Smithsonian Institution

Office of Engineering Design & Construction

DESIGN DATA BOOK

PROJECT NO.: **2030101**

PROJECT TITLE: **MSC: Replace Pod 5 Roof**

FACILITY: **MUSEUM SUPPORT CENTER (MSC)**

DATE: 15 March, 2023
Final Submission

This project is approved as being in conformance with applicable provisions of the Smithsonian Directive (SD) 410.

Michael J. Carrancho, P.E., Associate Director Date

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Washington, D.C. 20013-7012

FLEXIBLE LIFELINE SYSTEMS®
AT THE HEIGHT OF INNOVATION

FLEXGUARD PERMANENT

PERMANENT GUARDRAIL SOLUTION FOR ROOF EDGE SAFETY

FlexGuard Permanent is a freestanding guardrail system that does not penetrate the roof membrane. It's modular design takes the complexity and high cost out of roof edge protection, providing a guardrail system that ensures the safety of workers who access a building's roof top. FlexGuard Permanent's unique design provides long-term durability and is easy to install.

FEATURES AND BENEFITS

- **Non-penetrating** No drilling, special anchoring or penetration of the roof membrane.
- **Easily Installed** No welding, bending, threading or special tools are required to complete a reliable and safe rooftop railing installation.
- **Adaptable** applicable to almost all variations of flat roofs.
- **Versatile** FlexGuard Permanent can be used for multiple safety applications.
- **Durable** FlexGuard Permanent's components and fittings are galvanized to ASTM standards on all assemblies.

FLS GUARD®

FLEXGUARD PERMANENT

RAILING SYSTEM OPTIONS

Base Options

Railing can utilize the counterbalance system that supports posts by spreading the weight out, or weighted bases that have a smaller footprint, but require return sections of railing to anchor the system in place.

Infill Panels

Infill panels attach to the top and bottom rail of the system. Only approved materials can be attached to the system due to wind loading requirements. Custom chain link and picket options are also available.

Integrated Toeboard

The base of the system is designed to connect to an extruded aluminum toeboard. This component is needed when there is no parapet to protection objects from falling over the edge of the rooftop.

FLS GUARD®

07 - Thermal and Moisture Protection

RHA ALUMINUM
ELECTRIC ACTUATION ROOF HATCH

Application
Acudor Electric Actuation Roof Hatches are designed to provide convenient, economical access to the roof of a building with the ease of automation. By adding an electric actuator, our hatch can be opened and closed remotely. This feature is available on small ladder access hatches, and more importantly on larger equipment hatches, which are typically heavy and difficult to operate.

Features RHA
- Choice of operating switch and/or remote control
- 12V/24V DC Electrical Actuator. Suitable for mains supply AC 120V/60Hz or 230V/50Hz
- Can open to any angle up to 80 degrees max
- Battery back-up
- Synchronized operation for large sizes

Optional Features RHA
- Stainless Steel Hardware
- Curb Mounted Units
- Louvered Curbs
- Curb pitch corrected for sloped roof

RHA Specifications:
Cover: Double-skin construction ("in box type design") with 1" cellulose insulation and a continuous EPDM foam weather/draft seal gasket that is attached to the inside of cover to provide a flush, tight fit. Designed to support a live load of 40lbs./sq. ft.

Curb: 1" thick fiberboard roof insulation at curb exterior. Curb is 12" high, with 3.375" wide bottom flange and pre-drilled mounting holes

Door Latch: Self Locking feature of Electric Actuator replaces need for conventional locks in standard designs Additional locking arrangements available upon request.

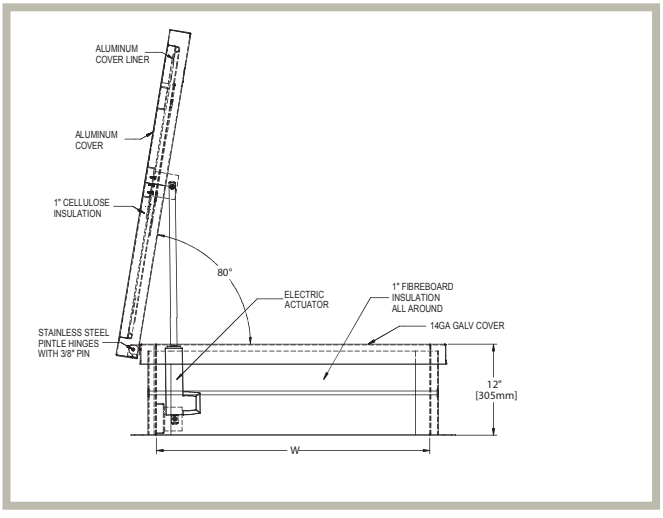
Opening: Convenient electric actuation with options of Push Button Switch, Key Switch and/or Remote Control. Can be kept open at any angle for ventilation. Single covers with more than one actuator operate on synchronous mode. Hatches with more than one cover have at least two actuators which need to be operated in sequence. Battery back-up is provided for emergency exits to ensure power supply in case of power outage. Control Box keeps the batteries charged.

Finish: Aluminum: Mill Finish

RHA STANDARD SIZES
(Special sizes up to 197" x 197" available upon request)

Model	Curb ID W&L inches (mm)	Weight per Hatch lbs. (kg.)
EA3232	24 X 24 (610 X 610)	60 (27.3)
EA3244	24 X 36 (610 X 914)	70 (31.8)
EA3838	30 X 30 (762 X 762)	75 (34.0)
EA3844	30 X 36 (762 X 914)	85 (38.6)
EA3862	30 X 54 (762 X 1372)	135 (61.4)
EA3804	30 X 96 (762 X 2438)	245 (111.4)
EA4444	36 X 36 (914 X 914)	95 (43.2)
EA5656	48 X 48 (1219 X 1219)	115 (52)

For detailed specifications see submittal sheet



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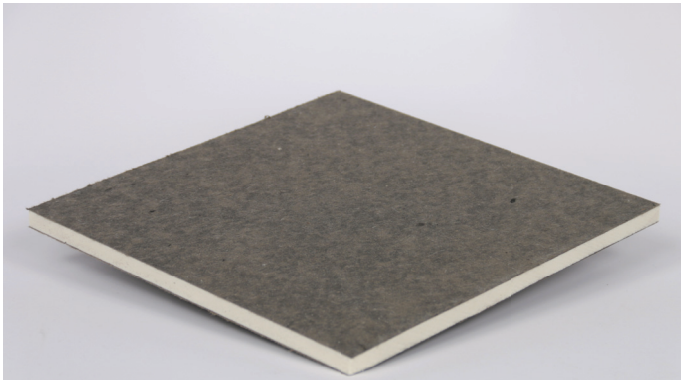
CARLISLE SYNTEC SYSTEMS

InsulBase® HD POLYISO
Insulation



Overview

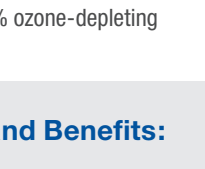
InsulBase HD is a rigid-roof insulation cover board composed of a high-density closed-cell polyisocyanurate foam core bonded on each side to glass-reinforced felt (GRF). Suitable for both re-roofing and new construction applications, InsulBase HD is specifically designed for use as a cover board in mechanically-attached single-ply systems only. InsulBase HD delivers an R-value of 2.5 and a compressive strength of 80 psi.

Features and Benefits

- High-density insulating cover board
- 80 psi compressive strength
- Exceptional protection against hail and rooftop traffic
- Higher R-value than wood fiber and gypsum cover boards
- For use on mechanically-attached and induction-welded single-ply roofing systems only
- Environmentally friendly construction with 0% ozone-depleting components and CFC free

Productivity Boosting Features and Benefits:

- Lightweight and easy to cut, handle, and install — no crumbling of material
- Five times higher R-value than gypsum cover boards
- ⅕ the weight of gypsum cover boards



Panel Characteristics

- Available in 4' x 4' (1220 mm x 1220 mm) and 4' x 8' (1220 mm x 2440 mm) panels in thickness of ½" (13 mm)

Applications

- Mechanically Attached Single-Ply Roof Systems Only

Installation

Mechanically Attached Single-Ply Systems

InsulBase HD panels must be secured to the roof deck with fasteners and plates (appropriate to the deck type). Butt edges and stagger joints of adjacent panels. Install the roof membrane according to Carlisle's specifications.

Review Carlisle specifications and details for complete installation information.

Codes and Compliances

- ASTM C1289, Type II, Class 1, Grade 3 (25 psi min)
- International Building Code (IBC) Section 2603
- UL Standard 790, 263 and 1256: Component of Class A Roof Systems (refer to UL Roof Materials' system directory)
- FM® Standards 4450/4470: Class 1 approval for steel roof-deck constructions (refer to FM RoofNav℠)
- California Code of Regulations, Title 24, Insulation Quality Standard License #TI-1418
- Third-party certification with the PIMA Quality Mark for Long-Term Thermal Resistance (LTTR) values
- CAN/ULC 5704, Type 2 & 3, Class 3

Precautions

Insulation must be protected from open flame and kept dry at all times. Install only as much insulation as can be covered the same day by completed roof-covering material. Protect installed product from excessive foot traffic. Carlisle will not be responsible for specific building and roof design by others, for deficiencies in construction or workmanship, for dangerous conditions on the jobsite or for improper storage and handling. Technical specifications shown in this literature are intended to be used as general guidelines only and are subject to change without notice. Call Carlisle for more specific details, or refer to PIMA Technical Bulletin No. 109: Storage & Handling Recommendations for Polyiso Roof Insulation.

CARLISLE SYNTEC SYSTEMS

InsulBase HD POLYISO
Insulation

Typical Properties and Characteristics (ASTM C1289)

Physical Property	Test Method	Value
Compressive Strength	ASTM D1621 (modified)	80 psi (138 kPa, Grade 3)
Dimensional Stability	ASTM D2126	2% linear change (7 days)
Moisture Vapor Permeance	ASTM E96	<1.5 perms (57.5 ng/(Pa•s•m^2)
Water Absorption	C1763	<3% volume

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

CLASSIFIED C UL US

Foamed plastic as roof deck construction material with resistance to an internal fire exposure only for use in construction no.(s) 120 and 123. See UL Directory of Products Certified for Canada and UL Roofing Materials and Systems Directory. 99DL.

PIMA QualityMark℠ The Certified LTTR-value

800-479-6832 | P.O. Box 7000 | Carlisle, PA 17013 | Fax: 717-245-7053 | **www.carlislesyntec.com**

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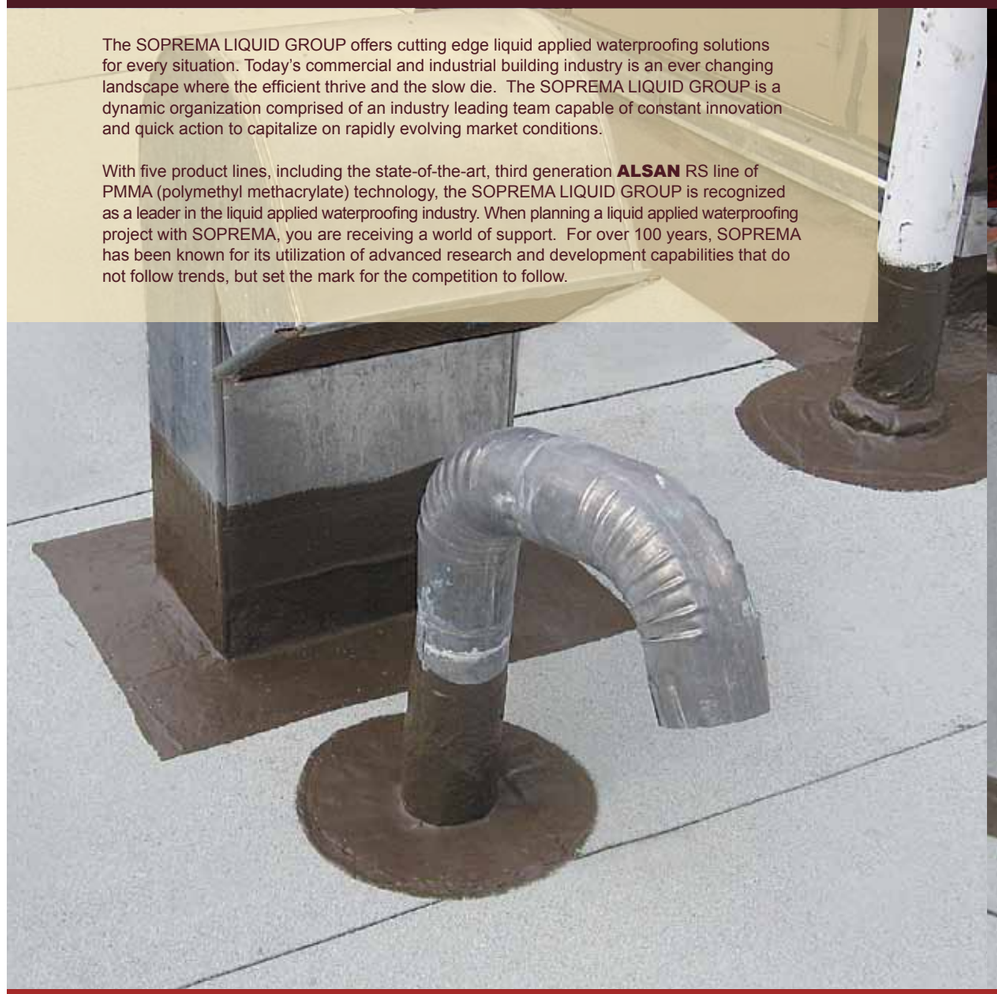
LIQUID APPLIED WATERPROOFING

The SOPREMA LIQUID GROUP offers cutting edge liquid applied waterproofing solutions for every situation. Today's commercial and industrial building industry is an ever changing landscape where the efficient thrive and the slow die. The SOPREMA LIQUID GROUP is a dynamic organization comprised of an industry leading team capable of constant innovation and quick action to capitalize on rapidly evolving market conditions.

With five product lines, including the state-of-the-art, third generation **ALSAN** RS line of PMMA (polymethyl methacrylate) technology, the SOPREMA LIQUID GROUP is recognized as a leader in the liquid applied waterproofing industry. When planning a liquid applied waterproofing project with SOPREMA, you are receiving a world of support. For over 100 years, SOPREMA has been known for its utilization of advanced research and development capabilities that do not follow trends, but set the mark for the competition to follow.



SOPREMA
ALSAN FLASHING

SOPREMA

SOPREMA, Inc.
310 Quadral Drive
Wadsworth, OH 44281

www.soprema.us
1.800.356.3521

AF-9/11

SOPREMA

SINGLE-COMPONENT RESIN - DIFFICULT FLASHING JOBS MADE EASY

ALSAN FLASHING

ALSAN FLASHING is a patented polyurethane/bitumen resin, single-component, moisture cured compound that utilizes low solvent technologies. Used in combination with **ALSAN PolyFleece**, the system creates a watertight, puncture and UV resistant liquid applied flashing or field membrane that is preferred by roofing contractors, architects and building owners.

Single-Component: Open the Can and Go

ALSAN PolyFleece is a flexible, non-woven, polyester fabric reinforcement used in Soprema **ALSAN** cold liquid-applied, single-component polyurethane reinforced roofing and waterproofing membrane systems. It is designed to improve tear strength, puncture resistance, flexural fatigue and crack bridging capabilities while maintaining membrane uniformity.

ALSAN PolyFleece is recommended and widely used as flashing reinforcement with **ALSAN FLASHING** and other **ALSAN** liquid-applied, single-component polyurethane resins. It is highly flexible and conforms to any shape, irregular penetrations and other surfaces. It has excellent coating saturation capabilities into elastomeric polyurethane resins.

NO TORCHES
NO MIXING
NO PROBLEMS

As a Roofing & Waterproofing Contractor:

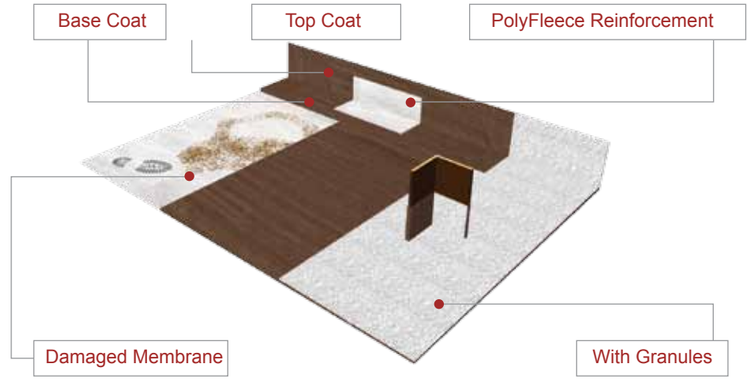
- Seamless flashing applications
- Able to conform to any irregular shapes
- No fasteners or termination bars required
- **ALSAN FLASHING** details can be included in the membrane warranty
- Install and/or repair more roof in less time
- Eliminate mistakes that often occur when mixing liquids
- Reduce injuries and downtime
- Eliminate the headaches associated with torching, cutting and gluing
- Save money and increase profitability
- Never interrupt the tenants while you work

As an Architect/Consultant:

- Difficult flashing jobs are now made easier
- Costs are decreased due to ease of use
- **ALSAN FLASHING** is fully compatible with all other Soprema products and roofing systems

As a Building Owner:

- **ALSAN FLASHING** provides superior moisture protection
- **ALSAN FLASHING** costs less than other flashing methods
- **ALSAN FLASHING** is easy to apply, reducing labor cost
- No torches, no fires mean no problems for clients, neighbors and tenants.



***ALSAN** FLASHING can be used in conjunction with **ALSAN** FINISH to produce a bright white, highly reflective finish ideal for use in cool roof applications.*

SOPREMA®

ALSAN® RS
240 LO

ALSAN® RS 240 LO
PRODUCT # L-RS015S
(pebble grey)

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

ALSAN RS 240 LO is a high performance, low odor, rapid-setting,polymethacrylate (PMA) resin. ALSAN RS 240 is utilized in conjunction with ALSAN RS 223 Mixing Powder to create ALSAN RS 263 LO Self-Leveling Mortar.

STORAGE

Always store closed containers in a cool, ventilated and dry location away from heat and oxidizing agents. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C). Approximate shelf life is twelve months from the date of manufacture when properly stored, sealed and unmixed.

APPLICATION

ALSAN RS 240 LO is mixed with ALSAN RS 223 Mixing Powder to make ALSAN RS 263 LO Self-Leveling Mortar and applied using a via a notched trowel or pin roller. The applicator is responsible for ensuring conditions are appropriate to proceed with proper application method.

Refer to the ALSAN RS 263 LO Self-Leveling Mortar product data sheet for more information regarding mixing and application.

QUICK FACTS

WEIGHT (kg)
10 (9.3 L)

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www.soprema.us
310 Quadral Drive, Wadsworth, Ohio 44281
Toll Free: (800) 356-3521 | Tel: (330) 334-0066

ALSAN® RS
260 LO FIELD

ALSAN® RS 260 LO FIELD
PRODUCT #
L-RS050S (pebble grey)
L-RS053S (traffic white)

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

ALSAN RS 260 LO Field is a high performance, low odor, rapid-setting, polymethacrylate (PMA) liquid resin. ALSAN RS 260 LO Field is catalyzed with ALSAN RS catalyst powder and combined with ALSAN RS Fleece to form a flexible, monolithic, reinforced membrane.

STORAGE

Always store closed containers in a cool, ventilated and dry location away from heat and oxidizing agents. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C). Approximate shelf life is twelve months from date of manufacture when properly stored, sealed and unmixed.

APPLICATION

Apply ALSAN RS 260 LO Field with a brush or roller. Prior to application, refer to published specifications and approved details for complete application instructions. The applicator is responsible for ensuring conditions are appropriate to proceed with proper application methods.

APPLICATION

BRUSH

ROLLER

COOL ROOF RATING						
PRODUCT	SOLAR REFLECTANCE		THERMAL EMITTANCE		SRI	
ALSAN RS 260 LO Field (White)	0.84 initial	pending 3 year	0.86 initial	pending 3 year	105 initial	pending 3 year

QUICK FACTS

UNIT SIZE (kg)	AMBIENT TEMP (°F)	SUBSTRATE TEMP (°F)	RESIN TEMP (°F)	POT LIFE (min)	RAIN PROOF (min)	NEXT LAYER (hour)	FULLY CURED (hour)
25 (19.7 L)	32-95 (0 to 35°C)	32-122 (0 to 50°C)	37-86 (3 to 30°C)	15-20 at 68°F (20°C)	45-60 at 68°F (20°C)	1-2 at 68°F (20°C)	5 at 68°F (20°C)

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ALSAN® RS
260 LO FIELD

TECHNICAL INFORMATION & TESTING

APPROXIMATE COVERAGE RATES

SUBSTRATE PROFILE	MINIMUM TOTAL CONSUMPTION kg/ft² (kg/m²)	BASE COMPONENT CONSUMPTION kg/ft² (kg/m²)	TOP COAT CONSUMPTION kg/ft² (kg/m²)	TOTAL THICKNESS mils(mm)	BASE COAT mils (mm)	TOP COAT mils (mm)
Smooth	**0.28 (3.0)**	0.19 (2.0)	0.01 (1.0)	**98 (2.5)**	65 (1.6)	32 (0.8)
Typical	**0.31 (3.3)**	0.21 (2.3)		**107 (2.7)**	74 (1.9)	
Granulated	**0.36 (3.8)**	0.26 (2.8)		**124 (3.1)**	90 (2.3)	
Rough	**0.40 (4.3)**	0.30 (3.3)		**140 (3.5)**	108 (2.7)	

CATALYST MIXING CHART

CATALYST REQUIRED					WINTER FORMULATION					
	4% Catalyst 50˚F (10˚C) to 68˚F (20˚C)		**2% Catalyst** 68˚F (20˚C) to 95˚F (35˚C)		**6% Catalyst** 32˚F (0˚C) to 37˚F (3˚C)		**4% Catalyst** 37˚F (3˚C) to 50˚F (10˚C)		**2% Catalyst** 50˚F (10˚C) to 68˚F (20˚C)	
25 kg can	**10** 0.1 kg packets		**5** 0.1 kg packets		**15** 0.1 kg packets		**10** 0.1 kg packets		**5** 0.1 kg packets	
1 kg	TBSP	kg	TBSP	kg	TBSP	kg	TBSP	kg	TBSP	kg
	4	0.04	2	0.02	6	0.06	4	0.04	2	0.02
1 liter (~1.3 kg)	5	0.05	2.5	0.03	8	0.08	5	0.05	2.5	0.03

PHYSICAL PROPERTIES

PROPERTY	MD	XMD	TEST METHOD
Peak load @ 73.4˚F (23˚C) control, lbf/in (kN/m)	70 (12.3)	65 (11.4)	ASTM D5147
Elongation @ 73.4˚F (23˚C) control, %	55	85	ASTM D5147
Peak load @ 73.4˚F (23˚C) post heat aging, lbf/in (kN/m)	75 (13.1)	80 (14.0)	ASTM D5147
Elongation @ 73.4˚F (23˚C) post heat aging, %	55	60	ASTM D5147
Peak load @ 73.4˚F (23˚C) post acc. weathering, lbf/in (kN/m)	75 (13.1)	75 (13.1)	ASTM D5147
Elongation @ 73.4˚F (23˚C) post acc. weathering, %	50	55	ASTM D5147
Peak load @ 0˚F (-18˚C), lbf/in (kN/m)	170 (29.8)	145 (25.4)	ASTM D5147
Elongation @ 0˚F (-18˚C), %	60	70	ASTM D5147
Tear resistance, lbf (N)	70 (311)	60 (267)	ASTM D5147
Dimensional stability, %	0.1	0	ASTM D5147
Static puncture resistance, lbf (N)	Pass 56 (249)		ASTM D5602
Shore A hardness, durometer	84		ASTM D2240
Water absorption, %	0.5		ASTM D570 (@ 212˚F)
Water vapor permeance, perms	0.2		ASTM E96
Low temperature flexibility, ˚F (˚C)	Pass -33 (-36.1)	Pass - 33 (-36.1)	ASTM D7264
Low temperature crack bridging	No cracks		ASTM C1305
Self-ignition, ˚F (˚C)	770 (410)		ASTM D1929
Smoke density index	350		ASTM E84
Rate of burning, in/min (m/hr)	0.8 (1.2)		ASTM C635

TECHNICAL INFORMATION & TESTING

CRRC RATED PRODUCT · FM APPROVED · CLASSIFIED UL · LARR · FLORIDA BUILDING CODE

ALSAN® RS
260 LO FLASH

ALSAN® RS 260 LO FLASH
PRODUCT #
L-RS052S (pebble grey)
L-RS054S (traffic white)

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

ALSAN RS 260 LO Flash is a high performance, low odor, rapid-setting, polymethacrylate (PMA) liquid resin for use in flashing applications. ALSAN RS 260 LO Flash is catalyzed with ALSAN RS catalyst powder and combined with ALSAN RS Fleece reinforcing fabric to form a flexible, monolithic, reinforced membrane.

STORAGE

Always store closed containers in cool, ventilated and dry location away from heat and oxidizing agent. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C). Approximate shelf life is twelve months from date of manufacture when properly stored, sealed and unmixed.

APPLICATION

Apply ALSAN RS 260 LO Flash with a brush or roller. Prior to application, refer to published specifications and approved details for complete application instructions. The applicator is responsible for ensuring conditions are appropriate to proceed with proper application method.

