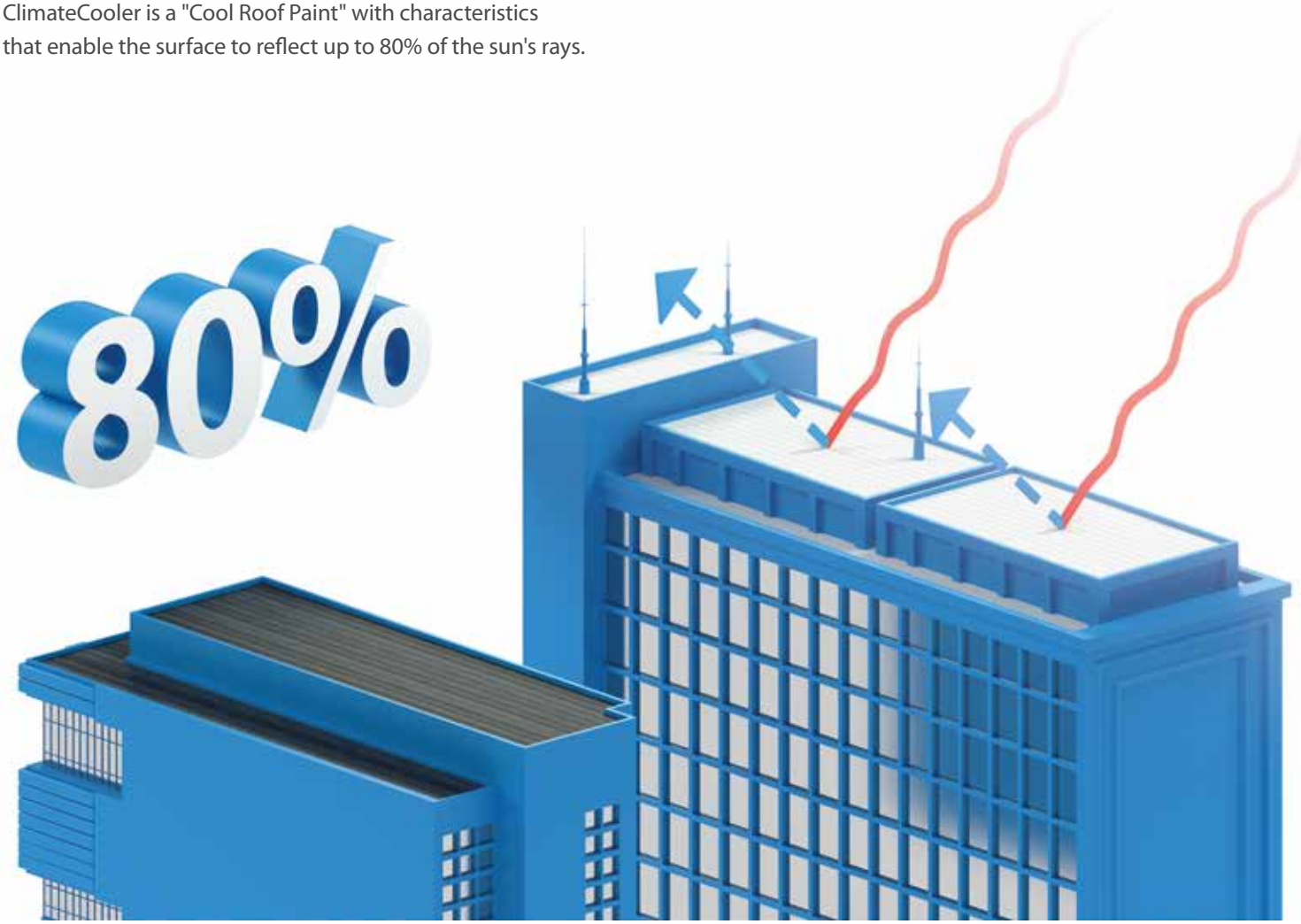
TIKKURILA

ClimateCooler®

SMART ROOFS ARE COOL

ClimateCooler is a "Cool Roof Paint" with characteristics that enable the surface to reflect up to 80% of the sun's rays.



