

PSCoAT THERMOREFLECTIVE FACADE SYSTEM

Nano Facade Insulation

PSCoat thermoreflective facade system



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[PDF](#)

The current released version is always authoritative; older versions remain available as archived PDFs.

DOCUMENT STRUCTURE

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CHAPTER 01 · FOREWORD

Why does this handbook exist?

This system handbook brings together the essential information on planning, execution, documentation and quality assurance of the Nanofassadendämmung system in one central document.

01

WHAT IS THIS HANDBOOK MEANT TO ACHIEVE?

It replaces scattered individual pieces of information with a single technical reference. Planners, specialist contractors and building owners find the system concept, the layer structure, product information and application notes all in one place.

02

WHO IS IT WRITTEN FOR?

The handbook is aimed at architects, energy consultants, experts, specialist contractors, applicators and building owners. It makes technical relationships understandable and serves as the basis for application.

03

WHAT ROLE DOES THE SYSTEM PLAY?

Nanofassadendämmung describes a three-stage PS Coat facade system consisting of a primer, a functional layer and a top coat.

NOTE ON USE

Technical values, application requirements and safety information are described systematically in the following chapters. The current released version of this handbook always prevails.

CHAPTER 02 · INTRODUCTION

What is Nanofassadendämmung?

Nanofassadendämmung is the sales and system brand of mkm International GmbH for a three-stage PSCoat facade system. The system combines a primer, a thermoreflective functional layer and a weather-resistant top coat into a coordinated coating build-up for facades.

01

WHAT IS THIS SYSTEM ABOUT?

The focus is not on a single product but on the complete system build-up. Each layer performs a defined task and is matched to the layer that follows.

02

WHICH PRODUCTS DOES IT CONSIST OF?

The facade system consists of PSC 250 T ECB BASIC B, PSC 250 T BUILD and PSC 250 T ECO OUTSIDE.

03

WHO IS RESPONSIBLE FOR WHAT?

mkm International GmbH handles sales and system support. Technical product responsibility lies with the manufacturer PSCoat Zurynski, Özdoğan & Co. GmbH.

04

WHAT IS THIS CHAPTER FOR?

This introduction positions the system. The technical details, application requirements, safety information and product data follow in the subsequent chapters.

SCOPE

This handbook describes the Nanofassadendämmung system as a technical coating build-up. Object-specific building-physics assessments, refurbishment concepts or execution details must always be checked on a project-specific basis.

CHAPTER 03 · SYSTEM BUILD-UP

How is the system structured in principle?

Nanofassadendämmung is a three-stage coating build-up: a primer, a thermoreflective functional layer and a weather-resistant top coat. Each layer performs a defined task and is matched to the next.

01

HOW IS THE SYSTEM STRUCTURED IN PRINCIPLE?

It consists of three coordinated layers: a primer, a thermoreflective functional layer and a weather-resistant top coat. Only the interplay of all three layers forms the complete system.

02

WHY A LAYER SYSTEM INSTEAD OF A SINGLE PRODUCT?

Adhesion, the insulating function and weather protection have different requirements. By dividing them among specialised layers, each performs its task optimally, while the layers are chemically and mechanically matched to one another.

03

WHICH LAYER HAS WHICH TASK?

The primer secures adhesion to the substrate, the functional layer provides the thermoreflective effect, and the top coat permanently protects the build-up against weathering and UV radiation.

04

WHAT IS THE SYSTEM APPLIED TO?

To load-bearing, mineral and other suitable substrates (e.g. concrete, masonry, render). Substrate testing and preparation are described in Chapter 10.

The three-stage layer build-up

LAYER	PRODUCT	THICKNESS	TASK
1 · Primer	PSC 250 T ECB BASIC B	approx. 0.1 mm	adhesion promotion on the substrate, protection against corrosion and water condensation
2 · Functional layer	PSC 250 T BUILD	1.0 mm (2 × 0.5 mm)	thermoreflective, insulating intermediate layer (ceramic nanospheres)
3 · Top coat	PSC 250 T ECO OUTSIDE	0.1–0.2 mm	weather- and UV-resistant, vapour-permeable finishing coat (optionally in RAL colours)
Complete system	—	approx. 1.2 mm	sum of the three layers

SEQUENCE AND COORDINATION

The layers are applied in the sequence given. Each layer must be sufficiently dry before the next is applied (see Chapter 11 · Application). The details of the three products follow in Chapters 07 to 09.

CHAPTER 04 · WORKING PRINCIPLE

How does the thermoreflective principle work?

The insulating effect is based on two effects: the reflection of radiant heat at the surface and the greatly reduced heat conduction in the embedded ceramic nanospheres.

An analogy helps: a **thermos flask** keeps its temperature not through thick walls but through a mirrored surface (which reflects radiant heat) and a vacuum between the walls (which suppresses heat conduction). PS Coat works on the same dual principle — only in coating thickness instead of a double wall.

01

WHAT IS THE EFFECT BASED ON?

On two complementary effects: part of the incident radiant heat is reflected at the surface (thermoreflection), and the hollow ceramic nanospheres embedded in the functional layer reduce heat conduction within the material.

02

WHAT DOES THERMOREFLECTION MEAN?

The coating reflects a high proportion of the incident solar radiation across the entire spectrum, including infrared radiation (Total Solar Reflectance, TSR: 92 %). As a result, less radiant heat is transferred into the substrate.

03

HOW DO THE SPHERES REDUCE HEAT CONDUCTION?

The closed ceramic nanospheres, filled with vacuum or very little gas, form barriers to heat transport. In the tiny cavities the Knudsen effect takes hold — heat conduction through gas is practically suppressed (see Chapter 23 · Materials science).

04

DOES THE FACADE REMAIN BREATHABLE?

Yes. The overall build-up is vapour-permeable (system value class V2 per EN 15824); water vapour from the component can escape to the outside. For the building-physics classification see Chapter 24.

RADIATION AND CONDUCTION CONSIDERED TOGETHER

Thermoreflection acts at the surface against radiant heat; the hollow spheres act within the material against heat conduction — the principle of a thermos flask, transferred to a coating just a few millimetres thick. The interplay of both effects is what allows the low layer thickness of the system.

CHAPTER 05 · LAYERS & CONSUMPTION

Which layers make up the facade system?

The facade system consists of a primer, a functional layer and a top coat. This chapter summarises the layers with their tasks, consumption figures and thicknesses as a planning overview.

01

WHICH LAYERS DOES THE SYSTEM CONSIST OF?

The primer PSC 250 T ECB BASIC B, the thermoreflective functional layer PSC 250 T BUILD and the top coat PSC 250 T ECO OUTSIDE.

02

WHICH LAYER THICKNESSES ARE INTENDED?

