



Topcoat Compatibility with LCM Lacquer Primer

Author: Chris Boyer

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Project reference: P-341

Lab book reference: CB-14639

Product reference: PB-7831, PB-7833

Background: LCM Lacquer Primer (PB-7831) is a solvent based lacquer wood primer designed for general purpose industrial use on interior wood substrates. Several types of topcoats can be used over this primer. This primer contains zinc stearate which, according to literature, can react with acid cured coatings to produce “acid bloom”. For that reason no acid cured coatings were evaluated in this experiment.

Objective: Determine which common topcoats can be applied over LCM Lacquer Primer without adhesion failure.

Experimental approach:

- Spray applied a 3-4 wet mils of LCM Lacquer Primer to maple millwork and let dry.
 - 3-4 mils wet film thickness; air dried 60 minutes (82°F, 46% RH)
- Lightly sanded primer with 220 grit sandpaper
- Applied topcoat
 - 3-4 mils wet film thickness
 - Air dried 60 minutes, oven dried 30 minutes at 120°F, Air dried additional 16 hours
- Performance tests
 - Crosshatch adhesion – ASTM D3359B
 - Thermal cycle (20 cycles) – ANSI/KCMA A161.1 2012 sec 9.3 (-40 to 120F / 70% RH)
 - Post-thermal cycle crosshatch – test ASTM D3359B after thermal cycles

Results: Crosshatch adhesion of the four topcoats tested over LCM Lacquer Primer ranged from 4B to 5B. 5B is the highest/best rating, 4B denotes not greater than 5% coating removed. No cracking or checking was observed after 20 thermal cycles and crosshatch adhesion after the thermal cycles again ranged from 4B to 5B. Adhesion rating of 4B is thought to be adequate for many applications including decorative interior coatings.

CIC Code	Description	Type	Crosshatch	Thermal Cycle	Post-Thermal Cycle
			ASTM D3359B	(20 cycles)	Crosshatch
			ASTM D3359B	ANSI/KCMA A161.1 2012 sec 9.3	ASTM D3359B
WB-882920	AquaTop	Latex Enamel	5B	Pass - no checks or cracks	4B
IB-734345	Touch-up White	NC Lacquer	4B	Pass - no checks or cracks	4B
IB-7817	Cicryl	Solvent Acrylic Enamel	5B	Pass - no checks or cracks	5B
BTZ7050	Clear Acrylic Topcoat	2k Urethane Clear	4B	Pass - no checks or cracks	4B

Conclusions: Each of the five topcoat + primer coating systems tested exhibited 4B or greater adhesion before and after thermal cycle testing. For decorative applications these topcoats are suitable for use with this primer. If special performance is required each coating system must be tested according to the requirements of that system on the particular substrate that will be used.

Suggested marketing statement: The following types of topcoats have been tested successfully for use as decorative interior coatings over this primer: latex, nitrocellulose lacquer, solvent acrylic, 2k urethane. Always test performance of the complete coating system before beginning production.