



# APPLICATION GUIDE

APRIL 2026

JFB HART COATINGS, INC.

(630) 643-0143

(630) 392-4977

[jfb supremextreme.com](http://jfb supremextreme.com)

## TABLE OF CONTENTS:

<b>PRODUCT DETAILS, APPLICABLE SUBSTRATES &amp; MARKETS</b>	2
<b>KEY FEATURES &amp; BENEFITS</b>	3
<b>SURFACE PREPARATION</b>	
CARBON STEEL	4 – 7
GALVANIZED STEEL & OTHER NON-FERROUS METALS	7
CONCRETE & MASONRY	7 – 9
WOOD	9
PREVIOUSLY PAINTED SURFACES	9
VCT, VINYL SHEETING, LINOLEUM, TERRAZZO, LVT	9
TILE & GROUT	10
<b>ENVIRONMENTAL CONDITIONS</b>	10
<b>MIXING INSTRUCTIONS</b>	
SX Gloss & SX Matte/Satin	11
W/ADHESION BOND	11
W/ACCELERATOR	11
W/GRIPLOK	12
W/ADHESION BOND & GRIPLOK	12
W/ACCELERATOR & GRIPLOK	12
W/ADHESION BOND & ACCELERATOR	12
W/ADHESION BOND & ACCELERATOR & GRIPLOK	13
MIXING RATIOS	13
WATER REDUCTION	13
	13
<b>URETHANE ADDITIVES INSTRUCTIONS &amp; NOTES</b>	14
<b>APPLICATION INFORMATION</b>	
EQUIPMENT	15
COVERAGE	15
DETAILS & NOTES	15
<b>MAINTENANCE</b>	
PREVENTATIVE	16
RECOMMENDED CLEANING INSTRUCTIONS	16
<b>REPAIRS &amp; REAPPLICATIONS</b>	16
<b>TROUBLESHOOTING</b>	17 – 18
<b>ADDITIONAL INFORMATION</b>	18

# JFB HART COATINGS

JFB Hart Coatings, Inc. (“JFBHC”, “JFB” or “JFB Hart”) developed a revolutionary technology for the next generation of high performance, environmentally friendly, water-based industrial coatings. This cutting edge, market-proven, “green” technology was developed using groundbreaking cross-linking chemistry in total water with no harmful co-solvents. The products created from this technology have more than 10+ years’ market history with sales in the consumer, industrial maintenance coatings and commercial floor care markets. This “game changing” technology produces urethane and epoxy coatings that have been applied to all different type of substrates all over the world. Facilities no longer have to use every day, commodity, “me too” solvent-based or low performance water-based products.

## PRODUCT DETAILS

	<u>SX Gloss</u>	<u>SX Matte/Satin</u>
<b>Type of Product</b>	Aliphatic Polyester Polyurethane	Aliphatic Polyester Polyurethane
<b>Number of Components</b>	2	2
<b>Dry Time (Hrs.)</b>	6-8	5-6
<b>Dry Time with Accelerator (Hrs.)</b>	3-4	2-3
<b>Pot Life (Minutes)</b>	90	90
<b>Gloss Level (60° Meter)</b>	85°	Satin 50° Matte 10°
<b>Clear or Color</b>	Both	Both
<b>Horizontal Coverage (Sq. Ft.)</b>	350-400	350-400
<b>Vertical Coverage (Sq. Ft.)</b>	250-300	250-300
<b>VOCs (g/l)</b>	< 5	< 15
<b>Solvents</b>	None	None
<b>Primer Needed</b>	No	No
<b>Abrasion Resistance (mg loss)</b>	10-20	33
<b>Hardness</b>	4H	3H
<b>Impact Resistance</b>	160 in lbs.	160 in lbs.
<b>Flexibility</b>	>32%	>32%
<b>Adhesion (1)</b>	5B (100%)	5B (100%)
<b>Tensile Adhesion (psi)</b>	2,473-2,609 (1)	1,600-1,800 (1)
<b>Flame Spread</b>	10 Class A Type I	10 Class A Type I
<b>Smoke Developed</b>	5 Class A Type I	5 Class A Type I

(1) These tests were completed with the coating applied direct to steel, no primer.

(2) This test was completed on concrete and the break occurred in the concrete; the coating itself.

## APPLICABLE SUBSTRATES & MARKETS

### SUBSTRATES

- Concrete
- EIFS
- Ferrous & Non-Ferrous Metal
- Fiberglass
- Terrazzo
- Previously Painted Surfaces
- Tile & Grout
- VCT
- Vinyl Sheeting
- Wood

### MARKETS

- Airport
- Theme Park
- Marine Ind.
- Healthcare
- Education
- Warehouse/Mfg.
- Transportation
- Restaurant
- Residential
- Rail Car / Vehicles
- Commercial Bldgs.
- Hospitality

## KEY FEATURES & BENEFITS

- **Exceptional Bonding Capabilities** – No primers needed; direct to most surfaces including ferrous and non-ferrous metals without destructive surface preparation
- **Types of Surfaces** – Concrete, stained concrete, carbon steel, aluminum, galvanized metal, stainless steel, fiberglass, wood, clay/masonry surfaces, stone, hardwood, terrazzo, vinyl composition tile (VCT), vinyl sheeting, ceramic and other tile and grout surfaces with the addition of adhesion plus
- **Permeability – 2.43 Perms** – Water barrier not vapor barrier; allows water vapors to migrate through the coating into the atmosphere
- **Ultraviolet Insensitivity** – No clear coat needed for better UV protection
- **Low to Zero VOCs** – The volatile organic compounds (VOCs) are less than 15 grams / liter
- **Virtually Odorless** - Does not require special breathing apparatus / respirators and does not omit any free monomers after parts A & B are mixed
- **Produced in Total Water** – Does not use solvents, exempt solvents or any co-solvent
- **Thermal Stability** – Has a high coefficient of linear expansion
- **Does Not Contain Proposition 65 Chemicals** – These chemicals are known to the state of California to cause cancer and birth defects
- **For Interior or Exterior Use** – Allows for a high performance urethane to be used indoors while the building is in operation
- **Meets U.S. Building Councils' LEED Criteria** – Under EQ 4.2 for Low-emitting paints and coatings
- **Flame Spread** – (ASTM 84); Result = 10 which is Class A / Type I (0 – 25 Flame Spread Index)
- **Smoke Developed** – (ASTM 98); Result = 5 which is Class A / Type I (0 – 450 Smoke Developed Index)
- **For Vertical or Horizontal Surfaces**
- **Increased Co-Efficient of Friction** – Products certified by the National Floor Safety Institute as High Traction with a wet co-efficient of friction rating greater than 0.60
- **Provides Anti-Graffiti Properties** – Paint, spray paint and markers can be removed without damaging the coating
- **Inherent Dry Erase Characteristics** – Can turn entire walls or tables into dry erase boards without ghosting / shadowing
- **Brush, Roll, or Spray Application**
- **Very Repairable** – Small sections can be repaired without noticing or redoing the entire section
- **ENERGY STAR Qualified & Cool Roof Rated Product** – Tested for 3 years at 3 different weather farms (FL, OH and AZ) and sent to UL for evaluation of the solar reflectance (Initial 0.83 and Aged 0.78) and thermal emittance (Initial 0.91 and Aged 0.85).

# **SURFACE PREPARATION OF CARBON STEEL**

The surface preparation required for different types of coating systems to be applied over carbon steel will vary considerably depending on the type of coating as well as the service environment. The Society for Protective Coatings (SSPC), NACE International (NACE), American Water Works Association (AWWA) and the American Society for Testing and Materials (ASTM) all make reference to various standards that define degrees and methods of surface preparation. The most widely used surface preparation specifications are those published in Steel Structures Painting Manual, Vol. 2, Systems and Specifications. Given below is a brief description of the various SSPC and NACE surface preparation standards. It is recommended that you refer to the SSPC or NACE standards for the complete text of the specifications.

## **SSPC-SP1 SOLVENT CLEANING**

The removal of all visible oil, grease, soil, drawing and cutting compounds and other soluble contaminants from surfaces with solvents or commercial cleaners using various methods of cleaning such as wiping, dipping, steam cleaning or vapor degreasing.

It is generally conceded that wiping with solvents will not positively remove all oil, grease and other soluble contaminants from the surface. Therefore, a more efficient cleaning method such as vapor degreasing or steam cleaning should be employed where coatings will not tolerate any oil, grease and other soluble contaminants residue.

It should be noted that organic solvents may not remove water soluble contaminants such as acid and alkali salts. Such contaminants should be removed using water and/or water-based cleansing agents. Reference SSPC-SP COM, Surface Preparation Commentary for Steel and Concrete Substrates.

## **SSPC-SP2 HAND TOOL CLEANING**

The removal of all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter by the use of non-power hand tools. Hand tool cleaning will not remove adherent mill scale, rust and paint. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.

## **SSPC-SP3 POWER TOOL CLEANING**

The removal of all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter by the use of power-assisted hand tools. Power tool cleaning will not remove adherent mill scale, rust and paint. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Power tool cleaning usually provides a slightly higher degree of cleanliness than hand tool cleaning, but is not regarded as adequate surface preparation for long-term exterior exposure of most high-performance coating systems.

## **SSPC-SP5/NACE 1 WHITE METAL BLAST CLEANING**

The complete removal of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method.

