



MINERAL PAINT WITH THERMAL INSULATION AND PROTECTION PROPERTIES



INDUSTRIAL EQUIPMENT

FACADES, ROOFS, INTERIOR OF BUILDINGS

WWW.ADITIZOL.CZ

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ADITIZOL:

- ▶ **ADITIZOL** paints provide a safe and durable barrier that protects against cold, heat and controls condensation.
- ▶ **ADITIZOL** products are designed for fast, efficient and safe for health reduction in heat loss of buildings, pipelines, valves, technological units, structures and other areas that need to be insulated and protected.
- ▶ **ADITIZOL** products are respecting the environment. It is water-dilutable and up to 85 % natural mineral material applicable in the interior and exterior.
- ▶ **ADITIZOL** paints are characterized by extraordinary thermal insulation and protection properties of buildings, metal, plastic, wood a other surfaces.
- ▶ The **ADITIZOL** products are respecting the environment.
- ▶ **ADITIZOL** paint is produced in two modifications:
 - **ADITIZOL BASIC**. It acts as a vapour barrier, (operating temperature is from - **40 °C** to + **200 °C**).
 - **ADITIZOL OPEN**. High diffusion material, (operating temperature is from - **40 °C** to + **130 °C**).
- ▶ It adheres to hot and cold surfaces. Can be applied to surfaces without disrupting operations.
- ▶ It effectively contributes to increase work safety. Little to no maintenance, easy to use and repair. It creates an integral protective and insulating layer on the surface of any structure without joints and interruptions. Reduces thermal shock from environment and thermal expansion.
- ▶ It effectively participates in addressing adverse sanitary defects in the form of condensation and mould formation even in difficult conditions of internal environment.
- ▶ It is environmentally friendly (low VOC's and no heavy metals), applicable in the interior and exterior of historic and contemporary commercial buildings with permanent and temporary stay of people and buildings for industrial use.
- ▶ It strongly resists weather conditions, especially acid rain and UV radiation, has constant properties and is renewable.
- ▶ It reflects up to 90 % of solar – infrared radiation. It can be tinted to the desired colour or a paint based on an aqueous dispersion may be applied to it.
- ▶ Product and production are certified and experimentally tested by the Technical and Test Institute for Construction Prague SOE.
- ▶ It is successfully tested by the National Institute of Public Health, Prague – Expert assessment of suitability for use of mineral coating **ADITIZOL** for indirect contact with foodstuffs.
- ▶ It is experimentally tested by the Technical and Test Institute for Construction Prague, Accredited testing Laboratory, to detect relative energy savings resulting in more then 60 % energy savings.
- ▶ It is commercially tested to reduce the surface temperatures with a temperature reduction of more then 100 °C.

ADITIZOL paint is produced in the following modifications:

- ▶ **ADITIZOL BASIC** paint is a liquid, water-dilutable material intended for thermal insulation and the protection of metal, plastic and other surfaces. Application work with ADITIZOL BASIC paint can be performed on the foundation with a temperature range from + 10 °C to + 150 °C. Operating temperature is from - 40 °C to + 200 °C. It acts as a vapour barrier.



- ▶ **ADITIZOL OPEN** paint comes in liquid form, it is water-dilutable, high diffusion (vapour permeable) material, intended specifically for the construction industry, it is used for thermal insulation and protection of plastered, concrete, brick, wood and other surfaces of external and internal structures of constructions and buildings, including the reconstructions of demanding varied historical architecture constructions. Application work with ADITIZOL OPEN paint can be performed on the foundation with a temperature range from + 10 °C to + 130 °C. Operating temperature is from - 40 °C to + 130 °C.



**THERMAL INSULATION CHARACTERISTICS OF
ADITIZOL BASIC**

At the temperature of **80 °C** with a coat of **ADITIZOL BASIC** paint **1 mm** thick is the relative energy saving **34.89 %** and with a coat of **2 mm** thick is the relative energy saving **59.87 %**.

At the temperature of (°C)	Thickness of paint ADITIZOL layer (mm)	Relative energy saving with ADITIZOL (%)
80	1	34.89
80	2	59.87

At the temperature of **100 °C** with a coat of **ADITIZOL BASIC** paint **1 mm** thick is the relative energy saving **27.10 %** and with a coat of **2 mm** thick is the relative energy saving **61.31 %**.

At the temperature of (°C)	Thickness of paint ADITIZOL layer (mm)	Relative energy saving with ADITIZOL (%)
100	1	27.10
100	2	61.31

Report Data - Experimental verification of thermal insulation properties of mineral **ADITIZOL BASIC** paint: **Technical and Test Institute for Constructions Prague, s.p.**

An example of a test result – surface temperature reduction:

Surface temperature was measured on a steel plates placed on a heating device. The difference between surface temperatures on painted and non-painted parts of the steel plates was **41 °C** and **101,5 °C**.

