

SBC

TECHNICAL DATA SHEET (TDS)

SOLAR GUARD PRO AQUA TRAPPAULIN AND RUBBER PAINT

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Product Type: Two-component waterborne polyurethane coating system

1. PRODUCT IDENTIFICATION

Commercial Product Name

SOLAR GUARD PRO AQUA TRAPPAULIN AND RUBBER PAINT

Product Family

SOLAR GUARD PRO AQUA IR UV Coating Systems

Product Type

Two-component, waterborne, chemically cross-linking aliphatic polyurethane coating designed for flexible substrates.

Components

- Component A – Pigmented polyurethane dispersion
 - Component B – Water-emulsifiable aliphatic polyisocyanate curing agent
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2. PRODUCT DESCRIPTION

SOLAR GUARD PRO AQUA TRAPPAULIN AND RUBBER PAINT is a professional-grade two-component waterborne polyurethane coating system specifically developed for the long-term protection and decorative finishing of flexible substrates.

The coating incorporates advanced infrared (IR) reflective pigments, high-performance ultraviolet stabilizers and light-resistant additives that provide excellent weather resistance, colour stability and mechanical durability.

After curing, the coating forms a highly flexible protective film with excellent adhesion, superior outdoor durability and long-term resistance to moisture, ultraviolet radiation and environmental exposure.

3. INTENDED USE

The coating has been developed for applications requiring excellent flexibility together with outstanding outdoor durability.

Recommended applications include:

- PVC tarpaulins
 - Rubber surfaces
 - Inflatable boats
 - Flexible vehicle components
 - PVC products
 - Aluminium
 - Galvanized steel
 - Wood
 - Other properly prepared flexible substrates
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4. MAIN FEATURES

Key product benefits include:

- Two-component polyurethane technology
 - Waterborne formulation
 - Low VOC content
 - Excellent UV resistance
 - IR reflective pigment technology
 - Reduced surface temperature
 - Outstanding flexibility
 - High mechanical strength
 - Excellent abrasion resistance
 - Superior adhesion
 - Excellent weather resistance
 - Long service life
 - Easy maintenance
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5. OPERATING PRINCIPLE

The coating cures through a chemical cross-linking reaction initiated by mixing Components A and B.

The polyurethane binder provides:

- excellent elasticity;

- outstanding adhesion;
- high mechanical strength;
- excellent water resistance;
- long-term durability;
- resistance to weathering.

Special infrared reflective pigments reduce heat absorption by reflecting a significant portion of the near-infrared solar spectrum (approximately 700–2500 nm).

When appropriate IR colours are selected, the coating system may reduce surface temperatures by up to **10–15°C** compared with conventional colour systems.

6. PRODUCT RANGE

The coating system is available in the following standard colours:

- PUR White IR UV
- PUR Red IR TR UV
- PUR Yellow IR TR UV
- PUR Dark Blue IR TR UV
- PUR Dark Green IR TR UV
- PUR Orange IR TR UV
- PUR Light Blue IR TR UV
- PUR Light Green IR TR UV

Custom production is also available according to:

- RAL colour system
- NCS colour system
- Pantone colours
- Customer-specific colour samples

Different colours may be intermixed where technically appropriate.

7. TECHNICAL CHARACTERISTICS

Property	Value
Product type	Two-component waterborne polyurethane coating
Binder	Aliphatic polyurethane

Property	Value
Number of components	Two
Thinner	Water
Mixing ratio	6.5 : 1 (A:B by weight)
Pot life	Minimum 2 hours at 20°C
VOC content	≤130 g/L
Shelf life	36 months
Packaging	According to current commercial packaging
Colours	Standard colours, RAL, NCS or custom colours

8. PHYSICAL PROPERTIES

Component A

Property	Value
Appearance	Homogeneous liquid
Colour	According to selected colour
pH	7.5–9.5
Flow time (DIN 4 / 20°C)	40 seconds
Density	1.0–1.3 g/cm³
Non-volatile content	20–50%
Particle size	Maximum 5 µm

Component B

Property	Value
Appearance	Clear liquid
Flow time (DIN 4 / 20°C)	70 seconds

Mixed Material

Property	Value
Non-volatile content	80%

Property	Value
Density	According to mixed system

9. SUITABLE SUBSTRATES

The coating may be applied onto properly prepared:

- PVC tarpaulins;
- PVC-coated fabrics;
- EPDM rubber;
- natural rubber;
- synthetic rubber;
- aluminium;
- galvanized steel;
- primed steel;
- wood;
- other compatible substrates.

