

LEAD INDUSTRIES ASSOCIATION

480 LEXINGTON AVENUE

NEW YORK 17, N. Y.

RED LEAD DIVISION

TEMPERATIVE DRAFTCONFIDENTIALSUBJECT TO REVISIONRED LEAD TECHNICAL COMMITTEE

New York, N. Y.

January 29-30, 1948

A meeting of the Red Lead Technical Committee of the Lead Industries Association was held on January 29-30, 1948, in the offices of the Association. The following persons were in attendance:

Present

Mr. A. C. Goets
Mr. O. F. Shobe
Dr. J. O. Johnstone
Mr. George Dishman

Representing

Eagle-Picher Company
Glidden Company
Hammond Lead Products, Inc.
National Lead Company

Mr. R. L. Ziegfeld, Secretary, Lead Industries Association
Dr. L. L. Carrick, Director, Red Lead Research; Meeting Chairman
Mr. C. J. Vander Valk, Technical Director

REVISION OF FEDERAL SPECIFICATION TT-P-86a

The meeting was opened at 10:30 A.M. with a review of a preliminary draft dated December 2, 1947, of the new Federal Specification for Red-Lead-Base paints.

The following changes were suggested and approved by the Committee:

Page 2,

Paragraph E-1, Line 2.

Change "red iron oxide and red lead" to "red lead and red iron oxide."

Table I, under Type IV insert "14 max." for siliceous matter.

Page 3,

Table III.

Paraphrase "ring and ball."

Paraphrase "25% solids."

Paragraph E-3d(2), Line 2.

Delete parenthetical expression and replace with "A suggested formula and cooking schedule for the varnish is outlined in paragraph 1-7."



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Page 3. Table IV.
Parenthesize "per cent by weight."
Parenthesize "5% NaOH @ 68°F."
Change "clear" to "Clear" after "Appearance."

Page 4. Insert "JJJ-O-336" after "Raw linseed oil."

Table VI.
Under Type IV delete "0.5" for minimum uncombined water and insert "0.5" under "max."
Under Type IV change minimum weight per gallon from "16.8" to "16.7."

Page 5. Paragraph E-5a.
Change "freshly-opened" to "freshly opened."

Paragraph E-5b, line 2.
Insert "by volume" after "parts."
Change "package" to "packaged."

Paragraph E-5g, line 4.
Add "when flowed on clean glass."

Page 7. Type I.
Change "at 7 diameter magnification" to "at a 7 diameter magnification."

Type II.
Change "at 7 diameter magnification" to "at a 7 diameter magnification."

Type III.
Change "in strong light" to "in a strong light."

Type IV.
Change "in strong light" to "in a strong light."

Under Alkali resistance (Type IV varnish), line 2.
Parenthesize "benzol."

Page 8. Paragraph E-2c(1), line 5.
Change "of hydrochloric acid" to "of conc. hydrochloric acid."

Page 9. Paragraph F-2g(2), line 5.
A question was raised concerning the number of the drier specification. It was decided to request clarification of this point when recommended changes are transmitted to Mr. Hickson.

Line 7.
Delete "a" from "TT-7-291a" in conformance with Paragraph A-1 on page 1.

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Page 10. Paragraph I-1b, Line 3.
Change "steel particularly," to "steel surfaces, particularly."

Paragraph I-1c, Line 2.
Change "surfaces particularly," to "surfaces, particularly."

Page 12. Paragraph I-10, Line 12.
Correct spelling of "formulae."

All of the editorial changes in Mr. Hickson's letter of transmittal, dated January 8, 1948, were approved by the Committee with the exception of that for Paragraph E-3d(2). The Committee's recommendation concerning Paragraph E-3d (2) is included above.

After careful consideration of Paragraph I-12 on page 12, concerning a six month guarantee of the condition of red lead paints after receipt, the Committee decided to protest its inclusion in the specification notes as unfair to red lead paint manufacturers. It was also proposed and agreed that the Technical Director should call this paragraph to the attention of several manufacturers of anti-corrosive paints and request that they file their written objections to it with Mr. Hickson.