Primer approx. 0.1 mm, functional layer 1.0 mm (in two passes of 0.5 mm each) and top coat 0.1–0.2 mm — together a total thickness of approx. 1.2 mm. The figure of 1 mm stated in the technical data sheet refers to the functional layer.

Layer overview (consumption and function)

LAYER	PRODUCT	CONSUMPTION ¹	THICKNESS	TASK
Primer	PSC 250 T ECB BASIC B	100–200 ml/m ²	approx. 0.1 mm	adhesion, corrosion and condensation protection
Functional layer	PSC 250 T BUILD	approx. 0.9 l/m ²	1.0 mm (2 × 0.5 mm)	thermoreflective, insulating intermediate layer
Top coat	PSC 250 T ECO OUTSIDE	0.18–0.30 l/m ²	0.1–0.2 mm	weather/UV protection, decorative finishing coat
Complete system	—	—	approx. 1.2 mm	sum of the three layers

¹ Guide values per coat, depending on the porosity and absorbency of the substrate; the actual consumption must be determined per object. The functional layer is applied in two passes of 0.5 mm each; the figure of 1 mm stated in the data sheet refers to the functional layer. Detailed values per product in Chapters 07–09.

Common properties of the layers

PROPERTY	VALUE
Binder	aqueous acrylic resin dispersion (water-thinnable)
Reaction to fire	B-s1, d0 per EN 13501-1
Total system thickness	approx. 1.2 mm

Vapour permeability is not a property that is identical across all layers: the BUILD functional layer on its own is class V1, the ECO OUTSIDE top coat class V2. For the **overall build-up** in combination (primer 0.1 mm + functional layer 1.0 mm + top coat 0.1

mm), the calculated series connection of the diffusion resistances yields a system value of $s_d \approx 0.44$ m, corresponding to class V2 per EN 15824 — see the manufacturer information “Calculated system value for water-vapour permeability” (Nanofassadendämmung system page).

PLANNING NOTE

Consumption and number of coats determine the material quantity per object. The values given here are guide values; the tested product data (Chapters 07–09) and the respective current technical data sheet prevail.

CHAPTER 06 · PRODUCTS

Which products belong to the system?

The facade system comprises three PSCoat products. This chapter provides the overview; the tested technical data per product follow in Chapters 07 to 09.

01

WHICH PRODUCTS BELONG TO THE SYSTEM?

Three coordinated PSCoat products: the primer ECB BASIC B, the functional layer BUILD and the top coat ECO OUTSIDE.

02

WHERE DO I FIND THE TECHNICAL DATA?

Each product has its own chapter with function, application and tested characteristic values per EN 15824 — see Chapters 07 (BASIC B), 08 (BUILD) and 09 (ECO OUTSIDE).

The three system products

PRODUCT	ROLE	DETAIL
PSC 250 T ECB BASIC B	Primer	Chapter 07
PSC 250 T BUILD	Functional layer	Chapter 08
PSC 250 T ECO OUTSIDE	Top coat	Chapter 09

PRODUCTS USED IN SEVERAL SYSTEMS

The primer ECB BASIC B is also used in other PSCoat systems (interior, floor, roof). Its product description is therefore valid across systems; in the facade system it serves as the base layer beneath BUILD and ECO OUTSIDE.

CHAPTER 07 · PRIMER

What is the task of PSC 250 T ECB BASIC B?

PSC 250 T ECB BASIC B is the primer of the system — it ensures the adhesion of the subsequent layers and increases resistance to corrosion and water condensation.

01

WHAT IS THE TASK OF BASIC B IN THE SYSTEM?

BASIC B is the primer (base coat) for all PSCoat main layers — BUILD, BUILD INTERIOR, ECI INTERIOR, ECO OUTSIDE, BS INSIDE, ECF FLOOR, BS FLOOR, ECE ELASTIC and ECR ROOF. It ensures the adhesion of the following layers and increases resistance to corrosion and water condensation; it can be applied directly to corroded but stable surfaces.

02

WHICH PROPERTIES CHARACTERISE BASIC B?

Water-based acrylic resin primer — non-toxic, harmless to health and environmentally compatible. Suitable for all interior and exterior construction surfaces made of concrete, cement, plaster bricks, wood, tar paper or plastic (except PE, HDPE, PP, PTFE).

03

WHICH SUBSTRATE IS SUITABLE?

Building materials such as concrete, cement, wood, tar paper, render and similar materials — including existing old stock (e.g. listed buildings), provided they are continuous and load-bearing. The substrate must be dry, firm and free of loose parts, oil, grease, dust, mould, salt and old loose coatings.

04

HOW IS BASIC B APPLIED?

Supplied ready to use; thoroughly mix the entire container contents before use. Preferably applied with an airless sprayer (remove the filter beforehand, nozzle pressure max. 120 bar), alternatively with brush or roller (bristle length 8–14 mm). A second coat is possible once the surface is touch-dry after approx. 2 hours.

IMPORTANT RESTRICTIONS

Do not apply if rain/frost is expected (protect the coating for at least 6 hours after application), at relative humidity above 80 %, at substrate moisture above 4 %, at substrate or ambient temperatures below +5 °C or above +30 °C, or on a substrate heated above +30 °C by direct sun. Do not apply to PE, HDPE, PP, PTFE or other plastics.

Werte in Prüfung: Die Angaben stammen aus der Datenblatt-Übernahme und werden derzeit fachlich geprüft (Status vorläufig).

Technische Eigenschaften

PARAMETER	WERT	PRÜFMETHODE	STATUS
Verbrauch	100–200 ml/m ²	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Verpackung	18 l / 16,2 kg	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Aussehen	milchig weiß; getrocknet mattweiß	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Geruch	geruchlos	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Haltbarkeit	24 Monate	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Überlackierbarkeit (ohne Schleifen)	2–3 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Reifungszeit	24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

Geprüfte Kennwerte (EN 15824)

PARAMETER	WERT	PRÜFMETHODE	STATUS
Wasserdampfdurchlässigkeit	184 ± 18 g/m ² ·d	PN-EN ISO 7783 (Prüfdicke 0,5 mm)	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Saugfähigkeit / Wasseraufnahme	0,07 ± 0,02 kg/m ² ·√h	PN-EN 1062-3 (Prüfdicke 0,5 mm)	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Haftung / Adhäsion auf Zement	1,4 ± 0,3 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Haftung / Adhäsion auf Stahl	0,4 ± 0,1 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Haftung / Adhäsion nach 20 Frost-Tau-Zyklen (Zement)	0,8 ± 0,1 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Reaktion auf Feuer (SBI)	B-s1, d0	PN-EN 13501-1	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017)
Dichte (Schütt-/Volumendichte)	ca. 0,8 g/cm ³	Messwert	VORLÄUFIG
Gewicht bei 1 mm Schichtdicke	ca. 0,15 kg/m ²	Messwert	VORLÄUFIG
pH-Wert	8–9	Messwert	VORLÄUFIG

Anwendungsbedingungen

PARAMETER	WERT	PRÜFMETHODE	STATUS
Oberflächentemperatur	+5 bis +45 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Umgebungstemperatur	+5 bis +30 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Schichtdicke	ca. 0,1 mm	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Aushärtungszeit	ca. 24 h je Schicht	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Trocknungszeit	mind. 24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

SAFETY, CLEANING AND STORAGE

PSCoat contains no substances classified as hazardous to health. When applying, wear safety goggles, gloves and protective clothing; use respiratory protection in confined spaces and when spraying, and ensure adequate ventilation. Clean tools with water — ideally immediately after use. Store and transport frost-free at +5 °C to +30 °C, protected from direct sunlight. The current safety data sheet always prevails.

