QUANTUM Chemical
High Performance Coatings

RESINOUS FLOOR SYSTEM

PRECIDIUM™ LS1150D RFS

DESCRIPTION

The **PRECIDIUM™ LS1150D** is a VOC-free two-component coating used on its own or as part of our **PRECIDIUM™ LS1150D RFS,** developed to provide an attractive, durable, chemically-resistant floor coating. Ideal substrates are properly prepared concrete, wood, steel or other compatible polyurea coatings.

As part of a layered system it is both the colour base coat and final clear top coat with optional non-slip properties. Our **PRECIDIUM™ PUD Accents** or approved broadcast media can be used as part of the aesthetics of the colour coat. Check with the manufacturer for available colours and custom colour options. When used in combination with our accent colours, a decorative granite appearance can be achieved. For a flawless and elegant finish, the **PRECIDIUM™ LS1150D** is for professional use and is installed by qualified applicators.

FEATURES

- **Solvent Free:** zero VOC; zero flammability issues; low odor; minimal environmental impact
- **Aliphatic:** unparalleled UV resistance; excellent color and gloss retention
- **Fast Cure:** quick return-to-service, even with elaborate designs
- **Chemical Resistant:** many chemicals have already been tested; our in-house lab will test additional chemicals upon request
- **Food Safe:** approved for incidental food contact on floors, walls and ceilings, making it an ideal choice for food processing facilities
- **Unique Designs:** our accent system adds elegance with unlimited colour combinations for the base coat and accent colours; broadcast media such as paint chips or quartz are design options that also work well with this flooring.

RECOMMENDED USES

- Garage and basement floors
- Industrial and commercial floors
- Food processing plants
- Restaurants
- Manufacturing plants
- Abrasion, graffiti and chemical-resistant floors
- Contact Quantum for specific requirements

PROPERTIES of FINISHED FLOOR

Finishes	High Gloss, semi-gloss non-skid (20; 50; 75; 100)	
Volume Solids	100%	
VOC:	0%	
Service Temperature	-40°C to 200°C	
Durometer Hardness	85A	
Tensile Strength	ASTM D412	2500 psi
Elongation	ASTM D412	73%
Tear Strength	ASTM D624	320 pli
Pot Life	40 minutes	
Tack Free	60 minutes	
Foot Traffic	2 hours	
Recoat	1 to 18 hours	
Working Temperature	up to 100°C	
Incidental contact	up to 180°C	

Chemical Resistance: PRECIDIUM™ LS1150D RFS is resistant to many chemicals. A complete chemical resistance chart, is available from the manufacturer.

SURFACE PREPARATION

A successful application for a durable and beautiful floor will be the result of a thoroughly prepared substrate. This is time well spent and crucial in achieving a long-lasting floor.

New concrete should be allowed to cure a minimum of 28 days. For concrete brick, the mortar must also be allowed to cure 28 days.

Moisture present on or in the concrete will compromise the floor coating.

Bare concrete should be tested for pH and have a level between 7 and 11 by using a pH test kit. Refer to **ASTM F-710**, ("Standard Practice for Preparing Concrete Floor to Receive Resilient Flooring") for further information on pH testing.

Testing for moisture may be done with the following tests. **ASTM D-4263** (Plastic Sheet Test) Using 2" Duct Tape, secure an 18"x18" sheet of transparent polyethylene to the slab, sealing it completely. Leave for at least 24 hours. Moisture under the plastic will indicate excessive moisture in the concrete and requirement for further testing.

ASTM F1869 (Standard Method for Measuring Moisture Vapour Emission Rate of Concrete Sub Floor using Anhydrous Calcium Chloride Moisture Emissions Test) can be used to determine the rate of moisture emission. A small dish of calcium chloride is weighed and placed under a plastic cover for 24 hours. The dish is removed and weighed again. The amount of water gained in the water vapor moisture will then determine the emission rate of the concrete. Moisture vapor transmission rate should not exceed 3 lbs. per 1000 sq. ft. in 24 hours as tested.

ICRI (International Concrete Repair Institute) Guide 03732 (Selecting and Specifying Concrete Preparation for Sealers, Coatings, and Polymer Overlays) can be used to determine the suitability of the concrete for this floor system.

Do not apply when the relative humidity of the concrete is greater than 75% as tested to the **ASTM F2170-02** (Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In Situ Probes).

