



TIKKURILA

# DRYTECH

## FUNCTIONAL COATINGS

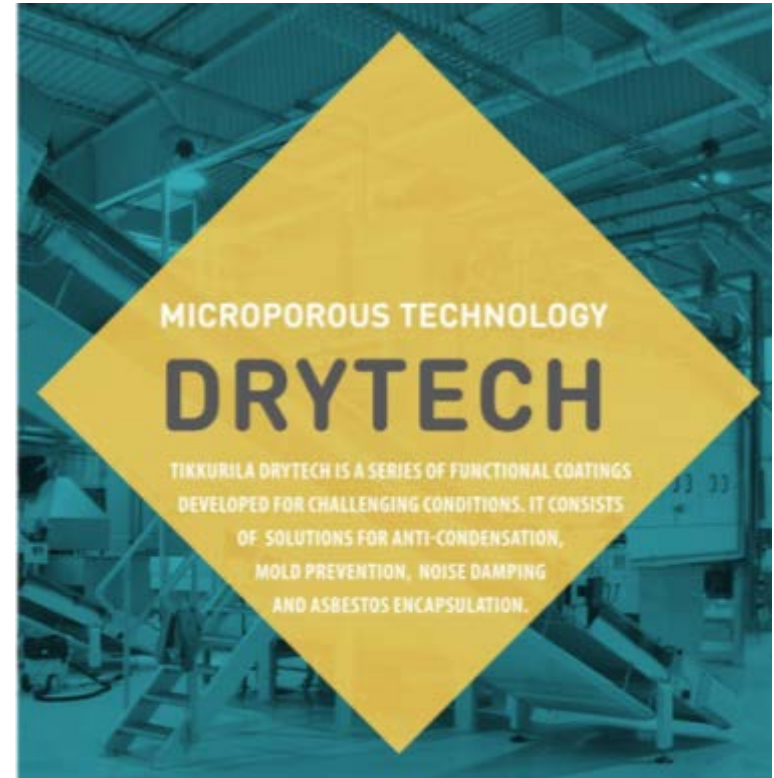
General presentation, Tikkurila Oyj

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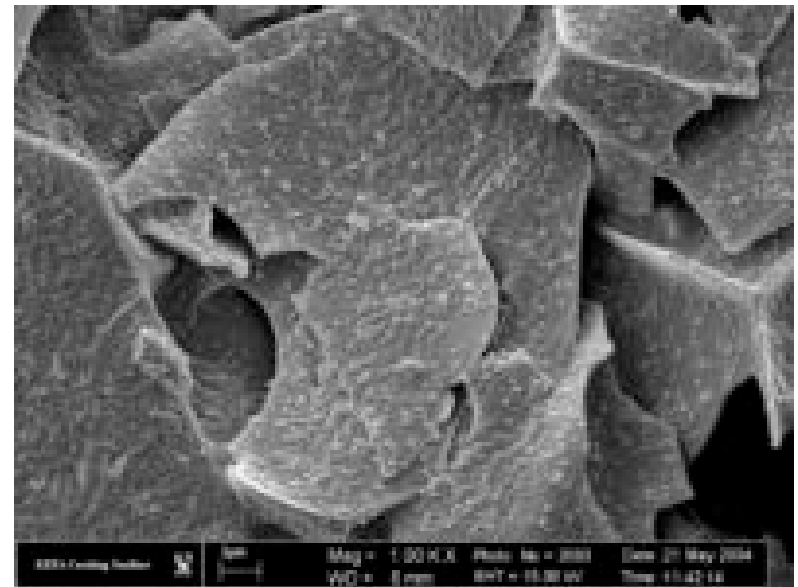


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## Drytech – microporous technology

Operating principles are based on the physical processes occurring in micropores – such as accumulation and evaporation of water.

In addition, some of the coatings offer insulation, reduction of noise and encapsulation of asbestos.



A picture of the micropore matrix. of 1mm thick coating makes the relative surface 20 000 times larger than the two-dimensional surface.



