

BRONYA

THERMAL INSULATION



**BRONYA:
IT IS APPLIED LIKE PAINT
ACTS AS A THERMAL BARRIER**

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ABOUT US

BRONYA

The history begins in the 1970s when NASA and ROSKOSMOS begin the development of a coating for the shields of space rockets. BRONYA ultra-thin thermal insulation is a strong thermal insulation paint suitable for any surface. Prevents heat loss and condensate formation. BRONYA is edible at temperatures from -60 'C to +200 'C

BHT ENGINEERING

Our company, as an exclusive importer and distributor, is dedicated to the sale of BRONYA thermal insulation paint and provides a complete service when using this paint, including the implementation of projects.



WHAT IS BRONYA IN UNIQUE?



LIFETIME

The basic component of Bronya paint is ceramic balls, which make up 80% of the mixture and the rest are binder polymers. After drying, this material shows high resistance to atmospheric changes, is waterproof and mechanically resistant.



DISADVANTAGES

The application process must be done correctly and professionally. Care must be taken when preparing the substrate and especially the coating (mixing). Certain procedures need to be followed when applying the coating. If you want to do the work yourself - consult us before starting!

Table of temperature reduction on the surface of metal pipes

BRONYA coating thickness, mm	Surface temperature °C					
	60	80	100	120	150	200
1 mm	42	54	64	68	77	100
1,5 mm	33	42	56	57	64	75
2 mm	31	35	45	51	58	70
2,5 mm	30	31	42	46	50	66
3 mm	28	29	35	42	45	52
4 mm	25	26	32	35	39	45



Recommendations for determining the thickness of Bronya liquid ceramic thermal insulation coating and modifications for use on pipes and equipment.

The use of Bronya liquid ceramic thermal insulation coatings is aimed at ensuring energy efficiency, achieving normalized heat losses and ensuring work safety conditions. Correctly determine the required amount of coating to solve the problems of insulation of pipes for hot water supply and heating, technological equipment, etc. We recommend: consult us before starting!

BRONYA OR TRADITIONAL INSULATION

**1 mm of coating = 5 cm of
mineral wool**

**THERMAL CONDUCTIVITY
BRONYA - TRADITIONAL
INSULATION**

0.001 W /m °C - 0.041 W /m °C



Impact on health a Environment!

BRONYA:

- Safe Certified
- Non-conflicting
- With the environment

TRADITIONAL INSULATION:

- Dangerous for allergy sufferers
- Dust source
- Carcinogenic components

AREAS OF USE BRONYA



**Thermal insulation of steam pipes,
water pipes and heating lines.**



**Thermal insulation of
tanks, cisterns, containers.**



**Thermal insulation of
industrial equipment.**



**Thermal insulation of trailers,
wagons and other vehicles.**



**Warming up building
facades.**



**The use of thermal
insulation in everyday life.**

- **INSULATION OF BUILDINGS, FACADES AND WOOD BUILDINGS**
- **INSULATION OF CONTAINERS, TANKS AND CISTERS**
- **INSULATION OF STEAM PIPES, WATER PIPES AND PIPES**
- **INSULATION IN INDUSTRY, ENERGY**
- **INSULATION OF TRANSPORT CONTAINERS, TRAILERS AND WAGONS**
- **INSULATION FOR COMMON USE**

BRONYA PAINT THERMAL INSULATION ADVANTAGES



PRESERVATION OF HEAT



PROTECTION AGAINST THE COLD



NOISE INSULATION



SAFETY



FIRE SAFETY



ANTI-CORROSION MATERIAL



COLOR ADAPTABILITY



APPLICATION ON HOT SURFACES



SIMPLICITY OF APPLICATION



LONG LIFE (+20 YEARS)

