

STAY UNDER COVER

***BITUMEN
ROOFING***



WHY ELASTOMER BITUMEN ON ROOFS?

Large roof areas, increased spans, lighter roof structures, efficient thermal insulation, increased life span requirement... Modern construction methods place tough demands on roofing materials. They have to withstand movements of the substructure, deformation of prefabricated components, temperature changes and stresses caused by ice formation in cold weather extremes. With efficient thermal insulation the roofing is subject to even greater temperature differences. The quality of roofing should not suffer even if installation is carried out in mid-winter.

KATEPAL elastomer bitumen roofing consists of one or more layers of elastomer bitumen membrane. Elastomer bitumen sheets are manufactured of styrene-butadiene-styrene (SBS) elastomer and bitumen bonded to polyester or glass felt. The waterproofing material of the sheet is crucial for keeping it weatherproof irrespective of the stresses it is subjected to. Thanks to its good stretch and elasticity properties SBS elastomer bitumen withstands high strain caused by movement even at very low temperatures. In this respect it is far superior to other bitumenbased waterproofing materials (oxidized bitumen and APP modified bitumen). In Finland the lack of elastic properties at low temperatures has been a cause of serious problems in flat roofs.



WHAT ARE THE ADVANTAGES OF KATEPAL MODIFIED BITUMEN ROOFING?

RELIABILITY AND DURABILITY

During the past 30 years, an area of over 60 million square metres has been roofed with elastomer bitumen membrane in Finland – with excellent results. No warranty repairs have been needed. The projected life span of 2-ply roofing is over 40 years.

ELASTICITY AND STRENGTH

Due to modern building methods and the northern climate in Finland, roofing materials need to retain their strength and elasticity over a wide temperature range. SBS elastomer bitumen combined with strong polyester and glass fibre felts gives roofing materials superior elasticity, strength and dimensional stability.

MULTI-PLY ROOFING AND STRENGTH

Built-up roofing is made by installing 2-3 layers of bitumen membrane on the roof. This minimises possible defects of workmanship and ensures that the joints are weatherproof. This type of roofing is strong, up to 8-12 mm thick. It is not susceptible to mechanical damage as thin plastic roofing materials are.

PERFORMANCE AT HIGH AND LOW TEMPERATURES

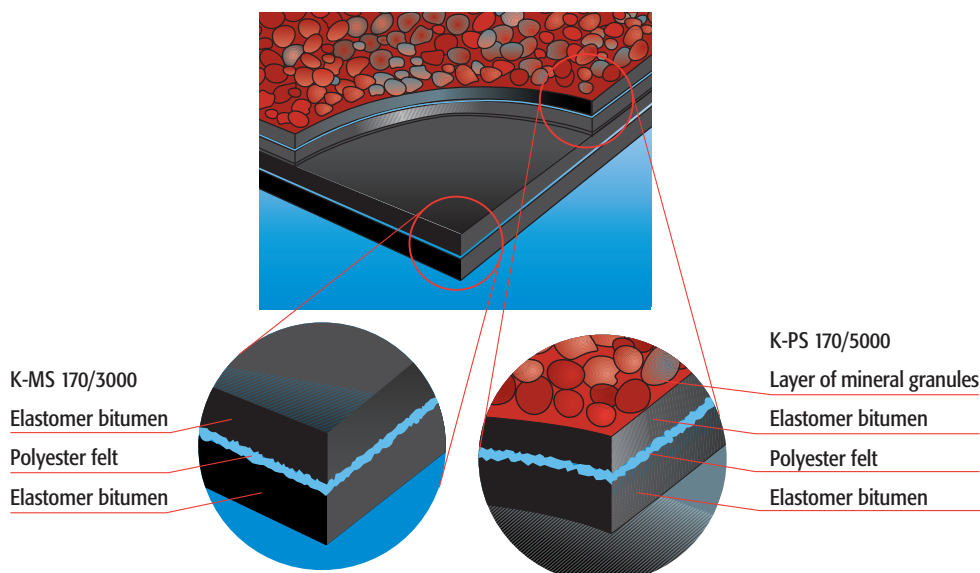
The softening temperature of elastomer bitumen is over +100 °C and it retains its elasticity even at the low temperature of -35 °C. Katepal's elastomer bitumen felt roofing products have been developed for the Finnish climate, but they also work in "greenhouse conditions". They can be laid on the roof even in extremes of cold weather without risking their reliability.