# Drytech products

**Tikkurila Drytech products** are a series of functional coatings, based on unique microporous matrix technology.



# Drytech products

- **GrafoTherm** – anti-condensation coating
- **BioRid** – coating for mold protection\*
- **Acoustics** – noise-damping coating
- **AsbestGuard** – coating for encapsulation and sealing of asbestos



anti-condensation



mold protection



noise damping

\*mold protection refers to the unique microporous matrix technology and the physical processes occurring in micropores.

## Why to choose Drytech?

- Effective solutions against mold, condensation, noise and asbestos
- Water-borne products
- Easier to use, compared to making structural changes
- Solutions for industries, professionals and consumers
- Time-proven products
- A wide range of application areas
- A long reference list
- Strong technical and training support from Tikkurila





**We keep  
surfaces dry**



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# GrafoTherm

anti-condensation coating



# GrafoTherm

- A one-component water-borne anti-condensation coating for steel roofing sheets, steel structures and other metal surfaces, where condensation and dripping-water problems occur.



# GrafoTherm

- GrafoTherm is built up of millions of micropores in the sizes 0.1–100 microns. They form a multilayer, porous texture with excellent moisture-absorption capacity.
- Evaporation occurs faster than with ordinary coatings due to the microporous structure, which breaks water surface tension and spreads moisture all around.



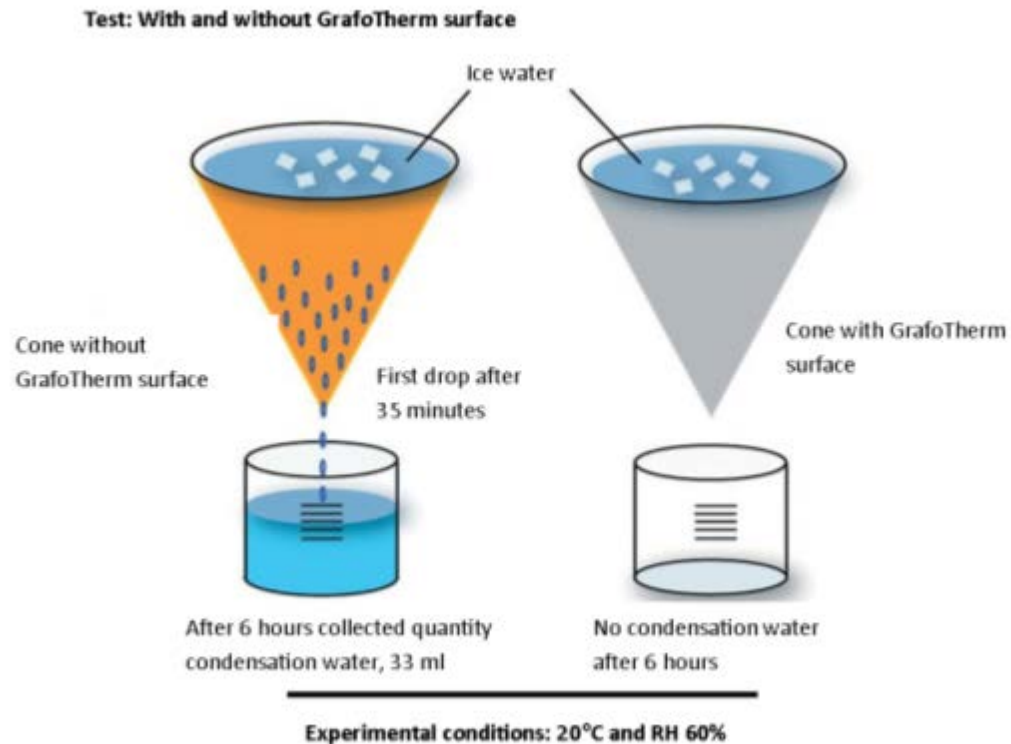
# GrafoTherm

- Problems caused by condensation are easy to prevent using GrafoTherm.
- It adsorbs the condensing moisture and prevents the formation of droplets.
- The moisture absorbed into the coating evaporates rapidly, when the condensation period ceases.