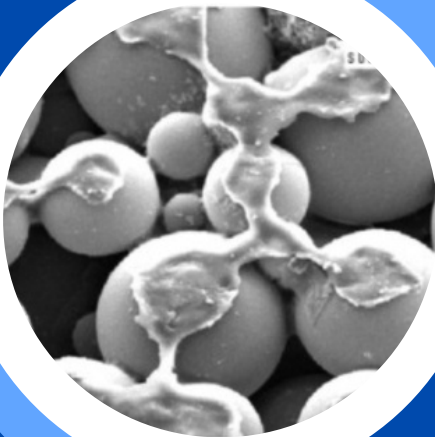


ECONOMY

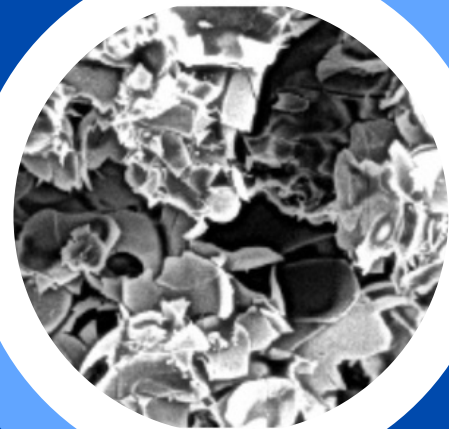
BRONYA UNDER THE MICROSCOPE

- **Reduction of heat loss**
- **Work at extreme temperatures**
- **Elimination of frost and condensation**
- **Properties proven by practice**
- **Sun protection**

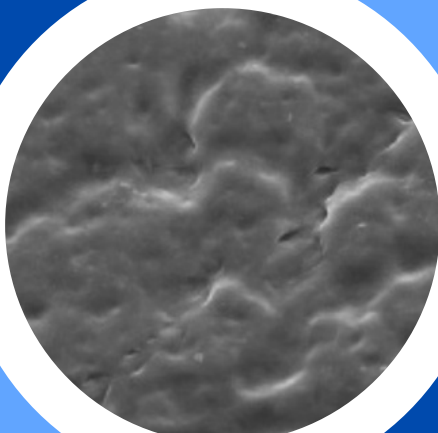
- **Simple isolation of complex shapes**
- **Confirmed by certification**
- **Protection of architecture**
- **Rain protection**



BRONYA: hollow ceramic balls connected by polymers that prevent the transfer of heat through the material



COMPETITION COATING: Under the microscope see the "broken" microstructure.

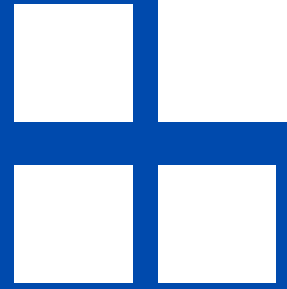


There is no microstructure developed to prevent heat transfer in the material.

HOW TO FIND OUT WHICH ONE IS BETTER?

There are several competing products on the market. The basic parameter that determines the quality of the thermal insulation coating is the coefficient of thermal conductivity, the value of which must be as small as possible, because a lower thermal conductivity means a better thermal insulation ability. Coefficient of thermal conductivity of mineral wool is 0.045 W/mK. Bronya coefficient of thermal conductivity is only 0.001 W/mK. Some manufacturers do not present their product as thermal insulation, but as a color that has a bonus compared to ordinary color, namely the effect of a certain heat saving, they state the efficiency in percentages (they do not guarantee the properties) and do not indicate the thermophysical parameters of their colors.

REFERENCE



MATTONI



GP Technology



ŠKOENERGO



BUDIŠ A.S.



NEMŠOVÁ S.R.O.



CEMMAC A.S.



NESTLÉ



RATAJ A.S.



BYTES S.R.O.

PRODUCTS BRONYA 1.



CLASSIC, CLASSIC NF

Applied as a coating, it acts as thermal insulation! Highly effective insulation of water pipes, steam pipes, air pipes for air conditioning systems, refrigeration systems, various containers, tanks, refrigerator tanks, etc.

(-60°C až do +200°C)



FACADE, FACADE NF

Ultra-thin insulation that can be applied up to a 1mm layer and increases vapor permeability. It is highly effective in eliminating frost penetration, condensation, mold formation, etc

(-60°C až do +120°C)



LIGHT, LIGHT NF

Applied as a plaster, it is applied in thin layers also to level the surface. Bronya Light is intended for finishing work, designed for thermal and sound insulation of the interior and exterior. Excellent adhesion to bricks, concrete, plasterboard.