Mr. J. Moore, Director of the Scientific Section, National Paint, Varnish and Lacquer Association was contacted by telephone during the meeting concerning the content of Paragraph I-12. He agreed that the inclusion of a requirement for a guarantee of paint condition would be highly objectionable to paint manufacturers, as contrary to the traditional policy of the National Paint, Varnish and Lacquer Association, and that its retention would set a dangerous precedent for the writing of future paint specifications. Mr. Moore agreed to submit his objections in writing to Mr. Hickson.

A copy of Mr. Moore's letter to Mr. Hickson, dated January 29 was received during the meeting on January 30 and is attached to these minutes as Exhibit "A".

PROJECT NO. 14 - ATMOSPHERIC PROGRAM

Two Blue Lead control paint formulations were submitted by Mr. Coets and were incorporated into the Program outline as Paint Nos. E 266 and E 267. These paints are composed of the following pigmentations and vehicles:

L.I.A. No. 266

Pigmentation 132

67.0% Pigment by Weight

Sublimed Blue Lead	60.0%
Zinc Chromate	20.0%
Magnesium Silicate	15.0%
Diatomaceous Silica	5.0%

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Vehicle No. V-166

33.0% Vehicle by Weight

Raw Linseed Oil	76.5%
Mineral Spirits	21.2%
Pb Napthenate	1.3%
Co Napthenate	0.5%
Mn Napthenate	0.5%

35.0 PVR 16.22#/gal.

L.I.A. No. 367

Pigmentation 133

55.0% Pigment by Weight

Sublimed Blue Lead	57.4%
Zinc Chromate	19.1%
Zinc Oxide	8.5%
Magnesium Silicate	10.0%
Diatomaceous Silica	5.0%

Vehicle No. V-167

45.0% Vehicle by Weight

Royal 869-1 Alkyd Solution	59.7%
Raw Linseed Oil	22.3%
Hi-Flash Naptha	15.6%
Pb Napthenate	1.4%
Co Napthenate	0.5%
Mn Napthenate	0.5%

29.0 PVR 14.21#/gal.

The inclusion in the Program outline of a list of persons receiving paints for application with the required amounts was decided upon and inserted as Supplementary Page B.

The use of a new high leafing aluminum paste sold by the Aluminum Company of America under the trade name Alcoa Paste #240 was proposed for use in the aluminum topcoat paint. It was so decided and the Program outline changed accordingly. The Technical Director was requested to order 25 pounds of this material for delivery to Mr. T. A. Neuhaus at the Glidden Company.

It was also decided to include specific instructions to the participants concerning the measurement of dry film with a Magma Gauge as follows:

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"The dry film thickness of each coat of paint shall be measured after application by means of a Mags Gauge and the average of three readings taken diagonally across the panel shall be recorded."

When the question was raised concerning the type of aluminum stearate to be used, it was agreed that this material should meet Navy Specification 52-A-12a.

CASE OF HEYDEN CHEMICAL CORPORATION VS. BURRELL AND WEIDIG

The Technical Director of the Red Lead Division informed the Committee members that the Heyden Company was currently seeking to restrain Burrell and Weidig, former Heyden employees now in the chemical consulting business, by court order from selling processes for or consulting on formaldehyde derivatives, including pentaerythritol. The Technical Director, also a former employee of Heyden, told the Red Lead Technical Committee that he had been asked to volunteer as a witness for the defendants and refused with Mr. Ziegfeld's knowledge.

The Thursday meeting was adjourned at 5:00 P.M.

PITTSBURGH - DES MOINES PROJECT AT MELLON INSTITUTE

The meeting convened at 10:00 A.M. on Friday, January 30. The first item discussed was the possible cooperation of the Red Lead Technical Committee in a project at Mellon Institute sponsored by the Pittsburgh - Des Moines Steel Company.

The Technical Director informed the Committee that he had called on Dr. James B. Garner, director of this project at Mellon, and related its objectives and status.

This project is being initiated to develop paint systems for steel structures, particularly the interior and exterior of water tanks, superior to those now contained in the current Pittsburgh - Des Moines Specifications. Dr. Garner is desirous of having test paint formulations submitted for inclusion in this research program. Several companies have already submitted formulations for test.

