

PolyStar WT 85

Polyaspartic Industrial High-Performance Coating

TECHNICAL DATA SHEET

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PRODUCT DESCRIPTION

Our cutting-edge coating system, referred to as PolyStar WT 85, stands as a versatile two-component solution, featuring a balanced 1:1 ratio. This product serves the dual purpose of being a colored basecoat and a crystal-clear topcoat. It excels in rapid turnaround and swift curing under standard conditions, typically becoming tack-free in approximately 180 minutes. This, in turn, enables the installation of a complete flooring system in just one day. PolyStar WT 85 distinguishes itself through superior mechanical and chemical properties, demanding minimal maintenance. Moreover, it offers full UV stability, culminating in a flawless aesthetic finish. For more in-depth information, kindly reach out to a representative from our dedicated team.

SAFETY MEASURES

Prioritizing safety during the handling of our product is paramount. To prevent skin contact, as some individuals may exhibit allergic reactions to the materials used, we strongly advocate the use of protective gloves, eyewear, appropriate attire, and ensuring proper ventilation. For comprehensive insights and guidance on the safe handling, storage, and disposal of chemical products, we urge you to consult the latest Safety Data Sheet (SDS) for Polystar WT 85. This resource contains essential physical, ecological, toxicological, and other safety-related data.

- KEEP OUT OF REACH OF CHILDREN
- KEEP FROM FREEZING CONDITIONS
- INTENDED FOR INDUSTRIAL USE ONLY

Disclaimer: Our recommendations and information pertaining to the application and utilization of our products are based on our extensive knowledge and experience, provided in utmost good faith. Nevertheless, the actual variances in materials, differences in substrates, and on-site conditions may have implications on the product's performance. Consequently, no warranty or liability can be inferred from this information or any recommendations. Users bear the responsibility of conducting their product testing tailored to their specific application and purpose. We strongly emphasize respecting the proprietary rights of third parties. All orders are subject to our prevailing terms of sale and delivery. For the most recent local product Technical Data Sheet related to the specific product, please don't hesitate to request it.

Product Compliance: Our system has secured approval from the pertinent regulatory bodies, including the Canadian Food Inspection Agency (C.F.I.A.).

ADVANTAGES

- Minimal odor
- Self-priming
- Compliant with VOC regulations
- Outstanding color stability
- High sheen
- Exceptional chemical resistance
- Low maintenance requirements
- Outstanding elongation and abrasion resistance
- Superior mechanical and chemical properties
- Extended working time
- Seamlessly applied coating
- Aliphatic in nature
- Multi-coat application in a single day
- Resistant to impermeability and mold
- Compliant with VOC and EPA regulations in all states and Canadian provinces, including CIFA, USDA, and FDA
- Meets food safety standards

APPLICATIONS

- Medical centers
- Research labs
- Drug manufacturing facilities
- Production and assembly plants
- Food processing factories
- Kitchen areas
- Restrooms and bathing spaces
- Educational institutions
- Shopping complexes
- Retail outlets
- Corporate office spaces
- Storage facilities
- Vehicle repair shops
- Display areas
- Community spaces
- Hallways and walkways
- Mixed residential and business projects

CONTENT PACKAGING

The PolyStar WT 85 kit encompasses Resin Part A and Part B Hardener. The kit configuration includes:

	Part A	Part B
2 Gallons Kit	1 Gallon	1 Gallon
10 Gallons Kit	5 Gallons	5 Gallons
Larger onfigurations are also available upon request.		

