

THERMOSULIT

6.1
10.2

Thermo-reflecting Insulation



Perfectly flat covering

**Maximum Insulation...
Minimum Thickness!**

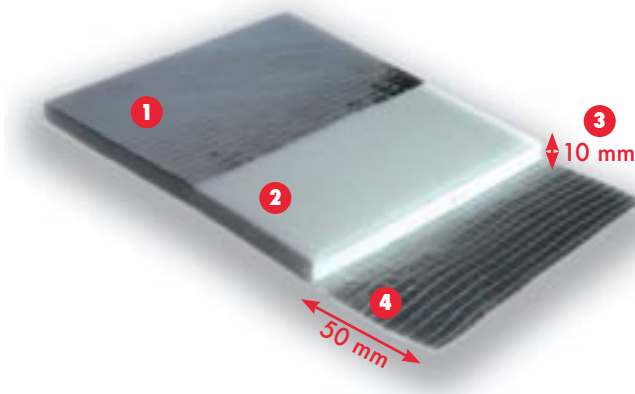
U0,2

W/m²K (CIM Report 04/2007)

Discover Thermosulit

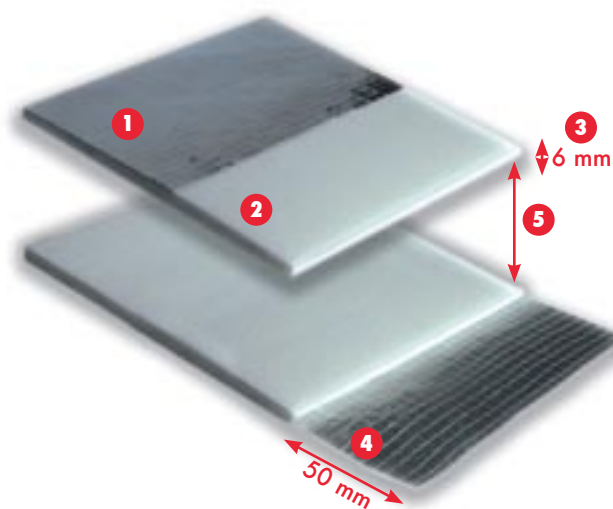
Thermosulit 6.1 and 10.2 are thermo-reflecting insulators made of closed-cell polyethylene foam, covered on one or both sides by an aluminium structure reinforced by mesh. This product is assembled by fusion, without glue or needlework, to preserve all the physical insulating qualities.

Thermosulit 10.2



Thermosulit 10.2 is covered by an aluminium sheet on both sides. It can be placed under and on rafters. In such a case, it acts as sub-membrane.

Thermosulit 6.1



Thermosulit 6.1 is covered by an aluminium sheet on one side only. It is applied in dual layer on either side of the rafters for even greater efficiency.



In winter, it keeps out the cold and the heat in.

In summer, it keeps out the heat and keeps your house cool.

- 1 100% pure aluminium, 17 microns thick
= Reflection greater than 94 %.
± 5 mm glass fibre mesh together with the aluminium sheet
= very strong resistance
- 2 Closed-cell polyethylene foam
= Flexible, thin and easy to cut.
- 3 Thermosulit thickness.
- 4 50 mm surplus aluminium on both sides and on the two edges for the covering = perfect tightness without extra thickness.
- 5 For Thermosulit 6.1, air space as thick as the rafters.

Multi-function insulation

In summer, sunrays on roofing tiles produce very high temperatures, from 50°C to 70°C. Thermosulit reflects the heat and protects your house by transferring this thermal energy from the rooms under the roof. This is the reverse phenomenon of traditional insulation which gradually absorbs this heat and restores it at night.

In winter, this principle works in the opposite direction. The heat is kept inside. Moreover, Thermosulit protects your building from outdoor humidity to maintain an indoor environment dry and far easier to heat. Thermosulit therefore means real energy conservation!



Discover the reflection principle

Reflection

Reflection is the action of a wave which changes direction when it has knocked against another body (reflecting surface).

Thermosulit works on the principle of many daily uses:

- Thermos
- survival blanket
- isothermal bag
- aeronautics
- aviation
- sunshade
- etc.

Thermo-reflecting insulation

This form of insulation forms a barrier against the different modes of heat transfer :

- Conduction** : transmission of heat through materials.
- Convection** : passage of thermal energy by air circulation.
- Radiant energy** : transfer of thermal energy in the form of electromagnetic waves.

