

UNITED LEAD COMPANY

LEAD PRODUCTS DIVISION

100 BROADWAY

NEW YORK, N. Y.

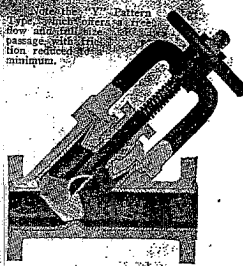
Products

"UNITED" CHEMICAL LEAD LINED
Pipe
Fittings
Bends
Tubes
"UNITED" CHEMICAL LEAD COVERED
Fittings
Tubes
Bars
"UNITED" HARD LEAD:
Acid Pumps
Fittings
"UNITED" BLOCK TIN LINED
All the above products furnished in Pure Block Tin Lined
or Covered.
"UNITED" CHEMICAL LEAD or BLOCK TIN COATED
Pipe
Fittings
Tubes
"UNITED" BRASS and COPPER LINED PIPE

Tank Connections
Acid Pumps
Agitator Tanks
Apparatus
Heating Coils
Cooling Coils
Plug Cocks
Plug Bibbs



Wedge Type
Flanged Acid Valve



"United" Chemical Hard Lead Lined
Plug and Seat Type "Y"
Pattern Valve

"United" Hard Lead Flanged Acid Valves

"United" Hard Lead Flanged Acid Valves are furnished in the same patterns as "United" Lined Valves, i.e., globe, Y, angle and gate patterns. The difference between the hard lead and lead lined valves is in the body only. The body is manufactured entirely of hard lead and the remaining parts are of cast iron or bronze.

Hard lead valves are recommended where acid fumes may prevail or there is a likelihood of drippage on the outside of the valve body. Such valves should also be used wherever installation is to operate under vacuum.

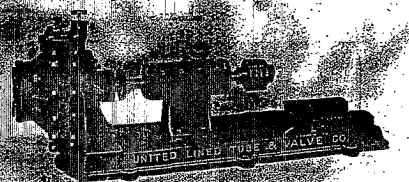
"United" Hard Lead Centrifugal Acid Pumps

We have combined in the "United" Hard Lead Acid Pumps all the essential details of a high class acid pump.

"United" Centrifugal Acid Pumps are made for heavy duty and hard service and have proven a most economical and satisfactory installation for unloading acid barges and tank cars, acid circulating systems and all general acid pumping problems.

"United" Acid Pumps after careful consideration by competent engineers have been frequently selected for use in places where high efficiency was required and repairs were almost impossible.

Self-lubricating with large internal grease glands supplied by compression grease cup. Outside bearings self-oiling and equipped with self-aligning thrust bearing with thrusts running in oil and properly housed. "United" Acid Pumps should be at work in your plant.



"United" Chemical Hard Lead Centrifugal Acid Pump
Furnished in Hard Lead or Iron

Service

Actual service records are on file, testifying of satisfactory results secured from installations of "United" Lined Products. Your corrosion problem can be eliminated. Our Engineering Department is at your service.

"United" Tubond" Chemical Lead Lined Steel Pipe and Flanged Fittings

"United" Tubond" Chemical Lead Lined Pipe is lined with a seamless chemical lead tube inseparably bonded to the outside casing. This "United" Method gives an absolute uniform



"United" Flanged Chemical Lead Tube Lined Pipe and Fittings

lining and a smooth interior surface with friction reduced to a minimum, and free from porous or defective spots.

Flanged pipes are made up with the bonded chemical lead lining turned over the face of the recessed flange which gives a positive lead to lead joint at each flange.

"United" Chemical Lead or Block Tin Lined Acid Valves

"United" Valves are heavily lined throughout with hard lead or pure block tin and being constructed of iron, except the lining, make one of the best and strongest acid valves on the market.

"United" Acid Valves are made in all required sizes and styles - globe, gate, angle and free flow "Y" type; also quick opening gate and special designs to meet any specifications. "United" Acid Valves are furnished in many desirable designs and are always ready to be opened or closed by hand or by air or steam, which opens or closes the valve without the stopping of the flow of acid, and admits of instant and easy access to the valve for adjustment or repair when necessary.

