



# COATLOK™ APPLICATION GUIDE

Additional product information can be found on the Huntsman Building Solutions (HBS) website at [www.huntsmanbuildingsolutions.com](http://www.huntsmanbuildingsolutions.com). Refer to the following documents plus this Product Application Guide to establish processing parameters for varying substrate and climatic conditions:

- Coatlok Technical Data Sheets
- Coatlok Brochure
- Coatlok B-side SDS's
- A-109 & Coatlok A-side SDS's

## PRODUCT SPECIFICATIONS

Coatlok coatings are reactive, 100% solid, two-component elastomeric systems. The membranes resulting from the reactions have properties which are exceptionally suited to perform as durable protective coatings. Upon application, the two-components quickly react, turning into a high-quality, seamless membrane which is immediately resistant to water and can be walked on after application, while being resistant to cracks and breaks during expansion and contraction. The coatings can be applied as a waterproof layer on most substrates using the usual mobile high pressure, 1:1 in volume, mixing and spraying equipment for two component systems with a short reaction time.

## GENERAL PROCESSING GUIDELINES

Coatlok systems require heat from the proportioner to complete the chemical reactions necessary to create a coating meeting the specifications on the Technical Data Sheet. Fully functional primary heaters and hose heat are needed to process Coatlok systems. Please consult the HBS Technical Service Department for further assistance.

## CHEMICAL CONDITIONING

The chemical drums should be stored and maintained between 59°F (15°C) and 86°F (30°C) before processing at the job site. Use dry air desiccant for intake vent on A-side drum only. Mix B-side drum with mixer to re-mix any settled colorant. Other means of cooling the drums on site may be necessary, contact the HBS Technical Service Department for more information.

## SUBSTRATE PREPARATION

All surfaces to be sprayed must be free of oil, grease, waxes, rust scale, loose dirt and water. In addition, the substrate must be structurally sound. The moisture content of wood substrates must not exceed 19% before the coating is applied. Some metal surfaces may require sandblasting prior to product spraying to ensure adequate adhesion. The application of a primer is required on most substrates before spraying a Coatlok membrane. Consult an HBS Technical Service Representative for additional information on surface preparation. When in doubt about the potential for adhesion to a substrate, build a mock-up and spray the product under similar conditions to that expected in the field, then test for adhesion and cohesion.

Applying to concrete:

Surface preparation in accordance to SSPC SP 13/NACE NO. 6. The Concrete Surface Profile needed for optimal performance is CSP 3 to CSP 5.

Applying to steel:

Solvent cleaning in accordance to SSPC SP 1. Removal of mill scale rust and paint (hand tool) in accordance to SSPC SP 2. Power tool in accordance to SSPC SP 3. NACE NO. 1 to 3 (SSPC SP 5, 10, 6) when cleaning the surface to white metal by commercial blast is specified.

Applying to non-ferrous metal (aluminum, galvanized, brass, copper, etc.):

Prepare in accordance to SSPC SP 16.

Applying to wood:

Sand, remove dust, loose parts, grease, any mold releasing agent.

Applying to foam, etc.:

Remove dust, loose parts, grease, any mold releasing agent.

Applying to plastics:

Solvent cleaning in accordance to SSPC SP 1. Achieve Profile such as CPS 3 or higher.

**SURFACE PRIMER**

Best results are obtained using a 2-component, 100% solids epoxy primer, such as Sikafloor 156 (Canada) / Sikafloor 161 (U.S.A.), by Sika (for concrete and steel), Chemorclad 9030 by Tritex (for concrete and wood), Polaprime Epoxy Primer by Andek (for concrete and steel), etc. Good results can also be obtained with a 1 or 2 component polyurethane primer, for concrete, steel and wood. All holes, cavities and cracks must be filled before the application of the primer and membrane. Adhesion tests must be performed in accordance with ASTM D 4541.

**APPLICATION PARAMETERS**

**EQUIPMENT** – Follow the spray equipment manufacturer’s safe operation guidelines. Every spray unit is slightly different and you will need to adjust your primary heater and hose temperatures accordingly for each coating system. Adjust your processing pressures and application technique for an appropriate spray pattern for the substrate and structure.

**PROPORTIONER** – Use only fixed ratio (one-to-one), volumetric positive displacement pumps connected to a common drive.

**TRANSFER PUMPS** – Use 2:1 or 1:1 double acting transfer pumps assuring equal pressure is delivered from both sides to the proportioner. Contact the HBS Technical Service Department for recommendations.

**PRIMARY HEATERS** – The primary heaters should be resistance controlled, direct contact heating rods, either submersible, mass block and tube style or combination of direct heating contact rods and mass block (hybrid heater). The primary heaters should be controlled through independent controllers, separated from the hose heat to ensure an accurate setpoint temperature. Coatlok may not be consistently sprayed in conformance with the written specification if the combination of the proportioner’s pumping capacity, the primary heat capability and spray gun discharge rate (mixing chamber size) is out of balance. Contact the HBS Technical Service Department for further guidance.

**HEATED HOSE** – HBS recommends the use of heated spray hoses rated at ≥ 2000 psi. Use moisture resistant hoses specifically designed for isocyanate. The heated spray hose should be able to maintain temperatures up to 190°F (88°C) and should be heated using an electrical element with an independent temperature sensor. The heated hose should also be adjusted and monitored separately from the A and B primary heaters and should be capable of maintaining the temperature from the A and B primary heaters all the way to the spray gun.