APPLICATION


BRUSH


ROLLER

QUICK FACTS

UNIT SIZE (kg)	AMBIENT TEMP (°F)	SUBSTRATE TEMP (°F)	RESIN TEMP (°F)	POT LIFE (min)	RAIN PROOF (min)	NEXT LAYER (hour)	FULLY CURED (hour)
12.5 (9.8 L)	32-95 (0 to 35°C)	32-122 (0 to 50°C)	37-86 (3 to 30°C)	15-20 at 68°F (20°C)	45-60 at 68°F (20°C)	1-2 at 68°F (20°C)	5 at 68°F (20°C)

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ALSAN® RS
260 LO FLASH

TECHNICAL INFORMATION & TESTING

APPROXIMATE COVERAGE RATES

SUBSTRATE PROFILE	MINIMUM TOTAL CONSUMPTION kg/ft² (kg/m²)	BASE COMPONENT CONSUMPTION kg/ft² (kg/m²)	TOP COAT CONSUMPTION kg/ft² (kg/m²)	TOTAL THICKNESS mils(mm)	BASE COAT mils (mm)	TOP COAT mils (mm)
Smooth	**0.28 (3.0)**	0.19 (2.0)	0.01 (1.0)	**98 (2.5)**	65 (1.6)	32 (0.8)
Typical	**0.31 (3.3)**	0.21 (2.3)		**107 (2.7)**	74 (1.9)	
Granulated	**0.36 (3.8)**	0.26 (2.8)		**124 (3.1)**	90 (2.3)	
Rough	**0.40 (4.3)**	0.30 (3.3)		**140 (3.5)**	108 (2.7)	

CATALYST MIXING CHART

CATALYST REQUIRED					WINTER FORMULATION					
	4% Catalyst 50°F (10°C) to 68°F (20°C)		**2% Catalyst** 68°F (20°C) to 95°F (35°C)		**6% Catalyst** 32°F (°C) to 37°F (3°C)		**4% Catalyst** 37°F (3°C) to 50°F (10°C)		**2% Catalyst** 50°F (10°C) to 68°F (20°C)	
12 kg can	**5** 0.1 kg packets		**2.5** 0.1 kg packets		**7** 0.1 kg packets		**5** 0.1 kg packets		**2.5** 0.1 kg packets	
1 kg	TBSP	kg	TBSP	kg	TBSP	kg	TBSP	kg	TBSP	kg
	4	0.04	2	0.02	6	0.06	4	0.04	2	0.02
1 liter (~1.3 kg)	5	0.05	2.5	0.03	8	0.08	5	0.05	2.5	0.03

PHYSICAL PROPERTIES

PROPERTY	MD	XMD	TEST METHOD
Peak load @ 73.4˚F (23˚C) control, lbf/in (kN/m)	70 (12.3)	60 (10.5)	ASTM D5147
Elongation @ 73.4˚F (23˚C) control, %	55	75	ASTM D5147
Peak load @ 73.4˚F (23˚C) post heat aging, lbf/in (kN/m)	80 (14.0)	80 (14.0)	ASTM D5147
Elongation @ 73.4˚F (23˚C) post heat aging, %	50	65	ASTM D5147
Peak load @ 73.4˚F (23˚C) post acc. weathering, lbf/in (kN/m)	70 (12.3)	75 (13.1)	ASTM D5147
Elongation @ 73.4˚F (23˚C) post acc. weathering, %	55	65	ASTM D5147
Peak load @ 0˚F (-18˚C), lbf/in (kN/m)	175 (30.6)	150 (26.3)	ASTM D5147
Elongation @ 0˚F (-18˚C), %	60	70	ASTM D5147
Tear resistance, lbf (N)	80 (356)	75 (334)	ASTM D5147
Dimensional stability, %	0.1	0.1	ASTM D5147
Static puncture resistance, lbf (N)	Pass 56 (249)		ASTM D5602
Shore A hardness, durometer	73		ASTM D2240
Water absorption, %	0.7		ASTM D570 (@ 212˚F)
Water vapor permeance, perms	0.2		ASTM E96
Low temperature flexibility, ˚F (˚C)	Pass -33 (-36.1)	Pass - 33 (-36.1)	ASTM D7264
Low temperature crack bridging	No cracks		ASTM C1305
Self-ignition, ˚F (˚C)	770 (410)		ASTM D1929
Smoke density index	300		ASTM E84
Rate of burning, in/min (m/hr)	0.8 (1.2)		ASTM C635

TECHNICAL INFORMATION & TESTING

FM APPROVED

CLASSIFIED UL

FLORIDA BUILDING CODE

ALSAN® RS FLEECE

ALSAN® RS FLEECE

PRODUCT #
L-RS027B (41.3 in width)
L-RS023B (20.7 in width)
L-RS024A (13.8 in width)
L-RS026B (10.3 in width)
L-RS028A (3.9 in width)

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

ALSAN RS Fleece is a proprietary non-woven polyester reinforcement used in ALSAN RS liquid membrane applications.

STORAGE

Always store in a dry location protected against the elements. Store on end to avoid deforming rolls and creasing fabric.

APPLICATION

Mix and apply ALSAN RS products in strict accordance with published instructions. Apply mixed resin to the prepared surface and roll out ALSAN RS Fleece into the liquid resin, making sure that the roll is unrolling smooth and without any wrinkles. ALSAN RS Fleece will begin to saturate into the liquid resin. Using a roller, wet the fleece with resin, applying light pressure. Roll the fleece with a nap roller to eliminate any air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of ALSAN RS Fleece until fully saturated and the layer of resin is fully and uniformly applied. Allow a 2 inch (5 cm) overlap at the side laps and 4 inch (10 cm) overlap at all flashing tie-ins and end laps.

QUICK FACTS

ROLL LENGTH (ft)	WEIGHT g/m²	THICKNESS (mils)
164 (50 m)	119	30 (.75 mm)

SOPREMA®
www.soprema.us
310 Quadral Drive, Wadsworth, Ohio 44281
Toll Free: (800) 356-3521 | Tel: (330) 334-0066

ALSAN® RS FLEECE

TECHNICAL INFORMATION & TESTING

FLEECE DIMENSIONS			
FLEECE WIDTH, in (cm)	FLEECE LENGTH, ft (m)	GROSS COVERAGE (f^2)	NET COVERAGE (f^2)
41.3 (105)	164 (50)	584	535
20.7 (53)	164 (50)	283	255
13.8 (35)	164 (50)	188	160
10.3 (26)	164 (50)	140	126
3.9 (10)	164 (50)	55	

PHYSICAL PROPERTIES		
PROPERTY	VALUE	TEST METHOD
Weight (avg.), g/m^2	119	ASTM D461
Thickness (avg)., mils (mm)	30 (0.76)	ASTM D5729
Tensile strength, MD/CD (avg.), lb	30.0 / 30.0	ASTM D4632
Elongation, MD/CD (avg.), %	70.0 / 100.0	ASTM D4632

TESTING & APPROVALS

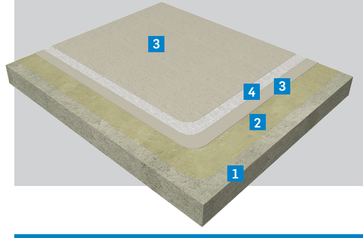
FM APPROVED

FLORIDA BUILDING CODE

SOPREMA®

ALSAN RS ROOF SYSTEMS

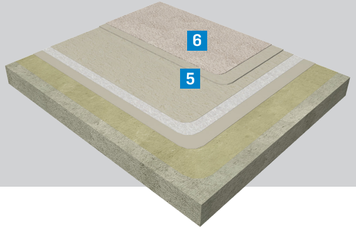
ROOF SYSTEM



1. Prepared substrate
2. ALSAN RS 276 Primer
3. ALSAN RS 230 Field or ALSAN RS 260 LO Field
4. ALSAN RS Fleece

ADDITIONAL MATERIALS FOR TRAFFICABLE SURFACES

5. ALSAN RS 230 Field or ALSAN RS 260 LO Field (additional layer)
6. ALSAN RS 289 Textured Base and ALSAN RS Color Additive



ALSAN RS FOR FLASHING

ALSAN RS PMMA/PMA liquid applied resins can be used in combination with ALSAN RS Fleece to create a seamless, watertight, puncture resistant, fully reinforced flashing system over SBS-modified bitumen or SENTINEL PVC membranes. Using ALSAN RS for difficult details is a cost-effective, easy-to-apply method that conforms to irregular shapes such as flashings, walls, penetrations, and curbs without the need of torching or adhesives.

INNOVATION SINCE 1908

SOPREMA has developed around the idea that the quality, durability and reliability of materials must match builders' ambitions and expectations. For more than 100 years, SOPREMA has been using its expertise to develop a variety of high-end products that meet or exceed all the requirements of the construction field.

ROOFING WATERPROOFING WALLS CIVIL ENGINEERING

ROOFING & WATERPROOFING | INSULATION | VEGETATED SOLUTIONS | SOUNDPROOFING | RELATED PRODUCTS

SOPREMA is an international manufacturer specializing in the production of waterproofing and insulation products, as well as vegetative and soundproofing solutions, for the building and civil engineering sectors.

SOPREMA.US • 1.800.356.3521 SOPREMA.CA • 1.877.MAMMOUTH

SS10018 -REV. 1.17

ALSAN® RS

ROOFING

ROOFING & WATERPROOFING

SOPREMA®

ALSAN® RS

LIQUID APPLIED PMMA/PMA POLYMERIC ROOF MEMBRANES

ALSAN RS offers a complete range of high performance, flexible, seamless, polyester reinforced liquid applied polymeric roofing solutions. ALSAN RS is composed of polymethyl methacrylate (PMMA) and polymethacrylate (PMA) based resins that offer rapid set times and results in a resilient roof requiring minimal maintenance.

Liquid applied systems offer alternatives to conventional roofing methods, eliminating the safety risks associated with adhesives, torches, and hot-applied systems. The single coat application technique also makes ALSAN RS a time and cost effective solution.

ADVANTAGES

- Rapid-setting and easy application
- VOC compliant
- Tough polyester reinforcement
- Cool roof solution
- Low maintenance

SUSTAINABILITY

EXTEND ROOF LIFE

ALSAN RS fully reinforced systems can be used over existing roofs as a recovery system to extend the life of the existing roof installation, limiting the need for tear off. ALSAN RS systems provide a seamless, monolithic seal for a watertight finish. This method provides long-term, cost effective protection against moisture infiltration and other damage.

SUCCESS STORY

Flatiron Building
New York City, New York

The world famous Flatiron Building in New York City is protected by SOPREMA. In the dead of winter, with temperatures below freezing, ALSAN RS created an impenetrable liquid applied waterproofing membrane guaranteed for 20 years. SOPREMA's state of the art polymethyl methacrylate liquid applied waterproofing technology was used to completely waterproof the 8,500 square foot main roof and 21st floor set back of the building. The work was completed in difficult circumstances, with below freezing (25˚ F) temperatures and windy conditions. The main roof was a recovery application, which saved Newmark Knight Frank, the building's owner, the costly process of tearing off the aged granulated surfaced SBS membrane. ALSAN RS was applied directly over the existing membrane, creating a watertight surface. Of special interest was the time saved on numerous skylights and other difficult flashing challenges, including time-consuming penetrations, bulkheads and chimneys, many with peculiar angles due to the building's unique architecture.

ALSAN RS ROOF SYSTEMS COMPONENTS*

PRIMERS

ALSAN RS 276 Primer – A rapid-setting primer designed for porous substrates

ALSAN RS 222 Primer – A rapid-setting primer designed for asphaltic surfaces and coverboards

RESINS

ALSAN RS 230 Field – Waterproofing resin for horizontal surfaces

ALSAN RS 230 Flash – Waterproofing resin for slopes and details

ALSAN RS 260 LO Field – Low-odor waterproofing resin for horizontal surfaces

ALSAN RS 260 LO Flash – Low-odor waterproofing resin for slopes and details

FINISH/SEALER TOP COAT RESINS

ALSAN RS 281 Clear Finish – Clear finishing resin

ALSAN RS 287 Color Finish Base – Colorless resin base to which a colored additive is added

ALSAN RS 289 Textured Base – Non-slip resin with premixed aggregates to which a colored additive is added

ALSAN RS 210 – Resin used in conjunction with ALSAN RS 223 to create ALSAN RS 233 Self-Leveling Mortar

ALSAN RS 240 LO – Low-odor base resin mixed with ALSAN RS 223 Mixing Powder to create ALSAN RS 263 Self-Leveling Mortar

RELATED PRODUCTS

ALSAN RS Paste – Patching resin used in surface preparation and repairs

ALSAN RS Detailer – Sealing resin combined with micro-fiber fleece reinforcement

ALSAN RS Catalyst Powder – Catalyzing agent used to induce curing process

ALSAN RS Fleece – Polyester based reinforcement used with all RS membrane resins

Natural or Colored Quartz Aggregates – Slip-resistant and decorative surfacing

ALSAN RS Deco Chips – Flat, angular pigmented polymer flakes used as a decorative medium

ALSAN RS Cleaner – Clear solvent used to clean and prepare transition areas

ALSAN RS Color Additive – Colored additive intended to be mixed into a liquid PMMA/PMA resins

*All components of ALSAN RS systems are sold separately.

ALSAN RS

POCKET INSTRUCTIONS

INDEX

TIME TESTED DEPENDABILITY

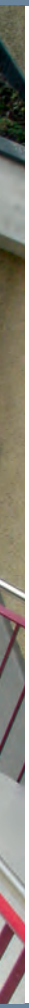
For over 100 years, the SOPREMA GROUP has developed and manufactured cutting edge waterproofing systems for all aspects of the building envelope. Today, advanced PMMA (polymethyl methacrylate) technology found in the ALSAN RS System is revolutionizing the industry by combining liquid plastics with time proven products to deliver unbeatable waterproofing protection. The ALSAN RS System is the ideal solution for waterproofing almost any surface including balconies, terraces, parking structures, water features, flat roof areas, plazas and many more.

This ALSAN RS System Pocket Guide has been developed to aid installers by providing detailed system information, optional finishes, proper installation procedures, drawing details and much more. It can be used right on the job site and acts as a quick reference tool promoting a successful installation every time.

Of course, the ALSAN RS System Pocket Guide does not replace the personal knowledge, training and technical support you receive from the SOPREMA.

Feel free to contact us at any time:

SOPREMA
800.356.3521
info@soprema.us
www.soprema.us
www.sopremaliquids.us
www.youtube.com/sopremavideos



GENERAL

Prior to application of any Soprema ALSAN RS products or materials, the substrate shall be prepared as recommended by Soprema and required for the intended application. All substrates must be clean, dry and free of oil, grease, curing compounds, release agents, laitance, gross irregularities, loose, unsound or foreign material such as moss, algae growth, dirt, ice, snow, water or any other condition that would be detrimental to adhesion of the primer and/or resin to the substrate. Some surfaces may require scarifying, sandblasting or grinding to achieve a suitable substrate.

In addition the substrate shall have a maximum moisture content of six (6) percent and be prepared as required to provide adhesion of the membrane to substrate with a minimum bond strength of 116 psi (0.8 N/mm^2) on asphalt or 219 psi (1.5 N/mm^2) on concrete. Determinations of bond strength and moisture content shall be performed periodically by the Contractor throughout the course of work.

CONCRETE

New concrete must be cured a minimum of 28-days in accordance with ACI-308, or as recommended by the concrete/mortar manufacturer, with a minimum hardness of 3,500 psi (25 N/mm^2).

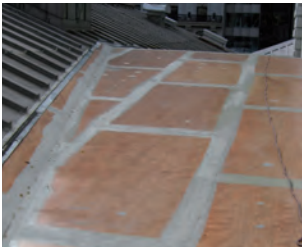
Where required, new or existing concrete shall be abrasively cleaned in accordance with ASTM D 4259 to provide a sound substrate free from laitance with an open concrete surface. Concrete surface must be prepared to obtain a concrete surface profile (ICRI CSP) of 2, 3 or 4. When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed 1/8-inch (3 mm) peak to valley. The substrate shall be sounded and all spalls, voids and blow holes on vertical or horizontal surfaces must be repaired before placement of the approved primer coat. Areas of minor surface deterioration of 1/2-inch (13 mm) or greater in depth shall be repaired to prevent possible pounding, leading to excessive usage of primer and/or resin. For concrete materials with a compressive strength of less than 3,500 psi contact Soprema Technical Department for substrate preparation requirements.

MASONRY

Walls should be constructed of hard kiln-dried brick, concrete block, or other tilt-up or cast-in-place concrete construction. Masonry walls shall be prepared in the same manner as indicated for concrete substrates. Membrane

must not be applied over soft or scaling brick or masonry, faulty mortar joints, or walls with broken, damaged or leaking coping. Walls of ordinary hollow tile, or other materials which in themselves are not waterproofed, should not be accepted as suitable to receive flashings unless they are properly waterproofed, to prevent moisture infiltration from above or behind the flashing system.

WOOD



Wood plank, timber or plywood shall be prepared as required to provide a suitable substrate for proper application of Soprema ALSAN RS materials. Fill joints, knot holes or cracks with ALSAN RS Paste to provide a level substrate. Cover joints in plywood sheathing with 4-inch (10 cm) wide strips of appropriate ALSAN RS fully reinforced liquid membrane after priming. Plywood sheathing shall meet the requirements of American Plywood Association (APA) product standard PS1 or better.

METAL

Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean) or as required by membrane manufacturer. Extend preparation a minimum of eight centimeters beyond the termination of the membrane flashing materials. Notch steel surfaces to provide a rust-stop. Unless otherwise indicated, all metal surfaces shall be abraded in order to provide a rough open surface. A wire brush finish is not acceptable. Surfaces should be cleaned with ALSAN RS Cleaner or ALSAN All-Purpose Claner prior to system application.

ASPHALT BUILT-UP OR GRANULATED SUBSTRATE MODIFIED BITUMEN MEMBRANE

All loose granules, dust and dirt shall be removed from the surface of the built-up roof (BUR) membrane by brooming and/or power vacuuming. For gravel surfaced BUR membranes, gravel should be removed by spudding and power vacuuming. All blisters and ridges must be cut and patched using approved Soprema SBS modified membrane. Flashing cement must be completely removed or when approved it must be covered with appropriate roofing felt, or an acceptable base sheet overlayment, to provide a reasonably level substrate.

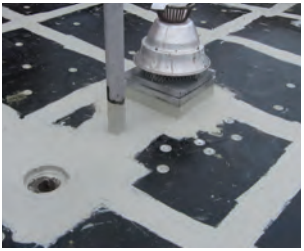
SMOOTH SURFACE "APP" MODIFIED BITUMEN MEMBRANE

All blisters and ridges must be cut and patched using Soprema approved SBS modified bitumen membrane. Flashing cement must be completely removed or when approved it must be covered with appropriate roofing felt, or an acceptable base sheet overlayment, to provide a reasonably level substrate. If a base sheet or overlayment is not used, the smooth APP modified bitumen membrane must be broadcast with 0.7-1.2 mm quartz silica to full cover. Using a torch or hot-air welder, liquify the top surface of the APP sheet and embed silica aggregate into the liquid asphalt. After the asphalt has cooled, remove all loose granules, dust the dirt from the surface of the membrane by brooming and power vacuuming.

FRAME CONSTRUCTION

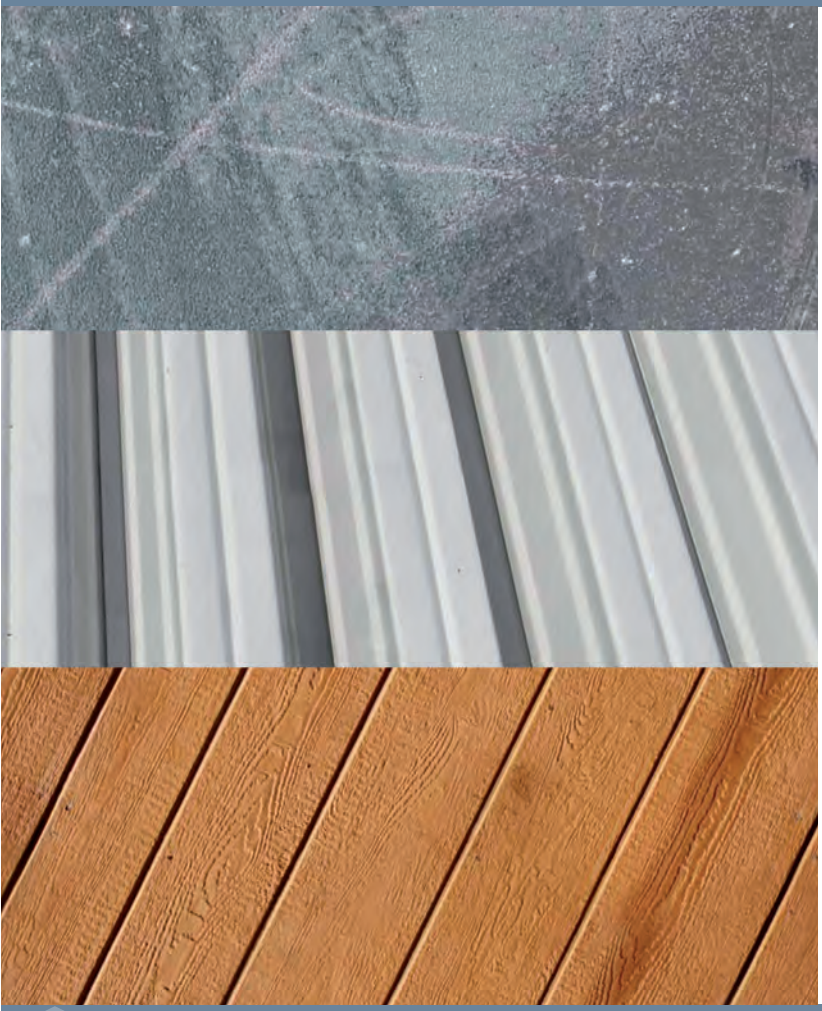
Frame walls are not acceptable to receive ALSAN RS cold fluid-applied reinforced membrane flashings unless suitable solid backing for the flashing is provided. As a minimum, plywood sheathing or cement backer board should be used as wall sheathing. Walls sheathed with gypsum wall board or other gypsum based products are not acceptable as a substrate for cold fluid-applied reinforced membrane. Suitable stops should be provided at the top of the flashing in curtain wall construction, to ensure a watertight seal for flashings.

INSULATION



Insulation may be installed as a separation layer over the existing substrate and/or to obtain the desired thermal value. Rigid foam roof insulation must have 1-inch (2.5 cm) minimum thickness closed-cell polyisocyanurate foam core integrally laminated to heavy non-asphaltic fiber-reinforced felt facers;complying with ASTM C 1289, Type II, Class 1, Grade 2; with minimum compressive strength of 20-psi, nominal 2.0 pcf density; using non-HCFC hydrocarbon blowing agents.

Apply minimum 1-ply base sheet over roof board insulation to provide a monolithic substrate for application of the roofing membrane. Base sheet may be Soprema SBS modified granulated cap sheet or a minimum of No. 40 asphalt saturated and coated felt conforming to ASTM D-2626, Type I.



Provide Soprema approved cover board insulation over rigid foam board insulation where required, and when hot mopping base sheet in asphaltic adhesive. Cover board insulation may be a minimum 1/8-inch thick Soprema Sopraboard, 4' x 5' minimum board dimension, complying with ASTM D 6506, D 412 & D 545 with 440-psi compressive strength; or other acceptable roof cover board as recommended and/or approved on a case-by-case basis by membrane manufacturer.

GLASS

Glass should be solvent washed and cleaned with Soprema ALSAN RS Cleaner or ALSAN All-Purpose Cleaner to remove all oil, grease, loose particles, algae growth, dirt, bituminous products and previous waterproofing materials to ensure a continuous uniform bond between surfaces. A minimum 4-inch (10 cm) continuous overlap and bond line of ALSAN RS membrane to glass should be used where a mechanical termination to glass is required. In areas where a watertight joint is required, a 1-1/2 inch (4 cm) minimum continuous overlap and bond line of ALSAN RS membrane to glass should be used. In all cases, the bond strength should be tested to assure proper adhesion.

OTHER SUBSTRATES

Remove all contaminants as required. Surface preparation shall be performed by means approved by Soprema. Contact Soprema Technical Department for preparation and treatment not specifically indicated above.

SUBSTRATE LEVELING AND PATCHING

Fill cavities and depressions with ALSAN RS Repair Mortar or ALSAN RS 233 Self-Leveling Mortar resin on horizontal surfaces or ALSAN RS Paste for all vertical and horizontal substrate repairs as needed to achieve a flat surface. Any surface to be leveled or patched must first be primed with an appropriate ALSAN RS primer when required.

CRACKS

Determine that crack is non-moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with ALSAN RS Paste. Alternately, when approved prior to project start-up, a polyurethane sealant may be used, but must be allowed to completely cure prior to application of ALSAN RS primer or membrane.

Void investigation
Tap the surface with a hammer and mark hollow areas.

Non-destructive testing for relative humidity of substrate
Electronic methods allow for testing of the relative humidity of the substrate, which should not exceed 5% (by weight) or 16% (by volume).

CCM Methodology for ground moisture testing
Calcium citrate-based moisture measurements are a very accurate gauge for surface moisture testing.

Compressive strength study
A specialized device is used to examine compressive strength of a substrate.

Adhesive strength study
The substrate is investigated with a device to determine bond strength.

Cementitious substrates:
→ 1.5 N/mm²
Asphalt surfaces:
→ 0.8 N/mm²

Core study
A core drill study can be used to determine the existence of previously installed systems that may impact current system selection.

Shot-blasting

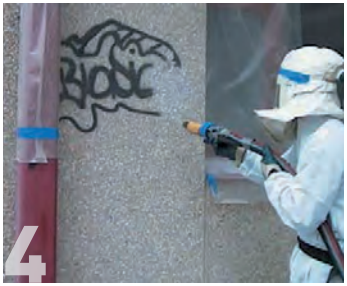
Shotblasting is the most efficient method for concrete surface preparation over wide open spaces. Laitance and other contaminants are found in the upper layer of finished concrete and will adversely affect adhesive strength. Shot-blasting will remove this layer and smooth the surface while removing dust at the same time.