Untreated and treated with GrafoTherm steel roofing sheet

# Functional demonstration of GrafoTherm

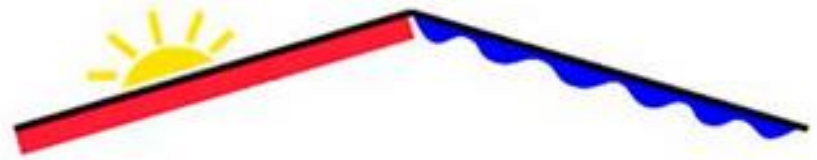


See video on [youtube](#)

# Working principle of GrafoTherm

The example of an uninsulated building roof made of partly GrafoTherm-treated and partly untreated steel sheets.

## Phase 1 – Evening



The sun sets and outdoor temperature falls rapidly. The temperature of the roof will soon reach dew point and condensation starts to appear on the untreated part of the roof.

The GrafoTherm coating insulates and reduces the temperature difference between the steel sheets and the air. No condensation therefore appears on that part of the roof.

# Working principle of GrafoTherm

## Phase 2 – Night

During cold nights with a clear sky, the temperature of a steel roof can be considerably lower than that of the outdoor air. This is due to long-wave heat radiation from the roof to the sky.

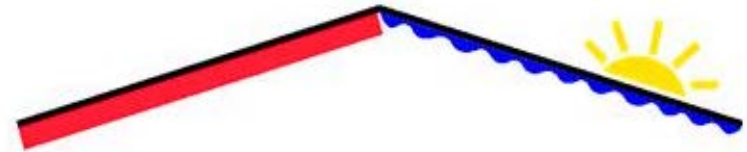
Heavy condensation now appears on the untreated surface and water starts dripping. Condensation also occurs on the steel surface under the GrafoTherm coat. However, condensation cannot take place on the surface of the GrafoTherm coating.





# Working principle of GrafoTherm

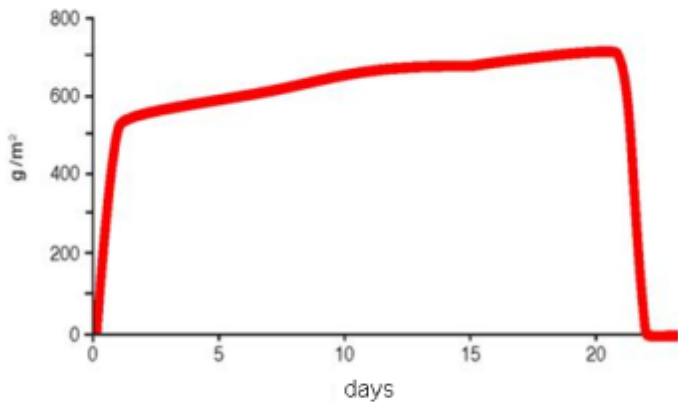
## Phase 3 – Morning



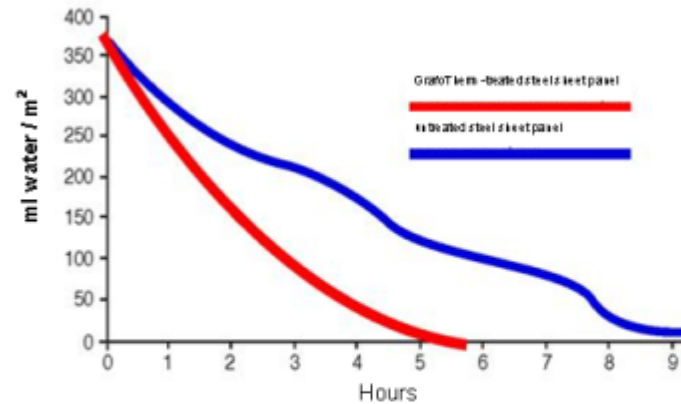
The sun rises and the outdoor air is warmed up. The temperature of the steel roof will soon exceed the dew point. The untreated steel surface gradually stops dripping and becomes dry.