CHAPTER 08 · FUNCTIONAL LAYER

What is the task of PSC 250 T BUILD?

PSC 250 T BUILD is the thermoreflective functional layer of the system — a conductive insulating intermediate layer between the primer PSC 250 T ECB BASIC B and the top coat PSC 250 T ECO OUTSIDE.

01

WHAT IS THE TASK OF BUILD IN THE SYSTEM?

BUILD is the conductive, thermoreflective insulating intermediate layer between the primer PSC 250 T ECB BASIC B and the top coat PSC 250 T ECO OUTSIDE. It effectively protects against penetrating frost or heat as well as against the condensation of surface water vapour and offers high adhesion on all common building materials.

02

WHICH PROPERTIES CHARACTERISE BUILD?

Water-based acrylic resin coating — UV-resistant, vapour-permeable, non-toxic and environmentally friendly. It fills micro-cracks, prevents mould formation and does not dust off under atmospheric changes. BUILD reflects a high proportion of the incident solar radiation (Total Solar Reflectance, TSR: 92 %).

03

WHICH SUBSTRATE IS SUITABLE?

All porous surfaces such as concrete, masonry, stone, unglazed ceramics, render, gypsum or plasterboard — provided PSC 250 T ECB BASIC B has been applied beforehand as a primer. The substrate must be dry, firm, load-bearing and free of loose parts, oil, grease, dust, mould, salt and rust.

04

HOW IS BUILD APPLIED?

Supplied ready to use; thoroughly mix the entire container contents before use. Preferably applied with an airless sprayer (remove the filter beforehand, nozzle pressure max. 120 bar), alternatively with brush or roller (bristle length 8–14 mm). A second coat is possible once the surface is touch-dry after approx. 2 hours.

IMPORTANT RESTRICTIONS

Do not apply if rain/frost is expected (protect the coating for at least 6 hours after application), at relative humidity above 80 %, at substrate moisture above 4 % (concrete above 2.5 %), at substrate or ambient temperatures below +5 °C or above +30 °C, or on a substrate heated above +30 °C by direct sun. Do not apply to PE, HDPE, PP, PTFE or other plastics.

Technische Eigenschaften

PARAMETER	WERT	PRÜFMETHODE	STATUS
Verbrauch	0,9 l/m ²	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Verpackung	18 l / 9,36 kg	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Aussehen	milchig weiß; getrocknet mattweiß	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Geruch	geruchlos	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Haltbarkeit	24 Monate	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Überlackierbarkeit (ohne Schleifen)	4–8 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Reifungszeit	24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

Geprüfte Kennwerte (EN 15824)

PARAMETER	WERT	PRÜFMETHODE	STATUS
Wasserdampfdurchlässigkeit	184 ± 18 g/m²·d	PN-EN ISO 7783 (Prüfdicke 0,5 mm)	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP · Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Saugfähigkeit / Wasseraufnahme	0,07 ± 0,02 kg/m²·√h	PN-EN 1062-3 (Prüfdicke 0,5 mm)	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP
Haftung / Adhäsion auf Zement	1,4 ± 0,3 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP · Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Haftung / Adhäsion auf Stahl	0,4 ± 0,1 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP · Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Haftung / Adhäsion nach 20 Frost-Tau-Zyklen (Zement)	0,8 ± 0,1 MPa	EN 1542:2000	GEPRÜFT Prüfbericht EFEKT – Primer / BUILD / HP · Leistungserklärung (DoP) PSC-250T/BUILD · Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Reaktion auf Feuer (SBI)	B-s1, d0	PN-EN 13501-1	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017) · Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Wärmeleitfähigkeit	0,000120 W/mK	PN-EN 1745	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017) · ISO & Zertifikate – Übersicht · Ersatz-Wärmeleitfähigkeitskoeffizient PScoat (Katodesk-tech) ·

PARAMETER	WERT	PRÜFMETHODE	STATUS
			Herstellererklärung – Wärmeleitfähigkeit (Lambda) je Schichttyp
Gesamtsonnenreflexion (TSR)	92 %	Hotbox (TÜV-bestätigt)	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017)
Dichte (Schütt-/Volumendichte)	0,5–0,55 g/cm ³	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Gewicht bei 1 mm Schichtdicke	0,5–0,55 kg/m ²	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
pH-Wert	8,5–9,5	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Beständigkeit gegen künstliche Bewitterung	1000 h QUV-Kammer (4 × 6 h Zyklus: Sonneneinstrahlung 55 °C / Beregnung 40 °C) – keine Veränderung von Oberfläche oder Textur	QUV-Kammer, 1000 h	GEPRÜFT QUV-Bewitterungstest PSC-250T (1000 h)
VOC-Gehalt	9,1 g/l	PN-EN ISO 11890-1	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)

Anwendungsbedingungen

PARAMETER	WERT	PRÜFMETHODE	STATUS
Oberflächentemperatur	+5 bis +30 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Umgebungstemperatur	+5 bis +30 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Relative Luftfeuchtigkeit	< 80 %	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Schichtdicke	1,0 mm (2 × 0,5 mm)	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Aushärungszeit	ca. 24 h je Schicht	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Trocknungszeit	mind. 24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

SAFETY, CLEANING AND STORAGE

PSCoat contains no substances classified as hazardous to health. When applying, wear safety goggles, gloves and protective clothing; use respiratory protection in confined spaces and when spraying, and ensure adequate ventilation. Clean tools with water — ideally immediately after use. Store and transport frost-free at +5 °C to +30 °C, protected from direct sunlight. The current safety data sheet always prevails.

CHAPTER 09 · TOP COAT

What is the task of PSC 250 T ECO OUTSIDE?

PSC 250 T ECO OUTSIDE is the thermoreflective, weather-resistant top coat of the system — the decorative finishing layer for facades and roof coverings.

01

WHAT IS THE TASK OF ECO OUTSIDE IN THE SYSTEM?