QUICK GAINS, LONG-TERM SOLUTIONS

Environmental regulations are getting increasingly strict everywhere around the world. At the same time, consumers expect solutions that are environmentally friendly. Energy-neutral buildings are being constructed, but the existing building stock still accounts for 40% of total CO_2 emissions on a global scale.

It has been said that cool roofs are one of the quickest ways with lowest cost to reduce our carbon emissions and begin the hard work of slowing down climate change.

Tikkurila now offers an intelligent roof-coating system that reflects solar radiation back into space. Intelligent roofing reduces the need for air conditioning, and has a positive effect not only on the environment but also the indoor climate of buildings, and reduces energy bills.

It usually takes years before energy-saving solutions start providing returns on investment, but Tikkurila ClimateCooler has immediate effect. The investment is relatively low, both in terms of time and money, meaning that the energy-saving properties of the new roof-coating system are quickly transformed into actual savings.

The majority of solar heat radiation is infrared radiation (IR). ClimateCooler reflects in average up to 80% of the sun's IR radiation compared with a conventional black bitumen roof. The exact amount of reflection depends on the painting system, color of the coating and the type of roof and roofing material.

The warmer the climate, the bigger the effect!

UNIQUE PRODUCT RANGE

ClimateCooler – EnergyWise Treatment for Roofs

Tikkurila ClimateCooler is a water-borne solar-reflection roof coating. Using this coating is a smart way to manage the energy consumption of buildings and to save money – and the planet.

The Tikkurila ClimateCooler roof-coating system has a documented effect proven by internationally recognized laboratories. The "Cool Roof Paint" is based on a technology that enables the surface to reflect solar heat radiation. The overall quality, service life and functionality of the roof are also significantly improved.

Roofs treated with ClimateCooler have lower temperature, which requires less energy to cool down the air entering the buildings' air conditioning system. ClimateCooler treatment reduces the need for cooling, and translates into financial savings.

- **The cost of cooling down buildings is reduced significantly.**
- **The roof surface will last longer because it is not exposed to severe external heat.**

ClimateCooler treatment is also beneficial to the climate. No cooling means more savings and less CO_2.

Two product families – Uni and Flex

Tikkurila ClimateCooler products are on offer in two families – Uni and Flex. Both have the same benefits related to the reflection of the sun's radiation, and both are available in the same colors black, light gray, dark brown, tile red, white and anthracite. The difference lies mainly in their areas of application.

The gloss grade of the products in the Uni family is matt, and they are designed for most normal roof types, such as concrete roof tiles, fiber-cement sheets and primed steel sheet roofs. The products in the Flex family are also matt, but they are more suitable for treating degraded roofs and flat roofs covered by e.g. bituminous felt. This is due to the fact that the Flex products have a higher elasticity, specially developed for difficult substrates.

Prior to application with any of the products, it is important that the surface has been treated with the corresponding primer, ClimateCooler Uni Primer or ClimateCooler Flex Primer, respectively. They contain special pigments and additives for optimal adhesion and repainting properties.

ClimateCooler can be used on old and untreated roofs, but it must always be applied to clean and dry surfaces. The product has good application properties and coverage capacity. The treated surface is UV-stable, water-repellent, and contains heat- and sun-reflecting pigments.

