



HNIPU UV-CURABLE FLOORINGS AND COATINGS

The photochemistry involved in UV curable materials is very complicated and usually is tailored to the specific process with its method of application, UV source, pigments and desired properties of the cured material.

UV-curable concrete floor coatings provide a durable, high-performance and eco-friendly solution. These thin-film coating systems cure instantly, thereby minimizing the downtime of any facility. Other benefits of these coatings include excellent chemical resistance, easy cleanability, little odor, and the ability to coat in cold conditions.

The surface preparation and applying of UV-resistant coatings is similar to that of traditional concrete floor coatings. UV coating systems include both clear and pigmented systems. The clear system consists of a primer and a topcoat which is available in different finishes ranging from high gloss to matte. The topcoat finish can be further enhanced by broadcasting additives for decorative or performance purposes.

Single-coat systems are also available. The thin film thickness can range between 0.065 and 1.0 mm.

Unlike conventional UV-curable coating, formulations developed by our company contain up to 60% of vegetable oils derivatives, such as modified soybean oil. This allows to obtain a composition of higher elasticity while maintaining the basic strength characteristics. The use of our compounds improves the adhesion of the cured composition to concrete, allows to reduce the number of coating layers to two, and for special coatings even to a single layer. The uniqueness of this compound is the possibility to apply one layer up to 0.8 mm thickness, at the rate of polymerization which allows the use of standard curing technology and standard equipment.

The introduction of our new hydroxyurethane modifier (HUM) based on vegetable raw materials, and adducts obtained on its basis, allow to improve hardness and wear resistance, while maintaining the other properties of the system.

The uniqueness of the developed formulation and the possibility of coating concrete sometimes without a primer, with layer thickness of 0.065 – 1.0 mm allow the covering of even open areas. Application is done by spraying, eliminating the negative effects of sunlight during the coating process and uses sunlight during the curing process, which reduces the total polymerization time even more.



Properties of HNIPU UV-cured flooring compared to conventional UV-cured flooring

Properties	Conventional UV-cured flooring	HNIPU UV-cured flooring
Adhesion	3B	5B
Pencil hardness	3H	4H
Solvent resistance	200+	200+
Gloss	84	90
Abrasion resistance, CS-17, 1000 grams	150-200	100
Thickness applied	0.065 -0.1mm	0.065-1.0 mm
Primer	Required	Not required for properly prepared substrates
No. of layers	2+	1