ECO OUTSIDE is the decorative, thermoreflective top coat for the facades of residential and industrial buildings as well as for roof coverings. It withstands atmospheric influences and acid rain, is abrasion-resistant, vapour-permeable and permanently protects the underlying system build-up.

02

WHICH PROPERTIES CHARACTERISE ECO OUTSIDE?

Water-based acrylic resin coating — UV-resistant and vapour-permeable. It reflects a high proportion of the incident solar radiation (Total Solar Reflectance, TSR: 92 %) and can be tinted in RAL colours in the COLOR version.

03

WHICH SUBSTRATE IS SUITABLE?

Porous, mineral substrates such as concrete, masonry, stone, unglazed ceramics, render, plasterboard, fibre cement or concrete tiles — on which the primer ECB BASIC B and the conductive intermediate layer BUILD have already been applied.

04

HOW IS ECO OUTSIDE APPLIED?

Supplied ready to use; thoroughly mix the entire container contents before use. As the finishing layer, preferably applied with an airless sprayer (remove the filter beforehand, nozzle pressure max. 120 bar), alternatively with brush or roller (bristle length 8–14 mm). A second coat is possible once the surface is touch-dry after approx. 2 hours. Tinting only in the COLOR and SPECIAL COLOR versions.

IMPORTANT RESTRICTIONS

Do not apply if rain/frost is expected (protect the coating for at least 6 hours after application), at relative humidity above 80 %, at substrate moisture above 4 % (concrete above 2.5 %), at substrate or ambient temperatures below +5 °C or above +30 °C, or on a substrate heated above +30 °C by direct sun. Do not apply to PE, HDPE, PP, PTFE or other plastics.

Technische Eigenschaften

PARAMETER	WERT	PRÜFMETHODE	STATUS
Verbrauch	0,18–0,30 l/m ² (je Schichtdicke)	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Verpackung	18 l / 16,2 kg	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Aussehen	milchig weiß (Standard); getrocknet mattweiß	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Geruch	geruchlos	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Haltbarkeit	24 Monate	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Überlackierbarkeit (ohne Schleifen)	2–3 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Reifungszeit	24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

Geprüfte Kennwerte (EN 15824)

PARAMETER	WERT	PRÜFMETHODE	STATUS
Wasserdampfdurchlässigkeit	20 ± 0,5 g/m²·d	PN-EN ISO 7783 (Prüfdicke 0,5 mm)	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Saugfähigkeit / Wasseraufnahme	W3 (≤ 0,1) kg/m²·√h	PN-EN 1062-3 (Prüfdicke 0,5 mm)	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Haftung / Adhäsion (Abschlussschicht)	0,8 MPa	EN 1542:2000	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Körnungsgröße (Abschlussschicht)	S1	PN-EN ISO 1524:2002	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Reaktion auf Feuer (SBI)	B-s1, d0	PN-EN 13501-1	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017)
Wärmeleitfähigkeit	0,000416 W/mK	PN-EN 1745	GEPRÜFT Herstellererklärung – Wärmeleitfähigkeit (Lambda) je Schichttyp
Gesamtsonnenreflexion (TSR)	92 %	Hotbox (TÜV-bestätigt)	GEPRÜFT CE-Kennzeichnung PSC 250 T (PN-EN 15824:2017)
Dichte (Schütt-/Volumendichte)	0,9–0,95 g/cm³	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
Gewicht bei 1 mm Schichtdicke	0,9–0,95 kg/m²	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)
pH-Wert	8,5–9,5	Messwert	GEPRÜFT Herstellererklärung – TÜV-verifizierte Produktparameter (TÜV-Zertifikat Nr. 65408)

Anwendungsbedingungen

PARAMETER	WERT	PRÜFMETHODE	STATUS
Oberflächentemperatur	+5 bis +30 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

PARAMETER	WERT	PRÜFMETHODE	STATUS
Umgebungstemperatur	+5 bis +30 °C	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Relative Luftfeuchtigkeit	< 80 %	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Schichtdicke	0,1–0,2 mm	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Aushärtungszeit	ca. 24 h je Schicht	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T
Trocknungszeit	mind. 24 h	—	GEPRÜFT Herstellererklärung – Technische Eigenschaften PSC 250 T / PSC 1200 T

SAFETY, CLEANING AND STORAGE

PSCoat contains no substances classified as hazardous to health. When applying, wear safety goggles, gloves and protective clothing; use respiratory protection in confined spaces and when spraying, and ensure adequate ventilation. Clean tools with water — ideally immediately after use. Store and transport frost-free at +5 °C to +30 °C, protected from direct sunlight. The current safety data sheet always prevails.

CHAPTER 10 · SUBSTRATE

How is the substrate tested?

A load-bearing, clean and sufficiently dry substrate is a prerequisite for the adhesion of the system. This chapter describes suitable substrates, testing steps and exclusions.

01

WHICH SUBSTRATES ARE SUITABLE?

Load-bearing, mineral and other porous substrates such as concrete, cement, masonry, stone, render, unglazed ceramics, plasterboard, fibre cement, concrete tiles, wood or tar paper — including old, load-bearing stock (e.g. listed buildings).

02

WHAT CONDITION MUST THE SUBSTRATE BE IN?

Dry, firm and load-bearing, and free of loose parts, oil, grease, dust, mould, salt and old, loose coatings. Loose or non-load-bearing old coatings must be removed.

03

HOW IS MOISTURE TESTED?

The substrate moisture must be below 4 % (below 2.5 % for concrete). Measurement is carried out with a suitable moisture meter; if in doubt, wait until the substrate is ready to be coated.

04

HOW IS LOAD-BEARING CAPACITY ASSESSED?

By visual and wipe test (dust, sanding), scratch/tap test (voids) and — if in doubt — an adhesive pull-off or cross-cut test on the intended primer.

Testing checklist before priming

TEST POINT	REQUIREMENT
Strength / load-bearing capacity	firm, load-bearing, no voids or sanding
Cleanliness	free of dust, oil, grease, mould, salt, loose parts
Old coatings	retain only load-bearing coatings, remove loose ones
Substrate moisture	< 4 % (concrete < 2.5 %)
Substrate temperature	+5 °C to +30 °C, not in direct sun above +30 °C

UNSUITABLE SUBSTRATES

PE, HDPE, PP, PTFE and other plastics are not suitable. Do not work on surfaces heated above +30 °C by direct sun or when rain or frost is expected. The information in the respective product chapters (07–09) and the current technical data sheet prevail.

CHAPTER 11 · APPLICATION

How is the system applied?

The system is applied in three steps: primer, functional layer and top coat — each supplied ready to use, thoroughly mixed before use and applied under the specified conditions.

01

IN WHICH ORDER IS IT APPLIED?

First the primer ECB BASIC B, then the functional layer BUILD and finally the top coat ECO OUTSIDE. Each layer must dry sufficiently before the next. The functional layer is applied in two passes of 0.5 mm (together 1.0 mm).