Diamond grinding

A handheld grinder with a diamond cup wheel is the easiest way to prepare small areas, as well as vertical walls, upturns and curbs. Removal of abrasive dust through vacuum suction is highly recommended.

Milling

Particularly with very rough substrates, milling of the surface is recommended. A subsequent shot-blasting will provide an optimal surface for subsequent coatings.



Sandblasting
Sandblasting is an efficient method for surface preparation of vertical surfaces, but protective measures are necessary.

Clean
Clean non-absorbent surfaces with a suitable cleaner.

Manual Grinding / Buffing
... with abrasive discs for metal and other surfaces. The rougher the substrate, the better the adhesion!

Manual Grinding / Buffing
... with abrasive paper (assuming machine grinding is not possible). Grain size: 20 - 40. The rougher the substrate, the better the adhesion!

Surface Cleaning
... cleaning with a vacuum cleaner.

Tool Cleaning
Tools should be cleaned immediately and thoroughly with ALSAN RS Cleaner or ALSAN All-Purpose Cleaner.


RS

Surface	Preparation	Primer
CEMENTIOUS SURFACES		
Concrete	Grind with diamond cup wheel or shot blast	ALSAN RS 276 Primer
Asphalt	Grind with diamond cup wheel or shot blast	ALSAN RS 222 Primer
Brick	Grind with diamond cup wheel or shot blast	ALSAN RS 276 Primer
Masonry block	Grind with diamond cup wheel or shot blast	ALSAN RS 276 Primer
Cement mortar	Grind with diamond cup wheel or shot blast	ALSAN RS 276 Primer
RECOVERY BOARDS		
Sopraboard	Remove dust and particulates	ALSAN RS 276 Primer
DensDeck	Remove dust and particulates	ALSAN RS 276 Primer
DensDeck Prime	Remove dust and particulates	ALSAN RS 276 Primer
DensDeck DuraGuard	Remove dust and particulates	ALSAN RS 276 Primer
SECUROCK	Remove dust and particulates	ALSAN RS 276 Primer
WOOD PRODUCTS		
Raw	Remove dust and particulates	ALSAN RS 276 Primer
OSB	Remove dust and particulates	ALSAN RS 222 Primer
Chipboard	Remove dust and particulates	ALSAN RS 276 Primer
Plywood	Remove dust and particulates	ALSAN RS 276 Primer
METAL		
Copper	Clean with ALSAN All-Purpose Cleaner; roughen with abrasive disc or belt sander	No primer
Aluminum	Clean with ALSAN All-Purpose Cleaner; roughen with abrasive disc or belt sander	No primer
Galvanized steel	Clean with ALSAN All-Purpose Cleaner; roughen with abrasive disc or belt sander	No primer
Zinc	Clean with ALSAN All-Purpose Cleaner	No primer
Stainless steel	Clean with ALSAN All-Purpose Cleaner; roughen with abrasive disc or belt sander	No primer
Anodized	Clean with ALSAN All-Purpose Cleaner; roughen with abrasive disc or belt sander	No primer
MEMBRANES		
SBS modified bitumen	Remove loose particulates	No primer
APP modified bitumen	Remove loose particulates	ALSAN RS 222 Primer
PVC	Remove particulates; clean with ALSAN All-Purpose Cleaner	No primer
TPO	Remove particulates; clean with ALSAN All-Purpose Cleaner	No primer
EPDM	Remove particulates; clean with ALSAN All-Purpose Cleaner	No primer
MISCELLANEOUS		
PMMA	Remove particulates; clean with ALSAN All-Purpose Cleaner	No primer
Polyurethane coating	Remove particulates; clean with ALSAN All-Purpose Cleaner	No primer
PVC pipes and tubes	Lightly sand; wipe clean	No primer
Glass	Lightly sand; clean with ALSAN All-Purpose Cleaner	No primer

Notes
Laitance must be removed. Bond strength 1.5 N/mm².
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All joints to be stripped in with fabric-reinforced ALSAN RS 230 Flash or ALSAN RS 260 LO Flash.
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Do not grind if zinc corrosive protective film is present.
Roughen with abrasive disc at least 0.5 mm.
Lightly sand only.
Thermofusible plastic film should be burned off prior to liquid application.
Liquify surface by application of heat and immediately top with quartz aggregate.
Adhesion testing on existing membrane is recommended.
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Adhesion testing is recommended.
Adhesion testing is recommended.
Adhesion will not be optimal.

CONTENTS	PAGE

Product	Description
ALSAN RS SYSTEM (PMMA)	
ALSAN RS 222	Primer for asphaltic surfaces
ALSAN RS 276	Primer for porous surfaces
ALSAN RS 230 Field	Resin incorporated with fleece reinforcement
ALSAN RS 260 LO Field	Low odor resin incorporated with fleece reinforcement
ALSAN RS 230 Flash	Resin incorporated with fleece reinforcement for flashing details
ALSAN RS 260 LO Flash	Low odor resin incorporated with fleece reinforcement for flashing details
ALSAN RS 233 Mortar	Flexible leveling mortar and wearing layer
ALSAN RS 263 LO Mortar	Low odor flexible leveling mortar and wearing layer
ALSAN RS 289 Textured Base [1]	Customizable color aggregate infused trafficable surface layer
ALSAN RS Textured Coating	Large aggregate infused trafficable surface layer
ALSAN RS 281 Clear Finish	Clear finish for use with colored quartz aggregate
ALSAN RS 287 Color Base [2]	Customizable color finish mixed with color pack additive
ALSAN RS Paste	Flexible resin paste
ALSAN RS Detailer	Micro-fiber infused resin paste
ALSAN RS Repair Mortar	Reprofiling and repair mortar

[1] ALSAN RS 289 Textured Base is an aggregated, clear base resin that is mixed with a pre-selected Color Pack Additive prior to the addition of catalyst activator.
[2] ALSAN RS 287 Color Finish Base is a clear base resin that is mixed with a pre-selected Color Pack Additive prior to the addition of catalyst activator.
[3] Coverage rate over aggregated finish is lower than over smooth surface application.

Coverage rate information refers to a generally smooth surface and may vary depending on substrate conditions.

Container weight (kg)	Coverage per container	Coverage rate (per m²)	Pot life (at 68°F)	Rainproof (at 68°F)	Next layer (at 68°F)	Fully cured
10	269	0.4 kg	10 min	30 min	30 min	3 hours
10	269	0.4 kg	10 min	30 min	30 min	3 hours
25	90	3.0 kg	15 min	30 min	60 min	3 hours
25	90	3.0 kg	20 min	45 min	2 hours	5 hours
12	43	3.0 kg	15 min	30 min	60 min	3 hours
12	43	3.0 kg	20 min	45 min	2 hours	5 hours
33	102	3.5 kg	15 min	30 min	60 min	3 hours
33	102	3.5 kg	15 min	30 min	60 min	3 hours
15	120	1.3 kg	10 min	20 min	60 min	2 hours
15	46	3.5 kg	10 min	20 min	45 min	2 hours
10	215	0.5 kg	15 min	30 min	60 min	3 hours
10	215 / 355 [3]	0.5 / 0.3 kg [3]	15 min	30 min	60 min	3 hours
15	n/a	n/a	20 min	30 min	60 min	3 hours
2	n/a	3.0 kg	20 min	30 min	60 min	3 hours
10 / 33.3	n/a	2.1 kg	15 min	30 min	60 min	3 hours

ALSAN RS 222 PRIMER

Primer for asphaltic surfaces

WEIGHT **10** kg	COVERAGE **269** ft^2 per container	COVERAGE **0.4** kg / m^2	COVERAGE **0.037** kg / ft^2
COVERAGE **15-20** wet mils	COVERAGE **15-20** dry mils	COVERAGE **95°F** **32°F** 0 - 35°C	COVERAGE **122°F** **32°F** 0 - 50°C
POT LIFE **10** minutes (at 68°F [20°C])	RAIN PROOF **30** minutes (at 68°F [20°C])	NEXT LAYER **30** minutes (at 68°F [20°C])	FULLY CURED **3** hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER **6** 0.1 kg packets 32 - 49°F (0 - 10°C)	CATALYST DOSAGE PER CONTAINER **4** 0.1 kg packets 50 - 68°F (10 - 20°C)	CATALYST DOSAGE PER CONTAINER **2** 0.1 kg packets 69 - 95°F (20 - 35°C)	

Coverage rates may vary depending on substrate conditions.

ALSAN RS 276 PRIMER

Primer for porous substrates

WEIGHT	COVERAGE	COVERAGE	COVERAGE
10 kg	269 ft² per container	0.4 kg / m²	0.037 kg / ft²
COVERAGE	COVERAGE	COVERAGE	COVERAGE
15-20 wet mils	15-20 dry mils	95°F 32°F 0 - 35°C	122°F 32°F 0 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
10 minutes (at 68°F [20°C])	30 minutes (at 68°F [20°C])	30 minutes (at 68°F [20°C])	3 hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER	
6 0.1 kg packets 32 - 49°F (0 - 10°C)	4 0.1 kg packets 50 - 68°F (10 - 20°C)	2 0.1 kg packets 69 - 95°F (20 - 35°C)	

Coverage rates may vary depending on substrate conditions.

ALSAN RS 230 FIELD (SUMMER FORMULATION)

Polyester scrim reinforced liquid membrane resin

WEIGHT **25** kg	COVERAGE **90** ft^2 per container	COVERAGE base layer **2.0** top layer **1.0** kg / m^2	COVERAGE base layer **0.19** top layer **0.09** kg / ft^2
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **95°F** **37°F** 3 - 35°C	SUBSTRATE TEMP **122°F** **37°F** 3 - 50°C
POT LIFE **15** minutes (at 68°F [20°C])	RAIN PROOF **30** minutes (at 68°F [20°C])	NEXT LAYER **60** minutes (at 68°F [20°C])	FULLY CURED **3** hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER **10** 0.1 kg packets 37 - 59°F (3 - 15°C)	CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 230 FIELD (WINTER FORMULATION)

Polyester scrim reinforced liquid membrane resin

WEIGHT **25** kg	COVERAGE **90** ft² per container	COVERAGE base layer **2.0** top layer **1.0** kg / ft²	COVERAGE base layer **0.19** top layer **0.09** kg / ft²
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **50°F** **23°F** -5 to 10°C	SUBSTRATE TEMP **59°F** **23°F** -5 to 15°C
POT LIFE **20** minutes [at 37°F [3°C]	RAIN PROOF **45** minutes [at 37°F [3°C]	NEXT LAYER **60** minutes [at 37°F [3°C]	FULLY CURED **6** hours [at 37°F [3°C]
CATALYST DOSAGE PER CONTAINER **10** 0.1 kg packets 23 - 49°F (-5 - 10°C)	CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 50 - 59°F (10 - 15°C)		

Coverage rates may vary depending on substrate conditions.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 230 FLASH (SUMMER FORMULATION)

Polyester scrim reinforced liquid membrane application for vertical surfaces

WEIGHT **12** kg	COVERAGE **43** ft² per container	COVERAGE base layer **2.0** top layer **1.0** kg / m²	COVERAGE base layer **0.19** top layer **0.09** kg / ft²
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **95°F** **37°F** 3 - 35°C	SUBSTRATE TEMP **122°F** **37°F** 3 - 50°C
POT LIFE **15** minutes (at 68°F [20°C])	RAIN PROOF **30** minutes (at 68°F [20°C])	NEXT LAYER **60** minutes (at 68°F [20°C])	FULLY CURED **3** hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 37 - 59°F (3 - 15°C)	CATALYST DOSAGE PER CONTAINER **2.5** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 230 FLASH (WINTER FORMULATION)

Polyester scrim reinforced liquid membrane application for vertical surfaces

WEIGHT **12** kg	COVERAGE **43** ft² per container	COVERAGE base layer **2.0** top layer **1.0** kg / ft²	COVERAGE base layer **0.19** top layer **0.09** kg / ft²
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **50°F** **23°F** -5 to 10°C	SUBSTRATE TEMP **59°F** **23°F** -5 to 15°C
POT LIFE **20** minutes (at 37°F [3°C])	RAIN PROOF **45** minutes (at 37°F [3°C])	NEXT LAYER **60** minutes (at 37°F [3°C])	FULLY CURED **6** hours (at 37°F [3°C])
CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 23 - 49°F (-5 - 10°C)	CATALYST DOSAGE PER CONTAINER **2.5** 0.1 kg packets 50 - 59°F (10 - 15°C)		

Coverage rates may vary depending on substrate conditions.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 260 LO FIELD

Low odor polyester scrim reinforced liquid membrane application

WEIGHT **25** kg	COVERAGE **90** ft² per container	COVERAGE base layer **2.0** top layer **1.0** kg / m²	COVERAGE base layer **0.19** top layer **0.09** kg / ft²
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **20** minutes (at 68°F [20°C])	RAIN PROOF **45** minutes (at 68°F [20°C])	NEXT LAYER **2** hours (at 68°F [20°C])	FULLY CURED **5** hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER **10** 0.1 kg packets 32 - 59°F (0 - 15°C)	CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.
ALSAN RS 260 LO Field requires the use of ALSAN RS LO Catalyst.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 260 LO FLASH

Low odor polyester scrim reinforced liquid membrane application for vertical surfaces

WEIGHT **12** kg	COVERAGE **43** ft² per container	COVERAGE base layer **2.0** top layer **1.0** kg / ft²	COVERAGE base layer **0.19** top layer **0.09** kg / ft²
COVERAGE base layer **50-60** top layer **22-26** wet mils	COVERAGE base layer **50-60** top layer **22-26** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **20** minutes (at 68°F [20°C]	RAIN PROOF **45** minutes (at 68°F [20°C]	NEXT LAYER **2** hours (at 68°F [20°C]	FULLY CURED **5** hours (at 68°F [20°C]
CATALYST DOSAGE PER CONTAINER **5** 0.1 kg packets 32 - 59°F (0 - 15°C)	CATALYST DOSAGE PER CONTAINER **2.5** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.
ALSAN RS 260 LO Field requires the use of ALSAN RS LO Catalyst.

Mil thickness rate does not take into account polyester fleece reinforcement thickness; measurement is for liquid resin only.

ALSAN RS 233 SELF-LEVELING MORTAR

Heavy-duty trafficable surface combining ALSAN RS 210 and ALSAN RS 223 Powder

WEIGHT **33** kg	COVERAGE **102** ft² per container	COVERAGE **3.5** kg / m²	COVERAGE **0.325** kg / ft²
COVERAGE **85-95** wet mils	COVERAGE **85-95** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **15** minutes (at 68°F (20°C)	RAIN PROOF **30** minutes (at 68°F (20°C)	NEXT LAYER **60** minutes (at 68°F (20°C)	FULLY CURED **3** hours (at 68°F (20°C)
CATALYST DOSAGE PER CONTAINER **4** 0.1 kg packets 32 - 49°F (0 - 10°C)	CATALYST DOSAGE PER CONTAINER **2** 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS 263 LO SELF-LEVELING MORTAR

Low odor heavy-duty trafficable surface combining ALSAN RS 240 LO and ALSAN RS 223 Powder

WEIGHT	COVERAGE	COVERAGE	COVERAGE
33 kg	**102** ft² per container	**3.5** kg / m²	**0.325** kg / ft²
COVERAGE	COVERAGE	AMBIENT TEMP	SUBSTRATE TEMP
85-95 wet mils	**85-95** dry mils	**95°F** **32°F** 0 - 35°C	**122°F** **32°F** 0 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
15 minutes (at 68°F (20°C)	**30** minutes (at 68°F (20°C)	**60** minutes (at 68°F (20°C)	**3** hours (at 68°F (20°C)
CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER		
4 0.1 kg packets 32 - 49°F (0 - 10°C)	**2** 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.
ALSAN RS 263 LO Self-Leveling Mortar requires the use of ALSAN RS LO Catalyst

ALSAN RS 287 COLOR FINISH BASE + COLOR PACK (over smooth surface)

Customizable thin-film color finish

WEIGHT **10** kg	COVERAGE **355** ft^2 per container	COVERAGE **0.3** kg / m^2	COVERAGE **0.028** kg / ft^2
COVERAGE **12-15** wet mils	COVERAGE **12-15** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **15** minutes [at 68°F (20°C)]	RAIN PROOF **30** minutes [at 68°F (20°C)]	NEXT LAYER **60** minutes [at 68°F (20°C)]	FULLY CURED **3** hours [at 68°F (20°C)]
CATALYST DOSAGE PER CONTAINER **4** 0.1 kg packets 32 - 49°F (0 - 10°C)	CATALYST DOSAGE PER CONTAINER **2** 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS 287 COLOR FINISH BASE + COLOR PACK (over aggregate)

Customizable thin-film color finsh

WEIGHT	COVERAGE	COVERAGE	COVERAGE
10 kg	**215** ft² per container	**0.5** kg / m²	**0.046** kg / ft²
COVERAGE	COVERAGE	AMBIENT TEMP	SUBSTRATE TEMP
20-25 wet mils	**20-25** dry mils	**95°F** **32°F** 0 - 35°C	**122°F** **32°F** 0 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
15 minutes [at 68°F [20°C]	**30** minutes [at 68°F [20°C]	**60** minutes [at 68°F [20°C]	**3** hours [at 68°F [20°C]
CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER		
4 0.1 kg packets 32 - 49°F [0 - 10°C]	**2** 0.1 kg packets 50 - 95°F [10 - 35°C]		

Coverage rates may vary depending on substrate conditions.

ALSAN RS 289 TEXTURED BASE + COLOR PACK

Customizable color aggregate infused trafficable surface finish

WEIGHT **15** kg	COVERAGE **120** ft² per container	COVERAGE **1.3** kg / m²	COVERAGE **0.12** kg / ft²
COVERAGE **25-30** wet mils	COVERAGE **25-30** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **10** minutes [at 68°F (20°C)]	RAIN PROOF **20** minutes [at 68°F (20°C)]	NEXT LAYER **60** minutes [at 68°F (20°C)]	FULLY CURED **2** hours [at 68°F (20°C)]
CATALYST DOSAGE PER CONTAINER **6** 0.1 kg packets 32 - 59°F (0 - 15°C)	CATALYST DOSAGE PER CONTAINER **3** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS 281 CLEAR FINISH (OVER QUARTZ)

Thin film clear finish utilized with color quartz aggregate

WEIGHT **10** kg	COVERAGE **215** ft^2 per container	COVERAGE **0.5** kg / m^2	COVERAGE **0.046** kg / ft^2
COVERAGE **20-25** wet mils	COVERAGE **20-25** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **15** minutes [at 68°F (20°C)]	RAIN PROOF **30** minutes [at 68°F (20°C)]	NEXT LAYER **60** minutes [at 68°F (20°C)]	FULLY CURED **3** hours [at 68°F (20°C)]
CATALYST DOSAGE PER CONTAINER **4** 0.1 kg packets 32 - 49°F (0 - 10°C)	CATALYST DOSAGE PER CONTAINER **2** 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS TEXTURED COATING

Large aggregate infused trafficable surface layer

WEIGHT	COVERAGE	COVERAGE	COVERAGE
15 kg	**46** ft² per container	**3.5** kg / m²	**0.325** kg / ft²
COVERAGE	COVERAGE	AMBIENT TEMP	SUBSTRATE TEMP
60-70 wet mils	**60-70** dry mils	**95°F** **32°F** 0 - 35°C	**122°F** **32°F** 0 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
10 minutes [at 68°F (20°C)]	**20** minutes [at 68°F (20°C)]	**45** minutes [at 68°F (20°C)]	**2** hours [at 68°F (20°C)]
CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER		
6 0.1 kg packets 32 - 59°F (0 - 15°C)	**3** 0.1 kg packets 60 - 95°F (15 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS PASTE

Flexible resin paste

WEIGHT	COVERAGE	COVERAGE	COVERAGE
15 kg	N/A ft² per container	N/A kg / m²	N/A kg / ft²
COVERAGE	COVERAGE	AMBIENT TEMP	SUBSTRATE TEMP
N/A wet mils	N/A dry mils	95°F 32°F 0 - 35°C	122°F 32°F 0 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
20 minutes (at 68°F (20°C)	30 minutes (at 68°F (20°C)	60 minutes (at 68°F (20°C)	3 hours (at 68°F (20°C)
CATALYST DOSAGE PER CONTAINER	CATALYST DOSAGE PER CONTAINER		
6 0.1 kg packets 32 - 49°F (0 - 10°C)	3 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS DETAILER

Micro-fiber infused flexible resin

WEIGHT **2** kg	COVERAGE **N/A** ft² per container	COVERAGE **3.0** kg / m²	COVERAGE **0.28** kg / ft²
COVERAGE **N/A** wet mils	COVERAGE **N/A** dry mils	AMBIENT TEMP **95°F** **32°F** 0 - 35°C	SUBSTRATE TEMP **122°F** **32°F** 0 - 50°C
POT LIFE **20** minutes [at 68°F (20°C)]	RAIN PROOF **30** minutes [at 68°F (20°C)]	NEXT LAYER **60** minutes [at 68°F (20°C)]	FULLY CURED **3** hours [at 68°F (20°C)]
CATALYST DOSAGE PER CONTAINER **1** 0.1 kg packets 32 - 49°F (0 - 10°C)	CATALYST DOSAGE PER CONTAINER **0.5** 0.1 kg packets 50 - 95°F (10 - 35°C)		

Coverage rates may vary depending on substrate conditions.

ALSAN RS REPAIR MORTAR

Reprofiling and repair mortar

WEIGHT	COVERAGE	COVERAGE	COVERAGE
10/33 kg	**N/A** ft² per container	**2.1** kg / m²	**0.20** kg / ft²
COVERAGE	COVERAGE	AMBIENT TEMP	SUBSTRATE TEMP
N/A wet mils	**N/A** dry mils	**95°F 37°F** 3 - 35°C	**122°F 37°F** 3 - 50°C
POT LIFE	RAIN PROOF	NEXT LAYER	FULLY CURED
15 minutes (at 68°F [20°C])	**30** minutes (at 68°F [20°C])	**60** minutes (at 68°F [20°C])	**3** hours (at 68°F [20°C])
CATALYST DOSAGE PER CONTAINER			
N/A*			

* Product ships in two components - a liquid resin and a powder; the powder component contains the catalyst activator.

Coverage rates may vary depending on substrate conditions.

ALSAN RS FLEECE

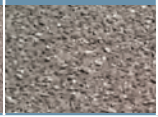
Non-woven, needle-punched polyester fabric reinforcement

LENGTH	WEIGHT	THICKNESS	
164 ft	**110**	**30-40**	
50 m	g / m²	(mils, nominal)	
WIDTH	WIDTH	WIDTH	WIDTH
41.3”	**20.7”**	**13.8”**	**10”**
105 cm	53 cm	35 cm	25 cm

Allow for a minimum 2” (5 cm) overlap at field and flashing side laps, 4” (10 cm) overlap at the end laps and a minimum 4” (10 cm) overlap at the base of the wall and all penetration flashings.

QUARTZ AGGREGATE

Chemically inert, kiln-dried quartz silica for providing skid resistant surfacing

WEIGHT	COVERAGE	COVERAGE	
50 lb	**1.0**	**5.0**	
23 kg	lb / ft²	kg / m²	
”00” QUARTZ	”0” QUARTZ	”1” QUARTZ	”2” QUARTZ
			

Color quartz blend options also available. Contact local sales representative for additional information.

ALSAN RS CATALYST

Reactive agent based on dibenzoyl peroxide used to induce curing in ALSAN RS products

PACKAGING **0.1** kg	PACKAGING **25** kg	DO **NOT** STORE IN DIRECT **SUNLIGHT**	

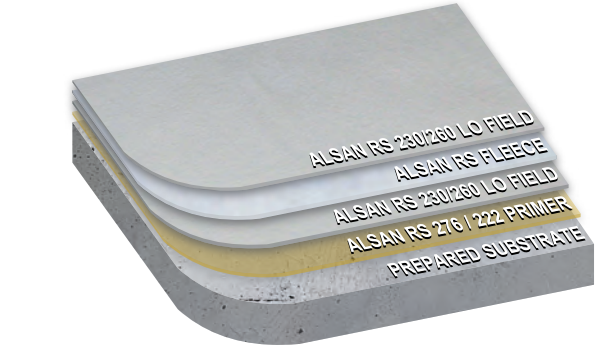
Refer to individual product information modules and product data sheets for proper catalyst activation quantities.

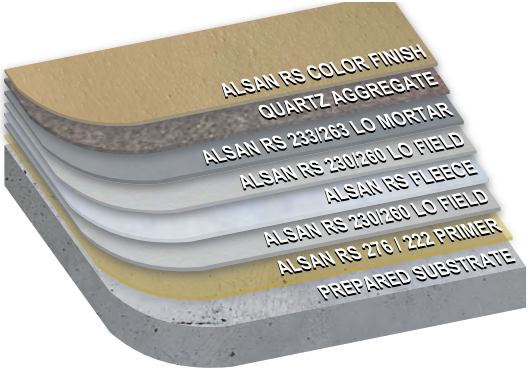
ALSAN RS LO CATALYST

Reactive agent based on dibenzoyl peroxide used to induce curing in ALSAN RS LO products

PACKAGING **0.1** kg	PACKAGING **25** kg	DO **NOT** STORE IN DIRECT **SUNLIGHT**	

Refer to individual product information modules and product data sheets for proper catalyst activation quantities.


ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS COLOR FINISH
QUARTZ AGGREGATE
ALSAN RS 233/263 LO MORTAR
ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE

SYSTEM APPLICATIONS

ALSAN RS systems allow for a number of waterproofing and surfacing systems, depending on the needs of a given application. Below is a selection of possible applications and surfaces.

