TRADE SALES

EXPOSURES

December 1965

Subject: Accelerated Testing

RS-95000-ZZ-154	RS-95006-JA-101
RS-95001-ZZ-154	RS-95007-JK-108
RS-95003-ZZ-111	RS-95008-ZZ-198
RS-95004-ZZ-114	RS-95011-ZZ-199

Contributors: K. Kramer, H. Carroll

Summary:

Exposures Exterior

Cleveland - 22 series of new exposures - 160 panels.
New Orleans - 5 series of new exposures - 46 panels.
Sub-Tripical - 6 series of new exposures - 86 panels.
Huron - 1 series of new exposures - 3 panels.
Arizona - 1 series of new exposures - 10 panels.

G.T.M.G.

The two new G.T.M.G.'s will be in full operation by the first week of January.

Weatherometer

Nothing new to report.

Fadeometer

Nothing new to report.

Immersion Tanks

Nothing new to report.

Salt Spray

The one salt spray unit that was using a dionized water fog has been changed back to a salt fog.

A Pipe Flow Tester has been installed in the equipment area to test the lining of pipes. Five percent salt solutions is pumped through coated pipe sections at the rate of approximately 350 gallons per hour.

TRADE SALES

MISCELLANEOUS

December, 1965

Subject: Anti-Skinning Agents
NT-23048-AD-263

Contributors: J. J. Bednarik, J. E. Southwick

Summary: Initial tests in V-891 and V-869 show Nuodex "Exkin No. 4" and Dehydag "Product 500 NRC" equal to standard CH-359. Naugatuck's "Polygard HR" and "Naugawhite" are unacceptable.

Discussion: Our initial tests (up to one month) show no differences in Speedenamel (V-891) or V869 clear between CH-359, Exkin No. 4 or Product 500 NRC. Tests were run at the standard and 1/2 standard levels. Skinning, dry, gloss, and color were checked. Stability of these properties will be checked periodically.

Tests in V8-69 showed the Polygard HR to cause a color change to green for the system, when exposed to air for one day. The Nauga white inhibited the dry from a normal 3-4 hours to over 8 hours.

Subject: Titanium Dioxide Test - - - DuPont R-902
NT-23048-AD-263

Contributors: J. J. Bednarik, J. E. Southwick

Summary: Our initial tests of DuPont R-902 (maximum chalk resistant chloride process TiO_2) versus W-290 (Z opaque R-88-S) and W-244 (DuPont R-900) show:

1) A slight sacrifice in hiding brightness - tint tone compared to W-244

2) Still noticeably better than W-290 for hiding brightness - tint tone.

3) Chalk resistance is noticeably improved over W-244 but still poorer than W-290 (based on Weather-O-Meter tests).

Discussion: We compared standard W-290 versus W-244 and DuPont R-902 in Japalac Tinting White Y-1218. The DuPont pigments were evaluated at a 95% replacement of the W-290.

Both chloride process pigments are better than W-290 for hiding brightness (reflectance) - tint tone (blueness) with the W-244 being a questionable trace better than the R-902. Data from Colormaster readings of 3 mil wet film draw-downs of whites and 2 oz. Black Dramatone per gallon tints.

	White Enamels			Tints		
	W-290	W-244	R-902	W-290	W-244	R-902
Hiding-C.R.	0.9452	0.9563	0.9569	1.001	1.002	1.001
Y-Brightness	88.76	90.06	90.17	46.88	47.38	47.55
Blueness*	2.94	1.53	1.76	-7.71	-10.57	-9.38

*As measure of blueness versus yellowness, I have used the yellowing factor of $\frac{A-B}{G} \times 100$ with the most positive number being the yellowest and the most negative being the bluest.

Weather-O-Meter testing is completed but exterior exposure at Cleveland and New Orleans will not be examined in four months. The Weather-O-Meter tests show the R-902 to be a noticeable improvement over W-244 for chalk resistance but still not equal to W-290.

Subject: Raw Material Evaluation
NT-25004-IK-154

Contributors: J. J. Bednarik, J. Davis, J. E. Southwick

Summary: Exposure Test No. 45 - Imperial Regal Yellows in Enamels

Exposure: 24 months - Cleveland and New Orleans - Retired

Results: While previous exposures have shown the Regal Yellows to be better than standard YW-1 and YW-2, they are poorer for tint retention. Series retired noting unacceptability of Regals for tint base use.

Subject: Raw Material Evaluation
NT-25004-IK-154

Contributors: J. J. Bednarik, J. Davis, J. E. Southwick

Summary: Exposure Test No. 40 - Glidden Titanium (Yellow, Blue and Green) Pigment Testing Enamel Systems

Exposure: 18 months - Cleveland and New Orleans - New Orleans retired.

Results: The Glidden Titanium Yellow is 5-15 units poorer than YW-108 for gloss retention but slightly better for color retention. It is 25-30 units poorer than TiO_2 - Hansa Yellow (YW-129) for gloss retention but noticeably better for color retention. It is 12-19 units better for gloss retention and equal for color retention as compared to the Shepherd Titanium Yellow.

The Glidden Titanium Blue is slightly poorer for color retention and poor for gloss retention compared to the TiO_2, Phthalo Blue Tones, Carbizol Vilot blend. The Shepherd Titanium Blue is very bad for both color and gloss retention.

The Glidden Titanium Green is equal to the TiO_2, Phthalocyanine Green, Ferrite Yellow blend for gloss retention but a trace poorer for color retention.