The "United" Hard Lead Lined Wedge Type Gate Pattern Flanged Acid Valve is a most efficient gate pattern acid valve. It was especially designed for work where a drip-proof valve is necessary, and this is one feature that you can be sure of. The valve is positively tight when closed. The wedge consists of hard lead disc recessed on the outside. The lead bellows on the inside of the valve body is in a drip-proof position and in the case of leakage, which is rare, the lead disc will eliminate any rubbing or abrasion, thus, thereby assuring a perfect seat.

NATIONAL LEAD COMPANY

Paint Materials for the Protection and Decoration of Wood, Plaster, Masonry and Metal

NEW YORK, N. Y., 111 Broadway
BOSTON, MASS., NATIONAL-BOSTON LEAD COMPANY, 800 Albany Street
BUFFALO, N. Y., 116 Oak Street
CHICAGO, ILL., 900 West 18th Street
PHILADELPHIA, PA., JOHN T. LEWIS & BROS. Co., Widener Building

CINCINNATI, OHIO, 659 Freeman Avenue
CLEVELAND, OHIO, 820 West Superior Avenue
ST. LOUIS, MO., 722 Chestnut Street
SAN FRANCISCO, CAL., 235 Montgomery Street
PITTSBURGH, PA., NATIONAL LEAD & OIL CO., 316 Fourth Avenue

Products

WHITE LEAD (Dry and in Oil); RED LEAD (Dry, in Oil, Liquid); LINSEED OIL (Raw and Boiled); FLATTING OIL.

White Lead for General Painting

Gloss paint made of pure white lead and pure linseed oil has long been the standard protective and decorative coating for exterior wood, brick, stone, concrete and stucco. It forms a tough, tenacious film that does not crack and scale but wears down smooth and even, leaving the surface ready for repainting without expensive preparation. Being mixed to order, lead-and-oil paint can be adapted to meet all exposure, surface and weather conditions. It can also be varied in color from white to any desired shade or tint by the addition of the proper colors-in-oil.

Our Dutch Boy white lead is guaranteed to be pure white lead ground in pure linseed oil. It is obtainable in the regular or heavy paste form and also in soft paste form. (The soft paste, known as Dutch Boy soft paste white lead, contains approximately a gallon more oil to the 100 lbs. of paste than does the heavy paste. This makes it softer or easier to thin, saving the user time and labor in mixing.)

Both the heavy paste and soft paste are sold in 100-lb. steel kegs and 50, 25 and 12½-lb. steel pails.

Dutch Boy linseed oil is pure, clear, carefully filtered and well settled. Sold in 1 and 5-gal. sealed cans bearing the Dutch Boy trade-mark. Our linseed oil is also obtainable in half barrels and barrels.

Flat Finishes for Interiors

Most inside painting nowadays is done in either flat or eggshell gloss finishes, such as are obtainable by reducing heavy paste white lead to brushing consistency with Dutch Boy flattening oil.

When white lead is thinned with flattening oil an interior paint results which possesses many points of excellence. It has good working and hiding qualities. It is easy to apply. It levels itself nicely leaving no brush marks. It sets slowly, so that large areas can be worked without risk of laps or joints.

Some of the finest interior decorating jobs in the country have been done with white lead and flattening oil paint. The beauty and charm of the finish it gives, the all-around economy of this paint and its thorough washability recommend it for all types of interior work—plain wall finishes, sponge-mottle and crumpled roll effects, the tiffany, etc.

The washability of a white lead and flattening oil finish is a point that should not be overlooked. This paint can be washed without injury not only a few months after it is applied but throughout its long life. Its pigment, white lead, is insoluble in water and remains so, not changing chemically under normal expo-



TRADE-MARK

sure indoors. Thus there is no unsightly streaking due to washing off of some of the pigment.

Dutch Boy flattening oil is sold in quart, gallon and 5-gal. cans sealed at the spout.

Red Lead for Metal

Pure white lead, properly thinned to suit the special conditions under which the paint is to be used, gives the best protection for wood and other building materials except metal. When it comes to the painting of metal, white lead (though good for the purpose) must yield first place to pure red lead.

The chief requirements of a protective coating for metal are that it should have the ability to stick firmly to metal and that it should keep moisture, which combined with air forms rust, from getting through. The paint must also be able to resist the destructive action of atmospheric gases, acid from the surface soil, and salt spray near the seacoast.

Paint made of pure red lead meets these requirements. It is insoluble in water, unaffected by ordinary atmospheric gases, adheres closely to metal, and is a true rust preventive.