FULLY REINFORCED WATERPROOFING APPLICATIONS

(1) Roofing and Waterproofing System

Construction
ALSAN RS 276 / 222 Primer (as necessary)
ALSAN RS 230 Field with ALSAN RS Fleece
ALSAN RS 230 Field

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

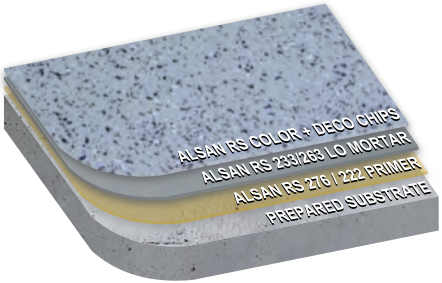
(2) ALSAN RS Roofing and Waterprooing System with Custom Color

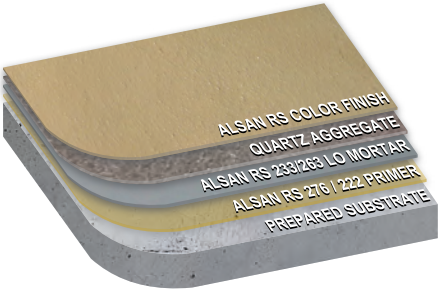
Construction
ALSAN RS 276 / 222 Primer (as necessary)
ALSAN RS 230 Field with ALSAN RS Fleece
ALSAN RS 230 Field

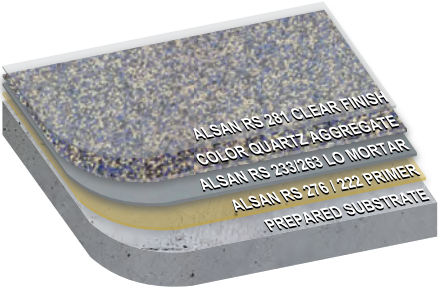
ALSAN RS Color Finish (RS 287 + COLOR PACK) for custom color finish

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

ALSAN RS 260 LO Field and ALSAN RS 260 LO Flash may be used in place of ALSAN RS 230 Field and ALSAN RS 230 Flash, respectively, for a low odor application option.


ALSAN RS COLOR + DECO CHIPS
ALSAN RS 233/263 LO MORTAR
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS COLOR FINISH
QUARTZ AGGREGATE
ALSAN RS 233/263 LO MORTAR
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS 281 CLEAR FINISH
COLOR QUARTZ AGGREGATE
ALSAN RS 233/263 LO MORTAR
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE

PARTIALLY REINFORCED TRAFFICABLE SYSTEMS

① ALSAN RS Partially Reinforced Trafficable System with Vinyl Chips

Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 233 Mortar
3. ALSAN RS Color Finish (RS 287 + COLOR PACK) with vinyl chips

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

② ALSAN RS Partially Reinforced Trafficable System with Quartz

Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 233 Mortar with natural quartz aggregate
3. ALSAN RS Color Finish (RS 287 + COLOR PACK)

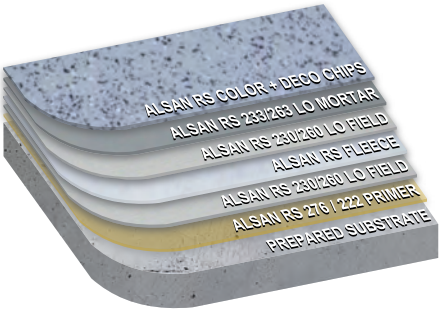
ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

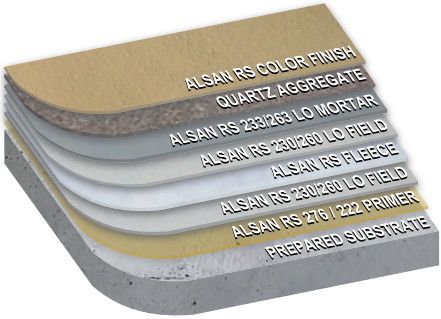
③ ALSAN RS Partially Reinforced Trafficable System with Color Quartz

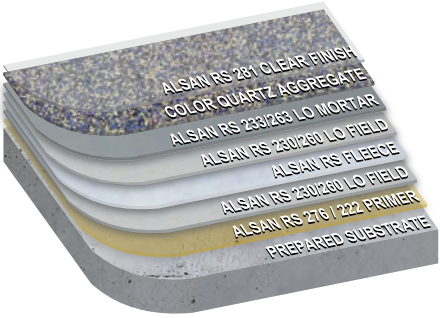
Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 233 Self-Leveling Mortar with color quartz
3. ALSAN RS 281 Clear Finish

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

ALSAN RS 260 LO Field ,ALSAN RS 260 LO Flash and ALSAN RS 263 LO Mortar may be used in place of ALSAN RS 230 Field, ALSAN RS 230 Flash and ALSAN RS 233 Mortar, respectively, for a low odor application option.


ALSAN RS COLOR + DECO CHIPS
ALSAN RS 233/263 LO MORTAR
ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS COLOR FINISH
QUARTZ AGGREGATE
ALSAN RS 233/263 LO MORTAR
ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS 281 CLEAR FINISH
COLOR QUARTZ AGGREGATE
ALSAN RS 233/263 LO MORTAR
ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE

FULLY REINFORCED TRAFFICABLE SYSTEMS

① ALSAN RS Fully Reinforced Trafficable System with Vinyl Chips

Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 230 Field -RS Fleece-ALSAN RS 230 Field
3. ALSAN RS 233 Mortar
4. ALSAN RS Color Finish (RS 287 + COLOR PACK) with vinyl chips

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

② ALSAN RS Fully Reinforced Trafficable System with Quartz

Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 230 Field -RS Fleece-ALSAN RS 230 Field
3. ALSAN RS 233 Mortar with natural quartz aggregate
4. ALSAN RS Color Finish (RS 287 + COLOR PACK)

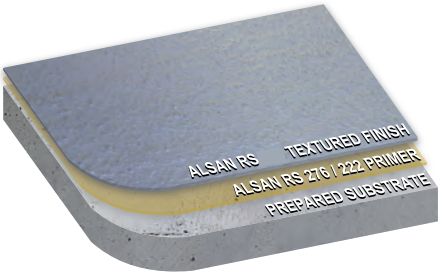
ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

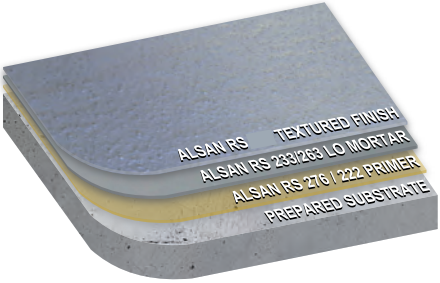
③ ALSAN RS Fully Reinforced Trafficable System with Color Quartz

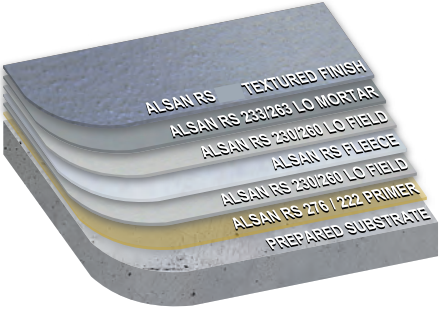
Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 230 Field -RS Fleece-ALSAN RS 230 Field
3. ALSAN RS 233 Self-Leveling Mortar with color quartz
4. ALSAN RS 281 Clear Finish

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

ALSAN RS 260 LO Field ,ALSAN RS 260 LO Flash and ALSAN RS 263 LO Mortar may be used in place of ALSAN RS 230 Field, ALSAN RS 230 Flash and ALSAN RS 233 Mortar, respectively, for a low odor application option.


ALSAN RS TEXTURED FINISH
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS TEXTURED FINISH
ALSAN RS 233/263 LO MORTAR
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE


ALSAN RS TEXTURED FINISH
ALSAN RS 233/263 LO MORTAR
ALSAN RS 230/260 LO FIELD
ALSAN RS FLEECE
ALSAN RS 230/260 LO FIELD
ALSAN RS 276 | 222 PRIMER
PREPARED SUBSTRATE

ALSAN RS TEXTURED FINISH SYSTEMS

① ALSAN RS Textured Finish Partially Reinforced Balcony System

Construction
1. ALSAN RS 276/222 Primer
2. ALSAN RS Textured Finish (RS 289 Textured Base + COLOR PACK)

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

② ALSAN RS Textured Finish Heavy Duty Partially Reinforced System

Construction
1. ALSAN RS 276/222 Primer
2. ALSAN RS 233 / 263 LO Mortar
3. ALSAN RS Textured Finish (RS 289 Textured Base + COLOR PACK)

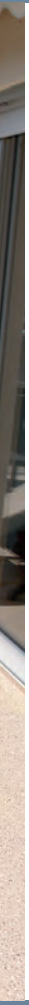
ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

③ ALSAN RS Textured Finish Heavy Duty Fully Reinforced System

Construction
1. ALSAN RS 276 / 222 Primer
2. ALSAN RS 230 Field -RS Fleece-ALSAN RS 230 Field
3. ALSAN RS 233 Mortar
4. ALSAN RS Textured Finish (RS 289 Textured Base + COLOR PACK)

ALSAN RS 230 Flash with ALSAN RS Fleece for details and flashing

ALSAN RS 260 LO Field ,ALSAN RS 260 LO Flash and ALSAN RS 263 LO Mortar may be used in place of ALSAN RS 230 Field, ALSAN RS 230 Flash and ALSAN RS 233 Mortar, respectively, for a low odor application option.




ROTOFLEX

MIXING

ALSAN RS systems are two- or multi-component products based on PMMA (polymethyl methacrylate) technology. The second component is a white catalyst powder which activates the curing reaction of the liquid resin product. Catalyst quantity is determined by **resin amount** and **ambient temperature**.

When mixing, it is important to thoroughly mix the catalyst into the liquid resin. A slow-speed mechanical agitator (electric drill with a mixing paddle) should be utilized to ensure thorough mixing. For smaller quantities, the catalyst can be stirred into the liquid resin by hand using a stir stick.

Always mix only as much resin as can be consumed based on product pot life.

! Use caution when handling products. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product. Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to relevant Material Safety Data Sheets (MSDS).

CATALYST DOSAGE

		RESIN QUANTITY (KG)								
		1	2	3	4	5	10	15	20	25
CATALYST DOSAGE	1%	1	2	3	4	5	10	15	20	25
	2%	2	4	6	8	10	20	30	40	50
	3%	3	6	9	12	15	30	45	60	75
	4%	4	8	12	16	20	40	60	80	100
	5%	5	10	15	20	25	50	75	100	125
	6%	6	12	18	24	30	60	90	120	150
		TABLESPOONS								

One tablespoon weighs approximately 10 grams or 0.001 kg.

Each 0.1 kg packet of catalyst activator is equivalent to 10 level tablespoons.

Standard equipment for application.

Materials: liquid component,
catalyst (white powder)
and mixing paddle.

Thoroughly stir liquid material in the bucket
prior to catalyst activation.

For batch mixing, pour off product (primer,
resin, leveling mortar, etc.) into clean
mixing bucket.

Catalyst (according to mixing table,
temperature and processing time)
mixed with low-speed agitator.
Mix for two (2) minutes.
(Small amounts may also hand-mixed.)

Before the start of the waterproofing work, prepare and clean areas of application and mask off application with masking tape.

Prime surface as necessary (refer to substrate chart). Wood and concrete substrates must be primed. Apply primer via lambswool roller or brush. Consumption will depend on existing surface texture and roughness: approximately 0.5 kg / m^2.

Apply primer by roller over entire surface. Consumption will depend on existing surface texture and roughness: approximately 0.5 kg / m^2.

Immediately remove masking tape.

The primed surface is ready after about 15 minutes for additional layers.

ALSAN RS Paste is a thick resin used for leveling and preparation of substrate to eliminate voids. ALSAN RS Paste can be mixed at a 1:3 ratio with quartz sand.

Add necessary quantity to a mixing bucket ...

... Add catalyst activator and mix throroughly.

Prime all areas prior to application of ALSAN RS Paste. Fill cavities, etc.

The filler can be applied with a trowel or spatula. Consumption depends on the nature of the substrate. Rule of thumb: about 2 kg per m^2 at one millimeter thickness.

Allow the paste to cure for 15 minutes prior to subsequent layer applications.

ALSAN RS Repair Mortar is a resin and sand mixture for leveling and repair of larger areas, voids, hollows, etc.

Add the pre-measured amount of silica sand into a mixing bucket ...

... Add the liquid component ...

... Thoroughly mix with a mechanical agitator. Note: ALSAN RS Repair Mortar does not require the addition of catalyst. The catalyst activator component is already incorporated into the silica sand mixture.

The mortar can be applied with a trowel or spatula. It is important during application to compress the mortar.
Consumption depends on the nature of the subtrate. Rule of thumb: about 2.2 kg per m^2 at one millimeter thickness.

The mortar is ready for subsequent applications after about 15 minutes. Prime areas with high porosity with ALSAN RS 222 Primer prior to subsequent layers.

Before the start of the waterproofing work, prepare and clean areas of application and mask off application with masking tape.

Roll catalyzed resin onto prepared substrate. Provide sufficient liquid, especially onto vertical surfaces (about 2.0 kg / m^2).

Apply the previously cut fleece into wet catalyzed liquid resin. Roll fleece into liquid resin, removing air bubbles and wrinkles with a roller. Any fleece overlaps require additional application of catalyzed liquid resin between fleece layers.

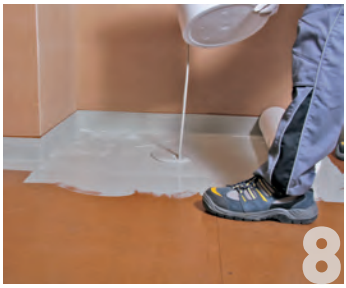
Immediately roll in additional catalyzed resin, fully saturating fleece. Visible white areas in fleece reinforcement are evidence of too little material being applied.
Consumption: approximately 1.0 to 1.3 kg / m^2.

Pour catalyzed resin onto prepared substrate. Provide sufficient material for the fleece embedment layer (about 1.5 kg / m^2).

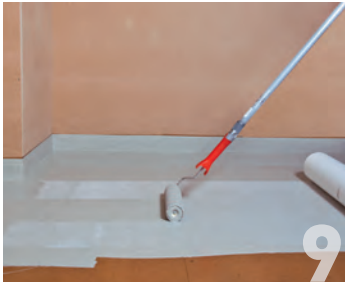
Evenly distribute catalyzed liquid resin with a lambswool roller or 3/16 in. (5 mm) notched squeegee.

Install ALSAN RS Fleece reinforcement directly into wet catalyzed liquid resin. Roll fleece into liquid resin, removing air bubbles and wrinkles with roller.

Apply additional catalyzed resin over fleece.

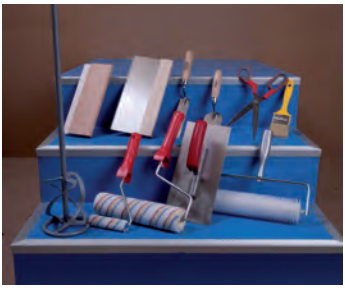


Immediately roll catalyzed resin, fully saturating fleece. Visible white areas in fleece reinforcement are evidence of too little material being applied. Consumption: approximately 1.0 to 1.3 kg / m^2.



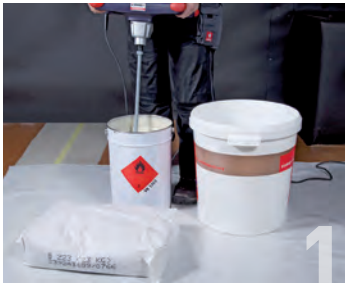
The surface is cured after about 30 minutes for additional layers, as required.

Apart from the actual product components that are used to create the protective layers, the following tools are needed: Large mixing bucket, spiked roller, trowel, etc. It is important to ensure a clean and tidy mixing area.



The required product components for the creation of ALSAN RS 233 Self-Leveling Mortar: ALSAN RS 210, ALSAN RS 223 Mixing Powder, catalyst. The first two components are mixed.

This mixture can be stored (ALSAN RS 233 mortar course, without a catalyst), for approximately one week and must be mixed again prior to the addition of the catalyst activator.



After mixing the first two components, add the prescribed amount of catalyst. Mix well.

Apply mixed material to the primed substrate or previously installed layers.

Apply with a trowel ...

... Distributing evenly.
Consumption: 3.5 - 4.5 kg / m^2.

Use a spiked roller in order to even out the application. As specified, sprinkle with natural quartz, colored quartz or Deco Color Chips.

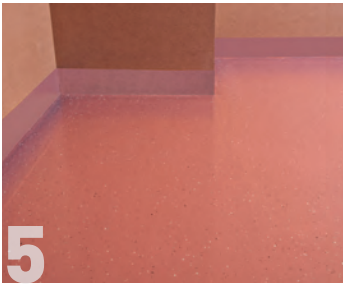
Allow about 30 minutes to cure before application of subsequent layers.

Mask application edges with masking tape. Apply ALSAN RS Color Finish. Consumption: approximately 0.4 kg / m^2.

Immediately remove masking tape.

Apply ALSAN RS Color Finish with a lambswool roller, trowel or flat-edged squeegee. Consumption: approximately 0.6 - 0.8 kg / m^2.

Prior to curing, immediately apply decorative vinyl chips with the hopper gun or by hand. Consumption: approximately 0.04 - 0.1 kg / m^2.



Finished surface. No further sealing is necessary. The area is accessible after one hour and can withstand consistent trafficking after one day.

Variant surfacing application used to achieve a required slip resistance and increased abrasion strength

Prior to curing of mortar course, broadcast natural or colored kiln-dried quartz aggregate to excess. Grain size selection is dependent upon trafficking requirements.

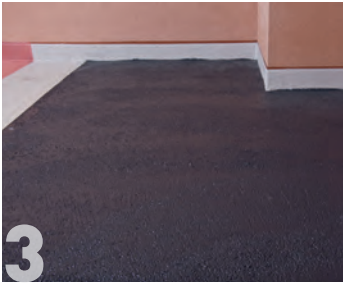
Sweep off excess sand.

The aggregated surface can be coated with ALSAN RS 288 Color Finish or ALSAN RS 281 Clear Finish after about 15 minutes. Note: This aggregated surface must always be sealed.

Version for increased wear resistance (e.g. vehicular traffic)

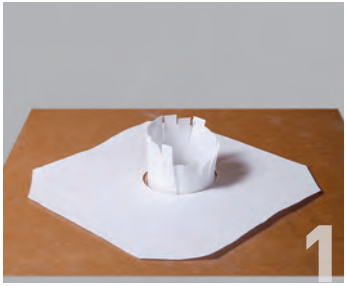
The ALSAN RS Textured Coating can be applied directly on the ALSAN RS 233 Self-Leveling Mortar.
Pour material ...

... and spread with a trowel.
Consumption: 3.5–4.5 kg/m².



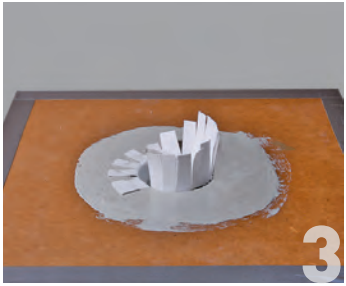
The area is accessible after one hour and can withstand vehicular traffic after one day.

Prepare given substrate as necessary. Wood and concrete surfaces must be primed with ALSAN RS 276 Primer. Apply primer with lambswool roller or brush. Consumption: approximately 0.5 kg / m^2. Pre-cut all ALSAN RS Fleece.



Allow primer to cure approximately 20 minutes. Mask off area with masking tape. Apply ALSAN RS 230 Flash with a brush or lambswool roller. Consumption: about 2.0 kg / m^2.

Install pre-cut fleece into wet ALSAN RS 230 Flash. Use roller to eliminate wrinkles and air bubbles. Completely saturate all fleece. Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.

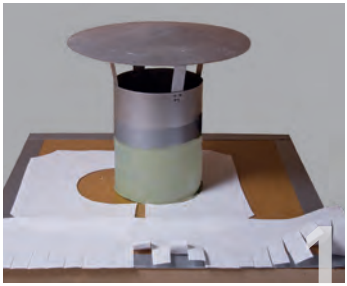


Apply additional application of ALSAN RS 230 Field in preparation for target fleece installation. This layer may be applied concurrently with initial fleece installation; there is no waiting period between fleece installations.

Fully saturate second fleece installation, removing all wrinkles and air bubbles. Consumption: 1.0 to 1.3 kg /m^2.

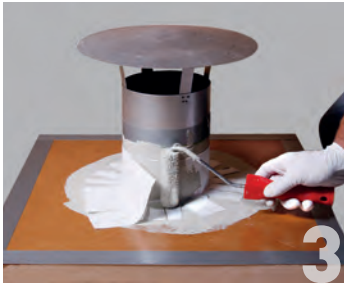
Immediately remove masking tape.
No drain clamping ring installation is subsequently required.

Prior to start of application, prime areas as necessary . Apply masking tape to application edges.
Prepare metal surface by abrading metal, removing existing coatings, rust.
Wipe with ALSAN RS Cleaner.
Pre-cut ALSAN RS Fleece polyester reinforcement prior to resin activation.

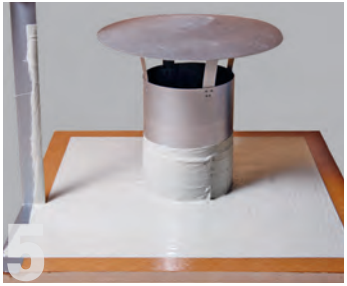


Apply ALSAN RS 230 Flash with a lambswool roller. Consumption: about 2.0 kg / m^2.

Install pre-cut fleece into wet ALSAN RS 230 Flash.
Use roller to eliminate wrinkles and air bubbles. Completely saturate all fleece.
Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.
Saturate fleece on vertical surface with ALSAN RS 230 Flash.
Consumption: approximately 1.0 to 1.3 kg / m^2.



While still wet, install RS Fleece target reinforcement around horizontal base. Apply ALSAN RS 230 Flash. Consumption: approximately 1.0 to 1.3 kg / m^2.



Promptly remove masking tape prior to ALSAN RS 230 Flash curing.

Prior to application, prepare surface via metal abrasion. Wipe surface with ALSAN RS Cleaner with a rag in order to thoroughly clean surface. Allow to dry prior to continuing application.

Mask off area with masking tape prior to application. Apply ALSAN RS 230 Flash with a brush or lambswool roller. Consumption: about 2.0 kg / m^2.

Install ALSAN RS Fleece into wet ALSAN RS 230 Flash.

Use the roller to eliminate any wrinkles or air bubbles. Completely saturate the fleece. Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.

While still curing, apply a top application of ALSAN RS 230 Flash in order to complete liquid membrane construction. Consumption: approximately 1.0 to 1.3 kg / m^2.

Prior to start of application, prime areas as necessary . Apply masking tape to application edges.

Apply ALSAN RS 230 Flash with a lambswool roller. Consumption: about 2.0 kg / m^2.

Install ALSAN RS Fleece reinforcement into wet ALSAN RS 230 Flash. Use the roller to eliminate any wrinkles or air bubbles. Completely saturate the fleece. Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.

While still curing, apply a top application of ALSAN RS 230 Flash in order to complete liquid membrane construction. Consumption: approximately 1.0 to 1.3 kg / m^2.

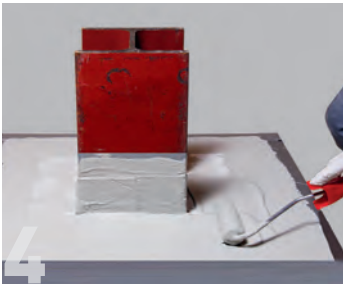
Immediately remove masking tape.

Please note:
This assembly is for joints with low to moderate expected movement. More dynamic movement requires a different assembly. Contact Technical Services for additional information.

Prior to start of application, prime areas as necessary . Apply masking tape to application edges.
Prepare metal surface by abrading metal, removing existing coatings, rust.
Wipe with ALSAN RS Cleaner.
Apply ALSAN RS 230 Flash with a lambswool roller. Consumption: about 2.0 kg / m^2.

Install ALSAN RS Fleece reinforcement into wet ALSAN RS 230 Flash. Use roller to eliminate any wrinkles or air bubbles. Completely saturate the fleece. Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.

While still curing, apply a top application of ALSAN RS 230 Flash in order to complete liquid membrane construction on vertical reinforcement. Consumption: approximately 1.0 to 1.3 kg / m^2.



While still wet, install RS Fleece target reinforcement around horizontal base of I-beam. Immediately apply ALSAN RS 230 Flash in order to complete liquid membrane construction. Consumption: approximately 1.0 to 1.3 kg / m^2.

Promptly remove all masking tape prior to liquid membrane curing.

The following series of photos illustrate a fully reinforced staircase application. Very often, in practice, only planar transition changes are fleece reinforced. Surface substrate should be properly prepared. Refer to substrate preparation chart for additional information.

Prime surface as necessary. Wood and concrete surfaces require primer application.

Apply primer with a brush or lambswool roller. Consumption: 0.5 kg / m^2 depending on surface texture. Allow to dry approximately 20 minutes.

Apply catalyzed ALSAN RS 230 Flash. Consumption: about 1.5 kg / m^2.

... and spread with a roller.

Install ALSAN RS Fleece reinforcement into wet ALSAN RS 230 Flash. Use the roller to eliminate any wrinkles or air bubbles. Completely saturate the fleece. Additional liquid resin should be applied in areas where the fleece reinforcement overlaps.