Trial applications are recommended before full-scale use.

10. SURFACE PREPARATION

Proper adhesion can only be achieved on clean, dry and sound substrates.

The surface shall be free from:

- dust;
- oil;
- grease;
- wax;
- silicone contamination;
- loose coatings;
- corrosion products;
- any contaminants impairing adhesion.

Mechanical cleaning or suitable degreasing shall be carried out where necessary.

Application shall only commence after the substrate has completely dried.

11. MIXING

Components A and B shall be mixed immediately before use.

Mixing ratio

6.5 parts Component A : 1 part Component B (by weight)

Mix thoroughly using a low-speed mechanical mixer until a completely homogeneous material is obtained.

The mixed material shall be applied within its specified pot life.

Pot life

Minimum 2 hours at 20°C

12. APPLICATION

The coating may be applied by:

- brush;
- roller;
- conventional spray;
- airless spray (subject to suitable viscosity).

Where necessary, the material may be adjusted with a small quantity of clean water.

Uniform film thickness shall be maintained throughout the application.

Subsequent coats shall only be applied after adequate drying of the previous coat.

Recommended system:

- **First coat:** SOLAR GUARD PRO AQUA PUR White IR UV (where required as a base coat)
- **Finish coat:** SOLAR GUARD PRO AQUA TRAPPAULIN AND RUBBER PAINT in the selected colour

13. RECOMMENDED FILM THICKNESS

The coating shall be applied at the specified film thickness in order to achieve the intended performance.

Parameter	Value
Recommended number of coats	2
Recommended dry film thickness per coat	Approx. 60 µm
Maximum dry film thickness per coat	80–100 µm
Theoretical coverage	5–7 m ² /kg/coat

Actual consumption depends on:

- substrate roughness;
- application method;
- substrate absorption;
- application equipment;
- practical application losses.

14. DRYING AND CURING TIMES

Typical drying times under standard laboratory conditions (20 ±2°C):

Condition	Time
Dust dry	Max. 1 hour
Through dry	Max. 24 hours
Recoat able	24 hours
Recoat able at 60°C	1 hour
Full cure	5 days

Accelerated cure (50–70°C) 1–1.5 hours

Drying times are influenced by:

- ambient temperature;
- relative humidity;
- air circulation;
- applied film thickness.

15. APPLICATION CONDITIONS

Recommended application conditions:

Parameter	Requirement
Substrate condition	Clean and dry
Substrate temperature	Minimum +10°C
Condensation	Not permitted
Rain	Not permitted
Application equipment	Clean and oil-free

Application shall not be carried out:

- during rainfall;
- in fog;
- where condensation is present;
- under freezing conditions;
- on contaminated substrates.

16. MECHANICAL PROPERTIES

After full curing, the coating provides excellent mechanical performance while maintaining high flexibility.

Laboratory testing demonstrates compliance with the following characteristics.

Property	Typical Result	Standard
Adhesion	GT0 (Class 0)	ISO 2409
Erichsen cupping	≥8 mm	ISO 1520
Impact resistance	≥60 cm / 1000 g	ISO 6272
Elongation at break	Approx. 120%	Internal laboratory test

The coating is capable of following deformation of flexible substrates without cracking or delamination.

17. ABRASION RESISTANCE

Abrasion resistance has been evaluated using the Taber Abraser test.

Testing confirms that the cured coating maintains:

- surface integrity;
- colour stability;
- adhesion;
- continuous protective performance;

under normal mechanical service conditions.

Detailed abrasion test data are provided in the corresponding laboratory reports.

18. WEATHERING AND UV RESISTANCE

The coating has been developed for long-term exterior exposure.

The cured coating demonstrates excellent resistance to:

- ultraviolet radiation;
- rainfall;
- humidity;
- temperature fluctuations;
- outdoor environmental exposure.

Accelerated weathering tests confirm that the coating maintains its integrity without significant cracking, blistering or loss of adhesion.

19. SOLAR REFLECTANCE PERFORMANCE

SOLAR GUARD PRO AQUA TRAPULIN AND RUBBER PAINT incorporates specially developed infrared reflective pigments that reduce heat absorption by reflecting a significant proportion of solar radiation.