## **SSPC-SP6/NACE 3 COMMERCIAL BLAST CLEANING**

The removal of all visible oil, grease, dirt, dust, mill scale, rust, paint oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method. Discoloration caused by certain stains shall be limited to no more than 33 percent of each unit area. Unit area is approximately 9 sq. in. (5776 sq. mm).

## **SSPC-SP7/NACE 4 BRUSH-OFF BLAST CLEANING**

A brush-off, blast-cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust and loose coating. Tightly adherent mill scale, rust and coating may remain on the surface. Mill scale, rust and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife. The entire surface shall be subjected to the abrasive blast. The remaining mill scale, rust or coating shall be tight. When coating is specified, the surface shall be roughened to a degree suitable for the specified coating system. Prior to coating application, the surface shall comply with the degree of cleaning as specified herein. Visual standards of comparators may be specified to supplement the written definition. In any dispute, the written standards shall take precedence over visual standards and comparators.

## **SSPC-SP10/NACE 2 NEAR-WHITE METAL BLAST CLEANING**

The removal of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method. Discoloration caused by certain stains shall be limited to no more than 5 percent of each unit area. Unit area is approximately 9 sq. in. (5776 sq. mm).

## **SSPC-SP11 POWER TOOL CLEANING TO BARE METAL**

The removal of all visible oil, grease, dirt, mill scale, rust, paint, oxide, corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portion of pits if the original surface is pitted. Differs from SSPC-SP3 in that it requires more thorough cleaning and a surface profile not less than 1 mil (25 microns).

## **SURFACE PREPARATION BY WATER JETTING**

Surface preparation and cleaning of steel and other hard materials by high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness prior to recoating. This standard is limited in scope to the use of water only without the addition of solid particles in the stream. Depending upon the specified level of cleanliness, the user should refer to the Joint Surface Preparation Standard Waterjet Cleaning of Metals issued by NACE and SSPC under the designation of NACE WJ-X(1-4)/SSPC SP WJ-X(1-4). Refer to the full standard for all details regarding this preparation method.

## **DEGREE OF CLEANLINESS VS. COATING PERFORMANCE**

Abrasive blast cleaning as defined in SSPC specifications SSPC-SP5/ NACE 1 (White Metal Blast Cleaning), SSPC-SP6/NACE 3 (Commercial Blast Cleaning) and SSPC-SP10/NACE 2 (Near White Blast Cleaning) is often regarded as the preferred method of surface preparation for carbon steel.

Experience has proven that a coating system applied over a properly blast-cleaned surface will cost less per square foot per year than the same system applied over a hand or power tool cleaned surface. This can be attributed to the two main purposes of surface preparation: to increase coating adhesion and to decrease surface contamination. Having strong adhesion will increase the service life of a coating; removing contamination will decrease the risk of future coating failure. While some coatings are designed to be tolerant to marginally prepared surfaces, the rule of thumb is that for a given coating system, a lower degree of surface preparation will result in poorer adhesion and an increased risk of failure.

When performed properly, abrasive blasting provides the best foundation for a coating system, which translates to longer service life and ultimately lower cost per square foot over the life of the system.

## **METHOD OF ABRASIVE BLAST CLEANING**

The SSPC specification for abrasive blast cleaning lists a number of alternative blast cleaning methods. The two most widely used are compressed air nozzle blast cleaning and centrifugal wheel blast cleaning. Since either method is capable of producing the same quality of surface preparation, both are equally acceptable for coating applications. A large quantity of shop-fabricated structural, plate and miscellaneous steel is now prepared by centrifugal wheel blast cleaning equipment because of the speed, production capacity and cost advantage of this method. Also, portable centrifugal wheel blast cleaning units can be transported to the jobsite and set up to process fabricated structural steel and plate assemblies as they are scheduled for erection.

Vacuum blasting is used in areas where the amount of abrasive dust created by compressed air nozzle blasting cannot be tolerated. However, it is recommended that motors, bearings and moving parts close to the work be protected.

Other methods of abrasive blast cleaning are not discussed here because of their more limited or specialized applications. Each has its own advantages and limitations which would merit its consideration for certain specialized types of work.

## **DETERMINING SURFACE CLEANLINESS**

The cleanliness of abrasive blast-cleaned steel may be determined by comparison with SSPC-Vis-1 pictorial standards, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning. To avoid interpretations resulting from color and profile variations due to different types of steel and abrasive media, small steel panels can be

abrasive blast-cleaned and used as representative samples of the work. These panels should be securely wrapped in clear plastic to protect them from deterioration.

## **MEASURING SURFACE PROFILE**

It is generally agreed that the surface profile contributes to the adhesion and performance of most zinc-rich coatings, tank linings and other high performance systems. Surface profile can be closely predetermined by the selection of the type and size of abrasive from the tables contained in SSPC and NACE Surface Preparation Specifications or from the abrasive supplier's data.

A number of devices are available for measuring surface profile. However, it should be noted that different types of test equipment will not necessarily give comparable readings and cannot be used for comparative purposes. Therefore, it is necessary to determine what test equipment is to be used if duplicate readings will be taken for verification or approval.

ASTM D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel, outlines four methods by which profile measurements can be taken. SSPC-PA 17, Procedure for Determining Conformance to Steel Profile/Surface Roughness/ Peak Count Requirements, outlines suggested procedures on the number of measurements that may be taken to qualify an area.

## **SELECTION OF ABRASIVE MEDIA**

Where a sharp angular profile is desired, a sharp, hard abrasive must be used such as garnet or a synthetic abrasive of equivalent hardness. A recyclable mix that is often accepted consists of not more than three parts chilled iron shot and one part of chilled iron grit. Recycled cast iron and malleable iron shot and grit, or 100 percent chilled shot are regarded as unsatisfactory for producing a sharp angular profile, but may be used where this type of profile is not required. Reference SSPC-AB 1, Mineral and Slag Abrasives, SSPC-AB 2, Cleanliness of Recycled Ferrous Metallic Abrasive, and SSPC-AB 3, Ferrous Metallic Abrasive.

## **REMOVAL OF DUST FROM ABRASIVE BLAST-CLEANED SURFACES**

Dust and blast products should be removed from the surface of abrasive blasted steel by high-pressure air, vacuum cleaning or brushing.

## **ORGANIC CONTAMINATION OF ABRASIVE BLAST-CLEANED SURFACES**

The greatest danger of organic contamination during abrasive blast cleaning is from oil and moisture. Compressed air used for nozzle blasting should be periodically checked to verify that it is clean, dry and oil-free (Reference ASTM D4285, Standard Test Method for Indicating Oil or Water in Compressed Air). Oil and water separators, traps or other equipment may be necessary to achieve clean, dry air. Fabricated steel is sometimes not solvent-cleaned prior to abrasive blast cleaning on the assumption that oil and grease will be removed by the

# Surface Preparation Grades of Blast Cleaned Steel

Assessment of degree of removal of rust, millscale and other visual contaminants (inspected without magnification).  
Important: Surface cleanliness is not a measure of surface profile.

## Explanatory Details

### Rust Grade A

- Steel with the millscale layer intact and very minor, or no rusting.

### Rust Grade B

- Steel with spreading surface rust, and the millscale commenced flaking.

### Rust Grade C

- Rusty Steel with the millscale layer flaked and loose, or lost, but only minor occurrence of pitting.

### Rust Grade D

- Very rusty steel with the millscale layer all rusted and extensive occurrence of pitting.

### Blast Class 1 (SP-7/N4)

- Very light, whip over blast clean with removal of loose surface contaminants.

### Blast Class 2 (SP-6/N3)

- Substantial blast clean with wide spread, visible contaminant removal and base metal color appearing.

### Blast Class 2 ½ (SP-10/N2)

- Intense blast clean leaving shaded grey metal with only tiny, isolated flecks or strips of visible contaminants.

### Blast Class 3 (SP-5/N1)

- Complete blast clean with consistent, metal color all over and no visible contaminants.



## Steel Graded & Blasted

Above the dotted red line

## JFB Hart Recommended System

**One Coat SX Gloss or SX Matte / Satin**

Below the dotted red line

**One Coat of an Epoxy Primer & One Coat SX Gloss or SX Matte / Satin  
Or two coats of the SX Gloss or SX Matte / Satin**

The reason for the primer is because of the profile (pitting) of the steel.

DISCLAIMER: The grades of rust and blast cleaned surfaces 'information', described and illustrated on these pages are a guide only and do not claim to be approved nor complying nor substitutable for or by any surface preparation standard. It is responsibility of the reader and/or users of this 'information' to separately determine and verify the specifications and/or methods and/or assessment of surface preparation as indicated or directed or required by or in any work specifications or standards. JFB Hart expressly disclaims any liability for the use or misuse of this 'information'.

blast cleaning process. Experience has shown that this is not always the case. Also, if proper quality control procedures are not employed during centrifugal wheel blast cleaning, the recycled abrasive may pick up oil, so that in time the abrasive itself will contaminate the steel being cleaned.

Oil contamination of a blast-cleaned surface is very difficult to detect visually or by ultra-violet light examination. The best protection against oil contamination is taking remedial measures to prevent its occurrence. If the blast-cleaned surface becomes contaminated by oil, grease, hand prints or other foreign matter, it should be solvent-cleaned and then reblasted according to the original specifications to ensure the same degree of surface cleanliness.