Subject: Exposure Reports
NT-23045-AH-262

Contributors: R. W. Green, J. Davis, J. E. Southwick

Summary:

1. Series N-1-39 40 months vertical south at New Orleans. A comparison of W-249 in several Mound City paints show this material to be equal in durability to the same paints using W-6. The W-6 was replaced with 79% W-249. Paints tested were LZT-644, LZT-611, LZt-607B and LZT-605. The LZT-605 showed severe cracking.

   A comparison of Chemet's 118 leaded zinc to Sherwin William's 18M leaded zinc shows the chemet material to be equivalent. Both these pigments are now coded W-249.

   A study was made to determine the effects of mildew on freshly prepared panels and on panels prepared in the laboratory and aged prior to exposure. The aged panels showed much better mildew resistance as compared to the fresh panels painted at the point of exposure. This indicates that laboratory exposure panels will show less severe mildew than panels painted on the exposure racks.

   A comparison of Y-2750 and Shake Kote on cedar siding shows the Shake Kote to be inferior to Y-2750 in that the Shake Kote cracks severely. However, the Shake Kote does not show this cracking on cedar shakes.

   This primer series compares Y-1851K (lead) and Y-1851L (lead free). The Y-3600-EJ is showing flaking over Y-1851L. It does not show flaking over Y-1851K but is severly cracked. The Y-1851L which initially showed better mildew resistance than Y-1851K is now equal to the Y-1851K. Included in this series is EGL 62001 (a Dusan trim paint) as a primer. Y-3600-EJ shows superior mildew and crack resistance over EGL-62001.

   A substitution of W-219 (a non-reactive zinc oxide) for W-33 in our Cuban Everon formula shows equal performance.

A comparison of E.P. 427, NJZ XV631 and EP 427W zinc oxide in Y-1850 shows equal durability.

2. Series 3-173 and WE3-173 24 mos. vertical south.
This series is to determine the difference in exposures of house paints at Elmwood and the WERE transmitter site. The chalk rate of both sets of panels were equal however, the Elmwood panels did show more dirt collection.

3. Series N-1-19 and N-1-20 40 months vertical South and north at New Orleans
This is a competitive house paint study. Y-1800, Y-1867, Sears Snowhite, and SWP-471 were rated best with equal durability. The Snowhite was slightly whiter. Sears 143, Dutch Boy, and Y-1850 were rated second. The durability of these paints were similar to the top rated paints but showed greater dirt collection. Pittsburgh and DuPont 40 were rated third. Spred House Paint and two DeVoe paints were rated last.

4. Series N-1-21 40 months vertical south at New Orleans
Comparisons of M-500 in Y-1800, Y-1892, and KU-125 show no adverse effects on durability.

A study of Y-1892 and EGL-62001 (a Busan paint) tints show the Y-1892 to have better appearance after 40 months. Initially the Busan paints better mildew resistance and color retention. After two years the mildew and color of the two paints were similar. At 40 months the Y-1892 is showing more chalk with greater clean up and in general looks better than EGL-62001. The paints were tinted with Dramatone black, red oxide, Dhalo blue and Hansa yellow.

Series E-2-7 43 months vertical south on yellow pine at Cleveland.
This series is a primer study on yellow pine comparing Y-1851H (lead) and Y-1851L (lead free) against a special Jones Dabney primer 3497-3471 primer. Little difference could be found in these paints.

Series 3-76, 3-77, N-376, N-377 Exposed vertical south at Cleveland and New Orleans on 4 ft. cedar and 45° south at Cleveland and New Orleans on 18" cedar, white pine, yellow pine, and Fir plywood.
This series shows the hard primers EGL-63449 and 1W130 to be slightly less crack resistant than standard Y-1851 but better in mildew resistance under Y-3600ES. The Busan paints showed slightly more mildew resistance under Y-3600EJ.

Subject: Y-3416 Spred Primer Sealer

Contributors: J. Sainsbury, F. Wickert

Discussions: Work continued on the reformulation of Y-3416 Spred Primer Sealer to replace the 195-T-5B (12% sol. of alpha protein) with Ulasein 15 (15% sol. of casein, ultra adhesives).

While substituting 50 lbs. of Ulasein for the 105 lbs. of 195-T-5B currently in Y-3416, produces good flow and application properties, initial viscosities 10-20 KU higher than desirable were encountered. Three pounds of CH-280 (Triton X-100) added to the grind, replacing 195-T-24 (cocoanut fatty acid soap), effectively reduced the initial viscosity and has provided excellent stability for three months now.

The following series of paints are based on CH-280/Ulasein formula, Paint No. 1, each one post stabilized as shown:

	EE5-333						
	1	12	23	34	45	6	7
195-T-24 (cocoanut fatty acid)	-	8.0	-	-	-	-	-
CH-450 (DAXAD 30)	-	-	8.0	-	-	-	-
CH-322 (TAMOL 731)	-	-	-	8.0	-	-	-
(TRITON CF-10)	-	-	-	-	2.5	-	-
(IGEPAL CO-610)	-	-	-	-	-	2.5	-
CH-280 (TRITON X-100)	-	-	-	-	-	-	2.5
Initial Viscosity (24 hrs.)	75	69	83	81	72	70	69
1 week	82	77	89	83	79	79	79
1 month	82	77	92	85	81	80	80

Surfactant Levels are the same on an active basis.

This series was made with UM-733 Latex (Firestone PL-14). The same series using UM-725 Latex (Dow 512-K) showed about the same difference between viscosities but with an overall initial viscosity 20 KU higher. Also with UM-725, some drop in viscosities was observed after two weeks storage, particularly the sample with triton CF-10.

Formulas of Y-3416 using 195-T-27 (cellosize QP-4400) thickener in place of the 195-T-5B solution have been stored for 8 months now, with excellent stability. The lack of flow in these paints, however, makes such a thickener change undesirable.