LOOKS COUNT

The roof does not always have to be plain grey. Katepal's standard range includes seven other colours too. Special colours are available to order.

FIRE SAFETY

Elastomer bitumen roofing systems recommended by Katepal comply with the binding regulations for roofing fire safety stipulated by the National Building Code of Finland. Katepal bitumen sheets meet the European fire requirements class B_{ROOF(t2)}. The approved class of Katepal products is based on tests run by VTT Technical Research Centre of Finland. The CE-marking on our products is a proof of it.



SUPERIOR RELIABILITY WITH ELASTOMER BITUMEN MEMBRANES

Modified bitumen membranes are divided according to their properties into four product classes, TL1, TL2, TL3 and TL4, as specified in the Finnish Roofing Contractors Association's publication, TOIMIVAT KATOT (FUNCTIONAL ROOFS). Katepal elastomer bitumen roofing membranes comply with the requirements of all the product classes, providing optimum product combinations for all roof slopes and substrates. The requirements are based on the essential properties in the product standard EN 13707 for the reinforced bitumen sheets.

KATEPAL ELASTOMER BITUMEN ROOFING PRODUCTS

Product	Product class	Roll size	Reinforcement	Bonding to substrate	Uses
Cap sheets K-PS 170/4000 K-PS 170/5000 torch-on	TL2 TL2	10 x 1 8 x 1	polyester felt polyester felt	hot bitumen bonding torching	cap sheet in built-up roofing
Cap sheets for bridge waterproofing K-PS 250/4000 K-PS 250/5500 torch-on	TL2 TL2	10 x 1 8 x 1	polyester felt polyester felt	hot bitumen bonding torching	cap sheet in bridge waterproofing
Cap felt K-PL 80/4800 torch-on	TL4	8 x 1	glass felt	torching	cap sheet in built-up roofing
Waterproofing sheets K-MS 170/3000 K-MS 170/4000 torch-on SUPER UNDERLAY SHEET self adhesive edge	TL2 TL2	10 x 1 10 x 1 15 x 1	polyester felt polyester felt polyester felt	hot bitumen bonding torching clout roofing nail	underlay sheet in built-up roofing vapour barrier, foundation waterproofing, radon barrier
Waterproofing felts K-EL 60/2200 K-EL 60/3200 torch-on K-EL 60/2200 Al 0.08	TL4 TL4 TL4	15 x 1 10 x 1 20 x 1	glass felt glass felt glass felt + alum. foil 0.08	hot bitumen bonding torching hot bitumen bonding	base sheet, built-up roofing, vapour barrier vapour barrier, root barrier for turf roofs
Venting underlay sheets K-TMS 170/3300 torch-on	TL2	10 x 1	polyester felt	partial torching	
Venting underlay felt K-TL 60/2500 torch-on membrane	TL4	10 x 1	glass felt	partial torching	
Single-layer roofing TUPLA torch-on	TL1	8 x 1	reinforced polyester felt	torching	cap sheet

The standard colour of cap sheet is grey. The standard colours of cap sheet types K-PS 170/5000 also include black, brown, green, red, white, light grey and blue.



KATEPAL'S BITUMEN ROOFING SYSTEMS FOR LOW-PITCH ROOFS

The class division of bitumen roofing membranes in the Finnish Roofing Contractors Association's publication, TOIMIVAT KATOT (FUNCTIONAL ROOFS), is based on applicable roof pitches. Katepal's recommendations for the use of the roofing membranes are based on this classification. We also recommend compliance with the guidelines of the same publication for working practices, fixing methods and execution of details.