### **ENVIRONMENTAL CONDITIONS**

Abrasive blast-cleaned surfaces should be coated before any visible rust forms on the surface. For this reason, it is recommended that abrasive blast cleaning be performed only when the relative humidity is no higher than 85% and the surface temperature of the steel at its coldest point is at least 5°F (3°C) above the temperature of the dew point. Some specifiers may include a time/humidity table in their specifications to ensure that the abrasive blast-cleaned surface is coated before flash rusting occurs. The general practice is that no more surface be prepared for painting than can be coated in a single shift.

### **PREPARATION OF WELDS**

Preparation of welds should be scheduled ahead of surface preparation. This work can be best handled by the metal trades connected with fabrication or erection, especially when code inspection and certification are involved. Weld spatter and slag can be removed by chipping or grinding. If the surface will be exposed to severe environmental conditions, it is suggested that sharp edges and corners be rounded to a smooth contour by grinding. Undercuts and recesses should be smoothed by grinding and porous welds ground down to pinhole-free metal. Remove weld flux from the surface by washing with water (Reference NACE SP0178, Surface Finishing of Welds Prior to Coating).

### **STEEL AND FABRICATION DEFECTS**

Steel and fabrication defects revealed by surface preparation such as weld imperfections, laminations, scabs and slivers should be corrected before proceeding further with surface preparations.

### **INACCESSIBLE AREAS**

It is not possible to properly prepare and apply a protective coating behind rafters or skip-welded lap joints, or in between back-to-back angle iron bracing. When allowable, these inaccessible areas should be coated before assembly or they will continue to erode away in a corrosive environment, leaving rust stains on the exposed coated surface below. In an aggressively corrosive environment, coated surfaces adjacent to these areas will actually be undercut and fail due to the corrosive action taking place in these inaccessible areas.

Therefore, if total protection of the surface is mandatory, all surface voids should be seal-welded and back-to-back bracing and tank rafters either coated before assembly or eliminated from the design and construction. Sharp corners and edges should be ground to a smooth contour and welds prepared as suggested in NACE SP0178. (See Weld Preparation.)

## **SURFACE PREPARATION OF GALVANIZED STEEL AND OTHER NON-FERROUS METALS**

Surfaces should be clean and dry. Remove dust and dirt by blowing off the surface with high pressure air or wiping clean with dry rags. Oil, grease, protective mill coatings and other soluble contaminants should be removed by solvent cleaning. White rust should be removed from galvanized steel by hand or power brushing. Care should be taken not to damage or remove the galvanizing. Rust should be removed from old galvanized steel by hand or power tool cleaning.

Hot-dipped galvanized and galvanized steel is often treated with passivation agents or coatings by the galvanizers. Although these treatments are used to prohibit the premature oxidation of the galvanized surface, they can prevent proper adhesion of the coating system and lead to delamination of the coating film. Great care should be taken to ensure proper surface preparation of passivated surfaces. Abrasive blast cleaning to increase mechanical adhesion is the preferred method of surface preparation (Reference ASTM D6386, Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting).

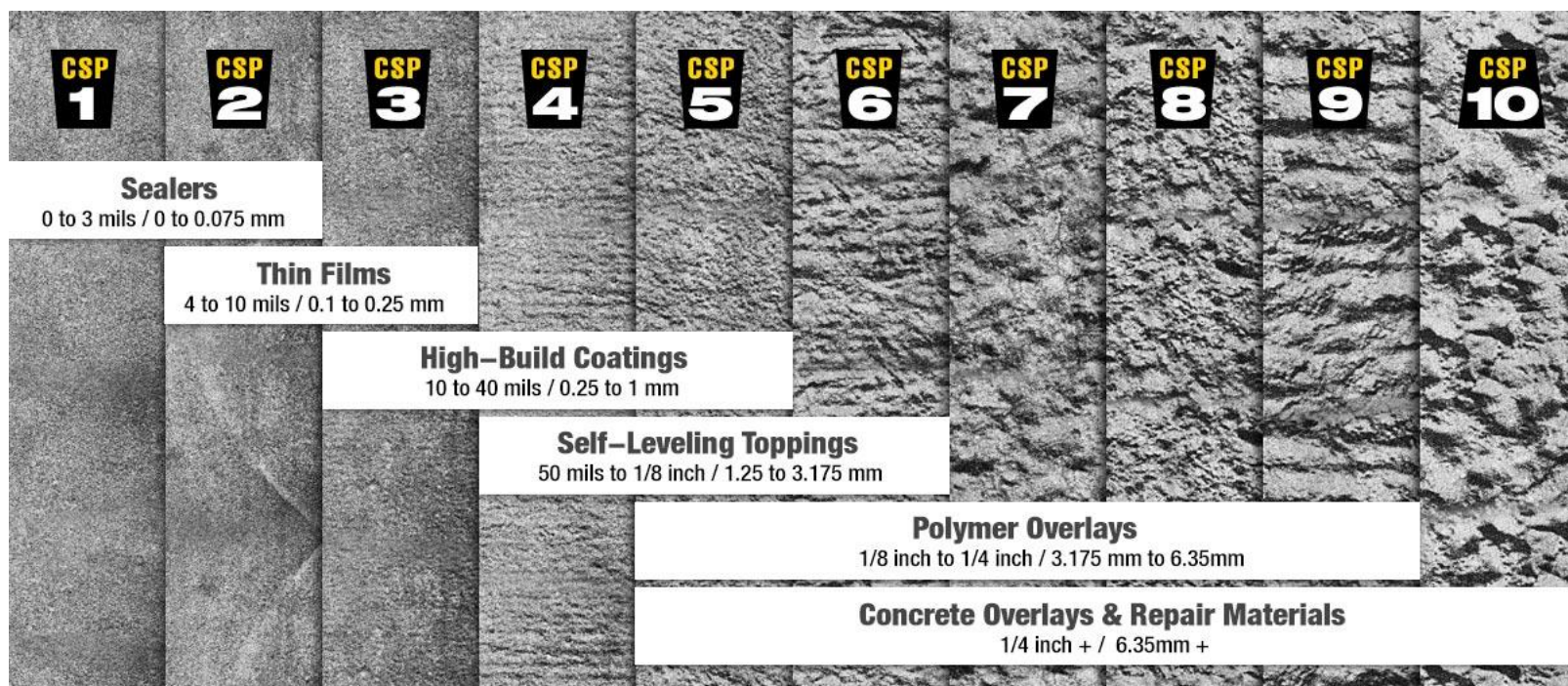
## **SURFACE PREPARATION OF CONCRETE AND MASONRY**

The type of surface preparation required for concrete and masonry is dependent upon the type of coating system to be applied and the intended service of the vessel or structure. NACE International, the Society for Protective Coatings, the International Concrete Repair Institute and the American Society for Testing and Materials all reference various methods of surface preparation. Following are surface preparation suggestions and brief descriptions of some of the practices recommended by NACE, SSPC, ICRI and ASTM.

SSPC-SP13/NACE 6 Surface Preparation of Concrete: This standard gives requirements for surface preparation of concrete by mechanical, chemical or thermal methods prior to the application of protective coating and lining systems.

ICRI Guideline No. 310.2: This guide provides designers, specifiers, contractors and manufacturers with the tools to select and specify the methods for preparing concrete surfaces prior to the application of sealers, coatings and polymer overlay systems.

# INTERNATIONAL CONCRETE REPAIR COUNCIL GUIDELINES



## **TESTING FOR MOISTURE CONTENT**

New concrete and masonry typically should not be coated for at least 28 days to permit the concrete or mortar to cure and dry out unless otherwise directed by the manufacturer. Free water and soluble alkaline salts remaining in the concrete may contaminate coatings or eventually cause delamination, blistering, peeling and/or efflorescence staining. For this reason, concrete should be visually inspected and tested for moisture content before painting.

Damp spots, efflorescence or white salts appearing on the surface are obvious indicators of moisture. Moisture presence can be tested by performing tests such as ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method, ASTM F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride, or ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. See the appropriate Product Data Sheet for moisture content limitations.

## **REPAIR OF SURFACE DEFECTS AND REMOVAL OF CONTAMINANTS**

The surface to be coated should be examined for defects such as fins, protrusions, bulges and mortar spatter. These defects should be corrected by grinding or scraping. Repair of surface defects includes patching voids and cracks that will cause discontinuities or unsightly appearance in the coating, and using a patching compound that is compatible with the coating system. Remove non-degraded release agents, fats, oil and wax and grease by scraping off heavy deposits followed by cleaning with an appropriate solvent or steam cleaning with an appropriate solution. Repeat the cleaning operation until the contamination is removed and flush the area with clean water to remove residual cleaning solution. Consult a supplier to provide assistance in choosing an adequate cleaning chemical.

Always ensure that the cleaning solution is maintained at a constant temperature level to keep the contaminants soluble until they are removed. Allow to dry thoroughly before coating.

## **REMOVAL OF LAITANCE**

High-build, high film strength coatings will not develop optimum adhesion to concrete unless laitance and other loosely bound material are first removed from the surface. Common methods of removal are acid etching and abrasive blasting. Abrasive blasting is preferred where practical, although dust and abrasive removal may present a problem on some projects. Acid etching is an economical way to prepare concrete floors, however, it is hazardous in its application and is not recommended for vertical or overhead surfaces.