The concrete must be structurally sound and free of all dirt, oil, grease, curing compounds, form release chemicals, coatings, and all contaminants prior to any abrasive blasting. When oil or grease are present, successful penetration and adhesion of the **PRECIDIUM™ LS1150D** will be at risk.

A simple test for grease that may not be visible is to mist water on the surface of the concrete. If the water beads up, contaminants are present and must be removed. If the water is absorbed into the concrete surface, oils are not present.

If any contaminants are present, the use of proper detergents may be required. Standards for cleaning concrete are available in SSPC (Society for Protective Coatings) SP-13.

Do not apply the **PRECIDIUM™ LS1150D** when the temperature of the concrete substrate exceeds the surrounding air temperature by more than 10°C; 18° F, due to outgassing. The porosity in concrete contains air. When the temperature of the concrete rises, the air in the pores expands, causing blisters or pinholes in the coating. An increasing surface temperature is a strong indication that outgassing will occur.

Keeping the concrete slab and ambient temperature within the stated range is essential as outgassing is further aggravated when abrasive blasting or scarifying breaks the thin concrete crust, thus opening more air pockets and bug holes. Concrete is very dynamic. It cracks, leaks, shrinks, moves, breathes, absorbs water and releases water vapor. By honouring the dynamics of concrete when applying this floor system, the best possible outcome is achieved.

Abrasive shot blasting or grinding of concrete surfaces is required prior to the coating application to provide a suitable surface texture for proper adhesion. A visual standard for an acceptable concrete profile is available in ICRI CSP 2-4.

If repair and crack filling is required, the use of **PRECIDIUM™ 2100** would be used. Follow mixing and application instructions on the product's technical data sheet. Before using any alternative concrete repairs, consult Quantum Chemical for compatibility.

Using or combining any other products with the **PRECIDIUM™ LS1150D** without prior written approval from the manufacturer will void the defective product warranty.

APPLICATION

PRODUCT MIXING: **PRECIDIUM™ LS1150D** is a two-component system mixed 1:1, Resin:Iso. Thoroughly mix the resin component prior to combining with ISO. Using graduated plastic mix containers, combine equal parts, by volume, of Resin and Iso. Thoroughly mix Resin and Iso with a low speed drill and mixing attachment, taking no longer than 1.5 minutes and being careful not to incorporate any air into the mixture.

Mix only the amount of material that can be applied within 10 minutes. On average, a ten-minute batch of **PRECIDIUM™ LS1150D** is 1-3 quarts of mixed material. Pour ribbons of **PRECIDIUM™ LS1150D** over the application area. The above amount wil be enough material to pour out 2-4 ribbons.

EQUIPMENT: When applying the **PRECIDIUM™ LS1150D,** proper equipment is essential. The standard application tool for applying the primer coat, base coat, and final clear top coats, will be a high-quality 18" epoxy roller cover with adjustable 9-18" roller cage.

Accents: For the decorative accents, applicators must be properly trained on application techniques required to achieve the various decorative finishes. Spiked shoes will be required to apply this multi-layered floor system.

Do not use a roller tray. Ribbons can be squeegeed over the area and back-rolled with an epoxy roller sleeve. During the project the roller should be rolled dry every 100-300 sq. ft. This will prevent the roller from becoming tacky and will increase the life of the roller. After the initial roll, it is important to back-roll the floor. Back-rolling is done to ensure even application and will help with breaking any balloons that may have formed from filling pinholes. On average a roller cover will do 500-1000 sq. ft. before replacement.

RFS LAYERS: When **PRECIDIUM™ LS1150D** floor coating is used as a layered system, optimum mil thickness of each layer will vary from 3-10 mils depending on project specifics and the layer being applied. Individual technical data sheets with detailed application instructions are available from Quantum Chemical for each component of the layered system.

PRIMERS: The **PRECIDIUM™ 2100** is excellent for repairs, levelling and crack finishes but the modified **PRECIDIUM™ 2200 Primer** is an excellent primer as it has a lower viscosity and therefore better penetration into the concrete. It adds a degree of impact resistance and has excellent adhesion but is not be recommended for floors that would come into contact with harsh solvents and chemicals.