Thermosulit operates on the following principles

Reduced conduction : high-performance closed cell polyethylene foam = 0,034 W/mK.

Reflection of more than 94% : radiates warmth and cold.

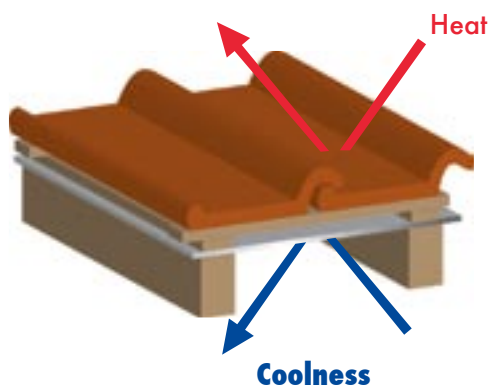
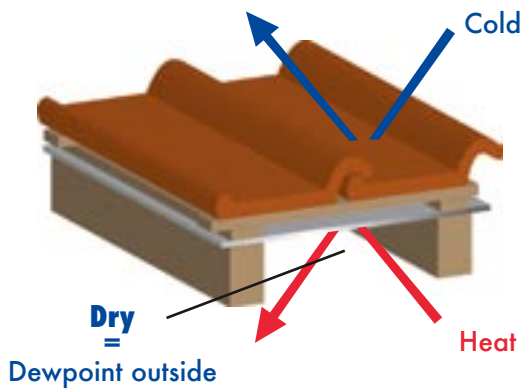
Low convection : air-tight.

Protection against humidity : humidity and water tightness.

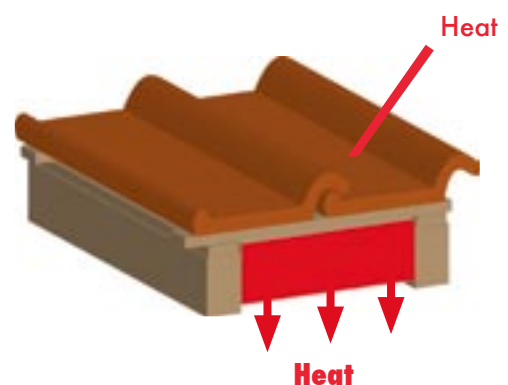
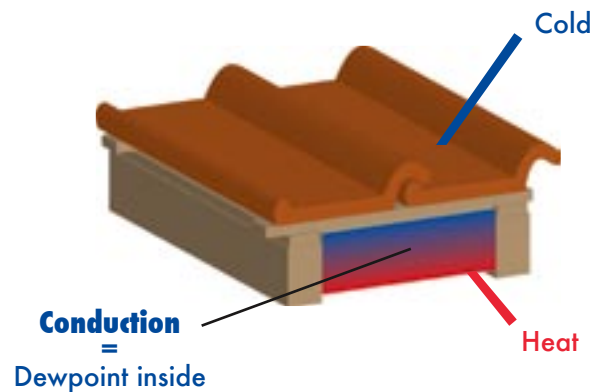


Different operating principles

Insulation with Thermosulit Reflection phenomenon



Traditional insulation Conduction phenomenon



Advantages

Simple and rapid installation

Thermosulit is very simple to install in complete safety. This light, resistant product can be cut to measure with a simple cutter and can be installed over several square metres at a time. It is fixed with a manual stapler and by a counter lath.

Thin and flexible

Thermosulit is a flexible product that embraces perfectly all the irregular forms of surfaces to be insulated. Its thinness saves space and increases the volume of buildings.

Healthy product

Thermosulit is a totally healthy, anti-static, non-toxic, non-fibrogenous and non-irritating product, requiring no protection nor the wearing of mask when installed, unlike other fibrous insulating products.

Fire resistant

Thermosulit resists fire perfectly thanks to its aluminium. The foam also secures excellent resistance and does not propagate fire by droplets.

High resistance

Thermosulit consists of an aluminium structure reinforced by mesh that provides resistance to traction and to perforation when installing the insulator.