## **ABRASIVE BLASTING**

Abrasive blasting should be sufficiently performed so as to remove weak laitance and solid contaminants. This procedure will open up surface voids, bugholes, air pockets, etc. Concrete substrates are abrasive blasted to provide a clean, sound substrate with a uniform anchor profile, but not to erode the surface beyond that which is necessary. Recommended blasting methods include dry abrasive with air-blast, hydroblasting with an abrasive and airless centrifugal wheel blast, and vacuum blasting.

Abrasive blasting using compressed air is the more common method of abrasive blasting. The blasting is often performed dry, but can incorporate water to control dusts. The water can be mixed with the abrasive and used as a slurry or the water can be injected into the abrasive at the end of the blast nozzle. Before wet blasting, one should consider the schedule constraints of the project. Time may not allow for ample drying of the surfaces before coatings are to be applied. The selected abrasive must be clean and dry with a maximum particle size that can pass through a 16-mesh screen.

The preferred method of abrasive blasting floors is with a portable unit incorporating centrifugal wheel blast using steel shot abrasive. These units reclaim much of the shot and subsequent dusts, minimizing the final clean-up before coating. The size of the steel shot, coupled with the travel speed of the unit, determines the aggressiveness of the blast cleaning.

After blast cleaning, residual abrasive, dust and other loose particles must be removed from the surface by vacuuming or blowing off with clean, dry compressed high-pressure air. Reference ASTM D4259, Standard Practice for Abrading Concrete, SSPC-SP13 and ICRI Guide 310.2, Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays and Concrete Repair, for the complete procedures and guidance regarding abrasive blast cleaning.

#### ACID ETCHING

Acid etching is often used on horizontal surfaces because it provides results at a low cost. It is impractical and dangerous to use for vertical and overhead surfaces as it will not etch the surface uniformly and does not have any effect on opening voids and holes near the surface.

Acid etching may not be suitable in some situations where the concrete surface has been power troweled and/or a thick film coating system has been specified.

Residual dust and dirt should be removed from the surface of the concrete by thoroughly sweeping or vacuuming.

Etched concrete should be examined for uniformity and texture, and should achieve ICRI CSP1 (minimal roughness). The surface should be free of surface glaze, laitance, salts and loosely adhering material. In many cases, more than one acid etching operation may be required to obtain a satisfactory profile. Reference ASTM D4260, Standard Practice for Liquid and Gelled Acid Etching of Concrete, ASTM D4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces, ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method, SSPC-SP13, Surface Preparation of Concrete or ICRI Guideline No. 310.2 for complete procedures before moving forward.

#### **REINFORCING STEEL REPAIR**

Where corrosion of the reinforcement of steel (rebar) exists, continue concrete removal along the corroded steel and any adjacent areas which show evidence of corrosion-induced damage that would inhibit bonding of repair material. When the exposed reinforcing steel has loose rust, corrosion products or is not well bonded to the surrounding concrete, removal should include undercutting the corroded reinforcing steel by approximately 3/4 in (19 mm) in accordance with ICRI Guideline No. 310.1R, Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.

Every precaution should be made to avoid cutting underlying reinforcement. All exposed reinforcement surfaces shall be

thoroughly cleaned of all loose concrete, rust and other contaminants. A protective coating can be applied to the reinforcement after surface preparation. Avoid spillage or application onto the parent concrete.

## **SURFACE PREPARATION OF WOOD**

Wood should be clean and dry. Remove surface deposits, sap or pitch by scraping and wiping clean with rags dampened with mineral spirits or VM&P Naphtha. Seal knots and pitch pockets with shellac reduced with equal parts of shellac thinner (denatured alcohol) before priming. Sand rough spots with the grain, starting with medium grit sandpaper and finishing with fine grit. Remove sanding dust. After the prime coat is dry, fill cracks and holes with a suitable compound that is compatible with the substrate and coating. When filler is hard, sand flush with the surface using the fine grit sand paper. Sand lightly between coats with fine grit, open-coat sandpaper.

## **SURFACE PREPARATION OF PREVIOUSLY PAINTED SURFACES**

Whether or not overcoating is a feasible alternative to complete removal and repainting depends a great deal on the condition of the existing coating system. The amount of corrosion present, number of coats, adhesion between coats and exposure conditions are some of the factors that need to be considered before a specifier can make an overcoat or complete removal decision.

Properly clean the surface of all dust, dirt, grease and foreign matter. Apply a test patch of JFB's product to ensure adhesion to the previously painted surface and also to ensure there will not be any delamination of the previously painted coating from the substrate.

## **SURFACE PREPARATION OF VCT, VINYL SHEETING, LINOLEUM, TERRAZZO & LVT**

If the floor is new, the factory sealer must be removed by scrubbing with an automatic scrubber, red pad and neutral cleaner. If the floor has been previously coated with conventional finish (acrylic or wax), remove all wax to get down to the bare substrate. Use a roto machine, black pad and acrylic stripper. If the floor has a urethane finish or UV cured product applied, lightly screen the floor using a roto machine, 120 mesh screen and water. The water will hold the dust down.

Once the floor is prepped per the three scenarios provided, rinse the floor with a neutral cleaner and continue to do so until the floor has a neutral pH. Apply a test patch if necessary to ensure proper adhesion.

## SURFACE PREPARATION OF TILE & GROUT

Clean the tile and grout. Power washing the grout will help remove more of the contaminants. Sanitize and de-odorize the grout with specific cleaners to remove smells. If looking to re-stain the grout, contact a grout professional for assistance. JFB's urethanes in a color can be used as an alternative to re-staining the grout. It will change the color of the entire floor, tile and grout.

A final scrub with denatured alcohol is recommended to remove any oils or residue left on the tile.

## ENVIRONMENTAL CONDITIONS

While surface preparation is usually defined and controlled by the specification, application is frequently specified to be performed "in accordance with the manufacturer's instruction." These instructions usually include ranges or limits governing the use of the product such as air and surface temperature, recoat time, spreading rate, film thickness, etc. They also include recommendations for various methods of application such as brush, roller, or spray as well as mixing and thinning instructions. For most types of coatings, the manufacturer's recommendations contain more than one method of application, and the applicator has the option of choosing the method of application that is most economical or best suited for a particular job.

The term "application" is no longer limited to just application methods, but has been expanded to include a number of related factors such as environmental conditions, material preparation, equipment, film characteristics, curing and recoating. Each of these factors has a bearing on the proper application of the coating system.

### **STORAGE AND HANDLING**

Facilities should be available at the shop or jobsite for handling and storage of coatings in accordance with the manufacturer's recommendations. In most instances, coatings should be stored in a protected or enclosed area where temperature conditions are controlled. Excessively high or low temperatures may affect application properties of a coating sufficiently so that it cannot be properly applied until it is brought within the recommended storage temperature range again. Furthermore, the physical and chemical properties of coatings may be adversely affected by storage at temperature extremes. All materials should be stored in sealed containers prior to use. Any material held in storage beyond the manufacturer's shelf life limits should be withdrawn from stock and disposed of in accordance with the appropriate regulations.

The products should be stored in a temperature controlled environment at 75°F, with a minimum of 40° F and a maximum of 90° F. Do NOT store or transport the products in the trunks of cars or garages where temperatures can exceed 90° F. Above this temperature, the product can go bad.

### **TEMPERATURE AND HUMIDITY**

Manufacturer's data on air and surface temperature limits and relative humidity should be adhered to during the application and through the cure of the coatings. While some coatings will tolerate much broader temperature and humidity ranges than others, the application and performance of any coating can be adversely affected if prescribed limits are not followed. (See Film Characteristics Section.) Even temperature variations within these limits may change the application properties of some coatings, requiring solvent and equipment adjustments as recommended by the manufacturer for proper application.

Continuous recording of environmental conditions with data loggers is often employed to monitor temperature and humidity conditions during the application and curing of coatings where these factors are essential to film formation and cure. If this type of equipment is not available, periodic readings can be taken with air and surface temperature thermometers and a sling psychrometer and then recorded to verify temperature and humidity conditions which were maintained during the coating and curing phase.

This is not to imply that all coatings applications must be monitored in this manner. However, it may be helpful to have such instrumentation available to settle questions where there is doubt as to whether the temperature and humidity conditions are suitable for the application of a coating.

Conditions	Material	Surface / Ambient	Humidity
Normal	65° - 85° F	65° - 85° F	35 – 65%
Minimum	40° F	40° F	0%
Maximum	85° F	100° F	90%

The pot life and dry times are affected by the material, surface and ambient temperatures. If the temperature is colder, the dry to touch and full cure time will increase. The pot life stays the same. If the temperature is warmer, the pot life will decrease as can the dry times.

Do not apply the products when the substrate temperature is less than 5° F above the dew point.

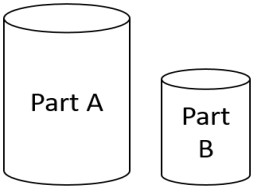
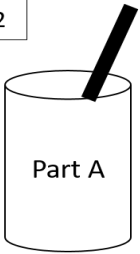
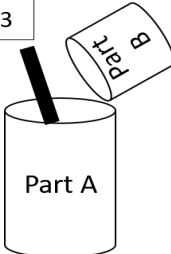

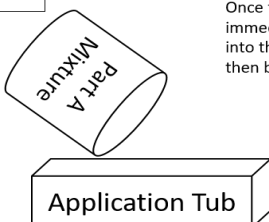
### **VENTILATION**

JFB Hart's coatings are water-based and do NOT contain any type of solvent and are virtually odorless. Thus, water is what is evaporating from the film as part of the drying or curing process. Respirators or other breathing apparatuses are not necessary or required when using JFB Hart's products.