Thickness of paint layer (mm)	Temperature of the uninsulated part of the steel plate (°C)	Temperature of the part of the steel plate insulated by ADITIZOL (°C)	Temperature difference (°C)
1.5	86	45	- 41
2.5	162	60.5	- 101.5

The experimental measurements, performed by the Technical and Test Institute for Construction Prague, Accredited Testing Laboratory, have confirmed that the mineral **ADITIZOL BASIC** paint has thermal insulation properties and significant energy savings can be achieved using this paint. However, the absolute amount of energy savings depends on the particular marginal conditions and the appropriate method of use.

THERMAL INSULATION CHARACTERISTICS OF ADITIZOL OPEN

Experimental verification of thermal insulation properties of mineral ADITIZOL OPEN paint on a building construction in the exterior and in the interior* (TZÚS Prague, s.p.)			
To assess the thermal insulation properties of ADITIZOL OPEN paint, a certified, fully autonomous testing device on the principle of the calibrated guarded hot box MPT-01 has been used which is designated for determining the thermal transmittance properties of building components and constructions in accordance with the standard ČSN EN ISO 8990:1998 – Heat insulation – Determination of heat transfer properties in steady state - Calibrated and guarded hot box.			
Thickness of the coat of ADITIZOL OPEN	Application	Input Pt	Relative energy savings
Pt (W) thermal energy input required to maintain a stable temperature in the hot section of the facility with the set temperature θ_{ti} +18°C in the hot interior and with the set temperature θ_{te} -10°C in the cold section of the testing concrete building construction.			
without the coat of paint applied		144,29 W	0 %
1 mm	cold section (the exterior)	125,31 W	13,50 %
1 mm	hot section (the interior)	126,40 W	12,40 %
2,1 mm	cold section (the exterior)	105,11 W	27,15 %
Combination 2,1 mm a 0,5 mm	cold section (the exterior) and hot section (the interior)	90,71 W	37,13 %
Conclusion: The experimental measurements have confirmed that the mineral ADITIZOL OPEN paint has thermal insulation properties and significant energy savings can be achieved using this paint on a building construction. However, the absolute amount of energy savings depend on the particular boundary conditions and the appropriate method of use.			

* Report Data - Experimental verification of thermal insulation properties of mineral **ADITIZOL OPEN** paint on a building construction in the exterior and in the interior:
Technical and Test Institute for Constructions Prague, s.p.

SELECTED REFERENCE PROJECTS ADITIZOL

TECHNOLOGICAL AND INDUSTRIAL EQUIPMENT

PIPELINE DISTRIBUTION SYSTEMS

TANKS, RESERVOIRS, CONTAINERS, TELECOMMUNICATION CABINETS

HALLS, ROOFS (STEEL), BOATS AND VEHICLES

FACADES AND INTERIOR OF BUILDINGS

INDUSTRIAL EQUIPMENT

Coca-Cola HBC Česko a Slovensko, s.r.o. – production plant Prague - Kyje

The Coca-Cola company was interested in insulating the pasteurizer at its factory. The goal of the application was to reduce heat losses and reduce surface temperature to ensure work safety, while adhering to all hygienic requirements and without limitation of operation. The use of mineral wool or similar insulating materials was not possible due to the operation and the requirements related to the operation.

Preliminary Paint Test:

In March 2017, based on Coca-Cola's request, we applied a paint sample to the pasteuriser to verify the declared properties of the material. Certainly, we also submitted an attestation from the National Institute of Public Health, Prague – Expert assessment of suitability for use of mineral coating ADITIZOL for indirect contact with foodstuffs.

Application of paint:

Based on the preliminary test results and on the conclusion that the material meets all requirements, the ADITIZOL BASIC paint was applied to the cleaned surface of the pasteurizer in full operation (the ADITIZOL BASIC can be applied on surfaces up to 150 °C) and partly during a short overhaul in August 2017. The paint thickness was 1.5 – 2.0 mm.

Results of the application:

- the surface temperature of the pasteuriser is reduced by 38%;
- significant improvement in work safety;
- reduction in the energy intensity of production without the need for additional installation of space-intensive thermal insulating elements ;
- mechanical stability of the paint layer.



PASTEURISER – Coca-Cola

Coca-Cola HBC Česko a Slovensko, s.r.o.

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Ref.: Assessment of application of mineral ADITIZOL BASIC paint

In August 2017 the mineral ADITIZOL BASIC paint was applied to the cleaned surface of the pasteuriser in our Prague - Kyje production plant. The application was implemented partly in full operation and partly during overhaul.