The GrafoTherm coating now will become dry very rapidly and will very soon have regained its capacity to meet the next condensation period.

# Adsorption/evaporation capacity of GrafoTherm



*Adsorption/evaporation by steel treated with a 1-mm thick GrafoTherm coat. It took 21 days to saturate the coating and only one day to make it completely dry by evaporation.*



*The evaporation rate from GrafoTherm-treated and untreated steel panel. Temperature 3-5°C. Relative humidity 85-90%*



# GrafoTherm

Two product versions:

- **GrafoTherm** - for on-site application
- **GrafoTherm Line** - for line application





# GrafoTherm

## Technical comparison table

	Substrates	Tools	Thickness	Theoretical coverage	Drying time
<b>GrafoTherm</b>	Zinc, aluzinc, aluminum, stainless steel, earlier painted or primed steel surface	Airless spray or roller/ brush	DFT190—320 g/m <sup>2</sup> (250—410 μm), depending on conditions	1.8 - 1.1 m <sup>2</sup> /l (wet 600 – 1000 g/m <sup>2</sup> )	+20°C, RH 55% DFT 410μm Touch dry 1—2 h Through dry 8—12 h
<b>GrafoTherm Line</b>	Back side primer of steel roofing sheet, zinc, aluzinc	Line	DFT250—500 g/m <sup>2</sup> , depending on conditions	1.8 - 0.9 m <sup>2</sup> /l (wet 600 – 1200 g/m <sup>2</sup> )	Oven drying DFT 500g/m <sup>2</sup> +80°C 30 min +150°C 15 min



# Application areas of GrafoTherm

- Steel roofing sheets
- Steel structures and other metal surfaces where condensation and dripping water problem occurs
- For interior and sheltered surfaces only
- Typical areas are warehouses and parking houses, ventilation ducts and water production plants, other production facilities and sport arenas, interior surfaces of wind turbine towers, sea containers, train and goods wagons, animal sheds, etc.
- *Products are not effective in areas with constant high humidity (no time for evaporation)*



# Examples of GrafoTherm use



Water production plants



Containers



Roofs of buildings and industrial premises



Interior surfaces of wind turbine towers





## Why to use GrafoTherm?

- Effective condensation and dripping-water prevention
- Developed as an anti-condensation coating, but also insulates from heat
- Special modifications for painting line application available
- Environmentally friendly, and improves the indoor climate
- Complies with the requirements of EN13501-1, class A2-s1d0
- Resistant against fire and spreading of flames, GrafoTherm can be applied inside ships (MED-B-8648)



**We solve  
condensation problems**



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# BioRid

coating for mold protection\*

\*refers to the unique microporous matrix technology and the physical processes occurring in micropores.

# BioRid

- A water-borne, functional coating for elimination of moisture and for keeping the coating surface dry.




# BioRid

- Mold protection is based on the physical processes occurring in micropores.
- The coating temporarily accumulates water during the condensation period, and when the surface temperature is above dew point, the moisture evaporates into the atmosphere.