The coating system contributes to:

- reduced surface temperatures;
- lower thermal loading;
- improved long-term coating durability;
- enhanced colour stability.

Solar Reflectance (SR), Total Solar Reflectance (TSR) and other solar performance values are determined in accordance with the relevant laboratory test reports.

20. WATER AND WEATHER RESISTANCE

Following complete curing, the coating exhibits excellent water resistance.

The cured film withstands exposure to:

- rainfall;
- prolonged moisture;
- high humidity;
- freeze-thaw cycles;
- outdoor climatic conditions.

When correctly applied, the coating maintains both its decorative appearance and protective performance throughout its service life.

21. CHEMICAL RESISTANCE

The cured polyurethane coating provides resistance to a wide range of commonly encountered chemicals.

Good resistance is achieved against:

- water;
- dilute salt solutions;
- atmospheric pollutants;
- common cleaning agents;
- UV-induced degradation.

Where prolonged exposure to aggressive acids, alkalis or solvents is anticipated, compatibility testing is recommended before application.

22. COLOUR AND GLOSS RETENTION

The coating incorporates UV-stable pigments together with advanced light stabilisers.

These technologies minimise:

- colour fading;
- chalking;
- loss of appearance;
- weather-induced degradation.

Long-term colour retention depends upon:

- selected colour;
- geographical location;
- UV intensity;
- environmental exposure conditions.

23. CLEANING AND MAINTENANCE

Regular cleaning contributes significantly to extending the service life of the coating.

Recommended cleaning methods include:

- neutral pH detergents;
- soft brushes or sponges;
- low-pressure water cleaning.

The following should be avoided:

- aggressive solvents;

- strong acidic or alkaline cleaners;
 - abrasive metallic cleaning tools.
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24. REPAIRABILITY

Localised coating damage may be repaired.

Recommended repair procedure:

1. Clean the damaged area.
2. Lightly abrade if required.
3. Remove all dust.
4. Degrease the surface.
5. Reapply the coating to the specified film thickness.

Properly executed repairs restore the protective performance of the coating system.

25. STORAGE

Store the product in its original unopened containers.

Recommended storage conditions:

- dry environment;
- protected from direct sunlight;
- frost-free storage;
- well-ventilated warehouse.

Containers shall remain tightly sealed until use.

26. SHELF LIFE

36 months

when stored in unopened original containers under recommended storage conditions.

Opened containers should be used as soon as practicable.

27. PACKAGING

The coating is supplied in the manufacturer's standard packaging configurations.

Packaging consists of:

- Component A;

- Component B;
- Complete two-component kit.

Current package sizes are available in the manufacturer's product catalogue.

28. HEALTH, SAFETY AND ENVIRONMENT

The product shall be handled in accordance with:

- applicable occupational health and safety regulations;
- the current Safety Data Sheet (SDS);
- good industrial hygiene practices.

Recommended personal protective equipment includes:

- protective gloves;
- safety glasses;
- suitable protective clothing;
- respiratory protection where necessary.

Refer to the relevant Safety Data Sheet for detailed safety information.

29. QUALITY ASSURANCE

The coating is manufactured under controlled production conditions.

Routine quality control includes verification of:

- incoming raw materials;
- mixing parameters;
- viscosity;
- density;
- colour;
- non-volatile content;
- packaging quality.

Finished products are released only after successful completion of all internal quality control procedures.

30. TRACEABILITY

Each production batch is assigned a unique batch identification number.

The batch number provides full traceability to:

- production date;
 - raw materials;
 - manufacturing records;
 - quality control documentation.
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31. RELATED DOCUMENTS

- Safety Data Sheet (SDS)
 - Application Guide
 - System Specification
 - Product Description
 - Laboratory Test Reports
 - Quality Control Documentation
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32. LIMITATIONS

This product shall only be used for its intended applications.

Do not apply:

- on improperly prepared substrates;
 - onto wet surfaces;
 - onto contaminated substrates;
 - outside the manufacturer's recommended application conditions.
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33. DISCLAIMER

The information contained in this Technical Data Sheet is based on laboratory testing, practical experience and the manufacturer's current knowledge.

Actual performance may vary depending upon substrate condition, application technique, environmental exposure and service conditions.

It remains the user's responsibility to determine the suitability of the product for the intended application.