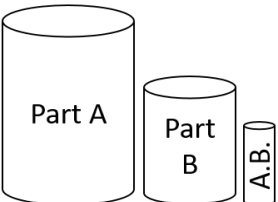
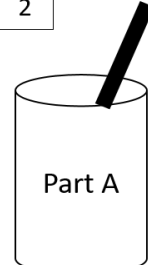
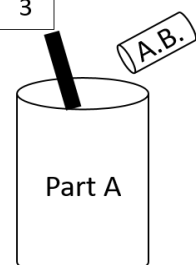
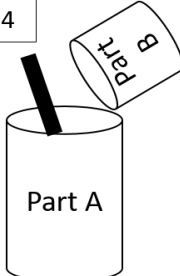
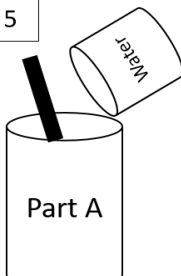
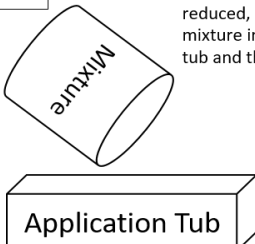
# MIXING INSTRUCTIONS

When including the different additives, there are eight (8) ways to mix JFB Hart's urethanes and one (1) way for the epoxy. These ways are as follows:

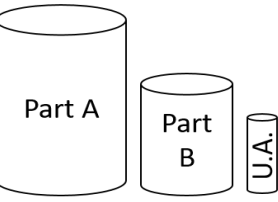
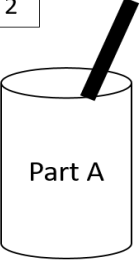
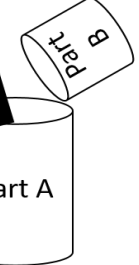

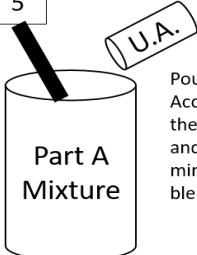
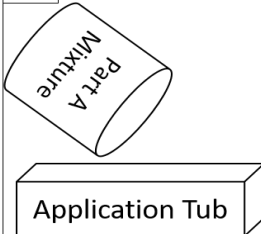
## SX GLOSS & SX MATTE/SATIN

<p>1</p>  <p>You received two products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p>4</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>5</p>  <p>Once the product is reduced, immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>	

## SX GLOSS & SX MATTE/SATIN WITH ADHESION BOND

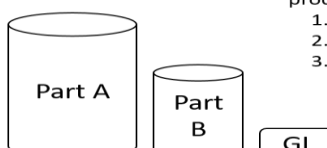
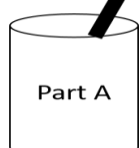
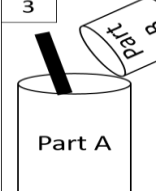
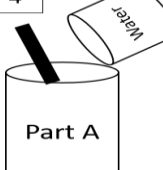
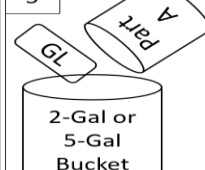
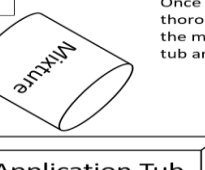
<p>1</p>  <p>You received five products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Adhesion Bond (“A.B.”) – Small Plastic Bottle</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Pour the Adhesion Bond into the Part A and stir for 60 seconds.</p> <p>Then allow this mixture to sit for 10 minutes.</p>
<p>4</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>	<p>5</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of the Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>6</p>  <p>Once the product has been reduced, immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>

## SX GLOSS & SX MATTE/SATIN WITH ACCELERATOR


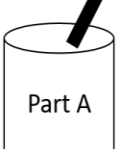
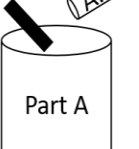
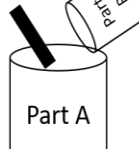
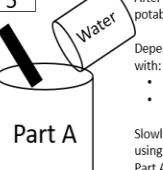
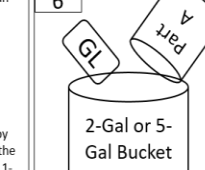
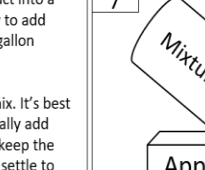
<p>1</p>  <p>You received three products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Urethane Accelerator “U.A.” – small plastic bottle</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p>4</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>5</p>  <p>Pour the Urethane Accelerator into the Part A Mixture and stir for 1 minute until fully blended together.</p>	<p>6</p>  <p>Immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>

# MIXING INSTRUCTIONS


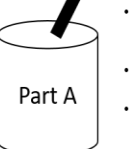
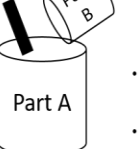
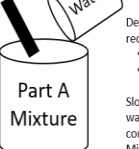

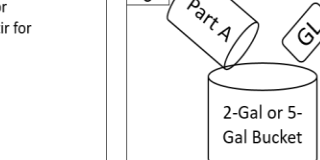
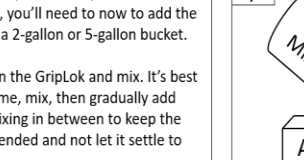
## SX GLOSS & SX MATTE/SATIN WITH GRIPLOK

<p>1</p>  <p>You received three products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. GripLoK (“GL”) – Small Plastic Bag</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p>4</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>5</p>  <p>If you have not poured the product into a larger bucket, you'll need to now to add the GripLoK. Use a 2-gallon or 5-gallon bucket.</p> <p>Slowly pour in the GripLoK and mix. It's best to pour in some, mix, then gradually add more with mixing in between to keep the GripLoK suspended and not let it settle to the bottom.</p>	<p>6</p>  <p>Once the GripLoK has been added and thoroughly mixed, immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>


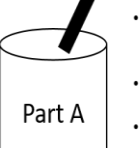
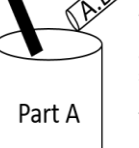
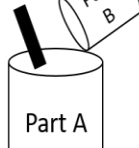
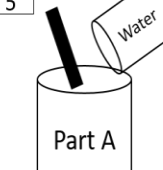
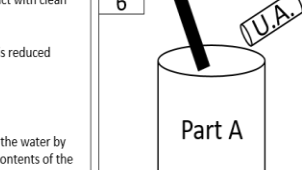
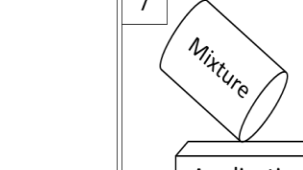
## SX GLOSS & SX MATTE/SATIN WITH ADHESION BOND & GRIPLOK

<p>1</p>  <p>You received four products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Adhesion Bond (“A.B.”) – Small Plastic Bottle</li> <li>4. GripLoK (“GL”) – Small Plastic Bag or Can</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Pour the Adhesion Bond into the Part A and stir for 60 seconds.</p> <p>Then allow this mixture to sit for 10 minutes.</p>	<p>4</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p>5</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of the Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>6</p>  <p>If you have not poured the product into a larger bucket, you'll need to now to add the GripLoK. Use a 2-gallon or 5-gallon bucket.</p> <p>Slowly pour in the GripLoK and mix. It's best to pour in some, mix, then gradually add more with mixing in between to keep the GripLoK suspended and not let it settle to the bottom.</p>	<p>7</p>  <p>Once the GripLoK has been thoroughly mixed, immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>	

## SX GLOSS & SX MATTE/SATIN WITH ACCELERATOR & GRIPLOK

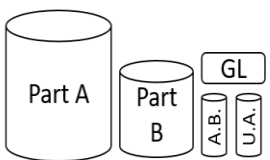
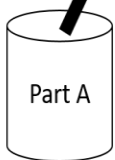

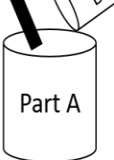
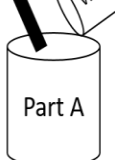
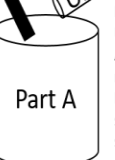
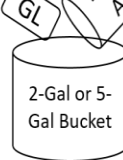
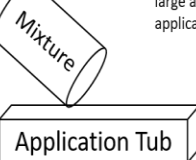
<p>1</p>  <p>You received four products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Urethane Accelerator “U.A.” – small plastic bottle</li> <li>4. GripLoK “GL” – plastic bag or can</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>	<p>4</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>
<p>5</p>  <p>Pour the Urethane Accelerator into the Part A Mixture and stir for 1 minute until fully blended together.</p>	<p>6</p>  <p>If you have not poured the product into a larger bucket, you'll need to now to add the GripLoK. Use a 2-gallon or 5-gallon bucket.</p> <p>Slowly pour in the GripLoK and mix. It's best to pour in some, mix, then gradually add more with mixing in between to keep the GripLoK suspended and not let it settle to the bottom.</p>	<p>7</p>  <p>Immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>	

