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Parlin, W. J.
April 18, 1950

MEMORANDUM TO FILES

RC-800 FIELD TEST
HEYWOOD-WAKEFIELD COMPANY
GARDNER, MASSACHUSETTS

This memorandum will serve to supplement the joint report of Mr. Guy Egan and the writer to Mr. Russell Morgan dated April 14, on the subject field test and covers the details of the test conditions and the results obtained.

The following are the details:

(A) Items Selected and Finishing Schedule

<u>Code</u>	<u>Type</u>	<u>Stain</u>	<u>Dry</u>	<u>Sealer</u>	<u>Dry</u>	<u>Topcoat</u>	<u>No. of Coats</u>	<u>Bake</u>
C-405A	Chair	Winthrop	Std.	Std.	Std.	"DULUX"	1	Std.
C-405A	"	"	ADON	1366	"	RC-800	1	"
C-405A	"	"	ADON	1366	"	"	2	15 min. flash between coats - std. bake.
C-282	Nightstand	"	Std.	Std.	Std.	"DULUX"	1	Std.
C-282	"	"	ADON	1366	"	RC-800	2	15 min. flash between coats - std. bake.
C-221	Chest	"	"	"	"	"	2	Std. bake for each coat.
M-552	"	Wheat	"	"	"	"	"	Std. bake for each coat.
M-1663	Table	"	"	"	"	"DULUX"	1	Std.
M-6086	Stand	"	Std.	"	"	RC-800	2	15 min. flash between coats - std. bake.
M-6086	"	"	"	Std.	"	"DULUX"	1	Std.
M-190	Chest	Champagne	ADON	1366	"	RC-800	2	Std. bake for each coat.
M-140	"	"	Std.	Std.	"	"DULUX"	1	Std.
M-140	Bed	"	ADON	1366	"	RC-800	2	15 min. flash between coats - std. bake
308	Step Table	Wheat	Std.	Std.	"	"DULUX"	1	Std.
308	"	"	"	1366	"	RC-800	2	15 min. flash between coats - std. bake.

(B) Standard System

Lilly Stain

AD 12 minutes
Bake 22 minutes x 135°F., 27% R.H.
Cool 18 minutes

19380 Type Sealer

AD 4 minutes
Bake 16 minutes x 90°F.
Cool 15 minutes

94 Sheen Type A "DULUX"

AD 28 minutes
Bake 92 minutes x 135°F., 27% R.H.

(C) Conditions Existing During Test

Sealer Booth

Temperature - 74°F.
Humidity - 24%
Gun - Type - MBC Devilbiss
Head - #704
Nozzle - AV 15 FF
Needle - FF
Material Pressure - 26 psi for 2 guns
Gun Pressure - 65 psi for 2 guns

"DULUX" Booth

Temperature - 70°F.
Humidity - 26%
Air Flow - 65 ft. per min.
Gun - Type - MBC Devilbiss
Head - #704
Nozzle - AV 15 FF
Needle - FF
Material Pressure - 25 psi for 2 guns
Gun Pressure - 75 psi for 2 guns

Oven Temperatures

See attached charts.

(D) Processing

Heywood-Wakefield's system of processing is as follows:

280 paper, oil/naphtha lubricant
00 steel wool, uniforming wax

Processing tests on the Heywood Wakefield rubbing line by one operator brought out the following comparisons:

<u>Item</u>	<u>Finish</u>	<u>Sand</u>	<u>Steel Wool</u>	<u>Total</u>
C-282 Nightstand	"DULUX"	11 sec.	9 sec.	20 sec.
C-282 "	RC-800	11 "	9 "	20 "
#308 Step Table	"DULUX"	28 "	31 "	59 "
#308 "	RC-800	52 "	28 "	90 "
M-190 Chest	"DULUX"	58 "	53 "	111 "
M-190 "	RC-800	115 "	67 "	182 "
M-522 Chest	"DULUX"	63 "	53 "	116 "
M-522 "	RC-800	121 "	75 "	196 "

In the case of the C-282 nightstands, which were brought back to Parlin for inspection, no attempt was made to rub the RC-800 coated piece to the same degree as the "DULUX"; rather, it was rubbed for the same length of time to visually illustrate the difference in ease of rubbing between RC-800 and "DULUX". With the other pieces the increases in rubbing time were as follows:

- (1) #308 Step Table + 33% more labor
- (2) M-190 Chest + 63% "
- (3) M-522 Chest + 69% "

However, it was the opinion of Mr. Richards, Finishing Superintendent, that in regular production the RC-800 topcoat would require about 35% more labor to process than their regular "DULUX".

(E) Tests Run and Results

- (1) Spraying - Show more orange peel than "DULUX" and when converted, film is only slightly poorer for leveling.
- (2) Processing - Harder to process, particularly to sand than "DULUX". Test data indicate from 33-69% more labor required but Finishing Superintendent estimates an average of approximately 35% increase.
- (3) Clarity - Definitely superior to "DULUX".
- (4) Life - Definitely superior to "DULUX".
- (5) Feel - Definitely superior to "DULUX".
- (6) Build - Two coats superior to "DULUX", one coat inferior. Two coats RC-800 gave 2.0-3.0 mils. One coat "DULUX" 1.7-1.9 mils.
- (7) Blistering - Occasional blisters encountered on porous pieces of wood, particularly when bleached. "DULUX" also shows blistering over 1366 on bleached wood.

(E) Tests Run and Results (continued)

- (8) Abrasion - Approximately three times as abrasion resistant as "DULUX". (1,250 strokes vs. 450 strokes.)
- (9) Alcohol - Definitely superior to "DULUX". 190 proof alcohol does not affect it but lifts "DULUX".
- (10) Acetone - "DULUX" apparently unaffected because acetone flowed out to a large ring or evaporated quickly. RC-800 shows no lifting but leaves a ridge around puddle. Acetone wets "DULUX" more readily than RC-800 and spreads out, evaporating about twice as fast than the RC-800.
- (11) Writing Ink - Neither affected.
- (12) Indelible Ink - Lifts "DULUX" and stains wood. Stains RC-800 but stains can be removed by wiping with alcohol.
- (13) Steam - "DULUX" whitens and softens more but recovers rapidly. RC-800 is stained which requires rubbing to remove.
- (14) Impact - Both crack but RC-800 shows more cracks.
- (15) Mar - When struck with edge of a large coin is slightly harder to mar than "DULUX".
- (16) Scratch - Harder to break through the film, but after broken through about same as "DULUX" in regard to effort required to continue the scratch.
- (17) Heat - Neither affected when 500 cc. beaker of boiling water is placed on the surface.

These results confirm the results of our laboratory tests and indicate that the RC-800 finish is superior to our current "DULUX" in most properties. The outstanding plus values demonstrated by this test for the RC-800 finish are its better appearance, feel and abrasion resistance. Compared to Heywood-Wakefield's "DULUX" finish, the major shortcomings of the RC-800 finish are (1) higher cost, (2) lower solids (30-32% vs. 42%), and (3) harder processing.

CGM:DMZ

C. G. MURPHY