During the continuous inspections, the mechanical stability of coating layer and the reduction of the surface temperature of the pasteuriser by 38 % was determined.

The result of the paint application is a significant increase in work safety and a reduction in the energy intensity of production without the need for additional installation of space-intensive thermal insulating elements. Based on the proven results we can recommend ADITIZOL mineral coating for use in our plants.
Prague, 15.3.2018



Ondřej Šolc
Production manager
PET & RMW dpt.

Coca-Cola HBC Česko a Slovensko, s.r.o.

Armenia • Austria • Belarus • Bosnia & Herzegovina • Bulgaria • Croatia • Cyprus • Czech Republic • Estonia • FYROM • Greece • Hungary • Ireland • Italy • Latvia
Lithuania • Moldova • Montenegro • Nigeria • Northern Ireland • Poland • Romania • Russia • Serbia • Slovakia • Slovenia • Switzerland • Ukraine

Coca-Cola HBC Česko a Slovensko s.r.o., IČ 41189698, DIČ CZ41189698, zapsaná v obchodním rejstříku vedeném Městským soudem v Praze,
oddíl C vložka 3595, den zápisu 22. 8. 1991. Člen skupiny Coca-Cola HBC.

INDUSTRIAL EQUIPMENT

Chemical industry
CHEMOPROJEKT a.s.



The tank is located outside in the premises of the chemical plant and in the summer time it has been overheated. The tank was covered with cooling sails in summer. As a result of the overheating, instability in the properties of the chemical substances in this tank occurred. A method of some insulation has been sought to ensure that the tank does not overheat in the summer and does not freeze in the winter. The application of ADITIZOL BASIC has been designed to meet this requirement. Applied paint thickness 3.00 mm.

The result of the application:

- stability of insulation and protective characteristics,
- protection from direct sunlight,
- protection against overcooling of the tank cover,
- ensuring and maintaining the required temperature regime,
- possibility of permanent visual control.

Chemical industry
CHEMOPROJEKT a.s.



The glycerin tank is located outside in the premises of the chemical plant. The goal was to apply some material to reduce heat losses during operation. The application of ADITIZOL BASIC has been designed to meet this requirement. Applied paint thickness 3.00 mm.

The result of the application:

- stability of insulation and protective characteristics,
- protection from direct sunlight, reducing amount of energy penetrating into the tank, reducing the temperature of the contents and its evaporation,
- ensuring and maintaining the required temperature regime
- preventing of sudden changes in internal pressure,
- possibility of permanent visual control.

Chemical industry
DUSLO, a.s.



On the surface of the outdoor pipeline, where is CO₂ gas, sudden temperature changes have occurred due to changes in temperature conditions (for example, by the effects of rain on the sun-heated pipe). Specifically, to suddenly cool the surface of the pipeline. As a consequence of the gas pressure impacts, the compressors failed to function, they had to be repaired and the operation had to be interrupted.

After the coating has been applied to the surface of the pipeline, no sudden temperature changes occur on the surface of the pipeline, and consequently no failures and failures in operation. Year of project implementation: 2015. Applied paint thickness 2.00 mm.

The result of the application:

- stability of insulation and protective characteristics,
- protection from direct sunlight,
- preventing of sudden changes in internal pressure,
- possibility of permanent visual control.

INDUSTRIAL EQUIPMENT

Pharmaceutical industry
VUAB Pharma, a.s.



The VUAB Pharma a.s. uses the ADITIZOL BASIC paint for over 2 years as a replacement for conventional insulating materials (PUR foam, mineral wool) on crystallization boilers and hot water pipelines with the possibility of applying of paint in operation. Average applied paint thickness 2 mm.

The results of application:

- stability of insulation and protective characteristics,
- energy savings,
- ensuring of the safe temperature of hot surfaces,
- significant improvement in work safety,
- space saving,
- possibility of application in places with the complicated access,
- possibility of permanent visual control.

Energy industry
ČEZ Teplárenská a.s.



ČEZ Teplárenská a.s had a request for additional thermal insulation on the pipeline to be implemented as a pilot as well as a test project in the following specification: ADITIZOL BASIC colour was used for the long-distance pipeline from the heating plant, total length 100 m - bidirectional. Surface specification: galvanized sheet which has been stripped of degraded original paint. The ADITIZOL BASIC paint has been applied in a total thickness of 2 mm. As a pilot project, the project will be monitored for 3 years in order to verify the properties of ADITIZOL paint. Year of project implementation: 2017.

The results of application:

- stability of insulation and protective characteristics,
- energy savings.

Chemical, energetic and food industry
ZVU STROJÍRNY, a.s.