The **PRECIDIUM™ LS1150D** is also often used as the primer on properly prepared concrete. Based on the preparation (shot blasted or diamond ground) it would typically be thinned with 10% Xylene to increase penetration into the concrete. Thickness would be ~3-4 mils. Once tack-free (1-3 hours), the colour base coat would be applied. For concrete that isn't shot blasted or ground, discuss the suitability of this floor system with the manufacturer.

COLOUR BASE COAT: Apply the **PRECIDIUM™ LS1150D** colour base coat at ~4-7 mils. Again this could vary depending on whether this will be a cast coat for broadcast media or the base colour coat for the accent system. For accent colours allow the 5-7 mil colour base coat to cure until tack free (1-3 hours depending on temperature and humidity).

PRECIDIUM™ PUD ACCENTS
Contact the distributor or manufacturer for proper application equipment for the desired finish. This one-component system has an unlimited potlife. Excess materials can be returned to the containers for future use. For accent colours the first accent is applied once the surface is tack free. Due to the relatively short cure-time, additional accent colours can typically be applied within 10-30 minutes. One to three accents are typically applied.

COLOUR BASE COAT and BROADCAST MEDIA
When using colour chips or quartz the first colour coat would be applied at 3-4 mils. Once tack free, apply a second coat at 2-3 mils and immediately apply colour chips or quartz to the surface. Allow the surface to cure approximately 3-4 hours. Remove excess chips or aggregate with a stiff brush.

CLEAR and CLEAR NON-SKID TOP COATS
The final clear coat(s) will vary depending on the floor system. A chipped floor may require ~10 mils or more of clear coat to ensure zero exposure of chips, while leaving enough texture to provide a suitable co-efficient of friction. When accent colours are used, a clear coat of ~3-4 mils would be applied followed by a final clear coat non-skid coat of ~2-3 mils. This is a guide only and must be carefully reviewed for appropriateness for a project and adjusted accordingly to comply with project-specific requirements as determined by the qualified applicator during the initial site visit.

Allow the finished system to cure 24 hours before being put into service, however, the longer the floor can be cured or at least protected, will improve the overall success of this floor system.

CLEAN-UP

Clean tools and application equipment immediately after use with solvent such as MEK, Xylene or Acetone. Clean spills or drips immediately with solvent. Cured **PRECIDIUM™ LS1150D** must be mechanically abraded for removal. Do not use alcohol or lacquer thinner blends that contain alcohol to clean equipment or tools.

STORAGE AND DISPOSAL

Store tightly sealed containers in cool dry storage, for product integrity. Keep from freezing. If moisture contaminated, discard product. Product for disposal must be either catalyzed or absorbed with suitable absorbent material and disposed of in accordance with relevant regulations.

LIMITATIONS

- Lower temperatures and humidity will slow cure time.
- Do not install over a grade concrete slab unless a moisture barrier has been placed under the slab.
- **PRECIDIUM™ LS1150D** is not recommended for pool applications.

MAINTENANCE and CARE

The **PRECIDIUM™ LS1150D** is easier to clean because it is seamless and also non-porous so dirt and debris remain on the surface. It also has a high chemical resistance with superior performance over many other types of flooring.

- Clean the **PRECIDIUM™ LS1150D** regularly to remove all dirt, stains and debris as these do remain on the surface of the floor and damage the finish in heavy traffic environments.
- Do not use soap because it will create a film that is difficult to remove with rinsing. This film will become slippery when wet, plus it attracts dirt and debris, causing the floor to look dirty much sooner.
- Floor stripping agents, citrus-based cleaners and corrosive chemical degreasers not recommended as they damage the floor if they are applied and remain on the floor for an extended period of time.
- A simple mixture of a pH neutral cleaner, diluted with water, is recommended for regularly scheduled cleaning.
- Thoroughly clean the soiled area with a synthetic mop, scrubbing stains with a soft-bristled brush. Cotton mops will catch on chips, quartz and the more aggressive non-skid additives.
- If a cleaning chemical is required, use a commercially available alkaline cleaner or degreaser.
- Thoroughly rinse the cleaned area to remove remaining dirt and cleaning agents.
- Use a foam squeegee to remove excess water.
- Allow the surface to dry before returning to service.
- Contact the manufacturer for removal of stains that are resistant to the above cleaning instructions.

TECHNICAL SUPPORT

For additional information and project specifics, or to obtain an SDS, call your distributor or Quantum Chemical at 780.458.3355 during regular business hours (8:00-4:30 MST) or send your inquiries to info@quantumchemical.com.