

SBC PRODUCT DESCRIPTION

THERMO SHIELD® AQUA IR 2K

Two-Component Water-Based Infrared Reflective Acrylic–Polyurethane Protective Coating

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1. PRODUCT OVERVIEW

THERMO SHIELD® AQUA IR 2K is a premium-quality, two-component, water-based acrylic–polyurethane protective coating developed for industrial and construction applications requiring outstanding mechanical durability, long-term weather resistance and reliable surface protection.

The coating combines advanced polymer technology with infrared-reflective (IR/NIR) pigments, UV absorbers and light stabilisers to provide durable protection against solar radiation, mechanical wear and environmental exposure.

The system is suitable for both interior and exterior applications and may be applied to a wide range of mineral and metallic substrates when used with the appropriate primer system.

2. PRODUCT DEVELOPMENT OBJECTIVE

Modern protective coating systems are expected to provide considerably more than decorative finishes.

Industrial and infrastructure projects require coating systems capable of delivering:

- Long-term surface protection
- Excellent mechanical durability
- Superior weather resistance
- Extended service life
- Energy-efficient performance
- Environmentally responsible technology

THERMO SHIELD® AQUA IR 2K has been specifically developed to meet these demanding technical requirements.

3. KEY BENEFITS

THERMO SHIELD® AQUA IR 2K combines numerous performance characteristics within a single coating system.

Principal Advantages

- Excellent adhesion to properly prepared substrates
 - Outstanding abrasion resistance
 - Excellent scratch resistance
 - High impact resistance
 - Superior UV resistance
 - Long-term colour stability
 - Excellent weather resistance
 - Infrared (IR/NIR) reflective technology
 - Low dirt pick-up
 - Good chemical resistance
 - High mechanical durability
 - Water-based technology
 - Low VOC emissions
 - Easy application
 - Long service life
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4. TECHNOLOGY

THERMO SHIELD® AQUA IR 2K is based on an advanced two-component acrylic–polyurethane binder system.

After mixing Components A and B, a chemical cross-linking reaction takes place, producing a dense polymer network with outstanding mechanical properties.

The resulting coating provides:

- Excellent adhesion
- High hardness
- Controlled flexibility
- Outstanding abrasion resistance
- Resistance to mechanical damage
- Long-term protective performance

The specially engineered infrared-reflective pigments reflect a significant proportion of near-infrared solar radiation while maintaining the desired visible colour.

This significantly reduces solar heat absorption by the coated surface and contributes to lower substrate temperatures and improved coating durability.

5. TECHNICAL ADVANTAGES

Thermal Performance

The IR/NIR reflective technology reduces solar heat absorption, thereby lowering surface temperatures during exposure to sunlight.

This is particularly advantageous for:

- Roof systems
 - Industrial facilities
 - Parking areas
 - Exterior steel structures
 - Large paved surfaces
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Mechanical Performance

The cross-linked polyurethane structure provides excellent resistance to:

- Abrasion
 - Scratching
 - Mechanical impact
 - Rolling traffic
 - Heavy industrial service conditions
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Weather Resistance

The coating provides long-term resistance against:

- Ultraviolet radiation
 - Rain
 - Frost
 - Humidity
 - Temperature fluctuations
 - Environmental ageing
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Aesthetic Durability

When correctly applied, the coating maintains:

- Colour stability
- Gloss retention
- Surface uniformity
- Decorative appearance

throughout extended service periods.

6. TYPICAL APPLICATIONS

THERMO SHIELD® AQUA IR 2K is suitable for a wide variety of applications where long-term protection, high mechanical durability and improved thermal performance are required.

Industrial Facilities

Recommended applications include:

- Manufacturing plants
- Production facilities
- Logistics centres
- Warehouses
- Industrial flooring
- Service buildings

Its excellent abrasion resistance and ease of cleaning make it particularly suitable for surfaces subjected to intensive mechanical use.

Transport Infrastructure

The coating is recommended for:

- Car parks
- Parking garages
- Traffic routes
- Pedestrian walkways
- Logistics terminals
- Loading areas

Its combination of mechanical strength and weather resistance provides outstanding long-term performance.

Energy Facilities

Recommended applications include:

- Power generation facilities
 - Electrical substations
 - Energy distribution centres
 - Technical service buildings
 - Renewable energy infrastructure
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Commercial and Public Buildings

Suitable for use in:

- Shopping centres
- Office buildings
- Educational facilities
- Healthcare buildings
- Public institutions

for both interior and exterior protective applications.

Architectural Applications

Suitable substrates include:

- Façades
- Roof systems
- Steel structures
- Concrete structures
- Decorative industrial finishes

7. SUSTAINABILITY

THERMO SHIELD® AQUA IR 2K has been developed in accordance with modern sustainability principles and current environmental expectations for high-performance coating systems.

Its water-based formulation contributes to:

- Reduced emissions of volatile organic compounds (VOC);
- Improved occupational safety during application;
- Lower environmental impact;

- Easier handling and cleaning of application equipment;
- Compliance with modern environmentally responsible construction practices.

The infrared-reflective pigment technology reduces solar heat absorption on exposed surfaces, helping to minimise thermal loading of building envelopes and supporting energy-efficient building design.

8. QUALITY ASSURANCE

THERMO SHIELD® AQUA IR 2K is manufactured under controlled production conditions using carefully selected raw materials and documented manufacturing procedures.

Quality assurance activities include:

- Incoming raw material inspection;
- Verification of formulation consistency;
- Continuous production process monitoring;
- Finished product quality control;
- Batch traceability and documentation.

Each production batch is inspected and verified to ensure conformity with the specified technical requirements and SBC's internal quality management procedures.

9. TECHNICAL SUPPORT

SBC provides comprehensive technical support throughout every stage of a project, from design to application and maintenance.

Technical support services include:

- Selection of the appropriate coating system;
- Substrate evaluation;
- Coating specification development;
- Surface preparation recommendations;
- Application guidance;
- Project-specific technical consultation;
- On-site technical assistance where required;
- Post-application technical support.

For complex industrial, infrastructure or architectural projects, SBC recommends consulting its Technical Service Department before commencement of application.

10. SBC COMMITMENT

SBC is committed to the development and manufacture of innovative protective coating systems that meet the highest technical expectations of modern construction, industrial facilities and infrastructure projects.

THERMO SHIELD® AQUA IR 2K reflects this commitment by combining outstanding mechanical durability, long-term weather resistance, advanced infrared-reflective technology and environmentally responsible water-based chemistry into a single high-performance coating system.

Through continuous research, product development and quality improvement, SBC aims to provide reliable coating solutions that deliver long service life, technical excellence and sustainable performance for customers worldwide.

11. LEGAL NOTICE

This Product Description has been prepared using the technical knowledge, laboratory testing and practical experience available at the date of publication.

The information contained in this document is provided for general guidance only and does not replace the applicable **Technical Data Sheet (TDS)**, **Safety Data Sheet (SDS)** or project-specific technical specifications.

Actual product performance depends on numerous factors including substrate condition, surface preparation, environmental conditions, application method, film thickness, curing conditions and service environment.

It is the responsibility of the user to verify that the product is suitable for the intended application and that it is used in accordance with the latest technical documentation issued by SBC, applicable standards and all relevant statutory requirements.

SBC reserves the right to modify product formulations, technical documentation and recommendations without prior notice as part of its continuous product development programme.