(-30°C až do +150°C)



ANTIRUST

The coating can be applied directly to the rusty surface! Highly effective thermal insulation with added anti-corrosion components. Just remove the loosened rust with a wire brush.

(-30°C až do +150°C)

PRODUCTS

BRONYA 2.



WINTER, WINTER NF

Application at low temperatures up to -35°C , while with other Bronya products it is possible up to $+7^{\circ}\text{C}$.

(-60°C až do $+90^{\circ}\text{C}$)



ANTICONDENSATE

When applied directly to a condensing wet surface in a thick technological layer, it suddenly prevents further condensation. It is highly effective in eliminating frost penetration, condensation, mold formation, etc.

(-60°C až do $+120^{\circ}\text{C}$)



UNIVERSAL, UNIVERSAL NF

A cheaper version of the Bronya Classic. Highly effective insulation of water pipes, steam pipes, air pipes for air conditioning systems, refrigeration systems, various containers, tanks, tanks, refrigerators, etc.

(-30°C až do $+140^{\circ}\text{C}$)



WALL, WALL NF

A cheaper version of Bronya Facade. Ultra-thin insulation that can be applied in up to 1 mm layer at a time and increases vapor permeability. It is highly effective in eliminating frost penetration, condensation, mold formation, etc.

(-60°C až do $+150^{\circ}\text{C}$)

PRODUKTY BRONYA 3.



METAL

A cheaper version of Bronya Antirust. Highly effective thermal insulation with added anti-corrosion components. Simply remove "wet" (loose) rust with a wire brush.

(-60°C až do +200°C)



NORD, NORD NF

A cheaper version of Bronya Winter. Application at low temperatures down to -35 °C, while with other Bronya products it is possible up to +7 °C

(-30°C až do +70°C)



FIREPROTECTION, FIREPROTECTION NORD

It is designed to increase the fire resistance of steel structures and structures for industrial and civil purposes from 45 to 120 minutes.

(-30°C až do +80°C)



AQUABLOCK

It is applied to roof coverings, balconies, terraces, floors, use in bathrooms, basements and the like.

(-30°C až do +80°C)

PARTNERS

BRONYA



KATROM s.r.o.

Premium Care
Personal Touch



AMERSPAN s.r.o.

Authorized sales
representative for the
Czech Republic



LOOPER s.r.o.

Profesional Airless



**GOHR
TECHNOLOGIES s.r.o.**

Sales Representative for
Slovakia

**TECHNICAL UNIVERSITY SLOVAK TECHNICAL
LIBEREC UNIVERSITY**

Determination of the
thermal conductivity of
the coating

Materials technology
Faculty based in Trnava



BEFORE AND AFTER IMPLEMENTATION

Since 2005, Bronya has been producing Bronya ultra-thin thermal insulation. You can find it in the subway in Seoul, in the office facilities of Hewlett-Packard (HP). From 2022 in the Czech Republic Mattoni Carlesbad, ŠKOENERGO - Mladá Boleslav, etc.



BEFORE AND AFTER IMPLEMENTATION

From 27.03.2023 to 29.03.2023, we implemented the application of BRONYA CLASSIC thermal insulation coating on the roof and BRONYA FACADE. Subsequently, we applied BRONYA AQUABLOCK waterproofing to the roof to prevent the penetration of water and moisture. In the first picture we see a temperature of 64.3 °C on - asphalt cardboard and in picture 2 we see 34.2 °C after the application of thermal and waterproofing with BRONYA coating. Place of implementation: kk Aparthotel Esquinzo Del Mar Fuerteventura Canary Islands.

TECHNICAL CERTIFICATE, CERTIFICATES AND PATENTS.

Our thermal insulation paint meets the conditions of the European Union and third countries, which have issued quality certificates (TUV) based on research.

Certificates:



**TSU
CERTIFICATE no.0002/2022**



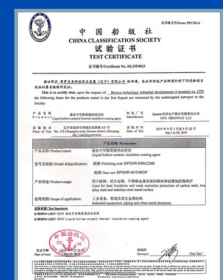
**TSU
CERTIFICATE no.0004/2022**



**TSU
CERTIFICATE no.0005/2022**



**TSU
CERTIFICATE no.0009/2022**





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