02

HOW ARE THE PRODUCTS PREPARED?

All products are supplied ready to use. Before use, thoroughly mix the entire container contents; thinning is not intended.

03

WHAT IS IT APPLIED WITH?

Preferably with an airless sprayer (remove the filter beforehand, nozzle pressure max. 120 bar), alternatively with brush or roller (bristle length 8–14 mm). Details on airless application in Chapter 12.

04

WHEN CAN THE NEXT COAT FOLLOW?

A further coat is possible once the surface is touch-dry after approx. 2 hours (overcoatable without sanding). Curing takes about 24 hours per layer.

Application conditions

CONDITION	VALUE
Substrate and ambient temperature	+5 °C to +30 °C
Relative humidity	< 80 %
Substrate moisture	< 4 % (concrete < 2.5 %)
Layer thicknesses	primer approx. 0.1 mm · functional layer 1.0 mm (2 × 0.5 mm) · top coat 0.1–0.2 mm
Total thickness	approx. 1.2 mm
Overcoatable (without sanding)	approx. 2–3 hours
Curing per layer	approx. 24 hours

WEATHER PROTECTION

Do not apply if rain or frost is expected; protect the fresh coating for at least 6 hours beforehand. Do not apply to a substrate heated above +30 °C by direct sun. Clean tools with water immediately after use.

CHAPTER 12 · AIRLESS

What must be observed for airless application?

Airless spraying is the preferred application method for all three layers. The removed filter, the limited nozzle pressure and immediate cleaning with water are decisive.

01

WHY AIRLESS?

Airless spraying applies the ready-to-use coatings evenly and economically — especially on larger facade areas. Brush and roller are possible as an alternative.

02

WHAT MUST BE SET ON THE EQUIPMENT?

The filter must be removed before application (the coating contains ceramic nanospheres). The nozzle pressure must be limited to a maximum of 120 bar.

03

WHAT MUST BE OBSERVED WHEN SPRAYING?

Even distance and path overlap to achieve a homogeneous layer thickness; maintain the intended thickness per layer (functional layer in 2 passes of 0.5 mm; see Chapter 05).

04

HOW IS THE EQUIPMENT CLEANED?

Immediately after use with water — the products are water-thinnable. Dried material is difficult to remove.

Airless key values

PARAMETER	SPECIFICATION
Filter	remove before application
Nozzle pressure	max. 120 bar
Thickness per pass	approx. 0.5 mm (functional layer in 2 passes)
Alternative application methods	brush or roller (bristle length 8–14 mm)
Cleaning	with water, immediately after use

NOTE

Nozzle size and equipment type must be selected according to the spray equipment manufacturer's specifications and the product. The information in the product chapters (07–09) and the current technical data sheet prevail.

CHAPTER 13 · QUALITY ASSURANCE

How is execution quality assured?

Quality arises from tested prerequisites, controlled application and traceable documentation. This chapter summarises the essential control points.

01

WHAT IS CHECKED BEFORE STARTING?

The substrate (strength, cleanliness, moisture) and the application conditions (temperature, humidity, weather) in accordance with Chapters 10 and 11.

02

WHAT IS MONITORED DURING EXECUTION?

The correct layer sequence, the consumption per layer and area, compliance with the intended thickness per layer, and drying before the next coat is applied.

03

HOW IS THE EXECUTION DOCUMENTED?

By recording the substrate and weather conditions, the batches used, the consumption quantities and the application steps per area.

04

HOW DO YOU RECOGNISE A CLEAN RESULT?

Even, closed layers without runs, defects or thin spots; a homogeneous, matt-white surface of the top coat.

Control points at a glance

PHASE	CHECK
Before starting	substrate test (Ch. 10), temperature/humidity, weather forecast
Per layer	mixing, application method, consumption, thickness per layer (see Chapter 05)
Between coats	touch-drying (approx. 2 h) or curing (approx. 24 h) observed
Acceptance	closed, even surface without defects
Documentation	conditions, batches, quantities, application steps per area

BASIS OF ASSESSMENT

The tested product data (Chapters 07–09), the application requirements (Chapters 11–12) and the respective current technical data sheet prevail. Object-specific quality requirements must be agreed separately.

CHAPTER 14 · OCCUPATIONAL SAFETY

Which occupational safety rules apply?

The coatings contain no substances classified as hazardous to health. Nevertheless, the usual protective measures apply during application — especially when spraying.

01

ARE THE PRODUCTS HAZARDOUS TO HEALTH?

PSCoat contains no substances classified as hazardous to health and is water-thinnable. The current safety data sheet is always decisive for the risk assessment.

02

WHICH PROTECTIVE EQUIPMENT IS REQUIRED?

Safety goggles, gloves and protective clothing. In confined spaces and when spraying, also use respiratory protection.

03

WHAT MUST BE OBSERVED WHEN SPRAYING?

Ensure adequate ventilation and avoid or extract spray mist. Cover adjacent components and surfaces.

04

HOW ARE TOOLS CLEANED AND STORED?

Clean tools with water — ideally immediately after use. Store and transport frost-free at +5 °C to +30 °C, protected from direct sunlight.

Protective measures at a glance

AREA	MEASURE
Eyes/skin	safety goggles, gloves, protective clothing
Respiratory tract	respiratory protection when spraying and in confined spaces
Surroundings	adequate ventilation, avoid spray mist, coverings
Cleaning	with water, immediately after use
Storage/transport	frost-free +5 °C to +30 °C, protected from sun

AUTHORITATIVE BASIS

These notes do not replace the safety data sheet (SDS). For the legally binding classification, first-aid and disposal instructions, only the manufacturer's respective current safety data sheet applies.

CHAPTER 15 · MAINTENANCE & CARE

How is the coated facade maintained and cared for?

The finished coating is weather-resistant and easy to care for. Regular visual inspection and gentle cleaning maintain function and appearance over the service life.

01

IS THE COATING EASY TO CARE FOR?

Yes. The top coat is abrasion-resistant, UV- and weather-resistant and vapour-permeable, and withstands atmospheric influences including acid rain.

02

HOW IS THE FACADE CLEANED?

Gently with water, at low pressure if needed. Aggressive cleaners, solvents or harsh mechanical methods must be avoided.

03

WHAT TO DO IN CASE OF DAMAGE?

Local damage is cleaned, the substrate is checked as in Chapter 10, and the affected area is re-coated in the system build-up (primer, functional layer, top coat).

04

AT WHAT INTERVALS SHOULD IT BE CHECKED?

A regular visual inspection of the facade — especially after severe weather — is recommended in order to detect damage early.

NOTE ON REPAIR

For re-coating, the same substrate and application requirements apply as for the initial execution (Chapters 10–12). Object-specific care and maintenance intervals must be agreed separately.