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PHYSICAL PROPERTIES

Properties	Values	References
Compressive Strength	14,000 psi – 96MPa	ASTM C 579
Flexural Strength	3,700 psi – 25.5MPa	ASTM D 790
Tensile Strength	8,000 psi – 55.2MPa	ASTM D 638
Bond Strength (concrete)	350psi – (2.4)	ASTM D 4541
Flammability	Self-extinguisher	ASTM D 635
Hardness (Shore D): Water Absorption	>65	ASTM D 2240
	< 0.1%	ASTM D 570
	< 0.1%	MIL D 3134
Impact Resistance	No chipping, cracking, or delaminating	ASTM D 2240
Flash Point	>200 °F - >93 °C	
Abrasion Resistance (CS-17 Wheel, 1,000 g load, 1,000 cycles)	58 mg loss	ASTM D 4060

PRODUCT DATA

Data	Values
Volumetric Ratio	1A:1B
Solid Content	85%
*Coverage (Wet Mils)	150 - 200 SQ. FT.
**Application Temperature	50-90 °F (10-32 °C)
Min Substrate Temperature	33 °F (1 °C)
Thinner	Not required
Pot Life @ 21°C	10-15 minutes
**Drying / Curing Time (Working time)	25 minutes
Tack Free	2 hours
Light Foot Traffic	5-7 hours
Traffic	24 hours
Max Curing Tim for resurfacing	24 hours
Shelf Life	12 months
USDA Food & Beverage & CFIA	Meets the requirements

*Coverage will differ depending on the quality, porosity, of the substrate, thickness, and application methods.

**Based at 71.6oF (22 °C) & 55% relative humidity. Higher temperatures and humidity will shorten pot-life and working time.

CHEMICAL RESISTANCE

Reagent	Results
ASTM 1308, Covered 7 days.	
Skydrol Unaltered	Unaltered
Betadine Unaltered	Unaltered
Calcium Chloride 20% Unaltered	Unaltered
Ammonia 20% Unaltered	Unaltered
Trisodium phosphate 20% Unaltered	Unaltered
Caustic Soda 20% Unaltered	Unaltered
Javex 3% Unaltered	Unaltered
Mineral spirits Unaltered	Unaltered
Methanol Unaltered	Unaltered
Toluene Unaltered	Unaltered
Xylene Unaltered	Unaltered
Hydrochloric acid 10%	Unaltered
Citric acid 10%	Unaltered
Lactic acid 5%	Unaltered
Unleaded petrol	Unaltered
Coffee	Unaltered
Tea	Unaltered
Beer	Unaltered
Skydrol	Unaltered
Nitric acid 10%	Some yellowing
Sulfuric acid 10%	Slightly discolored

SURFACE TESTING

Surface characteristics vary, and as a best practice, it's vital to establish a sample area before commencing your project. To ensure proper adhesion and color consistency, we recommend conducting on-site testing utilizing the method endorsed by our representative. Additionally, sampling existing coatings can help identify contaminants or potential delamination.

SURFACE PREPARATION

Abide by surface preparation guidelines, as outlined in ICRI Guideline No. 310.2R, titled "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair." It's essential that the concrete substrate maintains a pH level of 9 or higher. Standard procedure dictates the removal of all bond-breaking materials.

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SURFACE MOISTURE CHECK

Before employing this flooring coating material, it is imperative to ensure that the concrete surface is thoroughly devoid of any moisture. Concrete moisture assessments should be conducted using either the calcium chloride test method (ASTM F1869) or the in-situ relative humidity (RH) probe test method (ASTM F2170). Alternatively, any other accredited method may be employed in accordance with our guidelines.

SURFACE TEMPERATURE AND HUMIDITY

It's crucial to validate that the floor's temperature aligns with the coating material and surpasses the specifications delineated in the official Technical Data Sheet. Maintaining the dew point at a minimum of 5°F (3°C) below the surface temperature is of paramount importance. If the relative humidity exceeds 85%, it is advisable to refrain from the coating application.

CONCRETE SURFACE PREPARATION

Before initiating the coating process, it is paramount that the concrete satisfies the following prerequisites:

- Dryness – Ensure that there are no areas with excessive moisture, with moisture content staying below 4%.
- Cleanliness – Eliminate any contaminants, such as dust, grease, deteriorated coatings, laitance, or any other substances that may impede proper adhesion.
- Surface Profiling – The concrete surface should be mechanically profiled in accordance with the Surface Preparation ICRI Guideline No. 310.2R. The degree of profiling may vary based on the specific system to be installed and the condition of the concrete. We strongly recommend seeking approval from a representative of our company.
- Structural Integrity – All cracks and chipped areas should be effectively repaired.
- Concrete preparation should be conducted through mechanical means such as shot blasting, grinding, sandblasting, or any other method approved by our company.

