



ADITIZOL

MINERAL MATERIAL
WITH THERMAL INSULATION
AND PROTECTION PROPERTIES

CONSTRUCTION

ADITIZOL OPEN

ADITIZOL BASIC



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ADITIZOL is produced in the following modifications:

- ▶ **ADITIZOL OPEN** 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 material 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.



- ▶ **ADITIZOL BASIC** is water-dilutable material intended for thermal insulation and the protection of metal, plastic and other surfaces. Application work with ADITIZOL BASIC material 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.



It is designed to provide fast, efficient and safe for health reduction in heat loss:

- **ADITIZOL OPEN** – of buildings, production and storage facilities
- **ADITIZOL BASIC** - of metal roofs and walls, product pipelines, pipelines, utility fittings, technological units, structures, boilers, tanks, production equipment, air conditioning pipes and other surfaces that need to be insulated and protected from undesirable external effects.

Examples of possible applications:

- for insulation facades
- for insulation of complex architectural facades
- for insulation of room walls and corridors from the interior
- to prevent surface condensation of water vapour on the walls and subsequent possible mould formation
- to reduce freezing of walls - to reduce heat loss and protect buildings and structures
- to protect the facade from adverse atmospheric and environmental influences
- to balance of the surface temperature of outer walls with the inner surfaces
- to reduce overheating of the building envelope
- to reduce overheating of the metal roofs and walls (ADITIZOL BASIC)

Characteristics and advantages:

- health and hygienic safety allows its use indoors
- it is highly resistant to weathering and ageing
- practically does not burden the load-bearing structures and prevents sudden thermal deformations
- does not support combustion
- It is environmentally friendly, water dilutable and free of harmful volatile substances
- allows application on WTA remedial plaster systems with the required high diffusion parameters
- creates a complete protective and thermal insulation layer on the surface of any structure in flat and plastic relief without joints and interruptions
- effectively participates in the solution of undesirable hygienic defects in the form of condensation and mold formation even in demanding indoor environmental conditions
- it is applicable in the interior and exterior of historical and contemporary civil buildings with permanent and temporary human residence as well
- significantly resists atmospheric influences, especially acid rain and UV radiation, bridges even small cracks of less stable surfaces, has permanent properties, is renewable
- effectively participates in increasing work safety (reducing the temperature of the hot surface below 60 °C from the original surface temperature of up to 200 °C) - ADITIZOL BASIC

Cooperation and research:

- Research cooperation with the Czech Technical University in Prague - The Faculty of Architecture, Department of Building Construction

Certifications and examinations:

- production and products are certified by the Technical and Test Institute for Constructions Prague, s.p. (TZÚS)
- product is certified by the State Institute of Health in Prague - for indirect contact with food
- in TZÚS Prague, s.p. the thermal insulation properties of the **ADITIZOL** material have been proven, which can achieve substantial energy savings of up to 60%

ADITIZOL OPEN

Experimental verification of thermal insulation properties of mineral ADITIZOL OPEN material on a building construction in the exterior and in the interior* Technical and Test Institute for Constructions Prague, s.p.			
To assess the thermal insulation properties of ADITIZOL OPEN material, 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 material 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 – thickness 100 mm.			
without material		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 material has thermal insulation properties and significant energy savings can be achieved using this material 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** material on a building construction in the exterior and in the interior:
Technical and Test Institute for Constructions Prague, s.p.

ADITIZOL BASIC

Experimental verification of thermal insulation properties of mineral ADITIZOL BASIC material on test bodies by calorimetric comparison method* Technical and Test Institute for Constructions Prague, s.p.			
Thickness of the material of ADITIZOL BASIC	Specified temperature	Input Pt	Relative energy savings
Input Pt (W) – thermal energy input required to maintain a stable temperature of 60 °C, $\Delta\theta = 34,5$ K.			
without material	60 °C	364,6 W	0 %
1 mm	60 °C	279,1 W	23,45 %
2 mm	60 °C	170,9 W	53,13 %
Input Pt (W) - thermal energy input required to maintain a stable temperature of 80 °C, $\Delta\theta = 55,3$ K.			
without material	80 °C	670,3	0 %
1 mm	80 °C	436,4	34,89 %
2 mm	80 °C	269	59,87 %
Input Pt (W) - thermal energy input required to maintain a stable temperature of 100 °C, $\Delta\theta = 74,2$ K.			
without material	100 °C	925,5	0 %
1 mm	100 °C	674,7	27,10 %
2 mm	100 °C	358,1	61,31 %
Conclusion: The experimental measurements have confirmed that the mineral ADITIZOL BASIC material has thermal insulation properties and significant energy savings can be achieved using this material. However, the absolute amount of energy savings depends on the particular marginal boundary conditions and the appropriate method of use.			