SUBSTRATE	TYPICAL ROOFS			Trafficable surfaces, outdoor decks and terraces
	VE 20 roof slope $\geq 1:20$ (2,8°)	VE 40 roof slope $\geq 1:40$ (1,5°)	VE 80 roof slope $\geq 1:80$ (0,8°)	VE 80 roof slope $\geq 1:80$ (0,8°)
Timber (boarding or plywood EXT)	K-MS + K-PS K-EL + K-PS K-TL + K-PS K-MS + K-PL TUPLA	K-MS + K-PS K-EL + K-PS K-TL + K-PS K-MS + K-PL TUPLA	K-MS + K-PS	
Insulation sheeting	K-MS + K-PS K-MS + K-PL	K-MS + K-PS K-MS + K-PL	K-MS + K-PS	
Concrete On a concrete substrate the choice of membrane roofing system is determined by the class of application and the structural system of the roof itself.	K-MS + K-PS K-TMS + K-PS K-EL + K-PS K-TL + K-PS K-MS + K-PL K-TMS + K-PL TUPLA	K-MS + K-PS K-TMS + K-PS K-EL + K-PS K-TL + K-PS K-MS + K-PL K-TMS + K-PL	K-MS + K-PS K-TMS + K-PS	K-MS*) + K-MS + K-PS K-MS*) + K-PS 250 K-MS*) + TUPLA K-MS*) + K-PS *) or K-TMS
Old bitumen roofing	K-TMS + K-PS K-MS + K-PS K-TL + K-PS K-EL + K-PS TUPLA	K-TMS + K-PS K-MS + K-PS K-TL + K-PS K-EL + K-PS TUPLA	K-TMS + K-PS K-MS + K-PS	

The most suitable membrane roofing systems, which also guarantee the longest service life are marked in red.

BRIDGE WATERPROOFING

Special requirements apply to waterproofing materials, quality of workmanship and equipment used in the waterproofing of bridge decks. Katepal's elastomer bitumen membranes and elastomer bitumen are approved by the Finnish Road Administration for demanding waterproofing applications in bridges.

The Finnish Road Administration has approved several Katepal Roofing Contractors as quality contractors. They are permitted to carry out waterproofing of bridges according to the Finnish Road Administration's SYL-6 regulations on bridge decks and the Silko guidelines on the repair of bridges.



A STEEP ROOF IS THE FIFTH FACADE OF YOUR HOUSE

SBS-BITUMEN ROOFING SHINGLES FOR GOOD LOOKS

With Katepal bitumen roofing shingles you can build a roof that is durable and looks good at a reasonable cost. Katepal's KL, Katrilli, Jazzy and Rocky roofing shingles come in many colours and styles – find the one that suits your house best.

SBS-Bitumen shingle roofing is quiet in rain and wind, it blends in with the landscape and snow will not drop off the roof causing a hazard. Bitumen roofing shingles are always installed on close boarding or similar decking covered with an underlay sheet, which ensures that the roof does its job in all circumstances and that all special details are waterproof. You can easily install the roofing by yourself. Ask for the Super-Katepal SBS-bitumen roofing shingles brochure.



KATEPAL PRODUCTS AND ROOFING CONTRACTORS

Roofs and the installation of roofing are important elements of the construction process. Because of the working methods used in the installation of bitumen roofing on low-pitch roofs, special training and knowledge is required of those carrying out the work. That's why Katepal bitumen roofing products are installed by selected roofing contractors.





KATEPAL

Katepal Oy, established in 1949, is the leading Finnish manufacturer of bitumen roofing and bitumen products. The Katepal production plants are located in Lempäälä, close to Tampere. Our main product groups include SBS elastomer bitumen-based roll roofing products, SBS-bitumen roofing shingles, liquid bitumen products and packed bitumen. Katepal products are type-approved in Finland by the Ministry of the Environment, the Finnish Road Administration and the Finnish Roofing Contractors Association and they have been awarded a product approval by many of the countries to which we export.

In its operations Katepal Oy complies with the certified ISO 9001 quality system. Environmental considerations are an integral part of all our activities. Katepal Oy's continuing product development aims at improving the durability and user friendliness of its roofing products. Traditional "roofing felts" have developed into modern elastomer bitumen membranes and SBS-bitumen roofing shingles, combining ease of installation with great looks and long-term durability.

KATEPAL OY
 P. O. Box 33, FI-37501 Lempäälä
 Tel. +358 (0)3 375 9111, Fax +358 (0)3 375 0974
 E-mail: katepal@katepal.fi
www.katepal.fi

CE
06 VTT: 0809-CPD-0546
EN 13707 Katepal SBS-membranes External fire performance: B _{ROOF} (t2) Technical properties and full CE-information: www.katepal.fi