A great advance in the quality of red lead was made when Dutch Boy red lead was perfected. It is a more highly oxidized product than old style dry red lead and is sold in paste form, ready for use after the addition of more linseed oil. Its exceptionally high true red lead content and the fineness of its pigment particles insure a paint of excellent brushing qualities, good coverage and extreme durability. Sold in 100-lb. steel kegs and 50, 25 and 12½-lb. steel pails.

The same highly oxidized red lead can also be had in liquid form. The liquid product is called Dutch Boy liquid red lead and is ready for use. It comes in natural red lead color, light and dark brown, light and dark green, and black. Sold in 1-gal. cans and 2½-gal. kegs.

We also make dry red lead for painting purposes.

General Painting Specifications

Following are general specifications for the painting of interior and exterior surfaces:

Preparation of Surface—(1) Woodwork—New woodwork shall be smoothed off with sandpaper where required and dusted clean before priming. From old woodwork which has been painted before, all loose paint, scale, dirt and dust shall be removed. Wash off with benzine or turpentine all parts where liquid paint remover has been used.

Before priming new woodwork, all knots and sappy streaks shall receive one coat of pure alcohol shellac, brushed out thin. After the priming coat is thoroughly dry, putty up all knot holes, dents, cracks, and other defects with putty composed of equal parts of white lead and whiting.

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DUTCH BOY PAINT MATERIALS

White Lead (Heavy Paste and Soft Paste); Red Lead (Dry, in Oil, Liquid); Linseed Oil (Raw and Boiled); Flatting Oil

White Lead for General Painting

Gloss paint made of pure white lead and pure linseed oil has long been the standard protective and decorative coating for exterior wood and other building materials. It forms a tough, tenacious film that does not crack and scale but wears down smooth and even, leaving the surface ready for repainting without expensive preparation. Being mixed to order, lead-and-oil paint can be adapted to meet all exposure, surface and weather conditions. It can also be varied in color from white to any desirable tint or shade by the addition of the proper colors-in-oil.

Our Dutch Boy white lead is guaranteed to be pure white lead ground in pure linseed oil. It is obtainable in the regular or heavy paste form and also in soft paste form. (The soft paste, known as Dutch Boy soft paste white lead, contains almost a gallon more oil to the 100 pounds of paste than does the heavy paste. This makes it softer or easier to thin, saving the user time and labor in mixing.)

Both the heavy paste and the soft paste are sold in 100 pound steel kegs and 50, 25 and 12½ pound steel pails.

Dutch Boy linseed oil is pure, clear, carefully filtered and well settled. Sold in 1 and 5 gallon sealed cans bearing the Dutch Boy trade mark. Our linseed oil is also obtainable in half barrels and barrels.

Flat Finishes for Interiors

Most inside painting today is done in either flat or eggshell gloss finishes such as are obtainable by reducing paste white lead to brushing consistency with Dutch Boy flatting oil. When white lead is thinned with flatting oil an interior paint results which possesses many points of excellence. It has good working and hiding qualities. It is easy to apply. It levels itself nicely leaving no brush marks. It sets slowly so that large areas can be worked without risk of laps or joints.

Some of the finest interior decorating jobs in the country have been done with white lead and flatting oil paint. The beauty and charm of the finish it gives, the all-around economy of this paint and its thorough washability recommend it for all types of interior work—plain wall finishes, sponge-mottle and crumpled roll effects, the tiffany, etc.



The washability of a white lead and flatting oil finish is a point that should not be overlooked. This paint can be washed without injury not only a few months after it is applied but throughout its long life. Its pigment, white lead, is insoluble in water and remains so, not changing chemically under normal exposure indoors. Thus there is no unsightly streaking due to washing off of some of the pigment. Dutch Boy flatting oil is sold in quart, gallon and 5 gallon cans sealed at the spout.

Red Lead for Metal

Pure white lead, properly thinned to suit the special conditions under which the paint is to be used, gives the best protection for wood and other building materials except metal. When it comes to the painting of metal, white lead (though good for the purpose) must yield first place to pure red lead.

The chief requirements of a protective coating for metal are that it should have the ability to stick firmly to metal and that it should keep moisture, which, combined with air, forms rust, from getting through. The paint must also be able to resist the destructive action of atmospheric gases, acid from the surface oil, and salt spray near the sea coast.