After some discussion, Mr. Shobe stated that he would prefer that any paint formulations be submitted to Dr. Garner through the Glidden Company since this is one of their established accounts. The Committee agreed to this and it was proposed that Mr. Shobe submit the following L.I.A. paint formulations:

Federal Specification TT-P-86a Paints, Types I, II, III and IV.

The present Pittsburgh - Des Moines Specification No. 16482 pigmentation with TT-P-86a, Type IV vehicle. This pigmentation has the following composition:

Lead Chromate	37.9%
Lead Sulphate, Basic	1.7%
Mg. Silicate	33.4%
Red Lead	27.0%

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Also Bakelite's WP-1 Primer applied to O.4 mil followed by 4 mils of Bakelite's P-10 Red Lead Anti-Corrosive Paint.

Another suggested pigmentation to comprise:

Lead Chromate	25%
Zinc Oxide	10%
Magnesium Silicate	20%
Red Lead	45%

This pigmentation is to be supplied with the current Pittsburgh - Des Moines primer vehicle as supplied by the Glidden Company.

It was also proposed that Mr. Shobe submit the following topcoat paints:

Aluminum in TT-P-86a, Type IV vehicle,
State of Maine Metal Bridge Specification Paint,
TT-P-86a, Type IV.

Bakelite's WP-1 Primer followed by P-10 Anticorrosive paint and red lead-lead chromate pigmented paint are to be recommended as four coat systems as well as two coats followed by two finish coats as additional systems for the water tank interiors. All the priming paints are to be applied in one and two coat applications followed by two and one coat applications of the finish coat paints on the exterior surfaces.

PANAMA CANAL PROJECT

The letter dated January 14, 1948, from Colonel Stratton concerning projected tests under the auspices of the Special Engineering Division of The Panama Canal was considered by the Committee. It was then agreed that this letter be acknowledged with a letter expressing the willingness of the Lead Industries Association to cooperate. Colonel Stratton's letter is attached as Exhibit "B".

L.I.A. PAINTS FOR THE NAVY - NORFOLK

The paints agreed upon at the December 11-12, 1947, meeting for submission to the Navy for application under hot and cold plastic anti-fouling paints for total submersion were reviewed. These were:

<u>L.I.A. Paint No.</u>	<u>Pigmentation</u>	<u>Vehicle</u>
33	J	20
35	J	13
137	P-16	13

It was recommended that Vehicle 13 be modified with chlorinated rubber in L.I.A. Paint 137. This revision was agreeable to the Committee and a specific recommendation for the amount of chlorinated rubber to be added was left to Mr. Diehlman.

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Another system proposed and agreed upon for submission to the Navy consists of Bakelite's WP-1 Primer under an anti-corrosive paint similar to P-10 but with the replacement of 50% by volume of the red lead with magnesium silicate.

It was also decided to submit the system recommended by the Bakelite Corporation along with the other L.I.A. recommendations consisting of WP-1 Primer, P-10 and Bakelite's anti-fouling paint applied according to Bakelite's current recommendations when the panels are prepared.

It was also agreed that at least one member of the Technical Committee accompany the Technical Director to Norfolk to observe the preparation of the panels when these are prepared.

The suggestion that an extra panel be requested of each system for exposure at the Sayville Marine Basin was approved.

Mr. Diehlman reiterated his intention to supply two additional bottom paints with the series for the Norfolk Navy Yard. Vehicles for these paints will consist of a coumarone-indene vehicle with coal tar and chlorinated rubber and an ethyl cellulose-Archlor combination.

Mr. Diehlman agreed to make all of the paints for submission to Norfolk for these tests.

L.I.A. PAINTS FOR THE NAVY - PHILADELPHIA

It was tentatively decided to submit the following paints to the Philadelphia Navy Yard for the projected half-tide tests:

<u>First Paint</u>	<u>Pigmentation</u>
	Red Lead 97%
	Titanium Dioxide 10%
	Zinc Chromate 10%
	Zinc Oxide 10%
	Asbestos 10%
	Mica (325 Mesh) 10%

Vehicle - L.I.A. No. V-27

<u>Second Paint</u>	<u>Pigmentation</u>
	Red Lead 45%
	Lead Chromate (lemon) 15%
	Zinc Chromate 7%
	Zinc Oxide 8%
	Micaeous Pigment 15%
	Asbestos 10%

Vehicle - L.I.A. No. V-27

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Third Paint

L.I.A. No. 18

Pigmentation - L.I.A. No. P-27

Vehicle - L.I.A. No. V-27

The fourth, fifth and sixth paints proposed consist of the above three pigmentations with an alkyd vehicle as specified in Maritime Commission Specification 52-MC-201.