While still curing, apply a top application of ALSAN RS 230 Flash in order to complete liquid membrane construction. Consumption: approximately 1.0 to 1.3 kg / m^2.

Allow to cure for 30 minutes prior to wearing surface applications.

Use ALSAN RS Paste as a setting bed for the protective metal edge profile installation.

Apply catalyzed ALSAN RS Paste directly to clean and dry ALSAN RS 230 application. Consumption depends on the nature of the substrate. Rule of thumb: about 2 kg / m^2 and one millimeter in thickness.

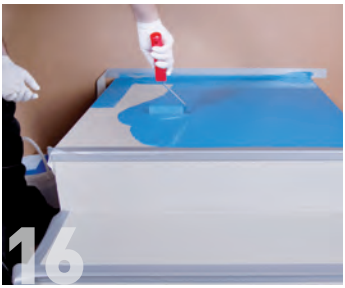
Install the metal edge profile, pressing them into wet ALSAN RS Paste.

The metal edge profiles are recommended for slip resistance purposes.

Apply masking tape to metal edge profiles.
Mix mortar course (see ALSAN RS 233 Self-Leveling Mortar), catalyze and apply ...

... and distribute onto horizontal surfaces with a trowel. Consumption: 3.5 - 4.0 kg / m^2. Immediately remove masking tape. Allow to dry approximately 30 minutes prior to subsequent applications.

Apply masking tape over metal edge profiles. Mix and catalyze ALSAN RS 288 Color Finish and apply ...



... and spread with a lambswool roller. Consumption: 0.6 - 0.8 kg / m^2.
Immediately remove masking tape.

The staircase is accessible after one hour and able to withstand heavy traffic after one day.

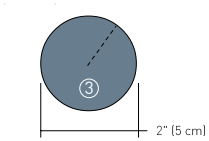

ALSAN RS 290 TEXTURED
ALSAN RS 276 | 222
PREPARED SU

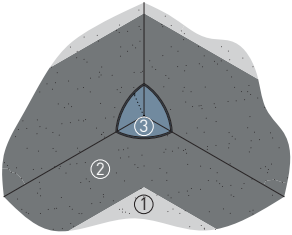
Inside Corner Detail

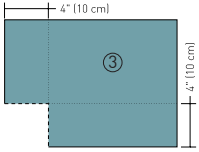
③ ALSAN 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash

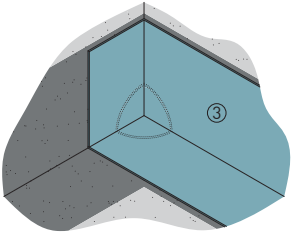
② ALSAN RS 276 / 222 Primer (as necessary)

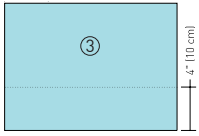
① Prepared substrate

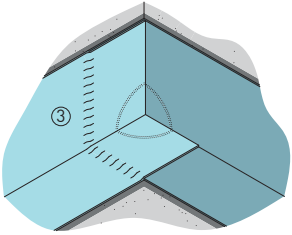






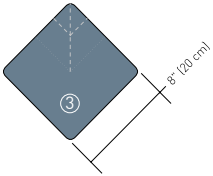


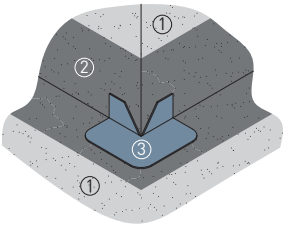


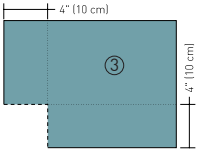


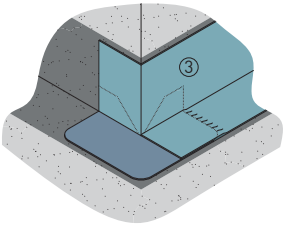
Outside Corner Detail

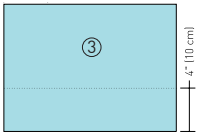
③ ALSAN 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate

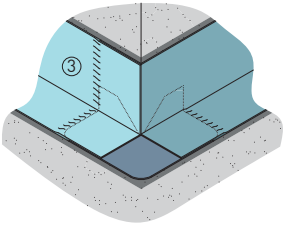












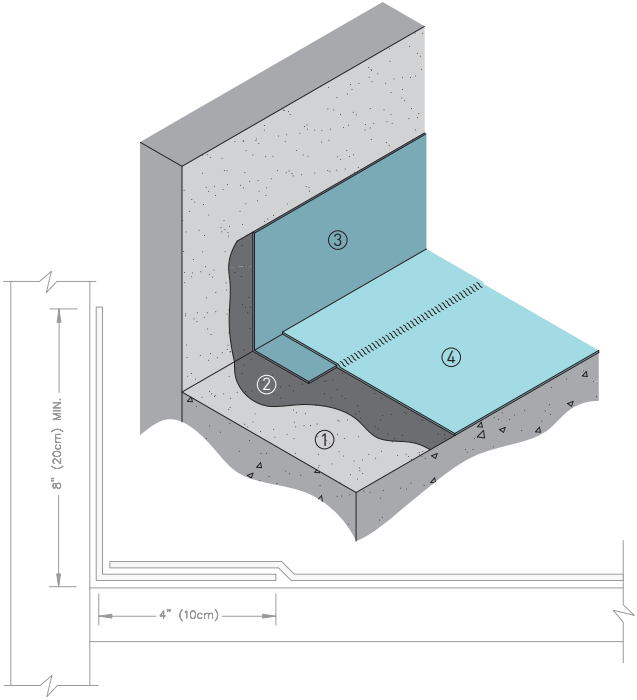
Standard Wall Flashing

④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field

③ ALSAN 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash

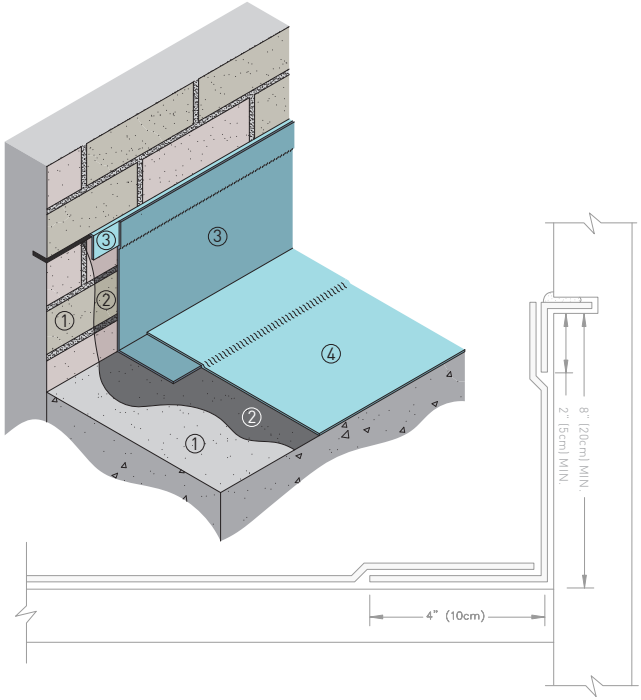
② ALSAN RS 276 / 222 Primer (as necessary)

① Prepared substrate



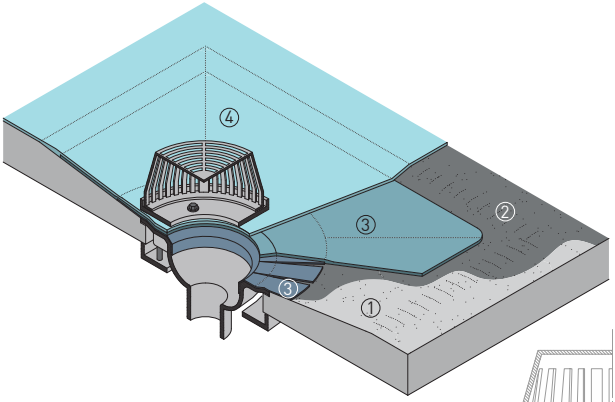
Brick Wall w/ Reglet

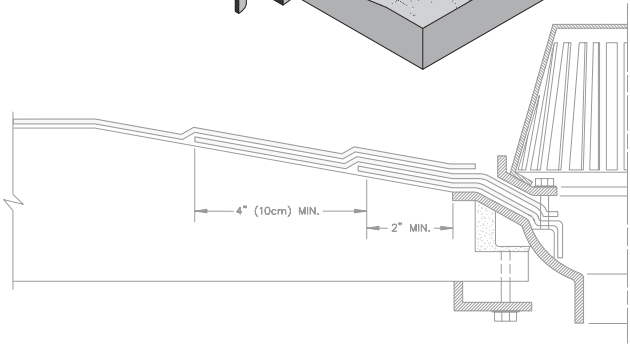
④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field
③ ALSAN RS 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate



Drain Flashing

④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field
③ ALSAN 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate

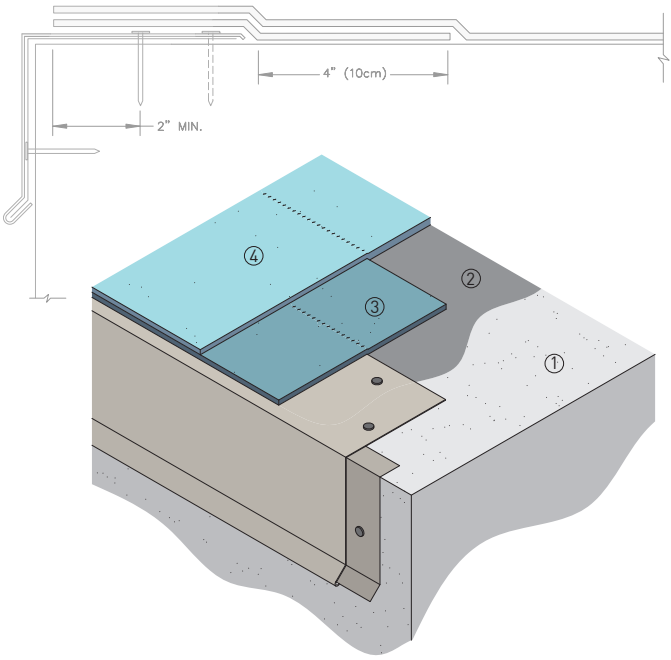




NOTE: Drain ring clamp installation is optional in ALSAN RS fluid-applied membrane application.

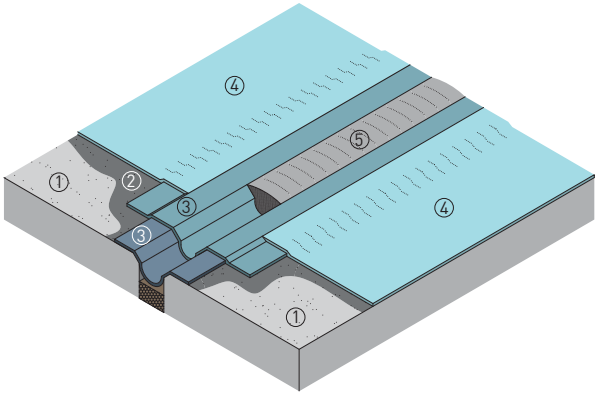
Metal Edge Flashing

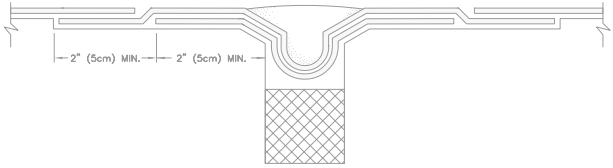
④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field
③ ALSAN RS 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate



Expansion Joint

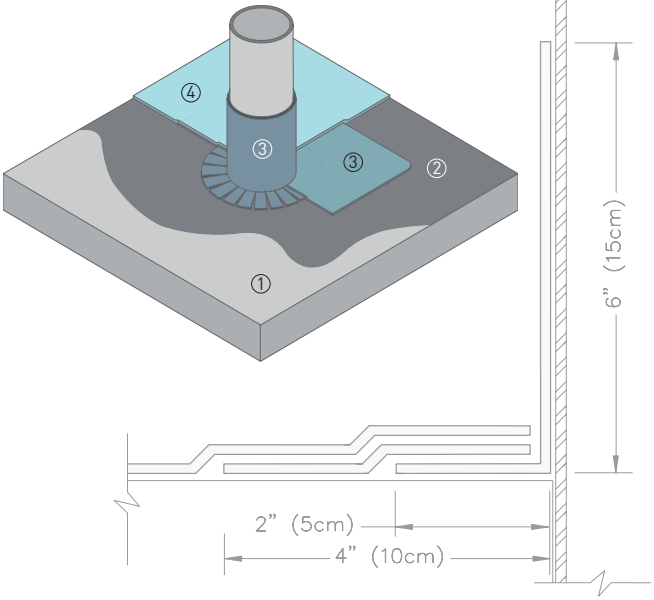
⑤ Flexible urethane sealant or pourable sealer (by others)
④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field
③ ALSAN RS 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate





Pipe Projection

④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field
③ ALSAN RS 230 Flash / ALSAN RS Fleece / ALSAN RS 230 Flash
② ALSAN RS 276 / 222 Primer (as necessary)
① Prepared substrate



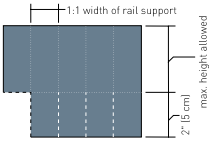
Rail Post Penetration

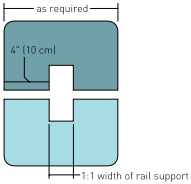
④ ALSAN RS 230 Field / ALSAN RS Fleece / ALSAN RS 230 Field

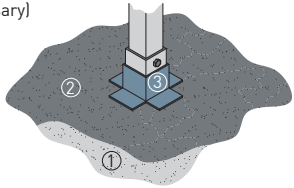
③ ALSAN 230 RS Flash / ALSAN RS Fleece / ALSAN RS 230 Flash

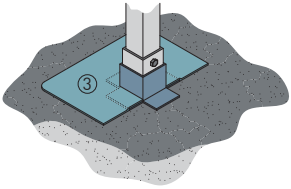
② ALSAN RS 276 / 222 Primer (as necessary)

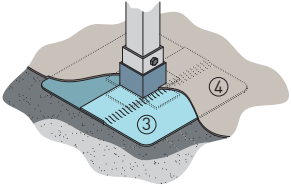
① Prepared substrate

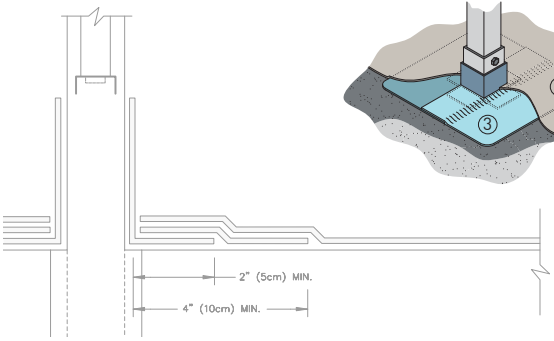












This ALSAN RS System Pocket Guide is a useful companion to the new **SOPREMA LIQUIDS** website (www.sopremaliquids.us) that features information on all SOPREMA LIQUID product lines. The website is your one stop source for up-to-date information including:

- Specifications
- Technical Bulletins / Notices
- Product Data Sheets
- Material Safety Data Sheets
- Drawing Details
- Instructional Videos
- Marketing Materials
- Job Profiles
- Warranty Information

All documents are available for instant download. For more information, please contact us at:

SOPREMA
800.356.3521
info@soprema.us
www.soprema.us
www.sopremaliquids.us

NOTE: All information and figures are based on the current state of knowledge. Requirements may differ based on varying conditions. SOPREMA reserves the right to make changes to this document at any time.

07/2012

CHECK OUT THE **SOPREMA TOOLBOX APP**!

The SOPREMA USA TOOLBOX app has tools especially designed to assist the estimator and contractor in working with SOPREMA LIQUIDS systems. You can find the app at the App Store on iTunes or by scanning the QR code below with your iPhone!

SOPREMA

SOPREMA USA
310 Quadral Drive
Wadsworth, Ohio 44281

Telephone	800.356.3521
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Internet	www.soprema.us
Twitter	@SopremaUSA

DUOTACK Adhesion Field Testing

Throughout construction, the contractor is responsible for ensuring DUOTACK insulation adhesive is well bonded to all substrate conditions. The quality of adhesive bond may be determined by conducting a simple qualitative bond test using a spud bar or a shovel.

If a quantitative uplift resistance value (pounds per square foot, psf) is required, please contact SOPREMA's Technical Department.

Qualitative Bond Test Method

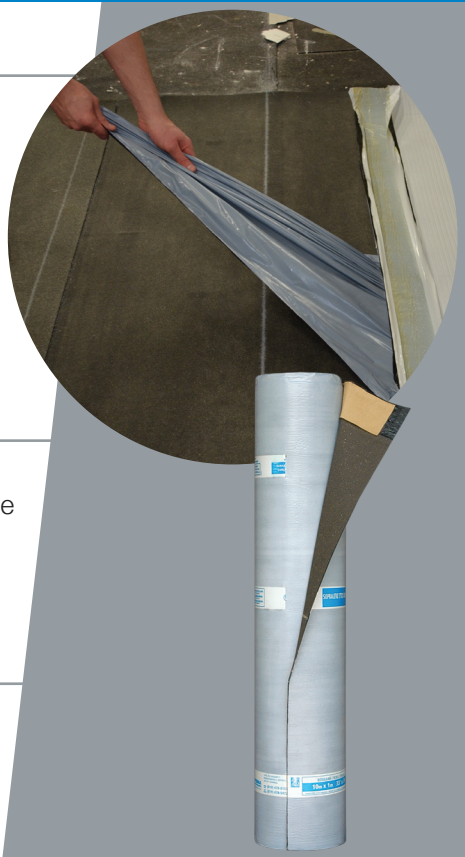
1. Ensure the substrate is clean, dry and free of contamination and loose materials.
2. Apply ½ to ¾ inch wide adhesive ribbons, spaced as specified (maximum 12 inches apart).
3. Immediately set the specified insulation or cover-board into the adhesive and hold in place using weight or hand pressure until the adhesive sets (typically within 5 minutes).
4. Allow 1 hour or more for adhesive to cure sufficiently before testing.
5. Using a flat-tip spud bar or a shovel (preferably with a heel on the back), position where the tip of the spud bar or the shovel is wedged under the board.
6. Apply consistent, gradual downward pressure on the handle to generate upward force on the underside of the board.
7. Observe the effects of this applied force:
    a. Board breaks. The DUOTACK bond is stronger than the board's cohesive strength.
    b. DUOTACK is completely removed from the substrate. Examine the substrate surface to determine if the substrate is satisfactory, or additional substrate preparation is required.
    c. DUOTACK separates leaving some DUOTACK residue on both the board and the substrate. Examine the DUOTACK to ensure it was property dispensed and fully cured.

SOPRALENE® STICK

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

SOPRALENE Stick is an SBS-modified bitumen, self-adhered base ply for use in approved multi-ply membrane and flashing assemblies. SOPRALENE Stick is composed of a proprietary formulation of elastomeric styrene-butadiene-styrene (SBS) polymer modified bitumen in combination with a high tack self-adhesive layer and is reinforced with tough, dimensionally stable non-woven polyester mat. The topside is surfaced with fine mineral aggregate to facilitate self-adhered, cold adhesive and hot asphalt applications and the underside is surfaced with protective polyolefin release film that is removed during application.



STORAGE

Store rolls on end and maintain in an upright position to prevent damage. Store rolls in a clean dry location and cover as necessary to protect rolls from environmental damage such as extreme cold, heat, or moisture. Monitor varying environmental conditions during storage, handling and application of SOPRALENE Stick.

APPLICATION

Prior to installation, unroll SOPRALENE Stick onto the roof surface and allow to relax. Place SOPRALENE Stick in desired position. Remove the protective release film from the underside of the sheet and roll SOPRALENE Stick into place with a weighted roller. Subsequent approved inter-ply or cap ply membranes are applied to SOPRALENE Stick via self-adhered, cold adhesive and hot asphalt applications. Refer to the SOPREMA SBS Roofing Manual for additional application guidelines.

APPLICATION

SELF-ADHERED

QUICK FACTS

ASTM STANDARD	LENGTH (ft)	WIDTH (in)	COVERAGE* (ft^2)	THICKNESS (mils)	ROLL WEIGHT (lb)	ROLLS/ PALLET (pallet weight)
D6164 Type 1, Grade S	49.2 (15.0 m)	39.4 (1.0 m)	147.6 (13.7 m^2)	106 (2.7 mm)	103 (46.5 kg)	20 (2,100 lb/ 953 kg)

* Coverage rate as reported assumes installation using side and end lap recommendations.

SOPREMA®
www.soprema.us
310 Quadral Drive, Wadsworth, Ohio 44281
Toll Free: (800) 356-3521 | Tel: (330) 334-0066

SOPRALENE® STICK

TECHNICAL INFORMATION & TESTING

SHEET PROPERTIES	
Reinforcement	Non-woven polyester
Elastomeric bitumen	Proprietary blend of bitumen and SBS polymers
Top surfacing	Sanded
Back surfacing	Self-adhered with release film
Selvage surface	Self-adhered with release film
Selvage width, in (mm)	3 in (76 mm)
End lap, in (mm)	6 in (152 mm)

DIMENSIONS & MASS		
PROPERTY		TEST METHOD
Thickness, mils (mm)	106 (2.7)	ASTM D5147
Net mass per unit area, lb/100ft^2 (g/m^2)	63 (3098)	ASTM D5147

PHYSICAL PROPERTIES			
PROPERTY	MD	XMD	TEST METHOD
Peak load @ 0°F (-18°C), lbf/in (kN/m)	110 (19.3)	85 (14.9)	ASTM D5147
Elongation at peak load @ 0°F (-18°C), %	35	40	ASTM D5147
Peak load @ 73.4°F (23°C), lbf/in (kN/m)	85 (14.9)	65 (11.4)	ASTM D5147
Elongation at peak load @ 73.4°F (23°C), %	55	60	ASTM D5147
Ultimate elongation @ 73.4°F (23°C), %	60	65	ASTM D5147
Tear strength @ 73.4°F (23°C), lbf (N)	125 (556)	85 (378)	ASTM D5147
Low temperature flexibility, °F (°C)	-15 (-26)	-15 (-26)	ASTM D5147
Dimensional stability, %	< 0.5	< 0.5	ASTM D5147
Compound stability, °F (°C)	240 (116)	240 (116)	ASTM D5147

** Data is represented by average values, unless noted otherwise.*

TESTING & APPROVALS

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SOPREMA®

SOPRABOARD®

SOPRABOARD®
PRODUCT #
Contact Customer Service

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

SOPRABOARD is a semi rigid, asphaltic roofing substrate board for use in approved multi-ply membrane and flashing assemblies. SOPRABOARD is composed of a mineral fortified asphaltic core formed between two fiberglass reinforcing plies. SOPRABOARD is designed for use with SOPREMA®'s SBS-modified bitumen membranes and may be used as a protection board in SOPREMA's waterproofing systems and assemblies.

STORAGE & HANDLING

Store SOPRABOARD flat on a pallet to prevent damage. Do not double stack pallets of SOPRABOARD as this may cause damage the lower pallet. Store in a clean, dry location and cover as necessary to protect boards from environmental damage such as extreme heat, cold, or moisture.

APPLICATION

Place SOPRABOARD in desired position. Apply SOPRABOARD with mechanical fasteners, or adhere with DUOTACK® insulation adhesive or hot asphalt, following the details for the uplift pressure required. Subsequent approved base-ply membranes are adhered to SOPRABOARD via heat welding, cold adhesive, self-adhesive or hot asphalt applications. Refer to the SOPREMA SBS Roofing Manual for additional application guidelines.

SOPREMA®
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310 Quadral Drive, Wadsworth, Ohio 44281
Toll Free: (800) 356-3521 | Tel: (330) 334-0066

SOPRABOARD®

TECHNICAL INFORMATION & TESTING

DIMENSIONS & MASS			
PROPERTY	SOPRABOARD 1/8"	SOPRABOARD 3/16"	SOPRABOARD 1/4"
Thickness, in (mm)	1/8 (3.2)	3/16 (4.8)	1/4 (6.4)
Board size, ftxft (mxm)	4x4 (1.2 x 1.2), 4x5 (1.2 x 1.5), 4x8 (1.2 x 2.4)		
Weight, lb/ft^2 (kg/m^2)	0.9 (4.4)	1.4 (6.9)	1.9 (9.3)

PHYSICAL PROPERTIES				
PROPERTY	SOPRABOARD 1/8"	SOPRABOARD 3/16"	SOPRABOARD 1/4"	TEST METHOD
Puncture resistance, lbf (N)	90 (400)	95 (423)	100 (445)	ASTM E154
Water absorption, %	<1.0	<1.0	<1.0	ASTM D994
Compressive strength, psi (kPA)**	1610 (11100)	1470 (10135)	1320 (9100)	ASTM C472
Hardness, min 20 lbf (89 N)	Pass	Pass	Pass	ASTM C1278

** Data is represented by average values, unless noted otherwise.*
*** Measured at 50% compression.*

TESTING & APPROVALS

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SOPREMA®

DUOTACK® 365

DUOTACK® 365
PRODUCT #
D30225 (cartridges)
D30150 (cubitainer)

PRODUCT DATA SHEET

DESCRIPTION & FEATURES

DUOTACK 365 is a low rise, two component polyurethane adhesive. DUOTACK 365 is used to adhere insulation and cover boards to approved substrates. Insulation and cover boards may include polyisocyanurate, polystyrene, mineral fiber, gypsum, wood fiber, cement, perlite and asphaltic roof boards. DUOTACK 365's unique chemistry provides for a versatile quick setting adhesive that is not susceptible to low relative humidity or temperature.