Paints made of pure red lead meets these requirements. It is insoluble in water, unaffected by ordinary atmospheric gases, adheres closely to metal, and is a true rust preventive.

A great advance in the quality of red lead was made when Dutch Boy red lead was perfected. It is a more highly oxidized product than old style dry red lead and is sold in paste form, ready for use after the addition of more linseed oil. Its exceptionally high true red lead content and the fineness of its pigment particles insure a paint of excellent brushing qualities, good coverage and extreme durability. Sold in 100 pound steel kegs and 50, 25 and 12½ pound steel pails.

The same highly oxidized red lead can also be had in liquid form. The liquid product is called Dutch Boy liquid red lead and is ready for use. It comes in natural red lead color, light and dark brown, light and dark green, and black. Sold in 1 gallon cans and 2½ gallon kegs.

We also make dry red lead of the highest grade.



FOR FORMULAS
SEE NEXT PAGE



Master Specifications

A. I. A.-FILE No. 25

N 27775.02

NATIONAL LEAD
COMPANY

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N 27775.03

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DUTCH BOY PAINT MATERIALS—Continued

Formulas

The following white lead formulas take no account of tinting materials. If colors-in-oil are used in quantities large enough to affect the consistency of the paint, the quantities of thinner named in the formulas should be increased in amount equal to one-half the weight of the tinting material.

It will be noted that the formulas for painting exterior wood are on the basis of Dutch Boy soft paste white lead as well as heavy paste white lead. For flat effects inside, the heavy paste is to be preferred as the higher oil content of the soft paste will give more of a sheen to surfaces painted with it.

(1) New Woodwork Outside—Three coats of paint, mixed as follows, are recommended for new unpainted woodwork outside:

	(a) Priming Coat	(b) Second Coat
	Heavy Paste	Soft Paste
Dutch Boy white lead	100 lb.	100 lb.
Pure raw linseed oil	4 gal.	3½ gal.
Pure turpentine	2 gal.	1½ gal.
Pure drier	1 pt.	1 pt.

	(c) Third Coat
	Heavy Paste
Dutch Boy white lead	100 lb.
Pure raw linseed oil	3½ to 4 gal.
Pure turpentine	1 pt.
Pure drier	1 pt.

(2) Old Woodwork Outside—Two coats of paint as follows are recommended for repainting old woodwork outside:

	(a) First Coat	(b) Second Coat
	Heavy Paste	Soft Paste
Dutch Boy white lead	100 lb.	100 lb.
Pure raw linseed oil	2 gal.	1½ gal.
Pure turpentine	2 gal.	1 pt.
Pure drier	1 pt.	1 pt.

(3) New Woodwork Inside—Three coats of paint, mixed as follows, shall be applied to new unpainted woodwork inside:

	(a) Priming Coat	(b) Second Coat
	Heavy Paste	Soft Paste
Dutch Boy white lead (Heavy Paste)	100 lb.	100 lb.
Dutch Boy flattening oil	3 gal.	2 to 3 gal.
Pure raw linseed oil	3 gal.	None
Pure drier	1 pt.	None

	(c) Third Coat
	Heavy Paste
Dutch Boy white lead (Heavy Paste)	100 lb.
Dutch Boy flattening oil	2 to 3 gal.
Pale varnish (suitable for enamel)	None

(4) Old Woodwork Inside—Two coats of paint are recommended for repainting woodwork inside. For a flat finish the paint for the first and second coats should be mixed according to formula B in paragraph 3. For an eggshell gloss finish the paint for the first coat should be mixed according to formula B in paragraph 3 and for the finishing coat according to formula D.

(5) Plaster Walls—Three coats of paint are recommended for plaster which has never before been painted. The priming coat should be mixed as follows:

	Priming Coat
Dutch Boy white lead (Heavy Paste)	100 lb.
Pure kettled-boiled linseed oil	7 gal.
Pure turpentine	1 gal.

NOTE: If boiled linseed oil cannot be obtained, 7 gal. raw linseed oil with 3 pt. drier may be used instead, and will in most cases give satisfactory results. Boiled oil is much superior, however, and will obviate trouble when conditions are difficult. It seals pores in the plaster and prevents suction.