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

ADITIZOL BASIC

MEASUREMENT REPORT measurement of the material ADITIZOL BASIC in the climatic chamber (standard ČSN EN 60068-2-1, ed. 2 (Test A: Cold)) on the test samples at stable body temperature 100 °C for verification of thermal insulation properties of the material (calorimetric comparison method) * Czech Technical University in Prague, Faculty of Architecture, Institute of Civil Engineering II			
Power P (W) – power input required to maintain a stable body temperature 100 °C.			
Thickness of material ADITIZOL BASIC layer (mm) on the test samples	Ambient air temperature θ_t	Power P	Relative energy savings
Without material	-20 °C	1252,1 W	0 %
2 mm	-20 °C	552,2 W	55,90 %
Without material	-10 °C	1135,3 W	0 %
2 mm	-10 °C	502,6 W	55,73 %
Without material	0 °C	1021,2 W	0 %
2 mm	0 °C	454,9 W	55,45 %
The test in the climatic chamber demonstrated that the material ADITIZOL BASIC has demonstrable and non-negligible thermal insulation properties and its use can achieve substantial energy savings.			

* Report Data – Evaluation of data from a laboratory measurement of the material **ADITIZOL BASIC** in a climate chamber for verification of thermal insulation properties of the material: **Czech Technical University in Prague, Faculty of Architecture, Institute of Civil Engineering II**



Facade – National Cultural Monument
Constitutional Court of Slovakia



Facade – National Cultural Monument
Constitutional Court of Slovakia



Facade – National Cultural Monument
Malužiná, Slovakia



Facade – Nitra, Slovakia



Facade – Prague, Czechia



Facade – Office building – Prague, Czechia



Facade – Cultural Monument
Manor House – Košice, Slovakia



Facade – National Cultural Monument
Levoča, Slovakia



Facade – Bratislava, Slovakia



Facade – new building
Munich, Germany



Facade – Dachau, Germany



Facade – Munich, Germany



Facade – Office building – Prague,
Czechia



Facade – Panama City Beach - USA



Facade – Panama City Beach - USA



Facade – Munich, Germany



Facade – Trenčín, Slovakia



Facade – Jesenice, Czechia



Interior – manor house - Slovakia



Interior – basement - Slovakia
archive for documents



Interior – manor kitchen - Slovakia



Interior – restaurant - Czechia



Interior – Great Britain



Interior – Bratislava Castle



Interior – Primary school –
Bratislava, Slovakia



Interior – Cannes - France



Underground parking – Prague, Czechia

ROOF IN PANAMA CITY BEACH, FLORIDA, USA



Applied material 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



before reconstruction



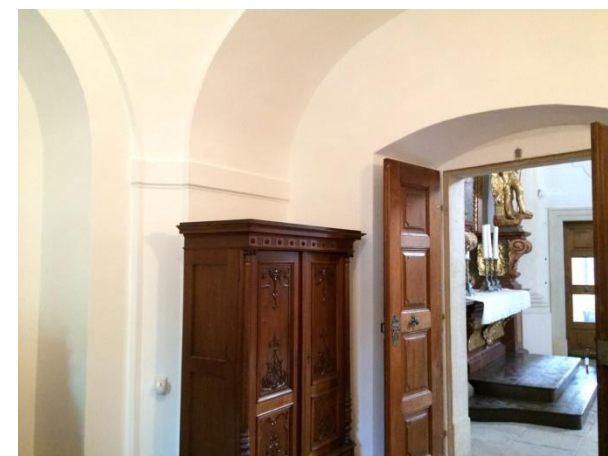
BASEMENT OF THE SOCIAL INSURANCE AGENCY



BOHEMIAN FOREST - INTERIOR OF REPRESENTATIVE BUILDING



PRAGUE - SACRISTY OF THE CHURCH



after reconstruction and
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 material



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