Adding the CCR UV absorber helps us achieve good UV absorption qualities and the transparency of a coating; however, the dispersion of the contained particles needs to be ensured. The dispersion of particles is achieved by means of the correct inclusion of CCR suspensions. This way, the agglomeration of particles and, as a result, the poorer absorption and reduced transparency are avoided.

Cinkarna Celje suspensions are water-based, so the coating system must also be water-based in order for these systems to be compatible.

The recommended addition of the CCR active component into the coating is from 0.6% to 1%, calculated for TiO2, in wet film with a thickness of 200 microns. By changing the amount added, the level of absorption and transparency is affected. By increasing the content of the active component, the level of UV light absorption is improved and thus the protection of the material from UV radiation is increased; however, an overdose may cause reduced transparency of the coating.

After adding CCR, the intense mixing of the coating is recommended. A homogenizer with a frequency of 1000 RPM or an ultrasonic homogenizer should be used in order for the particles to disperse in the coating in a uniform manner.

The minimum mixing time is 5 minutes and it is contingent on the quantity of the added substance and the viscosity of the coating.

In the event of any problems with the stability of the coating, compatibility tests for the components of the coating (checking polarity or non-polarity, measuring the charge of the particles with a PCD device) as well as the use of a homogenizer for the adding of other components into the coating are recommended.

It is recommended that the addition of water as a solvent should be increased to the maximum level at which the coating still remains stable and that is allowed by the system.

It is also recommended that the binder is added last, even after CCR.

CCR 220 Mn and CCR 150 are available for various types of coatings.

If the dispersion of particles in the coating is not achieved (left picture of a board), the particles agglomerate and the coating becomes non-transparent and its light absorption quality diminishes. Once the conditions for the good dispersion of particles (homogeneous coating) and the stability of the coating are met, the coating containing CCR is transparent (right picture of a board) and has good absorption qualities.
The effect of the addition of CCR into the coating. The addition of CCR improves the level of UV absorption in comparison with the basic coating without a UV absorber. By increasing the CCR content, the absorption level of UV light is additionally increased.

The above diagram shows the comparison between the stable, homogeneous coating and the instable, non-homogeneous coating. The instable coating absorbs less UV light.

The effect of the addition of CCR into the coating. The addition of CCR improves the level of UV absorption in comparison with the basic coating without a UV absorber. By increasing the CCR content, the absorption level of UV light is additionally increased.