

Materials ADITIZOL are characterized with verified extraordinary protection and thermal insulation properties. It is a stable and durable water dispersion of specific mineral binders with closed spherical fillers (microspheres). The material is light, flexible, ductile and has excellent adhesion to the coated surface. This white matt suspension can be applied to any surface of any shape. Materials are designed for application to surfaces of different configurations. The ADITIZOL maintain the aesthetic appearance of treated surfaces. After drying, an layer with unique protective and thermal properties is created.

MODIFICATIONS

ADITIZOL OPEN is water-dilutable, high diffusion (vapour permeable) material, intended specifically for the construction industry for protection and thermal insulation of plastered, concrete, brick, wood and other surfaces of external and internal structures of constructions and buildings, including the reconstruction of varied demanding historical architecture. After applying, it withstands the temperature from - 40°C to + 130°C.

ADITIZOL BASIC is water-dilutable material for protection and thermal insulation of metal and other surfaces. Operating temperature range: from - 40°C to + 200°C. It acts as a vapour barrier.

USE

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 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.

Typical use: Interior and exterior surfaces. ADITIZOL materials are the solution:

- ✓ to reduce heat losses and to protect buildings and structures;
- ✓ to protect the facade against adverse atmospheric weather and the building structure from damage;
- ✓ to eliminate frost penetration of walls;
- ✓ to reduce the heat losses of heat sources (heat tracing, steam piping), heat exchangers, long-distance pipelines;
- ✓ to the additional anti-corrosion protection of structures;
- ✓ to reduce thermal bridging to an acceptable level;
- ✓ to deal with unwanted condensation on surfaces and its consequences;
- ✓ for thermal insulation protection of gas pipelines (protection against exposure to direct sunlight, prevention of pressure fluctuations of gas in pipelines resulting from abrupt change of temperature on its surface);

PRODUCT INFORMATION/TECHNICAL DATA

TECHNICAL DATA	
Colour	White
Tinting	Material can be tinted to specific colour requirements (preferably pastel colours) with pigment paints (tinting pastes).
Appearance/Gloss degree:	Matt (Matt finish, thus not highlighting imperfections like sheen or gloss paint.)
Volume Solids (%):	~ 85
Density (kg/dm ³):	~ 0,46
Package weight (20-liter bucket)	~ 9,6 kg
Solar Reflectance Rating TSR (%):	> 90
Equivalent thermal conductivity (W·m ⁻¹ ·K ⁻¹) (calculation value):	0,006
Spreading rate:	Modification/Applied thickness of each layer: ADITIZOL OPEN / 1.0 mm ~ 1.00 – 1.10 l/m² ADITIZOL BASIC / 0.5 mm ~ 0.50 – 0.55 l/m² (Depends on the application method and the surface)

Technical Data Sheet

ADITIZOL

Flash point:	Non-flammable.
Respecting the environment:	100% Lead Free. Dispose of excess product and containers in a responsible manner without harming the environment.

ADITIZOL OPEN	Technical specification	Characteristics *
Adhesion to surface	CSN 73 2577	0.8 [MPa]
Frost resistance	CSN 73 2579	25 cycles, No damage
Adhesion to surface after frost resistance test	CSN 73 2577	2.0 [MPa]
Determination of water-vapour transmission properties	CSN EN ISO 7783	s_d 0.13 [m] (at 1 mm)
Test for water-tightness of surface finish of building structures	CSN 73 2578	0.0 [l.m ⁻² za 30 min.]
Health safety – emission of VOC (Volatile Organic Compound)	CSN EN ISO 16000-10 CSN EN ISO 16000-11	R: Hygiene and health safety – for products in the interior – Positive evaluation
Response to Fire Tests – Spread of Flame	ISO 5658-2	Meets the requirements
Reaction to fire tests - Heat release test and smoke production rate	ISO 5660-1+A1	Meets the requirements
Toxicity test of materials and components	CSN EN 17084	Meets the requirements
Burning behavior	CSN ISO 3795	Burning rate 0 mm/min (does not ignite)
Safety evaluation for use in indirect contact with foodstuffs	Regulation (EC) No. 1935/2004 of the European Parliament and of the Council in latter wording.	Meets the requirement for indirect contact with foodstuffs
Sensory analysis odour	CSN EN 1230-1	Meets the requirements - Grade 0