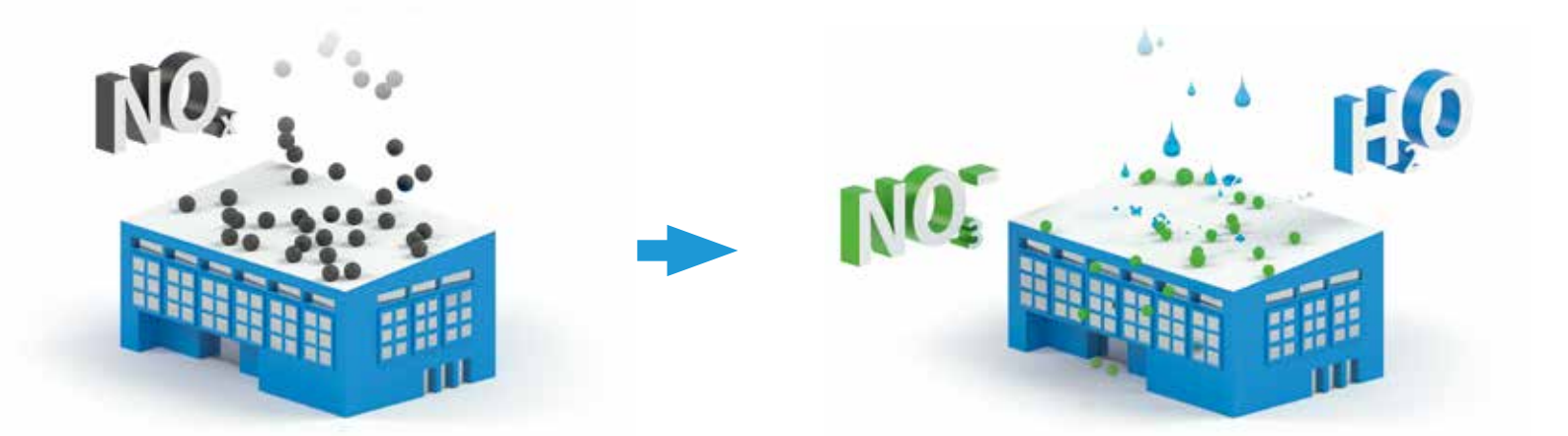
SUPERIOR BENEFITS

- Lower temperature on the roof surface
- Improved indoor climate
- Lower energy consumption for cooling down buildings
- Lower CO_2 emissions
- Good bonding properties
- Extends the service life of the roof with many years.

ClimateCooler Catalyst – An Intelligent Roof-Coating System

Tikkurila ClimateCooler Catalyst products have the same properties as ClimateCooler products. They are also suitable for the same areas of use, but with one clear advantage: they are capable of decomposing harmful NOx compounds, from e.g. exhaust gases, to harmless NO3 compounds (salts) – thanks to a catalytic process. For the present, the color selection is limited to white.

The ClimateCooler Catalyst coating was listed in the 2015 publication of "Sustainia100", an annual guide to 100 innovative solutions from around the world that presents readily available projects, initiatives and technologies (www.sustainia.me/solutions). The ClimateCooler Catalyst coating has been named as one of the top 100 sustainable solutions globally and given the position at the forefront of sustainable innovation in the Building sector of the guide





ClimateCooler HyperCoat Products – Water-proof Sealing for Roofs

Flat roofs tend to collect small pools of water after heavy rain. Over time, this can cause irreparable damage. Tikkurila now offers products specially developed for situations like this.