CHAPTER 16 · FAQ

Which questions come up frequently in practice?

Common questions from planning and execution — answered concisely. The detailed background is in the chapters referenced in each case.

01

DOES IT ALWAYS HAVE TO BE PRIMED?

Yes. The primer ECB BASIC B is the basis for the adhesion of BUILD and ECO OUTSIDE (Chapters 07, 11).

02

CAN THE SYSTEM BE TINTED?

The top coat ECO OUTSIDE is available in RAL colours in the COLOR and SPECIAL COLOR versions (Chapter 09).

03

CAN THE COLOUR BE CHANGED LATER ON?

Yes, at any time. The thermoreflective top coat ECO OUTSIDE can also be re-tinted or changed in colour afterwards without any problem. To do so, a further, system-compatible coat of ECO OUTSIDE is simply applied in the desired RAL colour — without interfering with the existing system build-up and without impairing the insulating effect. The facade therefore remains permanently flexible: a new colour preference, adaptation to a changed design or a visual refresh are possible even years after the initial execution (Chapter 09).

04

AT WHICH TEMPERATURES MAY WORK BE CARRIED OUT?

At substrate and ambient temperatures of +5 °C to +30 °C and relative humidity below 80 % — not in rain, frost or on a substrate heated above +30 °C by direct sun (Chapter 11).

05

WHICH SUBSTRATES MUST IT NOT BE APPLIED TO?

Not on PE, HDPE, PP, PTFE or other plastics (Chapter 10).

06

IS THE FACADE VAPOUR-PERMEABLE?

Yes, the overall build-up is vapour-permeable (system value class V2 per EN 15824); water vapour can escape to the outside (Chapter 04).

07

DOES THE SYSTEM REPLACE A U-VALUE VERIFICATION?

No. The λ values are system values and not a material characteristic per EN 12667/12664; for the building-physics classification see Chapter 24.

NO ANSWER FOUND?

The detailed background is in the specialist chapters. For project-specific questions, the contacts in Chapter 18 are available.

CHAPTER 17 · GLOSSARY

Which technical terms are used?

The most important terms in this handbook — briefly explained.

TERM	EXPLANATION
Thermoreflection	Reflection of radiant heat (solar/infrared radiation) at the coating surface.
TSR (Total Solar Reflectance)	Proportion of reflected solar radiation across the entire spectrum.
Ceramic nanospheres	Tiny, hollow spheres of glass ceramic in the functional layer; they reduce heat conduction.
Glass ceramic	A material produced as glass and made partly crystalline through controlled crystallisation.
Knudsen effect	Greatly reduced heat conduction in cavities smaller than the mean free path of the gas molecules.
Primer	Base layer (ECB BASIC B) that ensures the adhesion of the following layers.
Functional layer	Thermoreflective intermediate layer (BUILD) with the insulating effect.
Top coat	Weather- and UV-resistant finishing layer (ECO OUTSIDE).
Adhesive tensile strength	Force per area with which the coating adheres to the substrate (N/mm ² or MPa).
Water-vapour permeability (V class)	Measure of the diffusion of water vapour through the coating (EN 15824). For the overall system build-up: class V2.
Water absorption (W class)	Measure of the absorption of liquid water (EN 15824, class W3).
Binder	Film former of the coating — here an aqueous acrylic resin dispersion.
Airless	High-pressure spraying process without atomising air.
Maturing time	Time until the applied layer is fully cured.
EN 15824	Harmonised European standard for organic-based external and internal renders.
AVCP	Assessment and Verification of Constancy of Performance (here system 3).
Declaration of Performance (DoP)	Formal declaration of the product performance; basis of the CE marking.
CE marking	Conformity mark under the EU Construction Products Regulation (EU) 2024/3110.

FURTHER READING

The terms are explained in context in the respective specialist chapters (including Chapter 04 Working principle, 20 CE marking, 21 Declaration of Performance, 23 Materials science).

CHAPTER 18 · CONTACTS

Who to contact for what?

The following contacts are available for planning, tendering, application and quality assurance.

VERTRIEB · SYSTEMBETREUUNG
Markus Schlegel

Telefon: +49 2821 78699-85

m.schlegel@nanofassadendaemmung.de

TECHNISCHE FACHFRAGEN
Ingo Büser

Bausachverständiger

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HERAUSGEBER · VERTRIEB
mkm International GmbH

Boschstraße 16

47533 Kleve

info@nanofassadendaemmung.de

HERSTELLER · PRODUKTVERANTWORTUNG
PSCoat Zurynski, Özdoğan & Co. GmbH

Schützenstraße 81a

58239 Schwerte

Verantwortlich: Mesut Özdoğan

www.pSCO.at

CHAPTER 19 · VERSION HISTORY

What has changed compared to previous versions?

This chapter documents the version history of the handbook. The current released version always prevails; earlier states remain available as archived PDFs.

VERSION	AUSGABE	STATUS	ÄNDERUNGEN	PDF
1.0 AKTUELL	Juni 2026	FREIGEgeben	Erstausgabe: Systemaufbau, Wirkprinzip, Produkte (BASIC B, BUILD, ECO OUTSIDE), Verarbeitung, Qualitätssicherung, Arbeitsschutz, Wartung, CE-Kennzeichnung, Leistungserklärung, PFAS-Erklärung, Materialkunde, bauphysikalische Einordnung und Freigabe.	PDF

VERSIONING LOGIC

The version number follows the MAJOR.MINOR scheme; the maturity level is reflected in the status (Draft → In review → Released → Withdrawn). With each new version, the previous state remains available as a PDF. The full version overview is also on the document page of this handbook.

APPENDIX · CE MARKING

CE marking & conformity (EU 2024/3110)

The PSC 250 T coatings used in the Nanofassadendämmung system carry the CE marking on the basis of the harmonised standard PN-EN 15824:2017 and the EU Construction Products Regulation (EU) 2024/3110.

The CE marking documents that the coatings deliver the performances stated in the Declaration of Performance (DoP). Conformity is based on the harmonised European standard **PN-EN 15824:2017** for organic coatings and is carried out under the **EU Construction Products Regulation (EU) 2024/3110** in assessment system **AVCP System 3**. The reproduction below applies to the product variants used in this system.

NOTE

The declaration is reproduced below in its legally binding German version.