Seventh Paint

Containing the same pigmentation as the second above but with the 52-MC-201 alkyd solution modified with 10% of chlorinated rubber (10 cps.) on vehicle solids.

It was next decided to consider the use of pentaerythritol alkyd resins as vehicles for primers for application above the water line. Long oil length pentaerythritol and dipentaerythritol alkyds were proposed and the Technical Director promised to investigate the commercial availability of these alkyds and obtain samples.

NEXT MEETING

Another meeting of the Red Lead Technical Committee was proposed for March, 1948. This meeting will include an inspection trip to the Sayville Test Station.

The meeting was adjourned at 5:15 P.M. on Friday, January 30, 1948.

C. J. Vanier
C. J. Vanier Valk
Technical Director
Red Lead Division

EXHIBIT "B"

C O P Y

THE PANAMA CANAL
CANAL ZONE
Department of Operation
and Maintenance
Special Engineering Division

Diablo Heights, C. Z.,
January 14, 1948.

VIA AIR MAIL

Red Lead Technical Committee
Lead Industries Association
420 Lexington Avenue,
New York 17, N. Y.

Attention: Mr. C. J. Vander Valk

Gentlemen:

The Special Engineering Division of The Panama Canal has been conducting field tests on protection of steel surfaces with hot application bituminous enamels. These test enamels were applied to the Panama Canal lock gates in strips ten feet wide in sufficient length to cover all variations in the types of exposure.

The enamel surfaces exposed to direct solar radiation have failed either by sagging or checking and cracking.

A further investigation is being planned to determine which protective coatings will best withstand the severe solar radiation of the tropics. Alternate and continuous submersion exposures are also planned to provide additional information. Cold application protective coatings and antifouling materials will be included in this investigation. Test panels will be exposed as follows:

Atmospheric exposures at Miraflores and Cristobal, C. Z.
Alternate submersion exposure to sea water, Fort Amador, C. Z.
Continuous submersion exposure to sea water, Fort Amador, C. Z.
Continuous submersion exposure to fresh water, Gatun, C. Z.

The sites of test panels, to be exposed in duplicate for each system, are as follows:

Alternate and continuous submersion	9" x 9" x 1/8"
Atmospheric	4" x 8" x 1/8"
Laboratory control	2" x 4" x 1/8"

All protective coating systems will be applied to steel surfaces. In addition, for semi-large-scale tests on the Pacific side of the Isthmus only, the following surface areas will be allotted for each protective coating system:

Marine atmospheric, maximum	20 square feet.
Sea water submersion, maximum	200 square feet.

N2771.01

Information is requested as to compatible primer and antifouling compounds which are recommended for use with your products. In this connection, it will be appreciated if you will furnish information covering the items listed below:

Are your products single component systems? If not, state what other components are included, as, for example, primer, top coats, and antifouling coating material.

Are your systems suitable for each of the different exposures listed above?

State approximate type and composition of the material recommended, excepting secret processes and materials.

Name any applicable specifications (Federal, Army, Navy, or others).

Describe the application methods which are most suitable for use with your products.

Furnish data regarding covering ability and cost in large quantities of the products recommended.

Describe recommended service behavior and laboratory identification and performance tests.

Furnish data or literature describing your products, especially long term service performance if available.

Should specific primer or antifouling materials be used to insure compatibility of these with ferrish coats?

Are specific thinners or are special handling procedures necessary to insure satisfactory results?

It is realized that some of the above requested information may be considered confidential. You may be assured that any information of this nature will be held in strict commercial confidence.

Your early reply will enable us to expedite the initiation of this further investigation of protective coatings.

Very truly yours,

/s/ James M. Stratton

/s/ JAMES M. STRATTON,
Colonel, C.E.,
Supervising Engineer.