**COATING APPLICATION**

In preparation for spraying, an off-target test spray should be performed to verify the processing pressure, primary heater and hose temperature settings. The “initial setpoint temperatures” listed on the Technical Data Sheet are suggested general starting parameters. One proven method of applying Coatlok systems is to spray perpendicular (90 degree angle) to the substrate, holding the gun more than 3 feet away from the substrate. However, every applicator should determine the method best suited for their application.

PROCESSING PARAMETERS			
Minimum Thickness	40 mils		
Coverage Rate	40 sq. ft. at 40 mils thick, per 1 gallon of system (iso and resin)		
Dew Point	Substrate temperature must be 5°F above dew point and rising before coating application		
Processing Temperature (Primary Heater & Hose Heat) & Processing Pressure	Coatlok H-750	150°F (65°C)	2000 – 2500 psi
	Coatlok H-760	150°F (65°C)	1500 – 2500 psi
	Coatlok H-790-NH	150°F (65°C)	1500 – 2500 psi
	Coatlok P-855	140°F (60°C)	1800 – 2500 psi
	Coatlok U-192	130°F (55°C)	1300 – 2000 psi
	Coatlok U-251	150°F (65°C)	2000 – 2500 psi
	Coatlok U-290	150°F (65°C)	2000 – 2500 psi

REACTIVITY PROFILE	
Gel Time	Coatlok H-750 6 – 7 seconds Coatlok H-760 3 – 5 seconds Coatlok H-790-NH 8 – 12 seconds Coatlok P-855 3 – 5 seconds Coatlok U-192 4 – 5 seconds Coatlok U-251 6 – 8 seconds Coatlok U-290 10 – 15 seconds
Light Traffic	3 – 4 hours @ 70°F (21°C) (cure time will be longer at lower temperatures)
Cure Time	24 hours @ 70°F (21°C) (cure time will be longer at lower temperatures)
Full Cure Time	7 days

## EXTERIOR APPLICATION

Climatic conditions are an important factor that should be considered when preparing to apply coatings. Ambient and substrate temperatures should be monitored. Product should only be applied when ambient and substrate temperatures are inside the range for the system being used. It is best to apply products when the humidity is less than 80% and the wind is less than 10 mph to maintain proper adhesion. Pay close attention to the temperature of the substrate when applying to the exterior of a structure.

## LIMITATIONS OF USE

If in doubt about the substrate temperature or surface conditions, a trial application should be conducted to check product quality and spray performance. Water on the surface from rain, fog, condensation, etc. will react chemically with the isocyanate, adversely affecting the product and physical properties, particularly adhesion.

## COLD WEATHER PROCESSING

The minimum substrate and ambient temperature for Coatlok are as follows:

Coatlok H-750	23°F (-5°C)
Coatlok H-760	23°F (-5°C)
Coatlok H-790-NH	23°F (-5°C)
Coatlok P-855	41°F (5°C)
Coatlok U-192	23°F (-5°C)
Coatlok U-251	23°F (-5°C)
Coatlok U-290	23°F (-5°C)

Low temperatures affect the coating process in two ways.

1. Chemical reactions are slowed down due to reduced exothermic energy within the expanding mass. Dripping and voids from slow plastic formation could occur.
2. This reduced temperature often leads to reduced yield.

The temperature and type of substrate has a greater influence on the quality of the product than the temperature of the air because the rate of heat transfer from liquid to air is much slower than the rate from liquid to substrate. If the substrate temperature is too low, or it is a highly conductive material such as metal or concrete, the heat produced by the chemical reaction may be drawn into the substrate so rapidly that plastic formation and cell generation becomes very slow, thus reducing yield. It is not a good practice to use the heated chemicals to warm the surface (flash coat). Instead, if the substrate to be sprayed is too cold to produce proper product, the substrate should be heated using an indirect-fired heater or the product should be sprayed on a warmer substrate on a warmer day. No open flame or direct heating is permitted during the spraying process.

## THERMAL AND UV PROTECTION

This product must not be used when the continuous service temperature of the substrate and membrane is below -60°F (-51°C) or above 140°F (60°C). If exposed to direct sunlight, Coatlok membranes will change color, but their mechanical properties will not be affected. If retention of the initial color is required, we recommend the application of an aliphatic top-coat on the Coatlok membrane.

## VENTILATION

Ventilate during application and for a minimum of 24 hours following the application or until no objectionable odor remains.

## CHEMICAL STORAGE

All components of Coatlok systems are packaged in closed-head metal drums or totes. Store the B-side resin and A-side isocyanates at temperatures between 59°F (15°C) and 86°F (30°C). Keep dry and keep from freezing. Keep away from direct sunlight. Remove the transfer pump and tightly close the bungs of the A-side and B-side drums after use. See the Coatlok B-side SDS's and appropriate A-side SDS for additional product information.

## FOR MORE INFORMATION

Visit [www.huntsmanbuildingsolutions.com](http://www.huntsmanbuildingsolutions.com) or call 1-877-742-7227 for more information on health, safety and environmental protection with respect to polyurethane chemicals.

**Disclaimer:** The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent inferred. All patent rights are reserved. The membrane product is combustible and must be protected in accordance with applicable codes. Protect from direct flame and spark contact, around hot work for example. The exclusive remedy for all proven claims is replacement of our materials.