CONCRETE REPAIR

Properly addressing any imperfections in the concrete is crucial to prevent the coating from revealing cavities, cracks, or blemishes. Ensuring even filling of concrete cavities is essential. After the material has dried, employing diamond sanding will eliminate any remaining flaws. In case you intend to use a repair material other than our product, please do not hesitate to contact a technical representative from our company to seek approval for a compatible substitute.

MIXING

Our coating system strictly adheres to a 1:1 mixing ratio (by volume). In simpler terms, combine one part A (resin) with one part B (hardener). It is advisable to use a drill and a mixing paddle for the comprehensive blending of the components. To prevent air entrapment when employing a drill mixer, maintain a low mixing speed (maximum 300 RPM). It is important to note that our product is designed for immediate application on floors, and allowing the mixed product to linger in the container will significantly curtail its working time. Under typical conditions, at a temperature of 22°C (71.6°F), the

standard working time on the ground post-unloading stands at 15 minutes.

APPLICATION GUIDELINES

For a solid color coating system, we recommend applying our product as a topcoat in two layers or all at once. In both scenarios, the expected coverage ranges between 75 and 200 square feet per gallon. Below are the comprehensive application steps:

1. To mitigate potential issues due to air expansion in porous concrete, particularly in the morning when temperatures rise, it is advisable to apply the coating at lower temperatures. Hence, the safer practice is to apply coatings later in the day, particularly for exterior projects. The ambient temperature is ideally within the range of 18 to 32°C (65 to 90°F) during the application.
2. As previously instructed, the gallons of resin should be mixed.
3. To guarantee even coverage, pour the material directly onto the surface in a ribbon pattern while walking and pouring simultaneously, maintaining an aim of approximately 75-100 square feet per gallon.
4. To ensure even distribution across the substrate, utilize a squeegee on an extension. When applying the first coat on bare concrete, it is advisable to apply the resin thinly to secure proper adhesion and facilitate air release. For a single coat application over existing PolyStar WT 85, targeting a coverage of approximately 75-100 square feet per gallon is recommended.
5. Achieve uniformity by rolling the surface in both forward and backward directions, utilizing a 10mm microfiber roller.
6. Repeat the process by reversing the direction.
7. Post-application, thorough cleaning and sweeping of the floor are essential, addressing any raised areas or imperfections.
8. When applying the topcoat, it is recommended to target an approximate rate of 100 square feet per gallon, following the same process as step 4.
9. If there is a need for additional protection against chemicals, abrasion, or slipperiness, do not hesitate to consult your representative from our company for tailored recommendations.

PRODUCT RESULT LIMITATIONS

At ground level, concrete slabs have the propensity to emit moisture vapor, and to maintain a flawless application, it is crucial that concrete meets the allowable moisture emissions, which typically amount to 3 pounds per 1,000 square feet over 24 hours (4%) as determined by a calcium chloride test. Therefore, thorough verification of concrete compliance is necessary. In scenarios where relative humidity levels surpass 85%, coating application might result in blistering and delamination. To address elevated humidity levels, the implementation of a concrete moisture vapor control system becomes indispensable. For insights into managing joints and cracks, adherence to our recommendations is vital, and in cases of uncertainty, feel free to seek guidance from our knowledgeable representatives.

WARRANTY

Our coatings package comes complete with a comprehensive one-year warranty commencing from the date of application. To obtain more details about the warranty, kindly get in touch with our company.

DISPOSAL

Any surplus material, including both Part A and Part B components, should be combined and allowed to cure. Upon curing, the product can be disposed of without any restrictive conditions. Conversely, uncured materials should be securely stored in an appropriate sealed container and disposed of in strict adherence to the applicable provincial, state, municipal, and federal regulations.