regupol Drain Plus can drain large quantities of water in the horizontal plane even under load.

The exact quantities can be obtained from the table below.

Compression	Unit	Mean Value X
Drainage capacity $q_{\text{stress/gradient}}$ Test direction CMD 1,275 kPa hard/hard	l/m s	hydraulic gradient $i = 0,015$ 0,0562