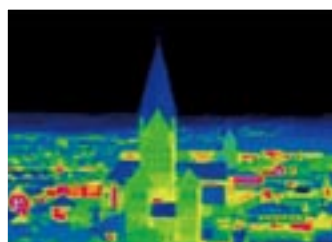
100% tight

Thermosulit offers total hygrometry control thanks to its air, water, and humidity tightness. The 7.5 cm aluminium tape guarantees flawless tightness at the joints, without thermal bridges – a result extremely difficult to obtain with traditional insulators.

Thermosulit can be stored and installed under any climatic condition without loss of efficiency. It can therefore protect the building from inclement weather, unlike a traditional insulator which, left outdoors on worksites, absorbs ambient humidity which reduces its efficiency.



Thermographic Photo



Savings = Ecology

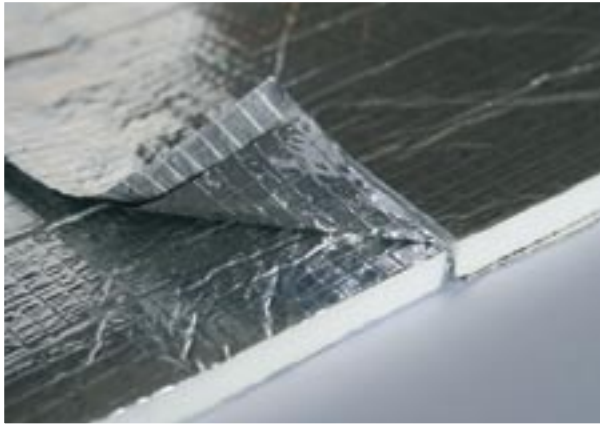
Thermosulit 10.2 (or ± 15 cm of fibrous insulator) applied to a house with a non-insulated roof surface of 100 m² (72 m² on the ground) **will save you** more than 1,200 litres of fuel oil or m³ of gas, or 12,000 kW electricity.*

Your savings will be even greater if you insulate the floor, walls and windows. At the current fuel or kW prices, the investment is recovered in about one year!

For the same simulation your **CO₂ emissions will be reduced** by ± 3600 metric tons, thereby contributing to the reduction of greenhouse gas emissions in line with the Kyoto Protocol. More than 22% of CO₂ emissions are actually generated by the heating of dwellings and buildings.

*According to the "Energie +" software of the Catholic University of Louvain – Architecture and Climate – Energy Division, Ministry of the Walloon Region.

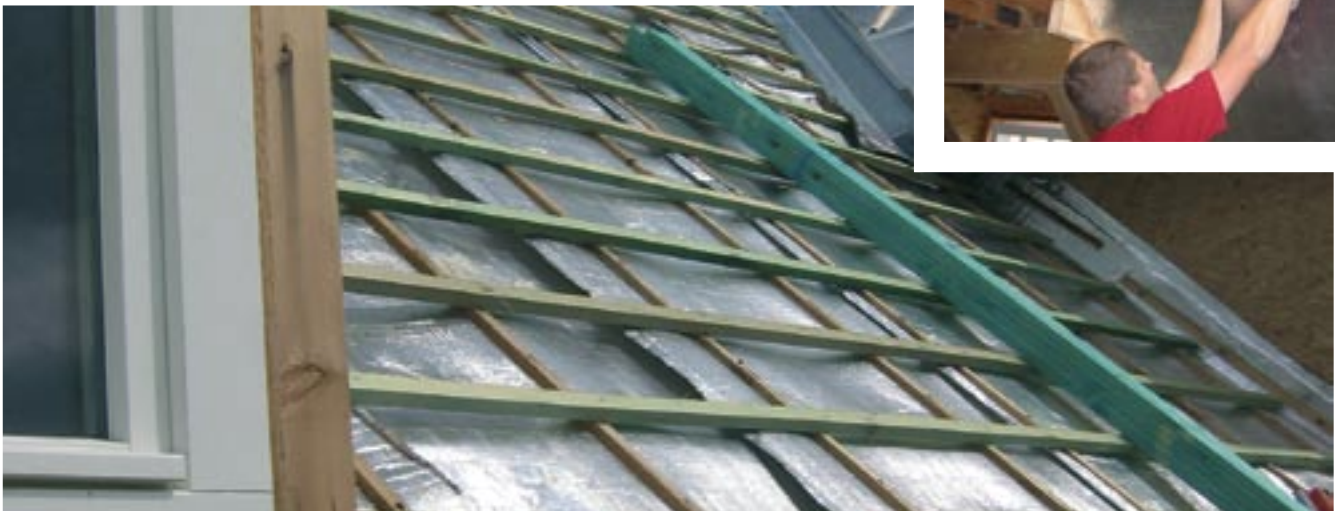
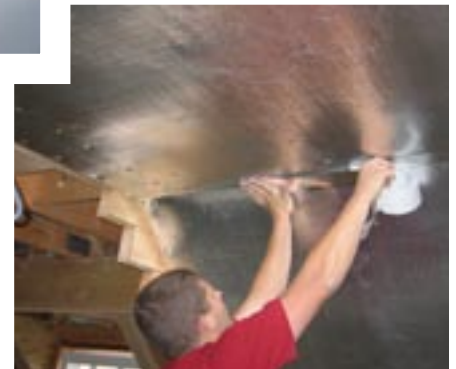
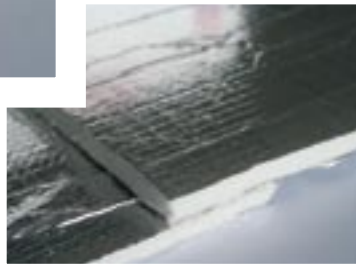
Discover the perfect covering