ZVU STROJIRNY, a.s. use ADITIZOL BASIC paint in some projects as a substitute for conventional insulating materials (PUR soil, mineral wool). The photo is a tank that serves as a water tank in the brewery. The location of these reservoirs was paid out in the open air to prevent overheating of the surface of the reservoir in the summer by the solar energy, and to maintain the required water temperature in the tank at winter. An application of ADITIZOL BASIC has been designed to meet this requirement. Applied paint thickness 1.5 mm.

The result of the application:

- stability of insulation and protective characteristics,
- protection from direct sunlight,
- protection against overcooling of the tank cover,
- ensuring and maintaining the required temperature regime,
- possibility of permanent visual control.

INDUSTRIAL EQUIPMENT

Distillery – crystallizing tanks



Mobile self-service petrol stations



Heat exchanger tank



Air-conditioning systems - piping



Container - server



Fittings



Air-conditioning systems - piping



Mobile self-service petrol stations



Tanks



ROOFS

ROOF IN PANAMA CITY BEACH, FLORIDA, USA



Applied paint thickness 2.00 mm.

The result of the application:

- stability of insulation and protective characteristics,
- protection from direct sunlight,
- reduction in the amount of energy penetrating inside during solar heating
- energy savings,
- provision of the necessary temperature mode,
- preventing of sudden changes in internal pressure,
- possibility of permanent visual control

ROOF IN MUNICH, GERMANY – OFFICE BUILDING



FACADES

Facade – Constitutional Court of Slovakia



Facade – family house



Facade – family house



Facade – USA - Florida



Facade – family house



Facade – Manor house



Facade – Manor House



Facade – Constitutional Court of Slovakia



Facade – family house



INTERIOR

Interior – manor house



Interior – basement
archive for documents



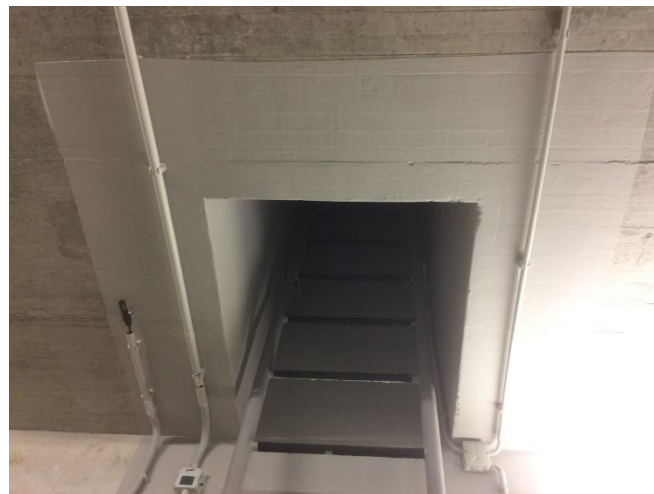
Interior – manor kitchen



Interior - basement



Interior - Waste water treatment plant



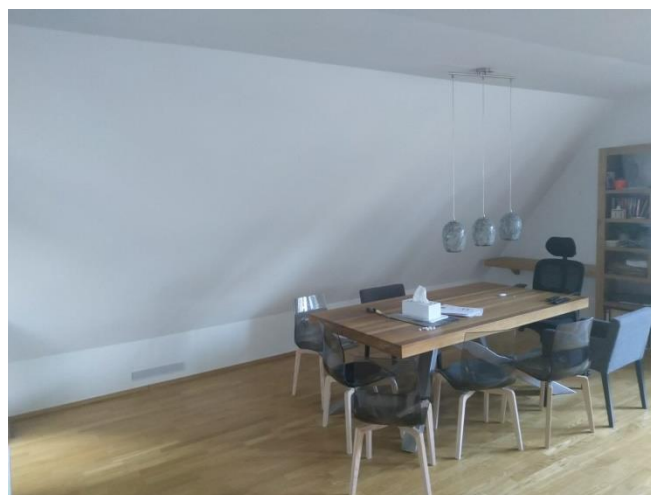
Interior – Bratislava Castle



Interior – Primary school



Interior - apartment



Underground parking



INTERIOR – before and after application

before reconstruction

BASEMENT OF THE SOCIAL INSURANCE AGENCY



BOHEMIAN FOREST - INTERIOR OF REPRESENTATIVE BUILDING



PRAGUE - SACRISTY OF THE CHURCH



after application of **ADITIZOL**

ADITIZOL® is ideally positioned to meet the needs of consumers and provide our partners with an opportunity to leverage the strengths of our products in their respective markets.
ADITEX seeks to improve the everyday living conditions of people.

ADITEX, spol. s r.o.
Czech Republic
producer of a mineral paint



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