STORAGE & HANDLING

DUOTACK 365 should be stored in a clean, dry location and protected from environmental exposure and out of direct sunlight. DUOTACK 365 can be stored without temperature restrictions. When used during cold weather, DUOTACK 365 should be conditioned to a minimum temperature of 14°F (-10°C). When stored properly, DUOTACK has a shelf life of 12 months from its manufacture date.

APPLICATION

DUOTACK 365 is applied to approved substrates free of oil, grease, dirt and other contaminants in ½" to ¾" ribbons. Maximum spacing for these ribbons is 12 inches on-center, though 6 inches and 4 inches on center are used in perimeters and corners. Once applied, immediately place the insulation/coverboard into the wet adhesive and do not allow the adhesive time to skin over. Maintain constant pressure/weight on the boards while DUOTACK 365 cures, usually in minutes but may vary depending on environmental conditions.

QUICK FACTS

CASE QUANTITY	COVERAGE (ft^2)	CUBITAINER QUANTITY (gal)	COVERAGE (ft^2)	TACK-FREE (minutes)
4 cartridges	100-150 per dual cartridge	10 per cubitainer set (A&B)	2500-3800 per cubitainer set (A&B)	10-12 at 70°F (21°C)

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310 Quadral Drive, Wadsworth, Ohio 44281
Toll Free: (800) 356-3521 | Tel: (330) 334-0066

DUOTACK® 365

TECHNICAL INFORMATION & TESTING

PRODUCT INFORMATION	
SPECIFICATIONS - DUOTACK 365 CARTRIDGES	
Color Part a Part b	Amber Grey
*Volume, mL Part a & b	750
Coverage, ft^2 (m^2) Four (4) dual cartridges	400-600 (37-56)
SPECIFICATIONS - DUOTACK 365 CUBITAINERS/DRUMS	
Color part a part b	Amber Grey
Size, gal (L) Cubitainers - part a & b Size, gal (L) Drums - part a & b	5 (18.9) 50 (189.3)
Coverage, ft^2 (m^2) Cubitainers - part a & b Coverage, ft^2 (m^2) Drums - part a & b	2,500-3,800 (232-353) 25,000-38,000 (2,323-3530)

** DUOTACK 365 is packaged in 4, 1.5L component caulk gun cartridges (dual set) per case.*

PROPERTIES		
PROPERTY		TEST METHOD
Viscosity, Brookfield @ 77 °F (25 °C) 5 rpm, sp# 4, cP Part A, Part B	400-600 4,000-7,000	ASTM D2556
Reactivity measure, seconds	10	Internal/industry
Rise time, seconds	Approx. 90	Internal/industry
Curing time, minutes	30	Internal/industry

TESTING & APPROVALS

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SOPREMA®

ALSAN RS CATALYST

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/02/2014 Revision date: 09/28/2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : ALSAN RS CATALYST

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Reactive agent used to induce curing of ALSAN RS liquid membranes

1.3. Details of the supplier of the safety data sheet

Manufacturer:
SOPREMA USA
310 Quadral Dr.
Wadsworth, OH 44281
Tel: 1-800-356-3521

Distributors:
SOPREMA Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
Tel: 1-819-478-8163

SOPREMA Canada
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
Tel: 1-604-793-7100

SOPREMA USA
12251 Seaway Road
Gulfport (Mississippi) 39507
UNITED STATES
Tel: 1-228-701-1900

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-434-9300 (Acct.# CCN20515). CANUTEC 1-613-996-6666

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

ORGANIC PEROXIDES – Type D
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 2
SKIN SENSITIZATION – Category 1
TOXIC TO REPRODUCTION (Fertility) – Category 2

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H242 - Heating may cause a fire
H317 - May cause an allergic skin reaction
H319 – Causes serious eye irritation
H361 – Suspected of damaging fertility

Precautionary statements (GHS-US) : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection: Recommended: safety glasses with side shields. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from

Prevention

	clothing, incompatible materials and combustible materials. Keep only in original container. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	IF exposed or concerned: Get medical attention. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	Store locked up. Protect from sunlight. Store at temperatures not exceeding 30°C/86°F. Keep cool. Store away from other materials.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	Temperature control may be required. Hazardous decomposition may occur.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Mixture

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Dibenzoyl peroxide	(CAS No) 94-36-0	49-51	Org. Perox. D, H242 Skin Sens. 1, H317
Dicyclohexyl phthalate	(CAS No) 84-61-7	49-51	

SECTION 4: First aid measures

4.1. Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swalowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2. Most important symptoms and effects, both acute and delayed

Potential acute health effects :

Eye contact	Causes serious eye irritation.
Inhalation	No known significant effects or critical hazards.
Skin contact	May cause skin irritation. May cause an allergice skin reaction.
Ingestion	Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include pain or irritation, watering or redness.
Inhalation	Adverse symptoms may include reduced fetal weight, increase in fetal deaths and skeletal malformations.
Skin contact	Adverse symptoms may include irritation, redness, reduced fetal weight, increase in fetal deaths and skeletal malformations.
Ingestion	Adverse symptoms may include reduced fetal weight, increase in fetal deaths and skeletal malformations.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled
Specific treatments	No specific treatment
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Use dry chemical, CO_2, water spray (fog) or foam.
Unsuitable extinguishing media	:	Do not use water jet.

5.2. Special hazards arising from the substance or mixture

This material increases the risk of fire and may aid combustion. Heating may cause a fire. May re-ignite itself after fire is extinguished. Hazardous decomposition may occur. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products	Decomposition products may include carbon dioxide and carbon monoxide.

5.3. Advice for firefighters

Firefighting instructions	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from the fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Remark(s)-		Benzoyl peroxide will explode at temperatures above 392°F (200°C). Do not allow benzoyl peroxide to dry out, as the material will become shock and friction sensitive.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Remove ignition sources. No open flames. No smoking.

6.1.1. For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

6.1.2. For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Small spill:	:	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid contamination with reactive substances. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill: Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid contamination with reactive substances. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures: : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use only non-sparking tools. Keep away from clothing, incompatible materials and combustible materials. Temperature control may be required. Empty containers retain product residue and can be hazardous. Do not reuse container.

Hygiene measures : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : To avoid the risk of formation of shock-sensitive crystals or loss of stability, it is important to store the product within the recommended temperature range. Temperature control may be required. Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store at temperatures not exceeding 30 °C/86 °F. Store locked up. Eliminate all ignition sources. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Prevent product contamination. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store at temperatures not exceeding 30°C/86°F.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. combustible materials.

Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Dibenzoyl peroxide (94-36-0)		
USA ACGIH 1996	ACGIH TWA (mg/m³)	5 mg/m³
USA RQMT 1984	RQMT TWA (mg/m³)	5 mg/m³
USA OSHA 1989	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA ACGIH 6/2013	ACGIH TLV (TWA) (mg/m³)	5 mg/m³ 8 hours
USA NIOSH 10/2013	NIOSH REL (TWA) (mg/m³)	5 mg/m³ 10 hours
USA OSHA 2/2013	OSHA PEL (TWA) (mg/m³)	5 mg/m³ 8 hours

8.2. Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: safety glasses with side-shields.
Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Dust respirator.
Personal protective equipment (Pictograms)	:	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid. [Granules]
Color	:	White
Odor	:	Odorless
Odor threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Specific Gravity	:	No data available
Density	:	≈ 778 kg/m³
Solubility	:	No data available
Log Pow	:	No data available

Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	Heating may cause an explosion.
Oxidising properties	:	No data available
Explosive limits	:	No data available
VOC		0 g/L
SADT		60°C (140°F)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

This product, in laboratory testing, either detonates partially, deflagrates slowly or shows a medium effect when heated under confinement.

10.2. Chemical stability

This product is stable.

10.3. Possibility of hazardous reactions

Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:
temperature increase
high temperature
Reactions may include the following:
hazardous decomposition
risk of causing fire

10.4. Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Avoid increased storage temperature. Direct sunlight.

10.5. Incompatible materials

Reactive or incompatible with the following materials:
combustible materials
reducing materials
Copper
iron
rust

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Product/ingredient name	Result	Species	Score	Exposure	Observation
Dibenzoyl peroxide	Eyes – Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Conclusion/Summary

Skin: Dibenzoyl peroxide showed no skin irritation when tested on rabbits according to OECD Test Guideline 404. Dicyclohexyl phthalate showed no skin irritation when tested on reconstructed human epidermis (RhE) according to OECD Test Guideline 439.

Eyes: Dicyclohexyl phthalate showed no eye irritation according to OECD Test Guideline 437.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Dibenzoyl peroxide	Skin	Mouse	Sensitizing
Dicyclohexyl phthalate	Skin	Mouse	Sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Dibenzoyl peroxide	OECD 471	Subject: Bacteria	Negative
Dicyclohexyl phthalate	OECD 471	Subject: Bacteria	Negative

Carcinogenicity

Conclusion/Summary Not available

Classification

Product/ingredient name	OSHA	IARC	NTP
Dibenzoyl peroxide	-	3	-

Reproductive toxicity

Conclusion/Summary Dicyclohexyl phthalate: Suspected of damaging fertility based on some evidence of adverse effects on sexual function.

Teratogenicity

Conclusion/Summary Not available.

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Not available

Information on the likely routes of exposure: Routes of entry anticipated: Oral, Inhalation.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

Conclusion/Summary Not available.
General Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimate

Not available.

SECTION 12: Ecological information

Ecotoxicity

Product/ingredient name	Result	Species	Exposure

Dibenzoyl peroxide	Acute EC 50 0.07 mg/l Acute EC50 0.11 mg/l Acute EC50 35 mg/l Acute LC50 0.06 mg/l	Algae Daphnia Micro-organism Fish	72 hours 48 hours 30 minutes 96 hours
Dicyclohexyl phthalate	NOEC >2 mg/l NOEC >100 mg/l Acute EC50 >2mg/l No toxicity at limit of solubility Acute LC50 >2 mg/l No toxicity at limit of solubility Chronic NOEC 0.181 mg/l	Algae Micro-organism Algae Fish Daphnia	72 hours 3 hours 72 hours 96 hours 21 days

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Dibenzoyl peroxide	OECD 301D	68% - 28 days	-	-
Dicyclohexyl phthalate	OECD 301D	68.5% - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Dibenzoyl peroxide	-	-	Readily
Dicyclohexyl phthalate	-	-	Readily

Bioaccumulative potential

Product/ingredient name	Log P_{ow}	BCF	Potential
Dibenzoyl peroxide	3.2	-	low
Dicyclohexyl phthalate	5.6	-	high

Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

Disposal Methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D003

Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14: Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	3106	Organic peroxide type D, solid (dibenzoyl peroxide, 50% in phthalate)	5.2	II		**Remarks:** Marine pollutant
TDG Classification	3106	Organic peroxide type D, solid (dibenzoyl peroxide, 50% in phthalate)	5.2	II		**Remarks:** Marine pollutant
ADR/RID Class	3106	Organic peroxide type D, solid (dibenzoyl peroxide, 50% in phthalate)	5.2	II		**Remarks:** Marine pollutant
IMDG Class	3106	Organic peroxide type D, solid (dibenzoyl peroxide, 50% in phthalate)	5.2	II		**Remarks:** Marine pollutant
IATA-DGR Class	3106	Organic peroxide type D, solid (dibenzoyl peroxide, 50% in phthalate)	5.2	II		**Remarks:** Marine pollutant

PG* : Packing group

In accordance with DOT

Transport document description	:	UN3106 Organic peroxide type D, solid, 5.2, II
UN-No.(DOT)	:	3106
DOT NA no.	:	UN3106
DOT Proper Shipping Name	:	Organic peroxide type D, solid
Department of Transportation (DOT) Hazard Classes	:	5.2 - Class 5.2 - Organic Peroxide 49 CFR 173.128
DOT Symbols	:	G - Identifies PSN requiring a technical name
Packing group (DOT)	:	II - Medium Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	:	152
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	225
DOT Packaging Bulk (49 CFR 173.xxx)	:	None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	5 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	10 kg
DOT Vessel Stowage Location	:	D - The material must be stowed ‘‘on deck only’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	:	12 - Keep as cool as reasonably practicable,40 - Stow ‘‘clear of living quarters’’,52 - Stow ‘‘separated from’’ acids,53 - Stow ‘‘separated from’’ alkaline compounds

SECTION 15: Regulatory information

United States inventory (TSCA 8b) All components are listed or exempted.

U.S. Federal regulations
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: dicyclohexyl phthalate

SARA 302/304
Composition/information on ingredients No products were found.
SARA 311/312
Classification Reactive

Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Dibenzoyl peroxide	49-51	No	No	Yes	Yes	No
Dicyclohexyl phthalate	49-51	Yes	No	No	Yes	Yes

SARA 313

	Product name	CAS number	%
Form R – Reporting requirements	Dibenzoyl peroxide	94-36-0	49-51
Supplier notification	Dibenzoyl peroxide	94-36-0	49-51

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts The following components are listed: BENZOYL PEROXIDE
New Jersey The following components are listed: BENZOYL PEROXIDE; DIBENZOYL PEROXIDE
Pennsylvania The following components are listed: BENZOYL PEROXIDE; DIBENZOYL; PHTHALATE ESTERS
California Prop. 65 None of the components are listed.

International regulations

Europe inventory All components are listed or exempted
Canada inventory All components are listed or exempted
Australia inventory (AICS) All components are listed or exempted
China inventory (IECSC) All components are listed or exempted
Japan inventory All components are listed or exempted
Korea inventory All components are listed or exempted
New Zealand Inventory of Chemicals (NZIoC) All components are listed or exempted
Philippines inventory (PICCS) All components are listed or exempted

SECTION 16: Other information

HMIS (USA):		NFPA (USA):	
Health	**2**	**Health**	**2**
Flammability	**2**	**Flammability**	**2**
Physical hazard	**2**	**Instability**	**2**
Protective equipment	**G**	**Specific hazard**	OX

History

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Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. (“Marpol”= marine pollution)
UN = United Nations

References Not available
For information: 1-800-356-3521 (U.S.A.)
1-800-567-1492 (Canada)

The Safety Data Sheets of SOPREMA are available on the internet at the following websites: www.soprema.us and www.soprema.ca

Update justification:
Updated storage temperature

SDS US (GHS HazCom 2012)*This SDS contains all the information required by ANSI Z400.1 standard (United States), by regulation 29 CFR Part 1910-1200 of the Hazard Communication Standard of OSHA and is in accordance with DORS/88-66 of WHMIS (Canada).*

MATERIAL SAFETY DATA SHEET

ALSAN RS 289 TEXTURED BASE

Offerte en français

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 **PAINT RELATED MATERIAL** **Class 3** **UN1263** **P.G.: II**

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Use: **Rapid-curing PMMA base resin**

Formula number: **N/A**

Manufacturer / Distributors:

Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39507
UNITED STATES
Tel.: 228 239-1168

In case of emergency:

SOPREMA (8:00am to 5:00pm ET): 1-800 567-1492 **CANUTEC (Canada) (24h.): 613 996-6666** **CHEMTREC (USA) (24h.): 1 800 424-9300**

EMERGENCY OVERVIEW

Clear liquid with strong solvent odour. CAUTION! This product and its vapours are extremely flammable. The vapours are heavier than air and may spread long distances. Distant ignition and flash back are possible. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

May cause skin, eye and respiratory tract irritation. May be harmful or fatal if swallowed. Ingestion of the product can cause severe lung injury when aspirated. Inhalation of high concentrations of this product may cause central nervous system (CNS) depression (headache, nausea, dizziness, drowsiness, incoordination and unconsciousness). May cause skin and respiratory sensitization.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Methyl methacrylate (MMA)	80-62-6	10-30	50 ppm	100 ppm
2-Ethylhexyl acrylate (2-EHA)	103-11-7	10-30	Not available	Not available
Diisopropanol-P-toluidine (DPPT)	38668-48-3	0.5-1.5	Not available	Not available

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

INHALATION

MMA: MMA is extremely volatile and can easily form high vapour concentration at room temperatures. Low concentrations are probably irritating to the nose, throat and respiratory tract. Higher concentrations can probably cause symptoms of CNS depression, such as headache, nausea, dizziness, drowsiness, and confusion. Very high concentrations may cause loss of consciousness and possibly death. Due to its irritating nature, MMA may cause a potentially fatal accumulation of fluid in the lungs. Symptoms may include shortness of breath, pain in the chest and difficulty breathing. Symptoms may not develop for up to 24 hours after exposure. (1)

2-EHA: 2-EHA is irritating to respiratory tract. (2)

DPPT: Irritating to the respiratory system. (2)

SKIN CONTACT

MMA: MMA is probably a mild to moderate skin irritant, based on animal information and limited human information. Mild redness was observed in approximately 16/50 volunteers, after a 48 hour exposure to cotton saturated with MMA. MMA can be absorbed through the skin but no harmful effects would be expected by this route of exposure. Repeated or prolonged skin contact can cause allergic skin sensitization. (1)

2-EHA: 2-EHA is a severe irritant based on animal information. (1)

DPPT: Prolonged contact with the product can result in skin irritation. (2)

EYE CONTACT

MMA: MMA is probably a mild to moderate eye irritant, based on animal information. (1)

2-EHA: 2-EHA is a very mild irritant based on animal information. (1)

DPPT: Irritating to eyes and respiratory system. (2)

INGESTION

MMA: Based on animal evidence, ingestion of MMA is likely to produce signs and symptoms of CNS depression. Ingestion is not a typical route of occupational exposure. (1)

2-EHA: May be harmful if swallowed. (2)

DPPT: Harmful if swallowed. (2)

Effects of Long-Term (Chronic) Exposure

SKIN SENSITIZATION

MMA: MMA is a skin sensitizer. There are numerous reports of allergic skin sensitization developing in people occupationally exposed to products containing MMA or MMA itself. These findings are supported by positive patch testing results. Once a person is sensitized to a material, contact with even a small amount causes outbreaks of dermatitis with symptoms such as skin redness, itching, rash and swelling. This can spread from the hands or arms to other parts of the body. (1)

2-EHA: 2-EHA is a skin sensitizer based on animal information. Sensitization in humans has also been reported. Several case studies have reported dermatitis and hand eczema in workers exposed to 2-EHA in adhesives, glues, inks and other products. Positive patch test reactions were obtained for 2-EHA in many of these workers. (1)

DPPT: Skin sensitizing effects were not observed in animal studies. (2)

NERVOUS SYSTEM
MMA: Based on human studies and supported by animal evidence, long-term exposure to MMA can probably cause mild CNS effects (e.g. headache, nausea, dizziness). (1)

2-EHA and DPPT: No information available.

CARCINOGENICITY
MMA: In general, human studies have not shown convincing evidence of an increased cancer risk from exposure to MMA. One study showed increased colorectal cancer in three groups exposed to MMA and ethyl acrylate and their volatile by-products. No conclusions can be drawn from this study due limitations such as the concurrent exposures. Negative results have been obtained in animal studies. The International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

2-EHA: IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3).

DPPT: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY
MMA: There is no human information available. MMA has not caused teratogenic or embryotoxic effects in animals at exposures which were not maternally toxic. (1)

2-EHA and DPPT: No information available.

REPRODUCTIVE TOXICITY
MMA: No human information available. No effects have been observed in limited animal studies. (1)

2-EHA and DPPT: No information available.

MUTAGENICITY
MMA: The available information does not indicate that MMA is mutagenic. (1)

2-EHA: 2-EHA demonstrated evidence of genotoxic activity in some assays (i.e. *In vitro* sister chromatid exchange, mouse lymphoma and *in vitro* UDS), the activity was weak and equivocal. (2)

DPPT: No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS
MMA: No information available. (1)

2-EHA and DPPT: No information available.

POTENTIAL FOR ACCUMULATION
MMA: Probably does not accumulate. MMA is rapidly absorbed by the inhalation, oral and dermal routes of exposure and distributed throughout the body. It is metabolized to methanol and methacrylic acid, which is further metabolized and taken up in normal biochemical pathways in the body. Elimination is mainly by exhalation of carbon dioxide. (1)

2-EHA and DPPT: No information available.

RESPIRATORY SENSITIZATION
MMA: There is insufficient information available to conclude that MMA is a respiratory sensitizer. There are only three reliable case reports of respiratory sensitization developing after occupational exposure to products containing MMA. This is a very small number of cases compared to the total population exposed to MMA in the workplace. Sensitized people can experience symptoms of bronchial asthma such as wheezing, difficult breathing, sneezing and runny or blocked nose at low airborne concentrations that have no effect on unsensitized people. (1)

2-EHA and DPPT: No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT
Avoid exposition to direct sunlight or UV rays while the product is on the skin. Remove contaminated clothing. Wash thoroughly with soap and water. Do not use solvents. If irritation persists, get immediate medical attention.

EYE CONTACT
Avoid exposition to direct sunlight or UV rays while the product is on the eyes. Flush thoroughly with water for at least 15 minutes. If irritation persists, get immediate medical attention.

INHALATION
In case of gas or vapour inhalation, move victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, give respiratory assistance. Obtain immediate medical attention.

SWALLOWING
Do not induce vomiting. Immediately contact local poison control centre. Should vomiting occur, be sure to keep the victim's head below hips to avoid aspiration of vomit into the lungs. Maintain the victim at rest and obtain immediate medical attention.

SECTION V: FIRE FIGHTING MEASURES

FLAMMABILITY: Flammable liquid, Class 1B (NFPA)
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.
FLASH POINT: 2°C or 35.6°F (MMA, closed cup)
AUTO-IGNITION TEMPERATURE: 230°C or 446°F (2-EHA)
FLAMMABILITY LIMITS IN AIR: (% en volume) Not available

FIRE AND EXPLOSION HAZARDS
This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS
Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO_2, methacrylic acid fumes.

FIRE FIGHTING INSTRUCTIONS
Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION
Universal foam, dry chemical powder, CO_2 or sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL
Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING
This product and its vapours are extremely flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE
Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear gloves in polyvinyl alcohol or butyl rubber.
RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.
EYES: Wear chemical safety goggles in accordance with standards.
OTHERS: Eye bath and safety shower.
CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Clear / strong solvent odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H_2O = 1):	0.99 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.):	2.0 g/L
VISCOSITY:	1 500 centipoises (Visco Brookfield LVT)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Strong acids, strong oxidizing and reducing agents, basis, and halogenated compounds.
HAZARDOUS DECOMPOSITION PRODUCTS: During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbon by-products and black smoke.
CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight.
HAZARDOUS POLYMERISATION: Direct exposition to sunlight or storage temperatures over 60°C or 140°F can produce uncontrolled and exothermic polymerisation.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA
MMA: (1)
LC_{50} (inhalation, rat): 7 093 ppm (4-hour exposure)
LD_{50} (oral, rat): 3 205 mg/kg
LD_{50} (dermal, rabbit): > 7 550 mg/kg

2-EHA: (1)
LC_{50} (male rat): > 240 ppm (4-hour exposure)
LD_{50} (oral, rat): 5 753 mg/kg

DPPT: (2)
LD_{50} (oral, rat): 100 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION
MMA: One study has shown lung effects (e.g. fluid accumulation and bleeding) in rats following short-term inhalation exposure to a low concentration (100 ppm). In other studies, short-term exposure to 710 to 16 000 ppm has produced effects ranging from respiratory tract irritation, CNS depression (e.g. reduced activity, respiratory depression, and unconsciousness) and lung damage to deaths in rats, mice, rabbits and guinea pigs. (1)

DPPT: Inhalation-risk test (IRT) showed no mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents no acute hazard. (2)

2-EHA: No information available.

EYE IRRITATION
MMA: MMA is a moderate to severe eye irritant. (1)

2-EHA: 2-EHA is a very mild irritant. (1)

DPPT: BASF-Test on rabbits showed that DPPT is slightly irritating. (2)

SKIN IRRITATION
MMA: There is insufficient information to conclude that MMA is a skin irritant. Unconfirmed studies have shown moderate to severe irritation. (1)

2-EHA: 2-EHA is a severe irritant. In a test conducted according to OECD guidelines, application of 2-ethylhexyl acrylate, covered, for 4 hours caused severe irritation in rabbits (maximum average scores at 24 hours: erythema: 3.2/4; oedema: 2.7/4; average scores at 24 and 72 hours: erythema: 3/4; oedema: 1.95/4). The severity of reaction increased in 1/6 rabbits resulting in superficial chemical burns after 72 hours when the test was ended. (1)

DPPT: BASF-Test on rabbits showed that DPPT is non-irritating. (2)

SKIN CONTACT
MMA: Extremely high dermal doses (18 900 or 37 800 mg/kg) have produced temporary signs of CNS depression in rabbits. No signs of toxicity were observed in rabbits treated dermally with up to 5 000 mg/kg, under cover, for 24 hours. (1)

2-EHA and DPPT: No information available.

INGESTION
MMA: Symptoms of CNS depression (increased, then decreased, respiratory rate, motor weakness, loss of reflexes, coma and death) have been reported in rats and rabbits following ingestion of very high doses (6 600-18 900 mg/kg). (1)

2-EHA and DPPT: No information available

Effects of Long-Term (Chronic) Exposure

INHALATION
MMA: Dose-related nasal lesions (including tissue death) and lung damage (inflammation and fibrosis) have been consistently observed in rats and mice exposed by inhalation in long-term studies. In one study, rats exposed to 1 000 ppm for 56 hours over 7 days showed adverse effects on the lungs (fibrosis and fluid accumulation). Decreased body,

ovary, thyroid and adrenal gland, liver and kidney weights have also been observed. In one study, body, lung and spleen weights were decreased in male rats exposed to 116 ppm for 3 or 6 months. Deaths have occurred in rats and mice with exposures to 3 000 or 5 000 ppm for 14 weeks. (1)

2-EHA and DPPT: No information available.