With the innovative and exclusive Thermosulit covering system, you can install the product edge to edge without having to superpose it, thus making it far easier to install the lathwork and the aluminium tape. Moreover, you increase the useful value of the purchased product by 5%.

— Perfectly flat covering without extra thickness no loss of product. **A Thermosulit exclusive!**

Usual covering = Extra thickness



Testimonials

" I have found the ideal product to insulate my attic which has a very low, irregular ceiling. Thermosulit really does embrace all shapes and has helped me save a lot of living space. » (Marc Vermeersch of Brussels)

" In summer, the temperature in the children's room was constantly 45°C. Now, since we insulated our house with Thermosulit, the temperature is pleasant and our children play and sleep well. "

(Madame Dor of Valence)

" My husband was very surprised when he saw that I had insulated an entire part under the roof all by myself. This product is so light and so easy to install. " (Marie Lefèvre of Brussels)

" We have always had a problem with humidity. Since we installed Thermosulit, our house is sound and dry, with a good ambient temperature, even when the heating is off. It is nice in winter, and not hot in summer." (Michèle and Roland Dutrieux of Brussels)

Implementation

Thermosulit 10.2 installed on rafters

Sub-membrane and thermal insulation

Unroll horizontally starting from the bottom of the roof • Staple the Thermosulit insulator (14 mm staples) • Repeat the operation, using the 5 cm surplus aluminium like a tile • Make the joints with the aluminium tape 75 mm wide • Insulate in a continuous, closed manner • Fix the section brackets (minimum 25 x 25 mm) perpendicular to each rafter • Install your roofing and foresee a ventilation.

Thermosulit 6.1 installed in dual layer

Subroofing and thermal insulation

For even greater efficiency, use Thermosulit 6.1 on either side of the rafters. Thermosulit 6.1 has an aluminium sheet on one side only. Installed in dual layer on either side of the rafters, it works according to the same reflection principle towards the outside and the inside, with the added advantage of an air space between the two layers. The installation is the same as for 10.2.

Thermosulit 10.2 installed under the rafters

Thermal insulation to be installed from the inside

Thermosulit is stapled directly under the rafter, horizontally from top to bottom, with a covering of 5 cm like a tile using the surplus aluminium sheets • Fix the covering with 7.5 cm aluminium tape • Fix the section brackets (minimum 25 x 25 mm) and then install the panelling or plasterboard.