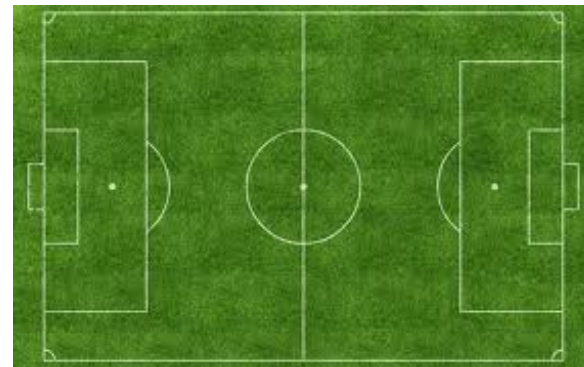
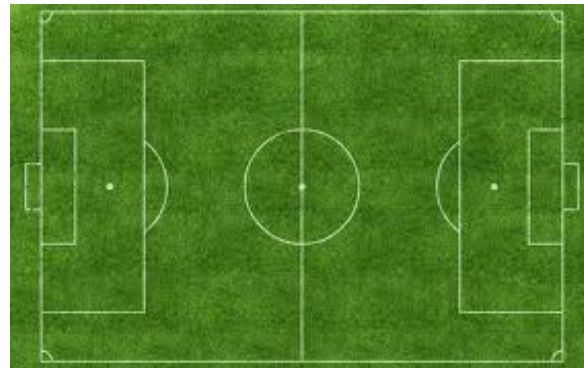
# Comparison of BioRid and ordinary film

Evaporation process in BioRid happens in a more efficient way compared to a flat surface due to the microporous matrix technology.



1 m<sup>2</sup> of BioRid  
in a thickness of approx. 1mm

=



For example, 1 m<sup>2</sup> of BioRid in a thickness of approx. 1mm represents a 12,000 times increase in relative surface, i.e. about the size of two football fields. That is why water evaporates faster and the painted surface stays dry.





# BioRid

Two application versions:

- **BioRid** - for brush and roller application
- **BioRid Spray** – mostly for spray application

	Application methods	Specific gravity	Coverage	Color
<b>BioRid</b>	Roller and brush	1.2 kg/l	1.6 –1.0 m <sup>2</sup> /l or 750 –1200 g/m <sup>2</sup>	white or grey
<b>BioRid Spray</b>	Airless spray, can also be applied by roller or brush	1.2 kg/l	1.6 –1.0 m <sup>2</sup> /l or 750 –1200 g/m <sup>2</sup>	white or grey



# BioRid-system

To get cleaner and nicer-looking surfaces Tikkurila offers BioRid-system, which additionally to BioRid contains two other products:

1. **BioWash** – cleaning detergent
2. **ProSeal** – primer before applying BioRid
3. **BioRid** – functional coating





# BioWash - cleaning detergent

- A very effective cleaning detergent for removing mold and algae.
- It is suitable for new and previously painted concrete, plaster, brick and metal surfaces.
- Mix the detergent into water in ratio 1:2 and use it for cleaning the surface and making it ready for painting before treatment with BioRid, BioRid Spray or ProSeal.
- BioWash can be applied by spray, sponge or brush.



# ProSeal - translucent primer

- A translucent water-borne primer.
- It is recommended for use on porous and absorbing surfaces before applying BioRid or BioRid Spray.
- ProSeal is intended for interior walls and ceilings and can be applied by brush or spray.

# Short application instructions of BioRid-system

1. Use BioWash to clean surfaces from mold and algae.
2. Treat absorbing and porous substrates with ProSeal.
3. Apply BioRid according to the recommendations on the can to provide a functional and effective result.





# Application areas of BioRid

For new and previously painted surfaces in conditions, where protection of the paint film from mold contamination is required:

- Living facilities
- Bathrooms
- Cellars
- Parking garages
- Food industry premises, especially breweries
- Warehouses
- Animal husbandry operations
- Others.





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## Examples of BioRid use

- Brauerei Goller, Zeil am Main;
- Schafft – Unilever Deutschland, Ansbach;
- Brauerei Paulaner, Munchen;
- Kumpf Fruchtsaft, Markgroningen;
- Bayerische Landesanstalt für Weinbau und Gartenbau, Veitshochheim;
- Neumarkter Lammsbräu, Neumarkt;
- Andritz Hydro, Ravensburg.



Tikkurila BioRid has been granted the Hygiene Certificate in Germany. Approved by Federal Association of German Food Inspectors (BVLK).