## SX GLOSS & SX MATTE/SATIN WITH ADHESION BOND & ACCELERATOR

<p>1</p>  <p>You received four products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Adhesion Bond (“A.B.”) – Small Plastic Bottle</li> <li>4. Urethane Accelerator (“U.A.”) – Small Plastic Bottle</li> </ol>	<p>2</p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p>3</p>  <p>Pour the Adhesion Bond into the Part A and stir for 60 seconds.</p> <p>Then allow this mixture to sit for 10 minutes.</p>	<p>4</p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p>5</p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of the Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p>6</p>  <p>Pour the Urethane Accelerator into the Part A and stir for 60 seconds.</p>	<p>7</p>  <p>Immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>	

# MIXING INSTRUCTIONS

## SX GLOSS & SX MATTE/SATIN WITH ADHESION BOND, ACCELERATOR & GRIPLOK

<p><b>1</b></p>  <p>You received five products:</p> <ol style="list-style-type: none"> <li>1. Part A – Gallon Can</li> <li>2. Part B – Quart Can</li> <li>3. Adhesion Bond (“A.B.”) – Small Plastic Bottle</li> <li>4. Urethane Accelerator (“U.A.”) – Small Plastic Bottle</li> <li>5. GriPlok (“GL”) – Small Plastic Bag</li> </ol>	<p><b>2</b></p>  <p>Open the Part A and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles</li> <li>• In Matte/Satin, flattening agents settle to the bottom, so stir Part A for a few minutes to fully suspend those flattening agents.</li> <li>• While stirring the mixture will seem to clump up, but continue to stir as they will blend in.</li> <li>• A low speed drill can be used but only on low speeds; high speeds can introduce air which can cause bubbles in the final finish.</li> </ul>	<p><b>3</b></p>  <p>Pour the Adhesion Bond into the Part A and stir for 60 seconds.</p> <p>Then allow this mixture to sit for 10 minutes.</p>	<p><b>4</b></p>  <p>Open the Part B and:</p> <ul style="list-style-type: none"> <li>• Inspect for any foreign particles or clumps that look like large crystals. If you see any, do not use.</li> <li>• Pour the Part B into the Part A mixture and stir for 2 minutes.</li> <li>• Then allow this mixture to sit for 2 minutes.</li> </ul>
<p><b>5</b></p>  <p>After the 2 minutes, it is time to reduce the product with clean potable water.</p> <p>Depending on your application, typically a gallon is reduced with:</p> <ul style="list-style-type: none"> <li>• Vertical: up to 4-8% (4-11 oz.)</li> <li>• Horizontal: 10-18% (13-25 oz.)</li> </ul> <p>Slowly stir in the water. It may be easier to mix in the water by using a 2 gallon or 5 gallon bucket. Just pour the contents of the Part A into the bucket and then add the water. Mix for about 1-2 minutes until fully blended together.</p>	<p><b>6</b></p>  <p>Pour the Urethane Accelerator into the Part A and stir for 60 seconds.</p>	<p><b>7</b></p>  <p>If you have not poured the product into a larger bucket, you'll need to now to add the GriPlok. Use a 2-gallon or 5-gallon bucket.</p> <p>Slowly pour in the GriPlok and mix. It's best to pour in some, mix, then gradually add more with mixing in between to keep the GriPlok suspended and not let it settle to the bottom.</p>	<p><b>8</b></p>  <p>Once the GriPlok has been thoroughly mixed, immediately pour out the mixture into the large application tub and then begin application.</p> <p>Pouring into the large tub is important as this gives you the full pot life of ~90 minutes. Not pouring into the tub and keeping in the can will reduce the pot life to ~30 minutes.</p>

### SPLITTING UP KITS

Splitting up kits is not recommended but can be done when using a scale by weight in grams. Scales can be purchased for \$10 - \$50 from any grocery store. Do NOT split up a kit by guessing on weights – this will most likely result in incorrect mixing ratio and cause issues; such as longer dry times, tacky appearance, low gloss, etc...

For the Adhesion Bond, GriPlok and Accelerator, use the grams noted above for every 100 grams of the Part A. Mix according to the proper instructions. Before pouring out any product, stir the Part A Resin thoroughly to ensure the product is smooth. Flattening agents in the Matte & Satin will sometimes settle to the bottom.

	Part By Weight		Water Reduction	
	Part A	Part B	Vertical	Horizontal
Gloss Clear/CTB	100 grams	44 grams	7 grams	29 grams
Gloss WTB	100 grams	36 grams	7 grams	29 grams
Satin-Matte Clear/CTB	100 grams	35 grams	7 grams	29 grams
Satin-Matte WTB	100 grams	31 grams	7 grams	29 grams
Adhesion Bond	3 grams			
GriPlok		17 grams		
Accelerator		3 grams		

### SX EPOXY MIXING

1. Stir the pre-measured components A & B separately, ensuring that all the solids are in suspension.
2. Combine the pre-measured components A & B together and mix with a low speed jiffy mixer and a paddle drill. Make sure the mixture is blended thoroughly. The mixture will become thinner.
3. Allow the mixture to “sweat-in” for a maximum of 5 minutes before use.
4. Upon completion of the “sweat-in”, pour the mixture out of the can for optimum pot life.

### WATER REDUCTION

Reducing the product with water helps level the product out and makes it easier to apply. Amount of reduction depends on if the application is for a vertical or horizontal application. Vertical applications use less reduction to prevent the product from running down / sag resistance.

For exterior applications, the humidity could play a role in how much water reduction is used. Higher humid areas may use less water. Lower humid areas may use more water.

Solvents should never be used to reduce the urethanes. The solvent will react with the resins and cause issues. Only reduce the urethanes with clean tap water.

	Quart	Gallon
Vertical – Clears & Colors	1 oz.	4 oz.
Horizontal – Colors	4 oz.	16 oz.
Horizontal – Clear (Normal)	5 oz.	20 oz.
Horizontal – Clear (Very Smooth)	7-8 oz.	30 oz.

### MIXING NOTES

- DO NOT MIX ANY URETHANE WITH A HIGH SPEED MIXER.
- THE EPOXY CAN USE A MIXER.
- Do not shake to mix two components together. You can shake the Part A prior to combining the Part B.
- Do not reseal any product after catalyzing.
- Do not prepare or mix more product than can't be used within pot life.
- Always pour new product into clean application tubs.
- Wear proper hand, eye and foot protection.
- Dispose of can and contents in accordance with local laws and regulations.

# URETHANE ADDITIVES INSTRUCTIONS & NOTES

## ACCELERATOR

The Accelerator is used to help reduce the drying times in JFB Hart's SX Gloss and SX Matte/Satin Urethanes.

Dry Times	Interior	Exterior (Note 1)
Without Accelerator	5 – 8 hours	5 – 8 hours
With Accelerator	2 – 4 hours	45 min. – 2 hrs.

*Note 1: For optimum results with accelerator, use in warmer environments with exposure to sunlight. Cooler environments can cause slightly longer dry times but not more than 2 hours. Do not apply JFB Hart products when the surface and / or air temperature is below 40° F (4° C).*

**Mixing Instructions:** Properly mix JFB Hart's urethane product (see technical data or application guide for further details). Prior to pouring out the mixed product, pour three (3) ounces of the Accelerator per gallon into JFB Hart's urethane mixture and stir together for two (2) minutes. Once thoroughly mixed, pour into application tub and begin applying product.

**Additional Information:** The use of the Accelerator will impact the pot life of JFB Hart's urethanes. Instead of ninety (90) minutes in a large application tub, one will only achieve forty-five (45) minutes. The pot life will be significantly shorter if kept in the can.

## ADHESION BOND

The Adhesion Bond is a non-toxic adhesion promoter that is added to any of the urethanes to provide excellent adhesion properties too hard to adhere to surfaces; including glazed or unglazed ceramic, porcelain, quarry and other tile and grout surfaces.

**Mixing Instructions:** Pour three (3) ounces of the Adhesion Bond per gallon into JFB Hart's urethane Part A (Resin) and stir together for two (2) minutes. Allow the mixture to sit for ten (10) minutes and then follow JFB Hart's recommended mixing instructions. See technical data sheet or application guide for further details.

**Additional Information:** The Adhesion Bond will increase the overall durability of the product. It is important to allow the ten (10) minute induction time for the Adhesion Bond and the Part A (Resin). This induction time will allow the product to meet its full adhesion characteristics much faster (within 24 hours). The Adhesion Bond does not have an impact on the pot life or working time. The Adhesion Bond can be used with any of the other Additives listed on this page. Follow the proper mixing instructions per the technical data sheets or the application guide.

## GRIPLOK & GRIPLOK GLOSS

The GripLok and GripLok Gloss are powder additives that are used in JFB Hart's urethanes to increase the coefficient of friction (slip resistance). Applicable locations include but are not limited to restrooms, locker rooms, tub/shower rooms, kitchens, entrances, hallways, concourses, and many others.

	Quart	Gallon
GripLok (Note 2)	Up to 0.55 lbs.	Up to 2.2 lbs.
GripLok Gloss	10 grams	40 grams

*Note 2: JFB Hart's standard amount for GripLok is 1.1 Lbs. per gallon or 0.27 Lbs. per quart.*

**Mixing Instructions:** Once JFB Hart's urethane is properly mixed and reduced with appropriate amount of water, while continuing to stir, slowly pour the GripLok and / or GripLok Gloss into the mixture and stir for two (2) minutes; make sure to keep the GripLok / GripLok Gloss fully suspended. Depending on the amount of water reduction and GripLok / GripLok Gloss amount, it may require mixing in a larger bucket. Once fully mixed, empty the contents of the can or bucket into the large application tub. The frequent dipping of the roller will keep GripLok and GripLok Gloss suspended in the coating.