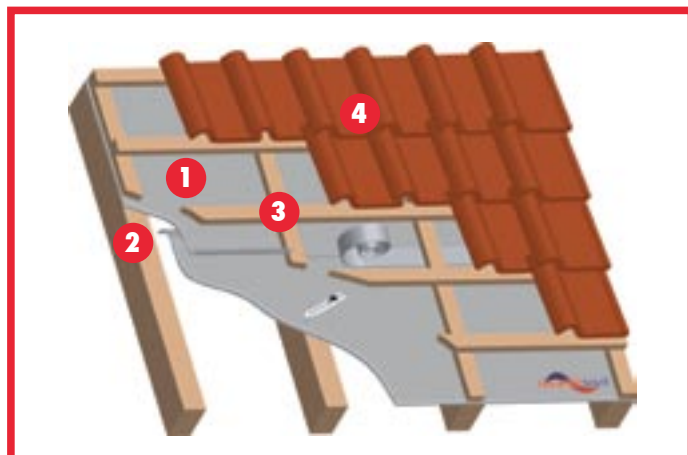
Thermosulit 10.2 on interior walls

Thermal insulation to be installed from the inside

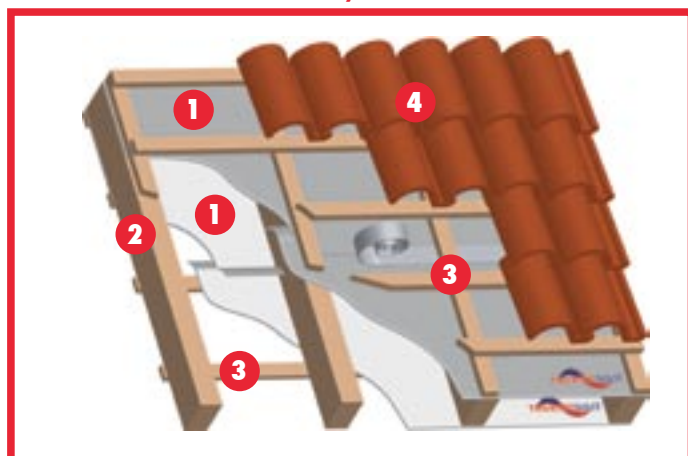
Assembly of a vertical lath • Staple Thermosulit 10.2 insulator on the lath and apply the 7.5 cm aluminium tape on the joints • Fix your counter lath or section horizontally • Install and fix the plasterboard plates or wooden panelling on the counter lath.

www.thermosulit.com to watch a video of an implementation

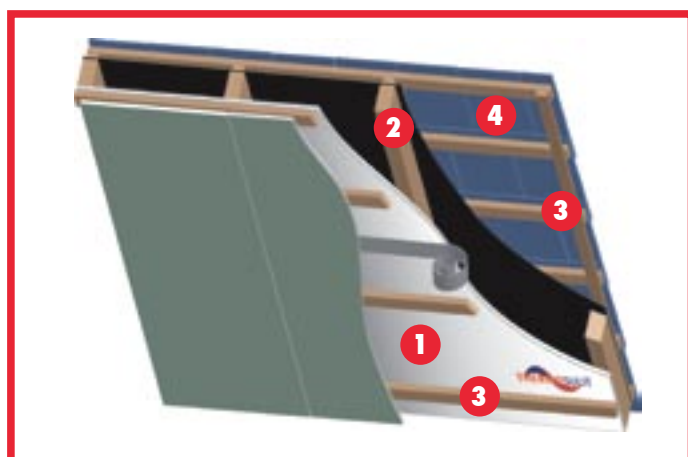
Thermosulit 10.2 on rafters



Thermosulit 6.1 in dual layer



Thermosulit 10.2 under the rafters



1. Thermosulit
2. Rafters
3. Lathing
4. Tiles



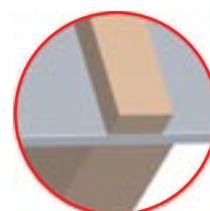
Covering
without thickness



Simple and
precise cutting



Aluminium tape
= perfect tightness



Thin and flexible

Discover the possibilities of use



Roofing, framework, attic

On and between the rafters • Under rafters • In a convertible attic • On bracket • As supplement to existing low insulation • Plasterboard or panelling finish...



Wall

On interior wall before plasterboard/panelling • Behind radiator • On brace frame...

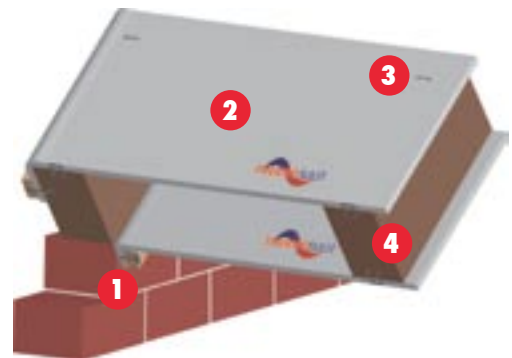
Other applications

Wooden floor • Industry • Air conditioning • Pipes and conduits • Sheds • Vehicules • Caravans ...