# Examples of BioRid use



Walls and ceilings of parking garages



Walls and ceilings in bathrooms and saunas



Mushroom cultivation plant



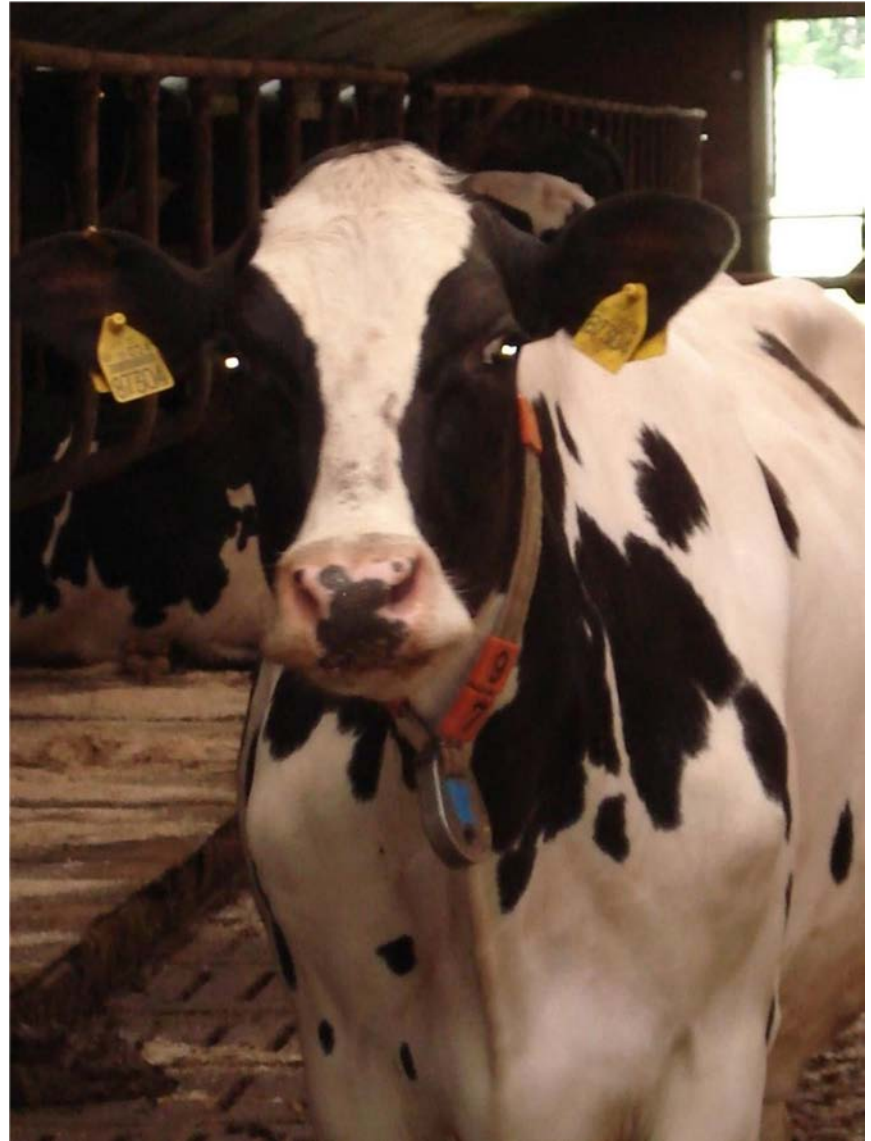
# Examples of BioRid use



Walls and ceilings of production areas in breweries



Walls and ceilings of parking halls



Animal husbandry operations facilities



## Why to use BioRid?

- Eliminates moisture and keeps the surfaces dry
- Mold protection based on the physical processes occurring in micropores
- Forms an elastic and a clean surface
- Water-borne, easy-to-use products
- Meets EU Health and Safety requirements
- A wide number of application areas
- Many years of experience and a long reference list
- Strong technical and training support from Tikkurila



**We protect surfaces  
against mold**



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# Acoustics

noise-damping coating

# Acoustics

- A one-component water-borne noise damping coating.
- The noise damping mechanism utilizes the same physical properties as other products in the Drytech family
- The coating absorbs sound waves and distributes them among the micro-porous matrix that significantly reduces the level of sound at the output.