**Additional Information:** The use of the GripLok or GripLok Gloss will increase the products durability. Some of the GripLok or GripLok Gloss may fall to the bottom of the can, bucket or application tub. Do your best to keep the mixture agitated to suspend the additives. The GripLok and GripLok Gloss can be used with any of the Additives listed on this page.

# APPLICATION

Application equipment and techniques recommended by JFB Hart are usually based on test reports from the equipment manufacturers, test applications and field experience gained under a variety of job conditions. The type of equipment, pressure settings and application techniques recommended by JFB Hart will usually permit satisfactory application of the coating under most job conditions. Variations in equipment, pressure settings and technique can be made by the applicator as long as proper atomization and application characteristics are not affected. For unusual or specialized applications, it is recommended that the coating manufacturer be consulted.

It is important that tools and equipment be clean and in good operating condition. Dirty tools and equipment can be a source of coating contamination, and broken or worn-out equipment may not be capable of satisfactory application. Frequently, the material is blamed for application problems when the real problem is the use of wrong or defective equipment.

## APPLICATION EQUIPMENT

The products are applied by roller, brush, spray or squeegee for the HP-330 Epoxy.

### Rollers:

- High quality, lint free rollers
- Do NOT use microfiber or foam rollers

	<u>Vertical</u>	<u>Horizontal</u>	} Use 3/8" nap for smoother substrates, marble, travertine,
Matte/Satin	1/2" nap	1/2" nap	
Gloss	1/2" nap	1/2" or 3/8" nap	

### Brushes:

- Use nylon polyester blend
- Be careful using foam brushes as they can cause streaks

### Spray:

- Airless 2,000-2,400 psi 0.015-0.017 tip
- Air-assisted 500-600 psi 0.015-0.017 tip
- Conventional DiVilbiss pressure pot w/ GA 503 gun and FF needle assembly with 777 air cap  
(Hose: 1/4" or 3/8" – do not use over a 50 ft. hose)

## PRODUCT COVERAGE

Applying the product at the correct thickness is key to success. It is easier to apply the product thinner than it is to apply it thick. If the product is applied thin, the water will evaporate quicker and not give the product a chance to fully level out

Try to figure out how much sq. ft. per kit you are going to achieve and make sure you have enough product. It is better to stop short of an application rather than stretch out a kit. Until you are comfortable and consistently applying the right amount of product per kit, set up visual indicators. Walk off the sq. ft. per kit you are expecting to get. Make sure to use the full kit for that area – then proceed to the next area

The estimated coverage changes depending on a vertical or horizontal application, roller used and water reduction

Gallon kits:	<u>Vertical</u>	<u>Horizontal</u>
Clear	275 – 325	325 – 400
Colors	275 – 325	300 – 375
Quart kits:	<u>Vertical</u>	<u>Horizontal</u>
Clear	65 – 75	75 – 95
Colors	65 – 75	70 – 90

**Do NOT exceed the maximum coverage**

## APPLICATION DETAILS

Product	Wet Film Thickness	Dry Film Thickness	Pot life	Reducer	Dry Time: To Touch	Dry Time: To Handle	Dry Time: To Cure
SX Gloss	Vertical 4-5 mils	Vertical 2.4-3 mils	90 minutes	Water	6 - 8 hours	8 - 10 hours	2 days
	Horizontal 6-8 mils	Horizontal 3.6-4.8 mils					
SX Matte/Satin	Vertical 4-5 mils	Vertical 2.2-3 mils	90 minutes	Water	2 - 3 hours	5 hours	2 days
	Horizontal 6-8 mils	Horizontal 3.3-4.5 mils					
HP-330 Epoxy	Vertical < 10 mils	Vertical < 10 mils	45 minutes	None	8 - 12 hours	8 - 12 hours	2 days
	Horizontal 10-250 mils	Horizontal 10-250 mils					

## APPLICATION NOTES

Always maintain a wet edge, do not apply product over an area that has already begun to clear up. To help avoid lines, do not overload areas where the coating has already been applied. Even though the product is self leveling, try to avoid large puddles or drips. Do not overwork the coating; doing so can raise the stipple and leave a slight texture or orange peel in the final appearance. Do not try to stretch the coating. If you are nearing the end of an area and are low on product, mix an extra gal or qt. Do not use product beyond its working pot life – make sure to switch roller covers and application tubs every 1-2 gallons (or 60-90 minutes). If product is kept in the can, the pot life will only be 30 minutes. If Accelerator is used, pot life will be 30-45 minutes. When finished, pour the extra material into the can but do NOT reseal – put the can in a garbage bag and it will harden overnight. Then throw away in regular garbage. Resealing the lid will create pressure and cause the lid to pop off. Throw out rollers – application tubs and frames can be rinsed in slop sink with warm water

## DRY TIME

Three factors can effect the dry time: (1) Heat. Higher heat is better. Cool air and substrate can lengthen the dry time. Do not apply product when air temp is below 40° F for 48 hours prior to application. (2) Humidity. Want low humidity. Higher humidity has more moisture in the air and can cause the product to take longer to dry. In higher humid areas, use fans to move the moisture. (3) Air Circulation. With air movement, more moisture can evaporate from the products. Fans are good to use with some exceptions.

## PREVENTATIVE MAINTENANCE

Keeping the surface clean and free from dirt and debris will increase the products longevity. Coated surfaces should be adequately protected when moving heavy equipment across coated floor surfaces. Through proper training and education, avoid unnecessary wear and tear on surfaces, such as forklift spin and skid marks for floors. Proper furniture glides and roller casters will extend the life of the coating. Carpet or felt glides are recommended. For roller casters rubber is preferred. The alternative is hard plastic which will become embedded with dirt and cause sharp edges that will scratch any finish.

## RECOMMENDED CLEANING PROCEDURES

A proper maintenance and cleaning schedule is suggested for all JFB Hart applications. This will increase service life and maintain attractiveness. Proper cleaning is also necessary to ensure sanitary conditions as well as safety where slip and fall conditions are a concern. JFB Hart floor systems can be cleaned in a variety of ways depending upon the surface texture and the environment in which the floor exists.

### CLEANING EQUIPMENT

The following is a suggested list of cleaning tools for surfaces coated with JFBHC products:

- Automatic Scrubbers – These machines apply cleaning solution and remove all wet residue.
- Power washers – 1,200 p.s.i. is sufficient only if applicable.
- Pads – White Pad for daily cleaning. For weekly or monthly cleaning a red pad.
- Brushes – Nylon non-abrasive.
- Brooms – Medium/Stiff Bristle.
- Mops – Synthetic for non-skid floors, cotton or synthetic for use on smooth floors.
- Wet Vacuums

### CLEANING PRODUCTS

- Degreasing – A water-based biodegradable cleaner, degreaser, exp. (Extra Muscle Cleaner) 3 parts cleaner to 1 part water. Rinse with clean water. Do not flood floor, damp mop.
- General Cleaning – A water-base biodegradable cleaner, degreaser, exp. (Extra Muscle Cleaner) 5 parts water to 1 part cleaner. Rinse with clean water. Do not flood floor, damp mop
- Scuffs & Stains – water-based biodegradable cleaner, degreaser, exp. (Extra Muscle Cleaner) 2 parts water to 1 part cleaner. Let cleaning solution sit on contaminated area 5-8 minutes, scrub clean. Rinse with clean water.
- NOTE – Floors that are not rinsed properly will become slippery from cleaner residue. Do not flood floors.

### DAILY DUST & WET MOPPING PROCEDURES

1. Frequent daily dust and wet mopping is necessary to remove all dirt and debris. The buildup of dirt and debris will cause friction between the coating and people shoes, which can create scratching in the coating.

2. Set up “Wet Floors” signage to notify customers and employees that floors may be wet to help prevent slip and falls.
3. When using a wet mop, mix the appropriate amount of neutral cleaner to water in the mop bucket. Follow the neutral cleaner’s recommendations for proper ratio. Be aware that adding too much cleaner to water could result in a thin layer of cleaner residue on the floor which can cause the floor to look hazy and / or become more slippery when wet.
4. After soaking the mop head in the bucket, make sure to ring out as much water as possible. The goal is to clean everything off the floor without flooding the floor with water.
5. Allow to fully dry before moving “Wet Floor” signs.

### AUTOMATIC SCRUBBING PROCEDURES

1. Dust Mop the floor to remove all dirt and debris.
2. Set up “Wet Floors” signage to notify customers and employees that floors may be wet to help prevent slip and falls.
3. Automatic scrubbers are recommended to deep clean the floors. The more frequent this is done, the better the floor will look and longer the coating will last.
4. When using an auto-scrubber, use the following pad:
  - Daily = white pad
  - Weekly / Monthly = red pad
5. Pour the appropriate amount of neutral cleaner to water in the automatic scrubber. Follow the neutral cleaner’s recommendations for proper ratio and make sure that cleaner is approved to be used in an automatic scrubber. Be aware that adding too much cleaner to water could result in a thin layer of cleaner residue on the floor which can cause the floor to look hazy and / or become more slippery when wet. You may use Neutral Cleaner mixed with the water.
6. Allow to fully dry before moving “Wet Floor” signs.