Finishing

1. Lathwork fixed on the wall to uphold the Thermosulit
2. Thermosulit
3. 14 mm staple
4. Rafters



Tips

- For good product efficiency, thermo-reflecting insulators must be installed with an air space of at least 10 mm on either side.
- The utilisation of ventilation tiles is recommended in order to make sure that there is a good circulation of the air under the tiles.
- If installed to insulate walls, thermo-reflecting insulators must be installed on the inside of the walls to allow them to breathe and not to give off their humidity in the house.

Characteristics

Thermosulit type	10.2	6.1
Material	closed-cell polyethylene foam	
	Aluminium	
	Glass fibre (mesh)	
Thickness	± 10 mm	± 6 mm*
Polyolefine width	± 1 m	± 1 m
Aluminium width	± 1,10 m	± 1,10 m
Roll length	10 - 50 m	10 - 50 m
Weight	± 470 gr/m ²	± 270 gr/m ²
Aluminum tape	60 m x 7,5 cm	60 m x 7,5 cm
Fire resistant	Yes	Yes
Air and water tightness	100 %	100 %
Aluminium reflection	+ 94 %	+ 94 %
Utilisation temperature	- 80 / + 100 C°	- 80 / + 100 C°
Thermal resistance Rt (m ² *K/W)	5 ⁽¹⁾ / 1,72 ⁽²⁾ / 1,57 ⁽³⁾	2,33 ⁽³⁾
Mechanical resistance (kN/m)	± 12	± 8
Thermal conductivity foam (W/mK)	± 0.034 ⁽²⁾	± 0.034 ⁽²⁾
U value (W/m ² K)	0,2 ⁽¹⁾ / 0,58 ⁽²⁾ / 0,6 ⁽³⁾	0,4 ⁽³⁾

Results of the studies conducted by the CIM, the ULG and the CSTC



* Thermosulit 6.1 installed as recommended, in dual layer, with aluminium on the external sides and 8 cm of air space inside.

⁽¹⁾ Studies conducted by the CIM / ⁽²⁾ Studies conducted by the CSTC about thermo-reflecting insulators** / ⁽³⁾ Studies conducted by the University of Liège. **Thermosulit was not part of the study carried out by the CSTC from 2003 to 2004. No comparison is possible as this is a unique and exclusive product.

Thermal resistance of 5 m²K/W ! (CIM report of 04/2007)

The comparative study and tests carried out by the highly reputed Hallam University of Sheffield, England - CIM «Centre of Infrastructure» - demonstrates that **the thermal performance of Thermosulit 10.2 is comparable to the performance of a 20 cm fibrous insulating material in the same winter conditions.** In the absence of a specific test to evaluate the performance of thin, reflective insulating materials, the <<Hallam University CIM>> has developed a method of comparative testing by energy consumption. Two types of roof* are constructed in a refrigerated room kept at temperatures of -5°C; 0°C; + 5°C (in order to simulate winter conditions). The internal space beneath the roof must be heated up to +/- 21°C and maintained constantly at that temperature.

* 1. Fibrous insulating material of 20 cm thickness (recognised Rt 5 m²K/W); 2. Thermosulit 10.2



The conclusions of this study demonstrate the numerous advantages of Thermosulit 10.2 :

1. Less calorific energy is required to maintain an equal temperature in a space of equal size.
2. Warm air is more efficiently distributed between the top and the bottom of the internal space.
3. Performance improves as outside temperatures are lowered, up to 17% increase in efficiency at -5°C.
4. The results obtained are comparable with the recognised thermal resistance of a fibrous insulating material of 5.0 m²K/W.
5. A considerable saving of space is achieved compared with the use of a fibrous insulating material.

This test is recognised in England by the «local authority building control»



Z.I. Sud (1) • Rue Buisson aux Loups 1a • 1400 Nivelles • BELGIUM

Tel : 0032 (0)67 41 16 10 • Fax : 0032 (0)67 41 16 16

info@thermosulit.com • www.thermosulit.com



The information provided are the result of studies and experience. They are communicated in good faith, but may under no circumstances constitute a guarantee on our part, nor engage our liability, even if the rights of third parties are violated. We are not responsible for the placing of this product.