ADITIZOL BASIC	Technical specification	Characteristics *
X-cut testing before exposure	CSN EN ISO 16276-2	Grade 0
Continuous condensation	CSN EN ISO 6270-1	120 hours, Positive evaluation
X-cut testing after exposure	CSN EN ISO 16276-2	Grade 0
Degree of blistering after exposure	CSN EN ISO 4628-2	Grade 0(S0)
Degree of rusting after exposure	CSN EN ISO 4628-3	Ri 0
Degree of cracking after exposure	CSN EN ISO 4628-4	Grade 0(S0)
Degree of flaking after exposure	CSN EN ISO 4628-5	Grade 0(S0)
Frost resistance of the surface finish	CSN 73 2579	25 cycles, (no damages/no changes)
X-cut test after frost resistance test	CSN EN ISO 16276-2	Grade 1
Fire protection test in accordance for set of requirements R1, R7 and R17	CSN EN 45545-2:2021	Comply with the requirements
Smoke Generation – Determination of optical density of smoke	CSN EN ISO 5659-2	Meets the requirements

Reaction to fire tests - Heat release test and smoke production rate	ISO 5660-1+A1	Meets the requirements
Response to Fire Tests – Spread of Flame	ISO 5658-2	Meets the requirements
Toxicity test of materials and components	CSN EN 17084	Meets the requirements
Burning behavior	CSN ISO 3795	Burning rate 0 mm/min (does not ignite)
Health safety – emission of VOC	CSN EN ISO 16000-10 CSN EN ISO 16000-11	R: Hygiene and health safety – for products in the interior – Positive evaluation
Safety evaluation for use in indirect contact with foodstuffs	Regulation (EC) No. 1935/2004 of the European Parliament and of the Council in latter wording.	Meets the requirement for indirect contact with foodstuffs
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(* based on white colour)

OTHER TECHNICAL INFORMATION			
Experimental verification of thermal insulation properties of the material ADITIZOL OPEN on a building construction in the exterior and in the interior* Technical and Test Institute for Construction Prague, SOE (TZÚS Prague, s.p.)			
To assess the thermal insulation properties of the material ADITIZOL OPEN , 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 $\theta_{ti} +18^{\circ}\text{C}$ in the hot interior and with the set temperature $\theta_{te} -10^{\circ}\text{C}$ in the cold section of the testing concrete building construction – thickness 100 mm.			
without the coat of material 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 %
2,1 mm and 0,5 mm	Combination cold section (the exterior) and hot section (the interior)	90,71 W	37,13 %
Conclusion: The experimental measurements have confirmed that the material ADITIZOL OPEN 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 depends on the particular boundary conditions and the appropriate method of use.			

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

Experimental verification of thermal insulation properties of the material ADITIZOL BASIC * Technical and Test Institute for Construction Prague, SOE (TZÚS Prague, s.p.)		
At the temperature of 80 °C with a coat of the material ADITIZOL BASIC 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 material ADITIZOL BASIC layer (mm)	Relative energy savings
80 °C	1 mm	34.89 %
80 °C	2 mm	59,87 %
At the temperature of 100 °C with a coat of the material ADITIZOL BASIC 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 % .		
100 °C	1 mm	27,10 %
100 °C	2 mm	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 boundary conditions and the appropriate method of use.		

* Report Data - Experimental verification of thermal insulation properties of the material **ADITIZOL BASIC: Technical and Test Institute for Constructions Prague, SOE (TZÚS Prague, s.p.)**

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**

Tests:

Technical and Test Institute for Construction Prague, SOE (TZÚS Prague, s.p.)

National Institute of Public Health, Prague – Expert assessment of suitability for use of mineral material ADITIZOL for indirect contact with foodstuffs – Certificate No.: 16 0014

Czech Technical University in Prague, Faculty of Architecture, Institute of Civil Engineering II – Measurement of material ADITIZOL BASIC in a climate chamber for verification of thermal insulation properties of the material.

STORAGE

1. Keep containers properly sealed.
2. Store away from direct heat, sun and severe cold in a place with adequate ventilation.
3. Protect from freezing during transportation and storage. Transport temperature must not fall below + 5 °C.
4. Storage temperature: + 5 °C to + 30 °C.
5. Max. relative humidity: 80 %.
6. Opened packages use within 1 month from opening.
7. Dispose of waste in accordance with applicable laws and regulations.
8. Keep out of reach of children.

PACKAGING

Standard packaging:
White, plastic bucket: 10L, 20L

Warranty: In original, unopened and undamaged packages for a period of 12 months from the date of manufacture. The storage instructions must be respected.

SURFACE PREPARATION

Surfaces must be clean, **dry**, and free of dirt, dust, grease, oil, soap, wax, scaling paint, water soluble materials, and mildew. Remove any peeling or scaling paint and sand these areas to feather edges smooth with adjacent surfaces. Drywall surfaces must be free of sanding dust. Pretreat the prepared substrate with a suitable high-quality penetration and wait for it to dry completely.