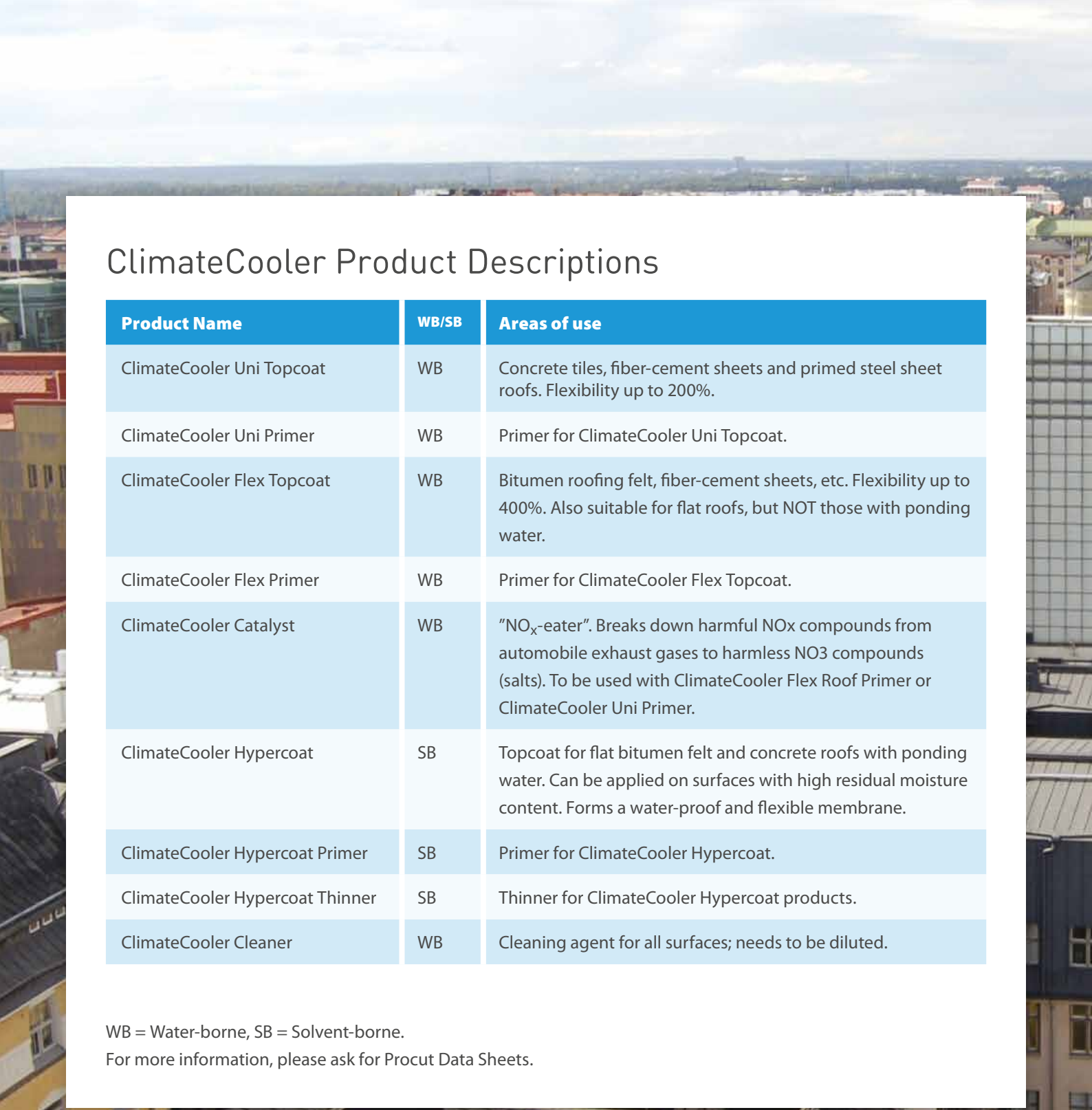
The products in Tikkurila's solvent-borne ClimateCooler Hypercoat family are intended for flat bitumen felt and concrete roofs with ponding water. Just as the other ClimateCooler products, the Hypercoat products also reduce the surface temperature of the roof by reflecting 80% of the solar radiation back into space.

In addition, the ClimateCooler Hypercoat coating forms a water-proof and flexible membrane that is able to withstand rain as quickly as 45 minutes after application under optimal conditions. The product can be applied even on surfaces with high residual moisture content.

CASE STUDY COPENHAGEN

A hotel in Central Copenhagen has two equally large wings with a roof area of 800 m². An area of 150 m2 of the roof with air conditioning machines was treated with ClimateCooler, while the other was left untreated.

According to a case study, the hotel has been able to cut annual CO_2 emissions by 27 tonnes after the application of ClimateCooler. This can be converted to driving seven times around the world with a small car. In addition to the benefit for the climate, the hotel has also achieved 10% cost savings.