SKIN CONTACT
MMA: A local neurotoxic effect was the only effect observed in male rats exposed dermally for 8 weeks. (1)

2-EHA and DPPT: No information available.

INGESTION
MMA: Increased kidney weights were observed in female rats fed a high dose (775 mg/kg/day) for 2 years. No effects were seen in males fed up to 950 mg/kg/day or in females fed 3 or 25 mg/kg/day. Behavioural effects and 3 deaths were observed in male rats administered 500 mg/kg daily for 21 days. Doses of 100 and 200 mg/kg had no effect on behaviour. (1)

2-EHA and DPPT: No information available.

CARCINOGENICITY
MMA: Negative results were obtained in mice and male rats exposed by inhalation to 500 or 1 000 ppm, and in female rats exposed to 250 or 500 ppm for 102 weeks. Negative results were also obtained in rats following dermal application of MMA for 16 weeks (3 days/week). (1)

2-EHA and DPPT: No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY
MMA: Methyl methacrylate did not produce developmental effects in one well-conducted study. The other studies located have limitations, such as incomplete evaluation of maternal toxicity, incomplete reporting, and the use of very high exposure levels. In a well-conducted study, rats were exposed to 0, 99, 304, 1 178 or 2 028 ppm methyl methacrylate (99.9% pure) on days 6-15 of pregnancy (6 hours/day). Treatment-related reductions in maternal body weight and food consumption were noted at all exposure levels. No developmental effects were noted at any concentration. (1)

2-EHA and DPPT: No information available.

MUTAGENICITY
MMA: The available information does not indicate that MMA is mutagenic. In vivo studies with rats and mice exposed by inhalation or ingestion have been negative. (1)

DPPT: The substance was not mutagenic in bacteria. (2)

2-EHA: No information available

SKIN SENSITIZATION
MMA: Skin sensitization as been produced in guinea pigs, using standards tests, in numerous studies.

2-EHA: 2-EHA is a skin sensitizer. (1)

DPPT: Skin sensitizing effects were not observed in animal studies and Guinea pig maximization test. (2)

REPRODUCTIVE TOXICITY
MMA: No effects on fertility were noted in male mice exposed by inhalation to 100, 1 000 or 9 000 ppm MMA for 5 days and then mated for 8 weeks. (1)

2-EHA and DPPT: No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS
Do not allow product or runoff from fire control to enter grounds, basements, storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL
This product is considered a hazardous material. Consult local, state, provincial, territory or federal authorities to know disposal methods.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG and DOT): Class 3
IDENTIFICATION NUMBER: UN 1263
SHIPPING NAME: Paint related material
PACKING GROUP: II
CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS

B2: Flammable liquid (flash point below 37.8°C).
D2B: Other toxicological effects (MMA and 2-EHA are sensitizers).

DSL: All constituents of this product are included in the Domestic Substances List (DSL – Canada).
TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).
Proposition 65: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

HMIS (USA):		NFPA (USA):	
Health	**2**	**Health**	**2**
Flammability	**3**	**Flammability**	**3**
Physical hazard	**1**	**Instability**	**1**
Protective equipment	**G**	**Specific hazard**	**-**

SECTION XVI: OTHER INFORMATION

GLOSSARY

ANSI: American National Standards Institute
ASTM: American Society for Testing and Materials
CAS: Chemical Abstract Services
CFR: Code of Federal Regulations (United States)
CSA: Canadian Standardisation Association
DOT: Department of Transportation
DSL: Domestic Substances List (Canada)
EPA: Environmental Protection Agency (United States)
HMIS: Hazardous Material Information System
LD_{50}/LC_{50}: Less high lethal dose and lethal concentration published
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration (United States)
RCRA: Resource Conservation and Recovery Act (United States)
TDG: Transportation of Dangerous Goods (Canada)
TLV-TWA: Threshold Limit Value – Time-weighted Average
TSCA: Toxic Substances Control Act (United States)
WHMIS: Workplace Hazardous Materials Information System (Canada)

Reference:
(1) CHEMINFO (2009) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
(2) Material safety data sheets' suppliers

Code of MSDS: **CA U DRU SS FS 183**
For more information: 1 800 567-1492

The Material Safety Data Sheets of SOPREMA are available on Internet at the following sites: **www.soprema.ca** and **www.soprema.us**

Justification of the update:

- New product.

This MSDS contains all the information required by ANSI Z400.1 standard (United States), by regulation 29 CFR Part. 1910-1200 of the Hazard Communication Standard of OSHA and is in accordance with standard DORS/88-66 of WHMIS (Canada).

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SOPREMA
We've got you covered

SAFETY DATA SHEET

ALSAN RS 240 LO

Offerte en français

GHS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		**NOT REGULATED**

SECTION I: IDENTIFICATION

Use: **Methacrylate liquid field membrane**

Manufacturer / Distributors:

Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39507
UNITED STATES
Tel.: 228 701-1900

In case of emergency:

SOPREMA (8:00am to 5:00pm ET): 1 800 567-1492 **CANUTEC (Canada) (24h.): 613 996-6666** **CHEMTREC (USA) (24h.): 1 800 424-9300**

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Combustible liquid. May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if inhaled. May cause respiratory irritation or drowsiness or dizziness. Causes skin irritation. Causes serious eye irritation. May cause damage to the central nervous system (CNS) through prolonged or repeated exposure if inhaled. May cause an allergic skin reaction.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. No smoking. Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Contaminated work clothing must not be allowed out of the workplace. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Benzyl methacrylate (BZMA)	2495-37-6	30-60	Not available	Not available
2-Ethylhexyl acrylate (2-EHA)	103-11-7	10-30	Not available	Not available
Acrylated resins	Confidential	10-30	Not available	Not available
Diisopropanol-P-toluidine (DPPT)	38668-48-3	0.1-1	Not available	Not available

Effects of Short-Term (Acute) Exposure

INHALATION

BZMA: Inhalation can cause respiratory irritation, nausea, dizziness, and headaches. (2)

2-EHA: 2-EHA is irritating to respiratory tract. (2)

Acrylated resins: Inhalation of mists or aerosols may cause respiratory irritation. (2)

DPPT: Irritating to the respiratory system. (2)

SKIN CONTACT

BZMA: BZMA may cause mild skin irritation including possible redness, swelling and blistering. (2)

2-EHA: 2-EHA is a severe irritant based on animal information. (1)

Acrylated resins: Skin contact may cause moderate irritation and allergic reactions in persons already sensitized to acrylates. (2)

DPPT: Prolonged contact with the product can result in skin irritation. (2)

EYE CONTACT

BZMA: BZMA, including its vapours, can cause moderate to strong eye irritation including redness and burning. More serious effects can result if exposed to large quantities or if exposure is not treated. (2)

2-EHA: 2-EHA is a very mild irritant based on animal information. (1)

Acrylated resins: Contact with eyes may cause moderate irritation, redness and oedemas. (2)

DPPT: Irritating to eyes and respiratory system. (2)

INGESTION

BZMA: BZMA may be toxic by ingestion. Swallowing significant amounts of the substance could cause serious injury, even death. (2)

2-EHA: May be harmful if swallowed. (2)

Acrylated resins: No information available.

DPPT: Harmful if swallowed. (2)

Effects of Long-Term (Chronic) Exposure

SKIN SENSITIZATION

BZMA: BZMA is a potential skin sensitizer and may cause allergic reactions and contact dermatitis in susceptible individuals, resulting in dryness and cracking of the skin. (2)

2-EHA: 2-EHA is a skin sensitizer based on animal information. Sensitization in humans has also been reported. Several case studies have reported dermatitis and hand eczema in workers exposed to 2-EHA in adhesives, glues, inks and other products. Positive patch test reactions were obtained for 2-EHA in many of these workers. (1)

Acrylated resins: Prolonged and/or repeated contact with skin or mucosa may cause irritation, redness, blisters, dermatitis, etc. (2)

DPPT: Skin sensitizing effects were not observed in animal studies. (2)

CARCINOGENICITY
BZMA: BZMA is not regulated as a carcinogen. No classification data on carcinogenic properties of this material is available from the US National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or Occupational Safety & Health Administration (OSHA). (2)

2-EHA: IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3).

Acrylated resins and DPPT: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

REPRODUCTIVE TOXICITY
No information available.

MUTAGENICITY
2-EHA: 2-EHA demonstrated evidence of genotoxic activity in some assays (i.e. *In vitro* sister chromatid exchange, mouse lymphoma and *in vitro* UDS), the activity was weak and equivocal. (2)

BZMA, acrylated resins and DPPT: No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS
No information available.

POTENTIAL FOR ACCUMULATION
No information available.

RESPIRATORY SENSITIZATION
No information available.

SECTION IV: FIRST-AID MEASURES

SKIN CONTACT
Wash with plenty of water. If skin irritation or rash occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

EYE CONTACT
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

INHALATION
Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING
Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable liquid, Class IIIA (NFPA)
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: can accumulate static charge by flow.
FLASH POINT: 90°C or 194°F (closed cup)
AUTO-IGNITION TEMPERATURE: 230°C or 446°F (2-EHA)
FLAMMABILITY LIMITS IN AIR: (% en volume) Not available

FIRE AND EXPLOSION HAZARDS
This product and its vapours can be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS
Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO_2, methacrylic acid fumes.

FIRE FIGHTING INSTRUCTIONS
Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION
Universal foam, dry chemical powder, CO_2 or sand. Use of water spray when fighting fire may be inefficient.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL
Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING
This product and its vapours are combustible and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE
Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear butyl rubber or nitrile gloves when mixing or applying this product..
RESPIRATORY: If the airborne concentration poses a health hazard, becomes irritating or exceeds recommended limits, use a NIOSH approved respirator in accordance with standards. Specific type of respirator will depend of the airborne concentration. Filtering face piece or dust mask is not acceptable for use with this product if TLV filtering levels have been exceeded.
EYES: Wear chemical safety goggles in accordance with standards.
OTHERS: Eye bath and safety shower. Workers must wear a long sleeved shirt with long pants and work boots.
CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Grey with slight solvent odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H_2O = 1):	1.1 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.):	1 g/L
VISCOSITY:	8 000 centipoises (Visco Brookfield LVT)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Strong acids, strong oxidizing and reducing agents, basis, and halogenated compounds.
HAZARDOUS DECOMPOSITION PRODUCTS: During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbon by-products and black acrid smoke.
CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight.
HAZARDOUS POLYMERISATION: Direct exposition to sunlight or storage temperatures over 60°C or 140°F can produce uncontrolled and exothermic polymerisation.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

BZMA: (2)
LD_{50} (oral, mouse): 5 000 mg/kg

2-EHA: (1)
LC_{50} (male rat): > 240 ppm (4-hour exposure)
LD_{50} (oral, rat): 5 753 mg/kg

Acrylated resins: (2)
LD_{50} (oral, rat): > 4 000 mg/kg
LD_{50} (dermal, rabbit): > 2 000 mg/kg

DPPT: (2)
LD_{50} (oral, rat): 100 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION
DPPT: Inhalation-risk test (IRT) showed no mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents no acute hazard. (2)

BZMA, 2-EHA and acrylated resins: No information available.

EYE IRRITATION
2-EHA: 2-EHA is a very mild irritant. (1)

DPPT: BASF-Test on rabbits showed that DPPT is slightly irritating. (2)

BZMA and acrylated resins: No information available.

SKIN IRRITATION
2-EHA: 2-EHA is a severe irritant. In a test conducted according to OECD guidelines, application of 2-ethylhexyl acrylate, covered, for 4 hours caused severe irritation in rabbits (maximum average scores at 24 hours: erythema: 3.2/4; oedema: 2.7/4; average scores at 24 and 72 hours: erythema: 3/4; oedema: 1.95/4). The severity of reaction increased in 1/6 rabbits resulting in superficial chemical burns after 72 hours when the test was ended. (1)

DPPT: BASF-Test on rabbits showed that DPPT is non-irritating. (2)

BZMA and acrylated resins: No information available.

SKIN CONTACT
No information available.

INGESTION
No information available

Effects of Long-Term (Chronic) Exposure

INHALATION
No information available.

SKIN CONTACT
No information available.

INGESTION
No information available.

CARCINOGENICITY
No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

MUTAGENICITY
DPPT: The substance was not mutagenic in bacteria. (2)

BZMA, 2-EHA and acrylated resins:
No information available

SKIN SENSITIZATION
2-EHA: 2-EHA is a skin sensitizer. (1)

DPPT: Skin sensitizing effects were not observed in animal studies and Guinea pig maximization test. (2)

BZMA and acrylated resins: No information available

REPRODUCTIVE TOXICITY
No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS
Do not allow product or runoff from fire control to enter grounds, basements, storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL
This product is considered a hazardous material. Consult local, state, provincial, territory or federal authorities to know disposal methods.

SECTION XIV: TRANSPORT INFORMATION

This product is not regulated by DOT and TDG.

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included in the Domestic Substances List (DSL – Canada).

TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).

Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION XVI: OTHER INFORMATION

GLOSSARY

ASTM: American Society for Testing and Materials (United States)
CAS: Chemical Abstract Services
CSA: Canadian Standardization Association
DOT: Department of Transportation (United States)
EPA: Environmental Protection Agency (United States)
GHS Globally Harmonized System
LD_{50}/LC_{50}: Less high lethal dose and lethal concentration published
NIOSH: National Institute for Occupational Safety and Health (United States)
RCRA: Resource Conservation and Recovery Act (United States)
TDG: Transportation of Dangerous Goods (Canada)
TLV-TWA: Threshold Limit Value – Time-Weighted Average

Reference:

(1) CHEMINFO (2015) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
(2) Suppliers' safety data sheets

Code of SDS: **CA U DRU SS FS 205**
For more information: 1 800 567-1492

The Safety Data Sheets of SOPREMA are available on Internet at the following site: **www.soprema.ca** and **www.soprema.us**

Justification of the update:

- New product

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

ALSAN RS 260 LO FIELD

Offerte en français

GHS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		**NOT REGULATED**

SECTION I: IDENTIFICATION

Use: **Methacrylate liquid field membrane**

Manufacturer / Distributors:

Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39507
UNITED STATES
Tel.: 228 701-1900

In case of emergency:

SOPREMA (8:00am to 5:00pm ET): 1-800 567-1492 **CANUTEC (Canada) (24h.): 613 996-6666** **CHEMTREC (USA) (24h.): 1 800 424-9300**

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Combustible liquid. May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if inhaled. May cause respiratory irritation or drowsiness or dizziness. Causes skin irritation. Causes serious eye irritation. May cause damage to the central nervous system (CNS) through prolonged or repeated exposure if inhaled. May cause an allergic skin reaction.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. No smoking. Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Contaminated work clothing must not be allowed out of the workplace. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Benzyl methacrylate (BZMA)	2495-37-6	10-30	Not available	Not available
2-Ethylhexyl acrylate (2-EHA)	103-11-7	5-10	Not available	Not available
Polyethylene glycol diacrylate	26570-48-9	0.1-1	Not available	Not available
Diisopropanol-P-toluidine (DPPT)	38668-48-3	0.1-1	Not available	Not available

Effects of Short-Term (Acute) Exposure

INHALATION

BZMA: Inhalation can cause respiratory irritation, nausea, dizziness, and headaches. (2)

2-EHA: 2-EHA is irritating to respiratory tract. (2)

Polyethylene glycol diacrylate: Suspect respiratory tract irritation hazard. Symptoms of irritation may include coughing, mucous production and shortness of breath. (2)

DPPT: Irritating to the respiratory system. (2)

SKIN CONTACT

BZMA: BZMA may cause mild skin irritation including possible redness, swelling and blistering. (2)

2-EHA: 2-EHA is a severe irritant based on animal information. (1)

Polyethylene glycol diacrylate: Suspect slight skin irritation hazard. Symptoms may include a slight localized redness or rash and swelling. Although no appropriate human or animal health effects data are known to exist, this material is expected to be a health hazard by skin absorption. (2)

DPPT: Prolonged contact with the product can result in skin irritation. (2)

EYE CONTACT

BZMA: BZMA, including its vapours, can cause moderate to strong eye irritation including redness and burning. More serious effects can result if exposed to large quantities or if exposure is not treated. (2)

2-EHA: 2-EHA is a very mild irritant based on animal information. (1)

Polyethylene glycol diacrylate: Suspect severe eye irritation hazard. Symptoms of irritation may include severe pain, tearing, redness or swelling. The damage to the eyes should be reversible. (2)

DPPT: Irritating to eyes and respiratory system. (2)

INGESTION

BZMA: BZMA may be toxic by ingestion. Swallowing significant amounts of the substance could cause serious injury, even death. (2)

2-EHA: May be harmful if swallowed. (2)

Polyethylene glycol diacrylate: Suspect slight ingestion hazard. (2)

DPPT: Harmful if swallowed. (2)

Effects of Long-Term (Chronic) Exposure

SKIN SENSITIZATION

BZMA: BZMA is a potential skin sensitizer and may cause allergic reactions and contact dermatitis in susceptible individuals, resulting in dryness and cracking of the skin. (2)

2-EHA: 2-EHA is a skin sensitizer based on animal information. Sensitization in humans has also been reported. Several case studies have reported dermatitis and hand eczema in workers exposed to 2-EHA in adhesives, glues, inks and other products. Positive patch test reactions were obtained for 2-EHA in many of these workers. (1)

Polyethylene glycol diacrylate: Suspect skin sensitization hazard. (2)

DPPT: Skin sensitizing effects were not observed in animal studies. (2)

CARCINOGENICITY
BZMA: BZMA is not regulated as a carcinogen. No classification data on carcinogenic properties of this material is available from the US National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or Occupational Safety & Health Administration (OSHA). (2)

2-EHA: IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3).

Polyethylene glycol diacrylate and DPPT: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

REPRODUCTIVE TOXICITY
No information available.

MUTAGENICITY
2-EHA: 2-EHA demonstrated evidence of genotoxic activity in some assays (i.e. *In vitro* sister chromatid exchange, mouse lymphoma and *in vitro* UDS), the activity was weak and equivocal. (2)

BZMA, Polyethylene glycol diacrylate and DPPT: No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS
No information available.

POTENTIAL FOR ACCUMULATION
No information available.

RESPIRATORY SENSITIZATION
No information available.

SECTION IV: FIRST-AID MEASURES

SKIN CONTACT
Wash with plenty of water. If skin irritation or rash occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

EYE CONTACT
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

INHALATION
Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING
Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable liquid, Class IIIA (NFPA)
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: can accumulate static charge by flow.
FLASH POINT: 90°C or 194°F (closed cup)
AUTO-IGNITION TEMPERATURE: 230°C or 446°F (2-EHA)
FLAMMABILITY LIMITS IN AIR: (% en volume) Not available

FIRE AND EXPLOSION HAZARDS
This product and its vapours can be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS
Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO_2, methacrylic acid fumes.

FIRE FIGHTING INSTRUCTIONS
Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION
Universal foam, dry chemical powder, CO_2 or sand. Use of water spray when fighting fire may be inefficient.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL
Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING
This product and its vapours are combustible and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE
Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear butyl rubber or nitrile gloves when mixing or applying this product..
RESPIRATORY: If the airborne concentration poses a health hazard, becomes irritating or exceeds recommended limits, use a NIOSH approved respirator in accordance with standards. Specific type of respirator will depend of the airborne concentration. Filtering face piece or dust mask is not acceptable for use with this product if TLV filtering levels have been exceeded.
EYES: Wear chemical safety goggles in accordance with standards.
OTHERS: Eye bath and safety shower. Workers must wear a long sleeved shirt with long pants and work boots.
CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Grey or white / slight solvent odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H_2O = 1):	1.25 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.):	0.5 g/L
VISCOSITY:	6 400 centipoises (Visco Brookfield LVT)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Strong acids, strong oxidizing and reducing agents, basis, and halogenated compounds.
HAZARDOUS DECOMPOSITION PRODUCTS: During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbon by-products and black acrid smoke.
CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight.
HAZARDOUS POLYMERISATION: Direct exposition to sunlight or storage temperatures over 60°C or 140°F can produce uncontrolled and exothermic polymerisation.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

BZMA: (2)
LD_{50} (oral, mouse): 5 000 mg/kg

2-EHA: (1)
LC_{50} (male rat): > 240 ppm (4-hour exposure)
LD_{50} (oral, rat): 5 753 mg/kg

DPPT: (2)
LD_{50} (oral, rat): 100 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION
DPPT: Inhalation-risk test (IRT) showed no mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents no acute hazard. (2)

BZMA, 2-EHA and Polyethylene glycol diacrylate: No information available.

EYE IRRITATION
2-EHA: 2-EHA is a very mild irritant. (1)

DPPT: BASF-Test on rabbits showed that DPPT is slightly irritating. (2)

BZMA and Polyethylene glycol diacrylate: No information available.

SKIN IRRITATION
2-EHA: 2-EHA is a severe irritant. In a test conducted according to OECD guidelines, application of 2-ethylhexyl acrylate, covered, for 4 hours caused severe irritation in rabbits (maximum average scores at 24 hours: erythema: 3.2/4; oedema: 2.7/4; average scores at 24 and 72 hours: erythema: 3/4; oedema: 1.95/4). The severity of reaction increased in 1/6 rabbits resulting in superficial chemical burns after 72 hours when the test was ended. (1)

DPPT: BASF-Test on rabbits showed that DPPT is non-irritating. (2)

BZMA and Polyethylene glycol diacrylate: No information available.

SKIN CONTACT
No information available.

INGESTION
No information available.

Effects of Long-Term (Chronic) Exposure

INHALATION
No information available.

SKIN CONTACT
No information available.

INGESTION
No information available.

CARCINOGENICITY
No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

MUTAGENICITY
DPPT: The substance was not mutagenic in bacteria. (2)

BZMA, 2-EHA and Polyethylene glycol diacrylate:
No information available

SKIN SENSITIZATION
2-EHA: 2-EHA is a skin sensitizer. (1)

DPPT: Skin sensitizing effects were not observed in animal studies and Guinea pig maximization test. (2)

BZMA and Polyethylene glycol diacrylate: No information available

REPRODUCTIVE TOXICITY
No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS
Do not allow product or runoff from fire control to enter grounds, basements, storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL
This product is considered a hazardous material. Consult local, state, provincial, territory or federal authorities to know disposal methods.

SECTION XIV: TRANSPORT INFORMATION

This product is not regulated by DOT and TDG.

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included in the Domestic Substances List (DSL – Canada).

TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).

Proposition 65: This product does not contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

SECTION XVI: OTHER INFORMATION

GLOSSARY

ASTM: American Society for Testing and Materials (United States)
CAS: Chemical Abstract Services
CSA: Canadian Standardization Association
DOT: Department of Transportation (United States)
EPA: Environmental Protection Agency (United States)
GHS Globally Harmonized System
LD_{50}/LC_{50}: Less high lethal dose and lethal concentration published
NIOSH: National Institute for Occupational Safety and Health (United States)
RCRA: Resource Conservation and Recovery Act (United States)
TDG: Transportation of Dangerous Goods (Canada)
TLV-TWA: Threshold Limit Value – Time-Weighted Average

Reference:

(1) CHEMINFO (2015) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
(2) Suppliers safety data sheets

Code of SDS: **CA U DRU SS FS 162**
For more information: 1 800 567-1492

The Safety Data Sheets of SOPREMA are available on Internet at the following site: **www.soprema.ca** and **www.soprema.us**

Justification of the update:

- GHS format.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

ALSAN RS 260 LO FLASH

Offerte en français

GHS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		NOT REGULATED

SECTION I: IDENTIFICATION

Use: PMMA liquid flash membrane

Manufacturer / Distributors:

Soprema Canada
1675 Haggerty Street
Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356-3521

Soprema USA
12251 Seaway Road
Gulfport (Mississippi) 39507
UNITED STATES
Tel.: 228 239-1168

In case of emergency:

SOPREMA (8:00am to 5:00pm ET): 1-800 567-1492 **CANUTEC (Canada) (24h.): 613 996-6666** **CHEMTREC (USA) (24h.): 1 800 424-9300**

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Combustible liquid. May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if inhaled. May cause respiratory irritation or drowsiness or dizziness. Causes skin irritation. Causes serious eye irritation. May cause damage to the central nervous system through prolonged or repeated exposure if inhaled. May cause an allergic skin reaction.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. No smoking. Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Contaminated work clothing must not be allowed out of the workplace. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Benzyl methacrylate (BZMA)	2495-37-6	10-30	Not available	Not available
2-Ethylhexyl acrylate (2-EHA)	103-11-7	5-10	Not available	Not available
Polyethylene glycol diacrylate	26570-48-9	0.1-1	Not available	Not available
Diisopropanol-P-toluidine (DPPT)	38668-48-3	0.1-1	Not available	Not available

Effects of Short-Term (Acute) Exposure

INHALATION

BZMA: Inhalation can cause respiratory irritation, nausea, dizziness, and headaches. (2)

2-EHA: 2-EHA is irritating to respiratory tract. (2)

Polyethylene glycol diacrylate: Suspect respiratory tract irritation hazard. Symptoms of irritation may include coughing, mucous production and shortness of breath. (2)

DPPT: Irritating to the respiratory system. (2)

SKIN CONTACT

BZMA: BZMA may cause mild skin irritation including possible redness, swelling and blistering. (2)

2-EHA: 2-EHA is a severe irritant based on animal information. (1)

Polyethylene glycol diacrylate: Suspect slight skin irritation hazard. Symptoms may include a slight localized redness or rash and swelling. Although no appropriate human or animal health effects data are known to exist, this material is expected to be a health hazard by skin absorption. (2)

DPPT: Prolonged contact with the product can result in skin irritation. (2)

EYE CONTACT

BZMA: BZMA, including its vapours, can cause moderate to strong eye irritation including redness and burning. More serious effects can result if exposed to large quantities or if exposure is not treated. (2)

2-EHA: 2-EHA is a very mild irritant based on animal information. (1)

Polyethylene glycol diacrylate: Suspect severe eye irritation hazard. Symptoms of irritation may include severe pain, tearing, redness or swelling. The damage to the eyes should be reversible. (2)

DPPT: Irritating to eyes and respiratory system. (2)

INGESTION

BZMA: BZMA may be toxic by ingestion. Swallowing significant amounts of the substance could cause serious injury, even death. (2)

2-EHA: May be harmful if swallowed. (2)

Polyethylene glycol diacrylate: Suspect slight ingestion hazard. (2)

DPPT: Harmful if swallowed. (2)

Effects of Long-Term (Chronic) Exposure

SKIN SENSITIZATION

BZMA: BZMA is a potential skin sensitizer and may cause allergic reactions and contact dermatitis in susceptible individuals, resulting in dryness and cracking of the skin. (2)

2-EHA: 2-EHA is a skin sensitizer based on animal information. Sensitization in humans has also been reported. Several case studies have reported dermatitis and hand eczema in workers exposed to 2-EHA in adhesives, glues, inks and other products. Positive patch test reactions were obtained for 2-EHA in many of these workers. (1)

Polyethylene glycol diacrylate: Suspect skin sensitization hazard. (2)

DPPT: Skin sensitizing effects were not observed in animal studies. (2)

CARCINOGENICITY
BZMA: BZMA is not regulated as a carcinogen. No classification data on carcinogenic properties of this material is available from the US National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or the Occupational Safety and Health Administration (OSHA). (2)

2-EHA: IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3).