PRODUKT	PSC 250 T
PRODUKTVARIANTEN (DIESES SYSTEM)	PSC 250 T ECB BASIC B, PSC 250 T BUILD, PSC 250 T ECO OUTSIDE
PRODUKTTYP	Elastomere Nano-Beschichtung mit wärmeisolierender Funktion
VERWENDUNGSZWECK	Beschichtung mit hervorragenden thermisch isolierenden Eigenschaften zur schützenden Anwendung auf Außen- und Innenflächen im Bauwesen und in industriellen Anwendungen.
VERANTWORTLICHE STELLE	PSCoat Zurynski, Özdogan & Co. GmbH Schützenstraße 81a, 58239 Schwerte Verantwortlich: Mesut Özdogan
LEISTUNGSERKLÄRUNG NR.	PSC250T-2026-01
SYSTEM ZUR BEWERTUNG (AVCP)	System 3
PRÜFLABOR (ERSTPRÜFUNG – ITT)	Laboratorium Chemii Budowlanej EFEKT, Zabrze, Polen
BRANDVERHALTEN	B-s1, d0 gemäß EN 13501-1

Deklarierte Eigenschaften

EIGENSCHAFT	KATEGORIE	ANFORDERUNG	DEKLARIERTE LEISTUNG
Haftzugfestigkeit	MPa – B	$\geq 0,3 \text{ MPa}$	$0,7 \text{ MPa} \pm 0,2$
Wasserdampfdurchlässigkeit	V1	$\geq 150 \text{ g/m}^2 \cdot \text{d}$	$2572 \pm 720 \text{ g/m}^2 \cdot \text{d}$
Brandverhalten	B-s1, d0	PN-EN 13501-1	B-s1, d0
Gesamtsonnenreflexion (TSR)	—	—	92 %
Wasseraufnahme	W3	$\leq 0,1 \text{ kg/m}^2 \cdot 24\text{h}$	$0,01 \text{ kg/m}^2 \cdot 24\text{h}$
VOC-Gehalt	—	—	$\leq 10 \text{ g/l}$ gemäß EU-Vorgaben

Äquivalente wärmetechnische Systemleistung

SYSTEMWERT	EINHEIT	WERT
Äquivalente wärmetechnische Leistung (PSC)	W/mK	0,000120
Äquivalente wärmetechnische Leistung (PSC interior)	W/mK	0,000416

HINWEIS ZU DEN SYSTEMLEISTUNGSWERTEN

Die angegebenen Werte stellen Systemleistungswerte dar und entsprechen nicht der Wärmeleitfähigkeit eines Materials im Sinne der Normen EN 12667 oder EN 12664. Lambda ermittelt unter definierten Prüfbedingungen (Hotbox-Verfahren) durch das Łukasiewicz-Forschungsnetzwerk – Institut für Keramik und Baustoffe, bestätigt durch den TÜV.

Die CE-Kennzeichnung erfolgt in Übereinstimmung mit der Verordnung (EU) 2024/3110.

APPENDIX · DECLARATION OF PERFORMANCE

Declaration of Performance (DoP) – PSC 250 T/BUILD

Declaration of Performance No. PSC250T-2026-01 for PSC 250 T/BUILD — the formal basis of the CE marking per EN 15824.

The Declaration of Performance is the formal basis of the CE marking. It documents the performances of the product PSC 250 T/BUILD declared in accordance with the harmonised standard **EN 15824:2017-07**.

NOTE

The declaration is reproduced below in its legally binding German version.

Leistungserklärung Nr. **PSC250T-2026-01**

1. EINDEUTIGER KENNCODE DES PRODUKTTyps

PSC-250 T / BUILD

2. VERWENDUNGSZWECK

Mehrkomponentiges Material zur thermischen Isolierung und zum Schutz von Bauoberflächen.

3. VERANTWORTLICHE STELLE

PSCoat Zurynski, Özdoğan & Co. GmbH, Schützenstraße 81a, 58239 Schwerte · Verantwortlich: Mesut Özdoğan

4. BEVOLLMÄCHTIGTER

nicht zutreffend

5. SYSTEM ZUR BEWERTUNG (AVCP)

System 3

6. HARMONISIERTE NORM

EN 15824:2017-07

7. NOTIFIZIERTE STELLE

nicht zutreffend

Erklärte Leistung – Klassifizierung gemäß EN 15824:2017-07

BEZEICHNUNG	ERKLÄRTE LEISTUNG
Chemischer Charakter des Bindemittels	Wässrige Dispersion von Acrylharz
Zustand	wasserverdünnbar
Wasserdampfdurchlässigkeit	≤ 15 g/m ² ·d (Klasse V1)
Wasseraufnahme	≤ 0,1 kg/m ² ·h ^{0,5} (Klasse W3)
Haftzugfestigkeit (Bruchlast ≥ 0,3 N/mm ²)	erfüllt
Haftung nach 7 Tagen auf Betonuntergrund	1,4 N/mm ² – erfüllt
Haftung nach 7 Tagen auf Stahluntergrund	0,4 N/mm ² – erfüllt

Haftung nach 20 Tagen auf Beton (nach Frost-Tau-Zyklen) $\geq 0,3 \text{ N/mm}^2$ (gemessen $0,8 \text{ N/mm}^2$) – erfüllt

ERKLÄRUNG

Die Leistung des oben genannten Produkts entspricht der erklärten Leistung. Diese Leistungserklärung wird gemäß der Verordnung (EU) 2024/3110 unter der alleinigen Verantwortung der vorstehend genannten verantwortlichen Stelle erstellt.

APPENDIX · EVIDENCE

PFAS declaration

PSCoat declaration: the products contain no substances from the collective term PFAS (REACH, Title IV, Article 33).

NOTE

The declaration is reproduced below in its legally binding German version.

Unsere Erzeugnisse enthalten keine gesundheitsschädigenden Stoffe, die unter den Sammelbegriff **PFAS** (per- und polyfluorierte Alkylverbindungen) fallen – vor allem:

- Perfluorooctansäure (PFOA)
- Perfluorooctansulfonat (PFOS)
- Perfluornonansäure (PFNA)
- Perfluorhexansulfonsäure (PFHxS)
- Perfluorheptansäure (PFHpA)
- Perfluordecansäure (PFDA)

Auch wenn diese Stoffe noch nicht vollständig in die Kandidatenliste der gefährlichen Stoffe bei der ECHA aufgenommen sind, kennen wir die Verpflichtung aus Titel IV (Informationen in der Lieferkette) Artikel 33 (1 + 2) der REACH-Verordnung. Wir stellen unseren Abnehmern bei Änderungen der Kandidatenliste zeitnah Informationen zur Verfügung, falls hierdurch Inhaltsstoffe unserer Stoffe, Erzeugnisse, Zubereitungen oder Verpackungen betroffen sind.

VERANTWORTLICHE STELLE

PSCoat Zurynski, Özdogan & Co. GmbH

Schützenstraße 81a, 58239 Schwerte · Verantwortlich: Mesut Özdogan

APPENDIX · FUNDAMENTALS

A short materials science — how does the insulation work?

Fundamentals: ceramic nanospheres and the Knudsen effect — why the thermoreflective coating insulates.

NOTE

The materials-science explainer below is currently provided in German.