The paint for the second coat should be mixed according to formula B in paragraph 3 and for the finishing coat according to formula C if a

flat finish is desired. If an eggshell finish is wanted, the paint for the finishing coat should be mixed according to formula D.

(6) Metal Work, Exterior and Interior—Three coats of paint, mixed as follows, are recommended for exterior and interior metal work:

	(a) First Coat	(b) Second Coat
	Heavy Paste	Soft Paste
Dutch Boy red lead-in-oil	100 lb.	100 lb.
Pure linseed oil	2½ gal.	2½ gal.
Lampblack-in-oil	None	12 oz.
Pure dry red lead	100 lb.	100 lb.
Pure linseed oil	3½ gal.	3½ gal.
Lampblack-in-oil	None	13 oz.

	(c) Third Coat
	Heavy Paste
Dutch Boy red lead-in-oil	100 lb.
Pure linseed oil	3½ gal.
Lampblack-in-oil	6 lb.
Pure dry red lead	100 lb.
Pure linseed oil	4½ gal.
Lampblack-in-oil	6½ lb.

NOTE: If genuine boiled linseed oil is available, use one-third boiled and two-thirds raw oil. If raw oil only is used, add ½ pt. drier to every gallon of paint. One-half pint of turpentine may be added to each 2 gal. of paint whenever it is deemed advisable to make the paint produced by any formula work more easily.

If liquid red lead is to be used, specify Dutch Boy liquid red lead No. 1 (natural red lead color) for first coat, Dutch Boy liquid red lead No. 6 (light brown) for second coat and Dutch Boy liquid red lead No. 7 (dark brown) for third coat.

Where a dark color other than brown is desired for the finishing coat, one of the following formulas should be used according to the color desired:

	Light Green	Dark Green
Dutch Boy red lead-in-oil	100 lb.	100 lb.
Pure linseed oil	6 gal.	6½ gal.
Medium chrome yellow	31 lb.	15 lb.
Chinese or Prussian blue	24 lb.	52 lb.
Dutch Boy red lead-in-oil	100 lb.	100 lb.
Pure linseed oil	13 gal.	1 gal.
Pure turpentine	15 lb.	15 lb.
Chinese or Prussian blue	52 lb.	52 lb.
Lampblack	52 lb.	52 lb.

If liquid red lead is to be used, specify Dutch Boy liquid red lead according to the finishing color desired, that is: No. 8-light green; No. 9-dark green or No. 5-black.

Printed Specifications Furnished—To any architect who desires, we will supply specification pamphlets containing full and complete directions for the proper use of white lead in the painting of woodwork, plaster, brick, stone, concrete and stucco, and of red lead in the painting of metal.

Write our nearest branch office for "Standard Specification for the use of White Lead" or "Standard Specification for the use of Red Lead."

NATIONAL LEAD COMPANY

NEW YORK	111 Broadway
BOSTON (National-Boston Lead Co.)	800 Albany Street
BUFFALO	116 Oak Street
CHICAGO	908 West 18th Street
PHILADELPHIA (John T. Lewis & Sons, Co.)	437 Chestnut Street

CINCINNATI	459 Freeman Avenue
CLEVELAND	620 West Superior Avenue
ST. LOUIS	722 Chestnut Street
SAN FRANCISCO	235 Montgomery Street
PITTSBURGH (National Lead & Oil Co.)	314 Fourth Avenue

A. I. A.—FILE No. 25

NATIONAL LEAD
COMPANY

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NATIONAL LEAD COMPANY

Manufacturers of Old Style Lead Cames

ATLANTIC BRANCH
NEW YORK, N. Y.

NORTHWESTERN WORKS
ST. PAUL, MINN.

For Hardlead Sheets, Gutters, etc., see pages A523-525

Old Style Lead Cames

Old Style Lead Cames for leaded glass windows are furnished in five designs: Rustic, Rough Cast, Antique, Hammered and Frosted; also in a smooth surface came with irregular edges. These make it possible to use a lead in harmony with the particular type of architecture employed and, at the same time, retain the soft, pleasing appearance characteristic of lead as compared with other materials.



