23 October 2012

Corelight – coating suitability

Objective: Provide recommended systems for coating Corelight panels.

Materials: Three 200 mm x 140 mm panels of Corelight supplied by the customer.

Corelight Applications:
■Office partitions, kitchen, residence, public area, toilet/bathroom
■Cubicle boards, showcase boards, cabinets & partitions
■System furniture, kitchen cabinets, bathroom cabinets, living room cabinets & shoe cabinets
■Door blanks for bathrooms, washrooms or toilets
■Can be applied to all furniture applications such as desks, closets or bedside cupboards
■Interior, exterior boards for DIY furniture
■Modern interior/exterior architectural design

Testing

Based on the composition of Corelight panels, high PVC content, the standard plastic materials specification was used as a starting point for adhesion studies (http://resene.co.nz/archspec/datasheets/spec12_Plastic_Materials.pdf). Additional tests using alternate products including more specialised sealers, primers and undercoats were also performed to provide a more comprehensive set of options.
Accelerated exposure studies were initiated for waterborne enamel coatings to determine their suitability when coated over Corelight.
Solvent resistance tests were also conducted to determine the effect of coating with solventborne paints which can dissolve and warp pure PVC.

Results

Excellent adhesion was obtained with most architectural coatings and it was confirmed that the Resene plastics materials specification is applicable to Corelight. In addition, the use of Quick Dry Primer Undercoat is recommended as a first coat on Corelight as an alternative to Acrylic Undercoat and it should be used exclusively as the first coat if Uracryl topcoats are intended to be used.

Exclusions – dedicated sealers are not required for successful coating of Corelight and in some cases can be deleterious to performance. Solventborne sealers such as Smooth Surface Sealer and Sureseal are not recommended under any circumstances.

The solvent resistance of Corelight is appreciably better than pure PVC although it still does have sensitivity to a wide range of solvents, especially at the PVC-rich surface where the glossy layer is easily removed by some solvents. Direct application of solventborne products to Corelight is not recommended.

Solvent Resistance	
Methylated Spirits	Fair
Propylene Glycol Methyl Ether Acetate	Fair
Dipropylene Glycol n-Butyl Ether	Fair
Dipropylene Glycol Methyl Ether	Fair
Xylene	Fair
Mineral Turpentine	Fair
Methyl Ethyl Ketone	Very Poor
Butyl Acetate	Poor

General Specification

Table 1 - Exterior Use

Generic Specification				Resene Spec No.	Resene One-Line Specification					
Substrate	Environment	Paint Type	Gloss Level		Surface Prep	1st Coat			2nd Coat	
Unplasticised PVC etc.	Exterior	Waterborne	Gloss	12e 1.1	D803	Hi-Glo Acrylic Undercoat	D31 D404		Hi-Glo	D31
Unplasticised PVC etc.	Exterior	Waterborne	Semi-Gloss	12e 1.2	D803	Sonyx 101 Acrylic Undercoat	D30 D404		Sonyx 101	D30
Unplasticised PVC etc.	Exterior	Waterborne	Satin	12e 1.3	D803	Lumbersider Acrylic Undercoat	D34 D404		Lumbersider	D34

Table 2 - Interior Use

Generic Specification				Resene Spec No.	Resene One-Line Specification					
Substrate	Environment	Paint Type	Gloss Level		Surface Prep	1st Coat			2nd Coat	
Unplasticised PVC etc.	Interior	Waterborne	Gloss	12i 1.1	D803	Enamacryl Acrylic Undercoat	D309 D404		Enamacryl	D309
Unplasticised PVC etc.	Interior	Waterborne	Semi-Gloss	12i 1.2	D803	Lustacryl Acrylic Undercoat	D310 D404		Lustacryl	D310
Unplasticised PVC etc.	Interior	Waterborne	Satin	12i 1.3	D803	Lumbersider Acrylic Undercoat	D34 D404		Lumbersider	D34
Unplasticised PVC etc.	Interior	Waterborne	Low Sheen	12i 1.4^{ZS}	D803	Zylone Sheen Acrylic Undercoat	D302 D404		Zylone Sheen	D302
Unplasticised PVC etc.	Interior	Waterborne	Low Sheen	12i 1.4^{SC}	D803	SpaceCote Low Sheen Acrylic Undercoat	D311 D404		SpaceCote Low Sheen	D311
Unplasticised PVC etc.	Interior	Waterborne	Flat	12i 1.5	D803	Zylone 20 Acrylic Undercoat	D37 D404		Zylone 20	D37
Unplasticised PVC etc.	Interior	Waterborne	Flat	12i 1.5^{SC}	D803	SpaceCote Flat Acrylic Undercoat	D314 D404		SpaceCote Flat	D314

the paint the professionals use

The above specification is very general and while it addresses many of the application areas where Corelight is recommended it is not comprehensive.

Accelerated durability testing requires several months and tests are not yet completed on acrylic enamel products therefore at this stage the exterior recommendation remains as the products listed in Table 1 above.

Office partitions, kitchen, residence, public area, toilet/bathroom
Select gloss level from general specification

Cubicle boards, showcase boards, cabinets & partitions
Select gloss level from general specification. For higher performance the use of Uracryl over Quick Dry Primer Undercoat is recommended.

System furniture, kitchen cabinets, bathroom cabinets, living room cabinets & shoe cabinets
Uracryl over Quick Dry Primer Undercoat is recommended.

Door blanks for bathrooms, washrooms or toilets
Select gloss level from general specification. For higher performance the use of Uracryl over Quick Dry Primer Undercoat is recommended.

Furniture applications such as desks, closets or bedside cupboards
Select gloss level from general specification. For higher performance the use of Uracryl over Quick Dry Primer Undercoat is recommended.

Interior, exterior boards for DIY furniture
Select gloss level from general specification.

Modern interior/exterior architectural design
Select gloss level from general specification.

Signage was also proposed as an application area. The best recommendation for painting signs is Sonyx 101. Apply two coats to achieve required base colour before other artwork is applied. To achieve anti-graffiti properties overcoat the completed artwork with two coats of Resene GraffitiShield which is available in gloss or semigloss. Allow 48 hours dry time after the last colour has been applied before application of Resene GraffitiShield. For best results wash the completed artwork with water before overcoating with Resene GraffitiShield.

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