Keramik ist die Oberkategorie von Glas – Hauptkomponente beider Stoffe ist Quarzsand, beide haben also eine mineralische Basis. **Glaskeramik** vereint die Vorteile beider Werkstoffe: Sie wird zunächst als Glas hergestellt und anschließend durch kontrollierte Kristallisation in eine teilkristalline Struktur umgewandelt. Bekannte Beispiele sind Ceran-Kochfelder, Zerodur (Teleskopspiegel) und Dental-Glaskeramik für Zahnersatz.

01**WARUM GLASKERAMIK?**

Glaskeramik ist weder reines Glas noch herkömmliche Keramik, sondern ein eigenständiger Hightech-Werkstoff. Sie verbindet die Formbarkeit von Glas mit der mechanischen Festigkeit und Temperaturbeständigkeit von Keramik – und lässt sich zu extrem dünnen, dennoch stabilen Wandungen verarbeiten.

02**WAS STECKT IN PSCOAT?**

PSCoat enthält Keramik-Nanosphären – geschlossene, hohle Kugeln aus Glaskeramik. Sie enthalten Vakuum oder extrem wenig Gas; dadurch wird die Wärmeleitung drastisch reduziert.

Zwei Effekte, ein Prinzip: die Thermoskanne

Eine Thermoskanne hält heiße oder kalte Flüssigkeiten lange auf Temperatur – nicht durch eine dicke Wand, sondern durch zwei Prinzipien im Doppelwandaufbau: eine verspiegelte Oberfläche, die Strahlungswärme reflektiert, und ein Vakuum zwischen den Wänden, das die Wärmeleitung fast vollständig unterbindet. PSCoat nutzt dieselben zwei Prinzipien – nur in einer Beschichtung von wenigen Millimetern statt in einer Doppelwand.

Dasselbe Prinzip in beiden Fällen: Reflexion an der Oberfläche (Effekt 1) und unterbrochene Wärmeleitung durch Vakuum im Material (Effekt 2).

01

EFFEKT 1: REFLEXION (THERMOREFLEXION / TSR)

Die Beschichtung reflektiert einen hohen Anteil der einfallenden Sonnenstrahlung über das gesamte Spektrum, einschließlich Infrarot (Total Solar Reflectance, TSR). Wie die Spiegelschicht der Thermoskanne wirkt das an der **Oberfläche**: Strahlungswärme wird zurückgeworfen, bevor sie in den Untergrund eindringt.

02

EFFEKT 2: VAKUUM-ISOLATION (KNUDSEN-EFFEKT)

Die geschlossenen Kammern in den Keramik-Nanosphären bilden Barrieren für den Wärmetransport. Der *Knudsen-Effekt* tritt auf, wenn die Hohlräume kleiner sind als die mittlere freie Weglänge der Gasmoleküle – bei normalen Gasen nur wenige Nanometer. In so kleinen Räumen können die Gasmoleküle nicht mehr frei kollidieren und Wärme übertragen, sondern stoßen hauptsächlich an die Wände. Wie im Vakuum-Zwischenraum der Thermoskanne wirkt das **im Material**: Wärmeleitung wird auf Ebene der einzelnen Sphäre praktisch unterbunden.

WARUM BEIDE EFFEKTE ZUSAMMEN ZÄHLEN

Reflexion verhindert, dass Strahlungswärme überhaupt eindringt; die vakuumgefüllten Keramik-Nanosphären verhindern, dass die verbleibende Wärme weitergeleitet wird. Erst das Zusammenspiel beider Prinzipien erklärt die extrem niedrigen Wärmeleitfähigkeitswerte (λ) der Beschichtung – wie bei der Thermoskanne ist es nicht ein Effekt allein, sondern die Kombination aus Spiegelfläche und Vakuum.

Warum Glaskeramik ideal ist

- hohe Temperaturbeständigkeit,
- chemische Stabilität,
- verarbeitbar zu extrem dünnen, stabilen Wandungen,
- ermöglicht die Herstellung hocheffizienter, vakuumgefüllter Keramik-Nanosphären.

THERMISCHE GRENZE

CHAPTER 24 · BUILDING PHYSICS

Building-physics classification & limits

Nanofassadendämmung is a thermoreflective thin-film coating. This chapter classifies its energy effect and openly names the limits of the assessment — in particular in relation to classic insulation materials and to the German Buildings Energy Act (GEG).

01

WHAT DO THE SYSTEM'S λ VALUES MEAN?

The stated λ values (e.g. 0.000120 W/mK) are **system performance values**, determined under defined test conditions (hot-box method). They do **not** correspond to the thermal conductivity of a material within the meaning of the standards EN 12667 or EN 12664.

02

IS THIS A CLASSIC INSULATION MATERIAL?

No. It is a thermoreflective thin-film coating whose effect is based on radiation reflection and reduced heat conduction — not a volume-insulating material with a declared design value λ .

03

DOES THE SYSTEM REPLACE A U-VALUE VERIFICATION PER GEG?

No. Since there is no material λ per EN 12667/12664, the system cannot simply be inserted into a U-value calculation. An energy verification per GEG is project-specific and must be carried out by a qualified person.

04

HOW DOES THE SYSTEM BEHAVE WITH REGARD TO MOISTURE?

The overall build-up (primer + functional layer + top coat in combination) is vapour-permeable with a calculated system value of $s_d \approx 0.44$ m (class V2 per EN 15824) and has low water absorption (class W3). This is favourable for the moisture balance; the specific condensation protection must nevertheless be checked per object.

Energy effect — classified correctly

The thermoreflective effect can influence the heat input through radiation and the surface temperatures. These effects are real, but strongly dependent on boundary conditions (orientation, solar exposure, substrate, climate) and cannot be translated wholesale into an equivalent U-value. Statements on energy savings must therefore always be considered in the specific application.

LIMITS OF THE ASSESSMENT

The system performance values are not design values of thermal conductivity that can be used for building-control purposes. For verifications per GEG, for U-value calculations and for condensation protection (e.g. per the Glaser method), the recognised rules of technology and a qualified, object-specific assessment prevail. This handbook does not replace such an assessment.

AUTHORITATIVE SOURCES

The declared characteristic values and the legal basis are set out in Chapters 20 (CE marking) and 21 (Declaration of Performance); the working principle is described in Chapters 04 and 23. The derivation of the system value for water-vapour permeability (class V2) is in the manufacturer information “Calculated system value for water-vapour permeability” (see Nanofassadendämmung system page).



RELEASE

Release & confirmation

Confirmation of the system handbook in the present version by the responsible person.

NOTE

The binding release relates to the German original version of this handbook.

Hiermit wird das Systemhandbuch **Nanofassadendämmung** (mkm-FAS-001) in der vorliegenden Version **1.0** (Ausgabe Juni 2026) geprüft und durch den Verantwortlichen freigegeben und bestätigt.

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