If necessary, treat the prepared metal surface with a suitable anti-corrosion agent.

Glossy areas should be dulled. Apply diluted ADITIZOL BASIC as an adhesive coat (1 to 2 thin layers) and then apply ADITIZOL BASIC as per the instructions. For the application on the facade of perimeter structures of permeable materials (concrete, brick, etc.), use the ADITIZOL OPEN modification.

APPLICATION DETAILS

1. Method: spraying equipment (airless), special roller or brush. Apply one layer at a maximum thickness of 0.5 mm (ADITIZOL OPEN up to 1.0 mm). When using a spraying device, the manufacturer's instructions must be followed. The pressure on the nozzle of the spray gun must be at most 100 bar. Thinning: Recommended 1 - 3 % maximum with clean water, if necessary.
2. Mixing: Stir thoroughly with a flat paddle or mixing device (speed max. 120 rpm) to an even consistency. Stir occasionally during use.
3. When applying with a brush do not return for minor flaws. Overcoating of coated layers will cause non-uniformity of coating with aesthetic drawbacks. Special roller or brush - thinning: recommended 5 - 10 % with clean water, stir as above. When applied to hot surface with temperature above +50 °C (ADITIZOL BASIC), dilute the material appropriately with increased amounts of clean water. Stir occasionally during use.
4. Recoating time: 24 hours. Drying time depends on temperature, substrate absorption and humidity. Drying time of 0.5 mm (for ADITIZOL BASIC) and 1.0 mm (for ADITIZOL OPEN) is at least 24 hours. Material can be tinted to specific colour requirements. Consult the amount of pigment used. The next layer can only be applied after the previous layer had fully dried out. The total coating thickness and the number of layers is determined by the calculation.
5. We warrant satisfactory results if used according to label directions and application directions.

LIMITATIONS

1. Cannot be applied in cold and moist conditions or applied over poor quality undercoats.
2. Surface temperature: min. +10 °C / max. + 150 °C (max. + 130° C for the ADITIZOL OPEN modification).
3. Ambient temperature: min. + 10 °C. Relative humidity: < 80 %. Moisture content: < 4 % (concrete: < 2,5 %).
4. The ADITIZOL products do not require special measures when drying (hardening). Do not apply in the rain. The material should not be exposed to direct rain for at least 6 hours of application).
5. The applied material must not be exposed to direct steam, water or other liquids for long periods of time.

SAFETY PRECAUTIONS

1. ADITIZOL products do not contain harmful substances. We recommend to follow the safety instructions and the applicable health and safety regulations in your workplace. Observe basic hygiene regulations. Material is not classified as an environmental hazard.
2. Keep out of reach of children.
3. Ensure to maintain good ventilation during application and drying process.

4. Wear a suitable dust mask. Use suitable eye protection. Use suitable hands and clothing protection.
5. In case of skin contact, wash with soap and water or a recognized skin cleaner. Avoid contact with eyes. In case of contact with eyes rinse immediately with running water and seek medical advice.
6. If product is ingested drink plenty of water. Do not induce vomiting at any time.
7. Refer to the Material Safety Data Sheet (MSDS) for detailed information about the product and transportation and classification criteria. MSDS is available from Customer Service.
8. To avoid any risk of spillage, always transport in a secure upright position. In case of spillage, any absorbent material such as sand, etc. may be used.
9. The material is non-flammable. In case of fire on structures or equipment on which the ADITIZOL has been applied, use water, foam, dry chemical extinguisher or carbon dioxide for firefighting.
10. If the surface to be painted is asbestos then the preparation, cleaning and/or removal of broken asbestos sheeting needs to be done in compliance to the Asbestos Regulations, 2001 of the Occupational Health and Safety Act 1993. (ACT NO 85 of 1993).
11. Use completely or dispose of properly. Dry, empty containers may be recycled. Local disposal requirements vary; consult your sanitation department or provincial-designated environmental agency on disposal options.

DISCLAIMER

The information contained herein is given in good faith and is meant merely as a guide for the specifier or user. It is gained from results obtained from our experience and tests carried out under controlled conditions. No warranty/guarantee is implied since the conditions of storage, use, application method, substrate and cleanliness of the substrate are beyond control. For a surface specific specification contact Customer Service Department for assistance. This issue supersedes all previous publications.

Important Note; Technology may change with time, necessitating changes to this Technical Data Sheet (TDS). It is the responsibility of the user to ensure that the latest TDS is being used for reference. ADITIZOL Technical Data Sheets are available on request from Customer Service.

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