Polyethylene glycol diacrylate and DPPT: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

REPRODUCTIVE TOXICITY
No information available.

MUTAGENICITY
2-EHA: 2-EHA demonstrated evidence of genotoxic activity in some assays (i.e. *In vitro* sister chromatid exchange, mouse lymphoma and *in vitro* UDS), the activity was weak and equivocal. (2)

BZMA, Polyethylene glycol diacrylate and DPPT: No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS
No information available.

POTENTIAL FOR ACCUMULATION
No information available.

RESPIRATORY SENSITIZATION
No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT
Wash with plenty of water. If skin irritation or rash occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

EYE CONTACT
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

INHALATION
Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING
Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE FIGHTING MEASURES

FLAMMABILITY: Flammable liquid, Class IIIA (NFPA)
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.
FLASH POINT: 90°C or 194°F (closed cup)
AUTO-IGNITION TEMPERATURE: 230°C or 446°F (2-EHA)
FLAMMABILITY LIMITS IN AIR: (% en volume) Not available

FIRE AND EXPLOSION HAZARDS
This product and its vapours can be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS
Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO_2, methacrylic acid fumes.

FIRE FIGHTING INSTRUCTIONS
Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION
Universal foam, dry chemical powder, CO_2 or sand. Use of water spray when fighting fire may be inefficient.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL
Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING
This product and its vapours are combustible and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE
Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear butyl rubber or nitrile gloves when mixing or applying this product..
RESPIRATORY: If the airborne concentration poses a health hazard, becomes irritating or exceeds recommended limits, use a NIOSH approved respirator in accordance with standards. Specific type of respirator will depend of the airborne concentration. Filtering face piece or dust mask is not acceptable for use with this product if TLV filtering levels have been exceeded.
EYES: Wear chemical safety goggles in accordance with standards.
OTHERS: Eye bath and safety shower. Workers must wear a long sleeved shirt with long pants and work boots.
CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Grey or white / slight solvent odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H_2O = 1):	1.25 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.):	0.5 g/L
VISCOSITY:	6 400 centipoises (Visco Brookfield LVT)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Strong acids, strong oxidizing and reducing agents, basis, and halogenated compounds.
HAZARDOUS DECOMPOSITION PRODUCTS: During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbon by-products and black acrid smoke.
CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight.
HAZARDOUS POLYMERISATION: Direct exposition to sunlight or storage temperatures over 60°C or 140°F can produce uncontrolled and exothermic polymerisation.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

BZMA: (2)
LD_{50} (oral, mouse): 5 000 mg/kg

2-EHA: (1)
LC_{50} (male rat): > 240 ppm (4-hour exposure)
LD_{50} (oral, rat): 5 753 mg/kg

DPPT: (2)
LD_{50} (oral, rat): 100 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION
DPPT: Inhalation-risk test (IRT) showed no mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents no acute hazard. (2)

BZMA, 2-EHA and Polyethylene glycol diacrylate: No information available.

EYE IRRITATION
2-EHA: 2-EHA is a very mild irritant. (1)

DPPT: BASF-Test on rabbits showed that DPPT is slightly irritating. (2)

BZMA and Polyethylene glycol diacrylate: No information available.

SKIN IRRITATION
2-EHA: 2-EHA is a severe irritant. In a test conducted according to OECD guidelines, application of 2-ethylhexyl acrylate, covered, for 4 hours caused severe irritation in rabbits (maximum average scores at 24 hours: erythema: 3.2/4; oedema: 2.7/4; average scores at 24 and 72 hours: erythema: 3/4; oedema: 1.95/4). The severity of reaction increased in 1/6 rabbits resulting in superficial chemical burns after 72 hours when the test was ended. (1)

DPPT: BASF-Test on rabbits showed that DPPT is non-irritating. (2)

BZMA, Polyethylene glycol diacrylate: No information available.

SKIN CONTACT
No information available.

INGESTION
No information available

Effects of Long-Term (Chronic) Exposure

INHALATION
No information available.

SKIN CONTACT
No information available.

INGESTION
No information available.

CARCINOGENICITY
No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY
No information available.

MUTAGENICITY
DPPT: The substance was not mutagenic in bacteria. (2)

BZMA, 2-EHA and Polyethylene glycol diacrylate: No information available

SKIN SENSITIZATION
2-EHA: 2-EHA is a skin sensitizer. (1)

DPPT: Skin sensitizing effects were not observed in animal studies and Guinea pig maximization test. (2)

BZMA and Polyethylene glycol diacrylate: No information available

REPRODUCTIVE TOXICITY
No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS
Do not allow product or runoff from fire control to enter grounds, basements, storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL
This product is considered a hazardous material. Consult local, state, provincial, territory or federal authorities to know disposal methods.

SECTION XIV: TRANSPORT INFORMATION

This product is not regulated by DOT and TDG.

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included in the Domestic Substances List (DSL – Canada).

TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).

Proposition 65: This product does not contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

SECTION XVI: OTHER INFORMATION

GLOSSARY

ASTM: American Society for Testing and Materials (United States)
CAS: Chemical Abstract Services
CSA: Canadian Standardization Association
DOT: Department of Transportation (United States)
EPA: Environmental Protection Agency (United States)
GHS Globally Harmonized System
LD_{50}/LC_{50}: Less high lethal dose and lethal concentration published
NIOSH: National Institute for Occupational Safety and Health (United States)
RCRA: Resource Conservation and Recovery Act (United States)
TDG: Transportation of Dangerous Goods (Canada)
TLV-TWA: Threshold Limit Value – Time-Weighted Average

Reference:

(1) CHEMINFO (2015) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
(2) Suppliers' Safety Data Sheets

Code of SDS: **CA U DRU SS FS 165**
For more information: 1 800 567-1492

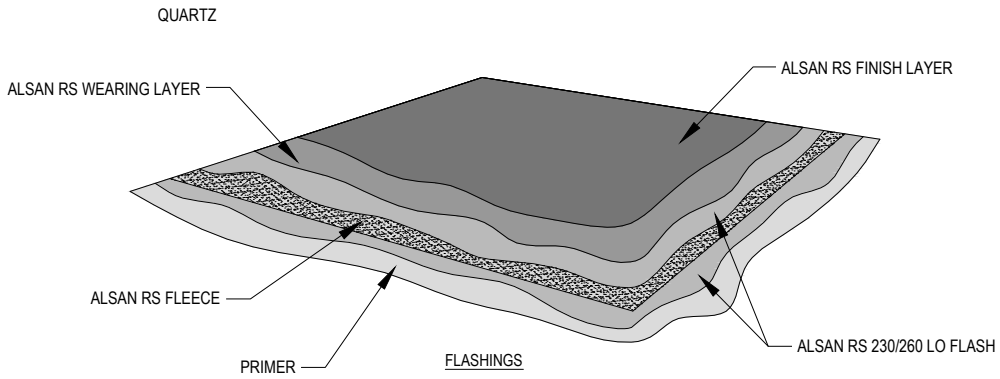
The Safety Data Sheets of SOPREMA are available on Internet at the following site: **www.soprema.ca** and **www.soprema.us**

Justification of the update:

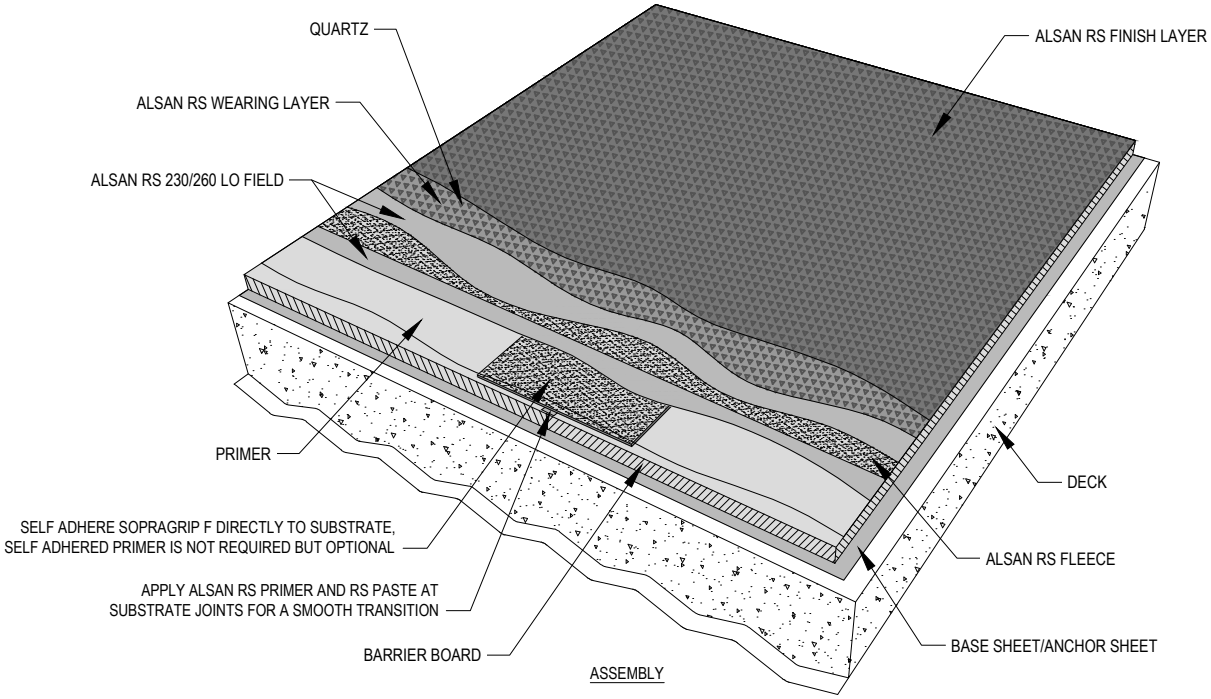
- GHS format.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

DRAWING MUST BE VIEWED IN ADOBE READER TO ENABLE CUSTOM LAYERING



FLASHINGS



ASSEMBLY

NOTES:
1. SOPREMA DETAIL DRAWINGS: REFER TO SOPREMA AND OTHER RELATED PUBLISHED DOCUMENTATION, PRODUCT DATA SHEETS (PDS) AND SAFETY DATA SHEETS (SDS) FOR ADDITIONAL INFORMATION. ALL DETAIL DRAWINGS AND RELATED INSTALLATION GUIDELINES ARE PROVIDED BY SOPREMA FOR THE SOLE PURPOSE OF ISSUING A SOPREMA WARRANTY. ACCORDINGLY, THE DETAIL DRAWINGS ARE NOT OFFERED, AND SHOULD NOT BE CONSIDERED, AS A SUBSTITUTE FOR PROFESSIONAL DESIGN SERVICES.
2. PRIMER: WHERE NOT SHOWN OR INDICATED ON DETAIL DRAWINGS, REFER TO MATERIAL PRODUCT DATA SHEETS FOR PRIMER APPLICATION REQUIREMENTS.

SOPREMA®
US CORPORATE ADDRESS
310 QUADRAL DRIVE
WADSWORTH, OHIO 44281
www.soprema.us
Tel:330.334.0066

PROJECT:

DRAWN BY: SOPREMA TECHNICAL SUPPORT, GGALLOWAY

NO.:	REVISION:	DATE:

TITLE:

ALSAN RS MEMBRANE, UNINSULATED ROOF ASSEMBLY

DATE: 7.6.2015

SCALE: NTS

DRAWING NUMBER:
US.RLIQ.01.11

Submittal List

SUBMITTALS LIST

Smithsonian Institution
Smithsonian Facilities

Project Title: MSC ReRoof Pod 5
SF Project No.: 2030101

Spec Section	Description	Days Due After NTP	Recommended Reviewer	Long Lead Time	Sole Source
010000	**SUPPLEMENTARY CONDITIONS FOR CONSTUCTION**				
2.3	Qualifications for critical elements of the work	As Req'd	COTR		
23.1	Request for utility service interruptions	2 weeks prior	COTR		
27.2	Site Protection Plan		COTR		
27.4	Proposed construction of temporary enclosures		COTR		
28.12	Data on source of sod for turf area repair	As Req'd	COTR		
30	Dust and Air Quality Control	prior to work	COTR		
33.1	Request for daily hot work permit	24 hrs prior to each need	COTR		
35.2	Plan for staging, storage & work areas	5 days prior to mobilization	COTR		
35.3	Product data for FR wood for temporary interior construction	10 days prior to use	COTR		
38.2	Scaffolding plan	10 days prior to erection	COTR		
39.1	Project signs	5 days prior to erection	COTR		
40.3	Coordination Plan	5 days after preconstruction mtg.	COTR		
41.2	Pre-condition written & photo documentation	As Req'd	COTR		
42.1	Progress Meeting minutes	Weekly	COTR		
42.2	Special Topic Meeting minutes	As Req'd	COTR		
44.2	Submittal Schedule & Control log	14	COTR		
44.6	Contractor request for substitutions	prior to Contract Award	A/E		
47.2	Daily reports	daily	COTR		
48.2	Job-site Safety Plan	10 days prior to mobilization	COTR		
48.8	List of emergency telephone numbers	at preconstruction meeting	COTR		
49.1	List of toxic & hazardous substances to be used for project.	10 days prior to use	COTR		
49.2	Toxic and hazardous substances monitoring plan	14 days prior to work	COTR		
49.7	List of hazardous materials to be stored on site	10 days prior to storage	COTR		
49.8	Notification of suspected hazardous materials found on site	Immediately upon finding	COTR		
50.2	Proof of training if personal protective equipment used	As Req'd	COTR		
51.2	Product data for materials for temporary barriers	As Req'd	COTR		
53.2	List of employees & subcontractors	Prior to start of work at site	COTR		
53.3	Names & telephone # of Superintendent, 24 hr basis	7	COTR		
54.2.2	Additions to Contractor & Subcontractor Personnel List	5 days prior to start of work	COTR		
54.2.3	Written request for MSC photo ID's for Contractor employees		COTR		
54.5	Report of reason for credential loss	As Req'd	COTR		
59.1	Schedule of Values	14	COTR		
60.1	Project Schedule bar chart	14	COTR		
60.2	Revisions to project schedule	As Req'd	COTR		
60.3	Recovery schedule & plan for accelerated work	As Req'd	COTR		
60.4	Application for payment	monthly	COTR		
60.4.2.1	Monthly as-built progress schedule	monthly	COTR		
60.4.2.2	Certified payroll data	weekly	COTR		
60.5.2	Contractor's change of address	As Req'd	COTR		
64.2	Written request for substantial completion inspection	As Req'd	COTR		
64.5	2nd Written request for substantial completion inspection	As Req'd	COTR		
64.7	Request for additional time to complete punch list items	As Req'd	COTR		
65.2	Written request for final completion inspection	As Req'd	COTR		
65.3.1	Copy of prior punch list indicating all items resolved	Prior to final inspection	COTR		
65.3.2	Warranties	Prior to final inspection	COTR		
65.3.4	Evidence of compliance with all regulatory agencies	Prior to final inspection	COTR		
65.3.5	Statement of no damage at site	Prior to final inspection	COTR		
65.5.1	Application for Final Payment	After final acceptance	COTR		
65.5.1	Final labor data	After final acceptance	COTR		
65.5.1	Final progress schedule update	After final acceptance	COTR		
65.5.2.a	Certification Contract requirements have been met	prior to final payment	COTR		
65.5.2.b	Final Release of Claims	prior to final payment	COTR		
65.5.2.c	Consent of surety	prior to final payment	COTR		
65.5.2.d	Security Badges and parking permits	prior to final payment	COTR		
65.5.2.e	As Built Record Drawings	prior to final payment	COTR		
65.5.2.g	As Built Record Specification	prior to final payment	COTR		
65.5.2.h	Text & photograph documentation	10 days after final inspection	COTR		
061053	**MISCELLANEOUS ROUGH CARPENTRY**				
1.4-A	Product Data	21	A/E		
1.4-A	Product Data	21	A/E		
070150.19	**PREPARATION FOR REROOFING**				
1.5-A	Temporary Roofing Submittal	21	COTR		

SUBMITTALS LIST

Smithsonian Institution
Smithsonian Facilities

Project Title: MSC ReRoof Pod 5
SF Project No.: 2030101

Spec Section	Description	Days Due After NTP	Recommended Reviewer	Long Lead Time	Sole Source
1.6-A	Installer Qualification Data	21	COTR		
1.6-C	Photographs: Show existing conditions of adjoining construction	Prior to work begins	COTR		
1.6-D	Landfill Records	Prior to final inspection	COTR		
1.7-A	Letter from Manuf. of adjacent office roofing	Prior to final inspection	COTR		
3.3	Adhesive Testing	Prior to work begins	COTR		
075600	**FLUID-APPLIED POLYMETHACRYLATE ROOFING**				
1.5-A	Product Data	21	A/E		
1.5-B	Shop Drawings	21	A/E		
1.5-C	Samples	21	A/E		
1.5-D	Wind Uplift Resistance Submittal	21	A/E		
1.6-A	Installer Qualifications	21	COTR		
1.6-B	Manufacturer Certificates	21	A/E		
1.6-C	Product Test Reports	21	A/E		
1.6-D	Field Quality Control Reports	weekly	COTR		
1.6-E	Sample Warranties	21	COTR		
1.7-A	Maintenance Data for Roofing	Prior to final inspection	COTR		
1.7-B	Certification from Manuf. Of Extg Roof re: warranty	Prior to final inspection	COTR		
076200	**SHEET METAL FLASHING AND TRIM**				
1.4-A	Product Data	21	A/E		
1.4-B	Shop drawings	21	A/E		
1.4-C	Samples	21	A/E		
1.5-A	Qualification Data for Fabricator	21	COTR		
1.5-B	Sample Warranties	21	COTR		
1.7-B-1	Mock-up of parapet	prior to roofing	A/E		
1.7-B-2	Mock-up of typical base and counter flashing	prior to roofing	A/E		
079200	**JOINT SEALANTS**				
1.3-A	Product	21	A/E		
1.3-B	Joint Sealant Schedule	21	A/E		
1.4-A	Preconstruction Field-Adhesion Test Reports	Prior to roofing work	COTR		
1.4-B	Sample Warranties	21	COTR		
221423	**STORM DRAINAGE PIPING SPECIALTIES**				
1.3-A	Product Data	21	A/E		
077200	**ROOF ACCESSORIES**				
1.3-A	Product Data	21	A/E		
1.3-B	Shop Drawings	21	A/E		
1.3-C	Delegated Design Submittals	21	A/E		
1.4-A	Coordination Drawings	21	A/E		
1.4-B	Sample Warranties	21	COTR		
1.5-A	Operation and Maintenance Data	21	COTR		
260101	**ELECTRIC GENERAL PROVISIONS**				
1.9-A	Manufacturers and subcontractors	As Req'd	COTR		
1.9-B	Shop drawings and Product data	As Req'd	A/E		
1.9-C	Copies of the results of the tests required	As Req'd	COTR		
1.9-D	Specialist shall submit a lists of similar project types	As Req'd	COTR		
1.9-E	Submit required certificates of approval from approved inspection agencies	As Req'd	COTR		
1.11-A	Submit documents as specified in Division 01	As Req'd	COTR		
1.11-B	Operation and maintenance data	As Req'd	COTR		
260500	**COMMON WORK RESULTS FOR ELECTRICAL**				
1.5-A	Submit Test Reports	21	A/E		
260504	**ELECTRICAL DEMOLITION**				
1.3-A	Project Record Documents	21	COTR		
260519	**WIRES AND CABLES**				
1.4-A	Product Data	21	A/E		
260519	**GROUNDING AND BONDING**				
1.4-A	Product Data	21	A/E		

SUBMITTALS LIST

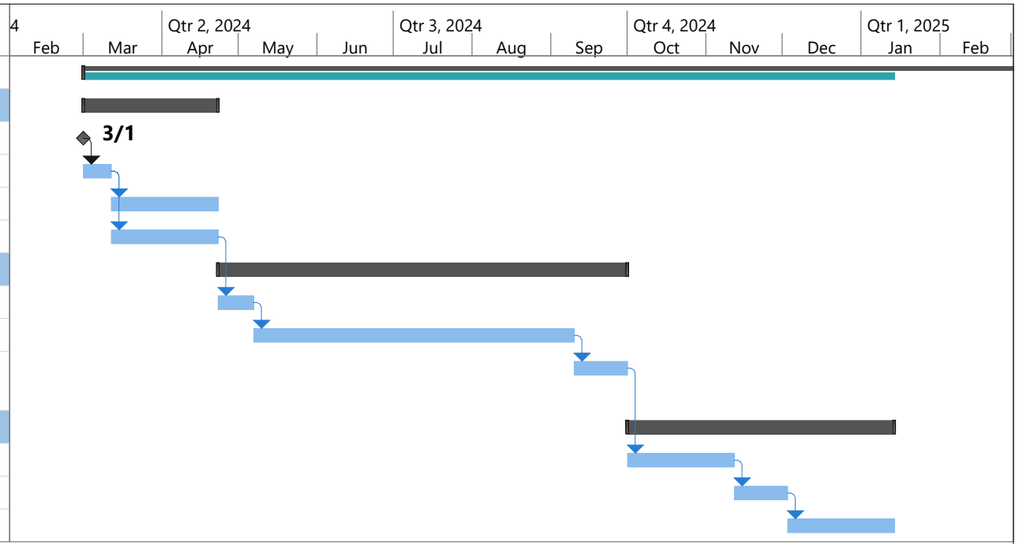
Smithsonian Institution
Smithsonian Facilities

Project Title: MSC ReRoof Pod 5
SF Project No.: 2030101

Spec Section	Description	Days Due After NTP	Recommended Reviewer	Long Lead Time	Sole Source
1.4-B	Certifications	21	A/E		
260526	**CONDUITS**				
1.4-A	Product Data	21	A/E		
260534	**BOXES**				
1.4-A	Product Data	21	A/E		
260553	**IDENTIFICATION FOR ELECTRICAL SYSTEMS**				
1.4-A	Product Data	21	A/E		
262726	**WIRING DEVICES**				
1.4-A	Product Data	21	A/E		
1.4-B	Field quality - control test reports	21	A/E		
264113	**LIGHTNING PROTECTION FOR STRUCTURES**	21			
1.5-A	Shop Drawings	21	A/E		
1.5-B	Product Data	21	A/E		
1.5-C	Qualification for Data	As Req'd	A/E		
1.5-D	Certifications	As Req'd	COTR		
1.5-E	Reports: Test and Inspections	As Req'd	COTR		
1.5-F	Project Records	As Req'd	COTR		
3.4	Field Quality Control	As Req'd	COTR		

Construction Schedule

ID	Task Name	Working Days	Calendar Days	Start	Finish	Predecessors	Resource Names
1	**Period of Performance**	**270 days?**	**378 days**	**Fri 3/1/24**	**Thu 3/13/25**		
2	**Preconstruction**	**37 days**	**53 days**	**Fri 3/1/24**	**Mon 4/22/24**		
3	Notice to Proceed	0 days	0 days	Fri 3/1/24	Fri 3/1/24		
4	Preconstruction Meeting	7 days	11 days	Fri 3/1/24	Mon 3/11/24	3	
5	General Submittal Review	30 days	42 days	Tue 3/12/24	Mon 4/22/24	4	
6	Site Mobilization	30 days	42 days	Tue 3/12/24	Mon 4/22/24	4	
7	**Construction**	**115 days**	***161 days***	**Tue 4/23/24**	**Mon 9/30/24**		
8	Demolition of Lightning Protection	10 days	14 days	Tue 4/23/24	Mon 5/6/24	6	
9	New Work	90 days	126 days	Tue 5/7/24	Mon 9/9/24	8	
10	Reinstallation and Recertification of Lightning Protection	15 days	21 days	Tue 9/10/24	Mon 9/30/24	9	
11	**Close Out**	**75 days**	**105 days**	**Tue 10/1/24**	**Mon 1/13/25**		
12	Punch List	30 days	42 days	Tue 10/1/24	Mon 11/11/24	10	
13	Demobilization / Site Clean Up	15 days	21 days	Tue 11/12/24	Mon 12/2/24	12	
14	As Built	30 days	42 days	Tue 12/3/24	Mon 1/13/25	13	



Project: 2030101_MSC_POD5
Date: Mon 3/20/23

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	