# Acoustics

Two product versions:

**Acoustics** - for on-site application

**Acoustics Line** - for line application







# Acoustics

## Technical comparison table

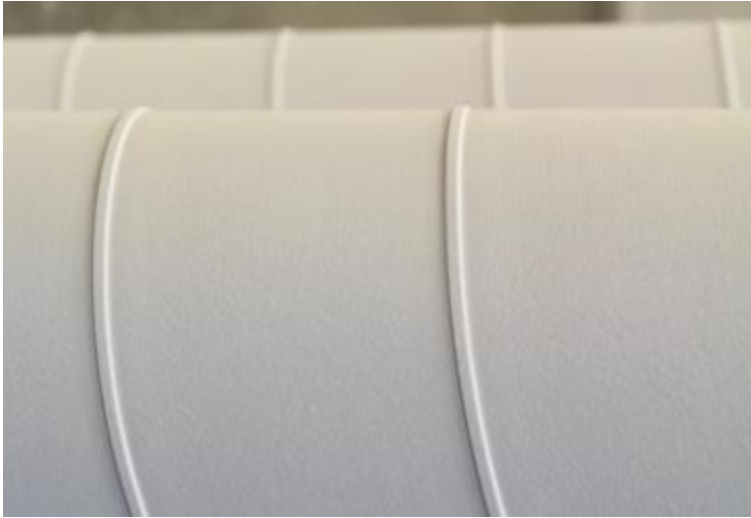
	Substrates	Tools	Thickness	Theoretical coverage	Drying time
<b>Acoustics</b>	Zinc, aluzinc, aluminum, stainless steel, earlier painted or primed steel surface, back side primer of steel roofing sheet	Airless spray or roller/brush	DFT 450µm	1.1 – 0.4 m <sup>2</sup> /l (wet 1200 – 3600 g/m <sup>2</sup> )	+20°C, RH 55% DFT 450µm Through dry 8—10 h
<b>Acoustics Line</b>	Zinc, aluzinc, aluminum, stainless steel, earlier painted or primed steel surface, back side primer of steel roofing sheet	Line	DFT 600g/m <sup>2</sup>	1.3 - 0.4 m <sup>2</sup> /l (wet 950 - 2800 g/m <sup>2</sup> )	Oven drying DFT 600g/m <sup>2</sup> +150°C 6—8 min

# Application areas of Acoustics

- Steel roofing sheets
- Metal surfaces in vehicles and railway cars
- Ventilation ducts
- Other metal surfaces where vibration and noise problem occurs
- Suitable to be used on interior and sheltered surfaces only.



# Examples of Acoustics use



Ventilation ducts



Railway cars and vehicles



Steel roofing sheets and walls in sport facilities



Steel roofing sheets in other premises



# Why to use Acoustics?

- Excellent acoustic damping and vibration absorbing properties
- Forms very elastic and strong film
- Prevents condensation
- Complies with the requirements of EN13501-1, class A2-s1d0
- Resistant against fire and spreading of flames



**We fight  
noise problems**



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# AsbestGuard

coating for encapsulation and sealing of  
asbestos



# AsbestGuard

- A functional coating suitable for encapsulation and sealing of asbestos that cannot be removed due to structural conditions.
- For interior use only as a treatment for asbestos-cement or asbestos-sprayed concrete surfaces, acoustic panels and insulation of ventilation ducts.
- Easy to apply by airless spray, brush or roller.



A large stack of grey pipes, likely asbestos-containing, is shown. The pipes are arranged in a dense, overlapping pattern, filling the frame. The text "We stop asbestos" is overlaid in the center in a bold, yellow, sans-serif font.

**We stop  
asbestos**





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# DRYTECH

## FOR YOUR BETTER LIFE

[www.tikkurila.fi/en/drytech](http://www.tikkurila.fi/en/drytech)

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