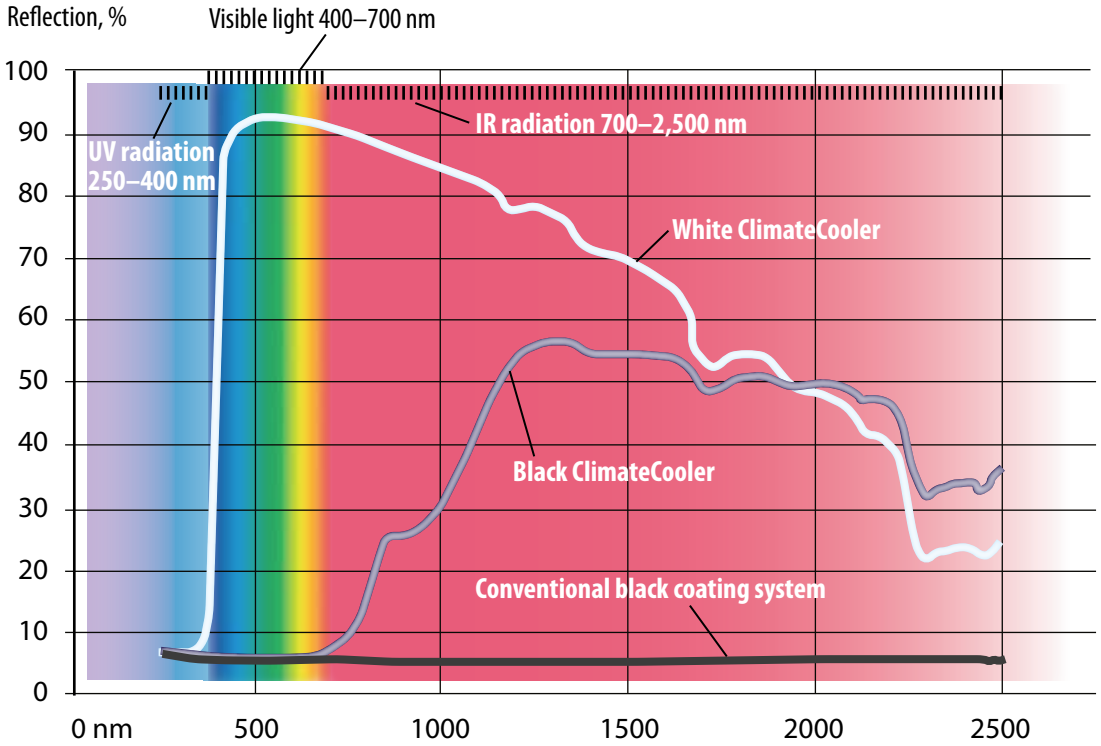


ClimateCooler Product Descriptions

Product Name	WB/SB	Areas of use
ClimateCooler Uni Topcoat	WB	Concrete tiles, fiber-cement sheets and primed steel sheet roofs. Flexibility up to 200%.
ClimateCooler Uni Primer	WB	Primer for ClimateCooler Uni Topcoat.
ClimateCooler Flex Topcoat	WB	Bitumen roofing felt, fiber-cement sheets, etc. Flexibility up to 400%. Also suitable for flat roofs, but NOT those with ponding water.
ClimateCooler Flex Primer	WB	Primer for ClimateCooler Flex Topcoat.
ClimateCooler Catalyst	WB	"NO_x-eater". Breaks down harmful NOx compounds from automobile exhaust gases to harmless NO3 compounds (salts). To be used with ClimateCooler Flex Roof Primer or ClimateCooler Uni Primer.
ClimateCooler Hypercoat	SB	Topcoat for flat bitumen felt and concrete roofs with ponding water. Can be applied on surfaces with high residual moisture content. Forms a water-proof and flexible membrane.
ClimateCooler Hypercoat Primer	SB	Primer for ClimateCooler Hypercoat.
ClimateCooler Hypercoat Thinner	SB	Thinner for ClimateCooler Hypercoat products.
ClimateCooler Cleaner	WB	Cleaning agent for all surfaces; needs to be diluted.

WB = Water-borne, SB = Solvent-borne.
For more information, please ask for Procut Data Sheets.

Comparison between the reflectance values of different coating systems on black bitumen roof



The biggest advantage of ClimateCooler can be achieved in the area of infrared (IR) radiation waves. One nanometer (nm) is equal to one billionth of a meter (0.000000001 m).
Graph Anne Kurki, Rakennuslehti magazine, source Tikkurila Oyj.

Save Money.
Do Good.
And Make Your Roof
Work for the Planet!

ABOUT TIKKURILA

Tikkurila is the leading paints and coatings professional in the Nordic region and Russia. With our roots in Finland since 1862, we now operate in 16 countries. Our high-quality products and extensive services ensure the best possible user experience in the market.

Tikkurila is a strong player in water-borne technology. Company has modern very sophisticated water-borne products proven-in-time. The quality of the products is ensured by the Tikkurila operational system, based on the requirements of ISO 9001 and ISO 14001.

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