### REPAIRS & REAPPLICATIONS

When an area is not meeting expectations, or a scratch has occurred, a repair or reapplication can be conducted. Damp mop or wash the section to be coated to limit the dust. If a larger area and on a floor, a roto machine with a 120 mesh screen can be used to go over the entire area. If it is a small area, a palm sander or sanding pads can be used with 120 mesh screens or 220 grit paper. The screen should be flipped and / or changed every 300 sq. ft.

After screening the area, using clean water, rinse the area. A neutral cleaner can be used to help neutralize the pH. If repairing a scratch, after screening, the scratch should feel smooth. If a light layer of water is applied over the scratch and no visible scratch is present the scratch should be screened enough and nothing should be visible after applying the product. When doing a vertical surface, you can either power wash the surface to provide adequate profile, or a light sanding with 220 grit sandpaper can be done. Make sure to clean the surface after sanding to remove all debris.

# TROUBLESHOOTING

Keeping the surface clean and free from dirt and debris will increase the products longevity. Coated surfaces should be

<p>Delamination Loss of adhesion to substrate or between coats (inter-coat adhesion).</p>	<ol style="list-style-type: none"> <li>1. Dust, dirt, contamination, dry spray.</li> <li>2. Water migration through porous substrates.</li> <li>3. Under film allowed to cure beyond maximum recoat time.</li> <li>4. Topcoat incompatible with under film.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove coating not tightly bonded, clean surface and recoat.</li> <li>2. Correct cause of water migration, remove coating not tightly bonded and recoat.</li> <li>3. Remove coating not tightly bonded, abrade surface and recoat.</li> <li>4. Completely remove coating and recoat with compatible system.</li> </ol>
<p>Dry Spray Rough, sandy surface texture on spray-applied coating.</p>	<ol style="list-style-type: none"> <li>1. Spray particles partially dry before reaching surface.</li> </ol>	<ol style="list-style-type: none"> <li>1. Sand smooth and adjust material, equipment and techniques for prevailing temperature and humidity conditions.</li> </ol>
<p>Flattening Loss of gloss.</p>	<ol style="list-style-type: none"> <li>1. Rain, fog, high humidity, or damp surfaces.</li> <li>2. Overthinning</li> </ol>	<ol style="list-style-type: none"> <li>1. Recoat when surface is dry and weather conditions are satisfactory.</li> <li>2. Remove coating if film properties or adhesion are affected and recoat with properly thinned material.</li> </ol>
<p>Framing Color, texture or hiding variations when roller-applied surfaces join work cut in with a brush.</p>	<ol style="list-style-type: none"> <li>1. Uneven film build between roller - and brush - applied work.</li> </ol>	<ol style="list-style-type: none"> <li>1. Recoat deficient work, apply heavier wet film or an additional coat on new work.</li> </ol>
<p>(Poor) Hiding Uneven color or shadowy appearance of topcoat.</p>	<ol style="list-style-type: none"> <li>1. Insufficient number of coats or low film build.</li> </ol>	<ol style="list-style-type: none"> <li>1. See "Framing." (Note: Some colors have weak hiding properties and require an additional coat for satisfactory hiding.)</li> </ol>
<p>Holidays Skipped or missed areas.</p>		<ol style="list-style-type: none"> <li>1. Touch-up or recoat.</li> </ol>
<p>Lapping (Lap Marks) Color, sheen or texture variations where one freshly painted area overlaps another.</p>	<ol style="list-style-type: none"> <li>1. First area painted has set up before overlap was made.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust material, equipment and technique for weather conditions.</li> <li>2. Work smaller areas to reduce lap time.</li> </ol>

CHARACTERISTIC/DESCRIPTION	PROBABLE CAUSE	CORRECTION
<p>Alligatoring Cross-hatch pattern of surface cracking.</p>	<p>Incompatibility of topcoat and under film, or coating over a soft under film.</p>	<ol style="list-style-type: none"> <li>1. Remove failed coating and recoat with compatible system suitable for exposure conditions. Do not topcoat until under film is dry enough to recoat.</li> </ol>
<p>Bubbling Bubbles on the surface of the dried film. May be microscopic in size.</p>	<ol style="list-style-type: none"> <li>1. Rapid volitization of solvents within the film.</li> <li>2. Air displacement resulting from absorption of wet film into porous substrate.</li> <li>3. Urethanes in contact with moisture.</li> </ol>	<ol style="list-style-type: none"> <li>1. Level surface defects by sanding and reapply coating at lower air or surface temperature, or add slower solvent to increase open time of wet film.</li> <li>2. Bridge or fill voids by applying a mist coat, a filler or sealer.</li> <li>3. Remove bubbles by sanding and reapply coating at a lower relative humidity. Allow coating to cure before contacting moisture.</li> </ol>
<p>Cracking Visible cracks through the surface of the film.</p>	<ol style="list-style-type: none"> <li>1. Stress or compression cracking of rigid substrate.</li> <li>2. Bending or flexing of non-rigid substrates.</li> <li>3. Physical damage: impact, heat, cold, exposure, etc.</li> <li>4. Surface freezing of fresh latex coatings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Patch cracks and recoat.</li> <li>2. Replace with coating having sufficient flexural strength to tolerate condition.</li> <li>3. Replace with coating that will tolerate physical conditions.</li> <li>4. Recoat when air and surface temperatures are above minimum recommendation</li> </ol>
<p>Cratering Round V- or U-Shaped thin spots or voids.</p>	<ol style="list-style-type: none"> <li>1. Caused when bubbles break.</li> </ol>	<p>See "Bubbling."</p>
<p>Crazing Fine line cracking forming a network or overall pattern.</p>	<p>See "Cracking."</p>	<p>See "Cracking."</p>

Mud Cracking Cross-hatched pattern of surface cracking.	1. Excessive film build or hot, dry weather.	1. Remove failed coating and recoat at recommended film thickness. Cool product in an ice bucket prior to mixing to slow down pot life during hot, dry weather.	Sandy (Appearance) Dull, rough appearance of film.	1. Dust and dirt contamination of the wet film.	1. Sand smooth and recoat. Protect freshly painted areas against dust and dirt contamination or suspend painting operations until environmental conditions are satisfactory.
Orange Peel Fine pebbled surface texture on spray-applied coating.	1. Insufficient atomization.	1. Sand smooth and recoat after adjusting material, equipment and technique to obtain better flow and leveling.	Shadowing See "Hiding."	1. See "Hiding."	1. See "Hiding."
Overspray Rough sandy areas on spray-applied work.	1. Deflected spray mist that settles on dry or partially dry coated surfaces.	1. Sand smooth and recoat using proper application technique and lap time. Protect dry film from overspray.	Streaking Areas having a rough texture on spray surface.	1. Equipment malfunction or use of wrong equipment. 2. Spray passes not properly lapped.	1. Sand smooth and recoat after correcting equipment malfunction or change to recommended equipment if wrong equipment was being used. 2. Sand smooth and recoat using proper applicator technique.
Pinholing Small holes or discontinuities in the film. May be microscopic.	1. Water migration through the film after the film has begun to set. (Also see "Bubbling" and "Cratering".)	1. If occasional pin holes are detected, touch-up or recoat. 2. If pinholing is a general surface condition, it indicates that coating was applied and cured under adverse environmental conditions. Apply a thin or mist coat to fill surface voids, followed by a full wet coat when environmental conditions are suitable for recoating.	Water Spotting See "Flatting."		
			Wrinkling Formation of wrinkle pattern on top of film.	1. Excessive film build. 2. Slow drying conditions	1. Sand smooth and recoat at proper film thickness. 2. Sand smooth and recoat when drying conditions are satisfactory.

## ADDITIONAL INFORMATION

Website: [jfb supremextreme.com](http://jfb supremextreme.com)

YouTube Channel: <https://www.youtube.com/user/JFBHC>

Sales Video:

<https://www.youtube.com/watch?v=vSQdfqajpTU&t=58s>

Training Video:

<https://www.youtube.com/watch?v=0TYZ7VLc378&t=356s>

Ballpein Hammer:

<https://www.youtube.com/watch?v=bsuSEio606o>

Flexibility:

<https://www.youtube.com/watch?v=u47eXeTeSPU>

Adhesion Test:

<https://www.youtube.com/watch?v=3Vs0zfpY0YM>

Mixing Video:

<https://www.youtube.com/watch?v=Gej3uRKoKAw&t=12s>

Application Video:

<https://www.youtube.com/watch?v=30fA9vLnUal&t=17s>

Roller Tracks (a.) V-shaped texture pattern on roller-applied surfaces or (b.) Lines at edge of roller passes.	1. Use of long nap roller cover on smooth surfaces. 2. Material not properly thinned. 3. Material not rolled out properly.	1. Change to shorter nap roller cover. 2. Make water adjustment to improve flow and leveling. 3. Use proper applicator technique.
Runs Heavy V-shaped or pencil shaped vertical build-ups on surface of coating.	1. Excessive film build.	1. Sand smooth and recoat using less water reduction and possibly high nap, if using a roller.
Sags Heavy U-shaped build-ups or horizontal lips on the surface of coatings. (Long sags may also be referred to as curtains.)	1. See "Runs."	1. See "Runs."