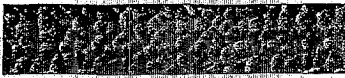
Rustic



Rough Cast (Patent No. 71132)



Antique



Hammered



Frosted



Smooth Surface—Irregular Edges

Dimensions—We can furnish the designs shown above in the following surface widths: $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, 2 , $2\frac{1}{4}$, $2\frac{1}{2}$, $2\frac{3}{4}$, 3 , $3\frac{1}{4}$, $3\frac{1}{2}$, $3\frac{3}{4}$, 4 , $4\frac{1}{4}$, $4\frac{1}{2}$, $4\frac{3}{4}$, 5 , $5\frac{1}{4}$, $5\frac{1}{2}$, $5\frac{3}{4}$, 6 , $6\frac{1}{4}$, $6\frac{1}{2}$, $6\frac{3}{4}$, 7 , $7\frac{1}{4}$, $7\frac{1}{2}$, $7\frac{3}{4}$, 8 , $8\frac{1}{4}$, $8\frac{1}{2}$, $8\frac{3}{4}$, 9 , $9\frac{1}{4}$, $9\frac{1}{2}$, $9\frac{3}{4}$, 10 , $10\frac{1}{4}$, $10\frac{1}{2}$, $10\frac{3}{4}$, 11 , $11\frac{1}{4}$, $11\frac{1}{2}$, $11\frac{3}{4}$, 12 , $12\frac{1}{4}$, $12\frac{1}{2}$, $12\frac{3}{4}$, 13 , $13\frac{1}{4}$, $13\frac{1}{2}$, $13\frac{3}{4}$, 14 , $14\frac{1}{4}$, $14\frac{1}{2}$, $14\frac{3}{4}$, 15 , $15\frac{1}{4}$, $15\frac{1}{2}$, $15\frac{3}{4}$, 16 , $16\frac{1}{4}$, $16\frac{1}{2}$, $16\frac{3}{4}$, 17 , 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NATIONAL LEAD COMPANY

Paint Materials for the Protection and Decoration of Wood, Plaster, Masonry and Metal

NEW YORK, N. Y., 111 Broadway
BOSTON, MASS., 800 Albany Street
BUFFALO, N. Y., 116 Oak Street
CHICAGO, ILL., 900 West 18th Street
PHILADELPHIA, PA., JOHN T. LEWIS & BROS. CO., 437 Chestnut Street

CINCINNATI, OHIO, 659 Freeman Avenue
CLEVELAND, OHIO, 820 West Superior Avenue
ST. LOUIS, MO., 722 Chestnut Street
SAN FRANCISCO, CAL., 235 Montgomery Street
PITTSBURGH, PA., NATIONAL LEAD & OIL CO., 316 Fourth Avenue

Products

WHITE LEAD (Dry and in Oil); RED LEAD (Dry, in Oil, Liquid); LINSEED OIL (Raw and Boiled); FLATTING OIL.

White Lead for General Painting

Gloss paint made of pure white lead and pure linseed oil has long been the standard protective and decorative coating for exterior wood, brick, stone, concrete and stucco. It forms a tough, tenacious film that does not crack and scale but wears down smooth and even, leaving the surface ready for repainting without expensive preparation. Being mixed to order, lead-and-oil paint can be adapted to meet all exposure, surface and weather conditions. It can also be varied in color from white to any desired shade or tint by the addition of the proper colors-in-oil.

Our Dutch Boy white lead is guaranteed to be pure white lead ground in pure linseed oil. It is obtainable in the regular or heavy paste form and also in soft paste form. (The soft paste, known as Dutch Boy soft paste white lead, contains almost a gallon more oil to the 100 lbs. of paste than does the heavy paste. This makes it softer or easier to thin, saving the user time and labor in mixing.)

Both the heavy paste and soft paste are sold in 100-lb. steel kegs and 50, 25 and 12½-lb. steel pails.

Dutch Boy linseed oil is pure, clear, carefully filtered and well settled. Sold in 1 and 5-gal. sealed cans bearing the Dutch Boy trade-mark. Our linseed oil is also obtainable in half barrels and barrels.

Flat Finishes for Interiors

Most inside painting nowadays is done in either flat or eggshell gloss finishes, such as are obtainable by reducing paste white lead to brushing consistency with Dutch Boy flattening oil.

When white lead is thinned with flattening oil an interior paint results which possesses many points of



TRADE-MARK

excellence. It has good working and hiding qualities. It is easy to apply. It levels itself nicely leaving no brush marks. It sets slowly, so that large areas can be worked without risk of laps or joints.

Some of the finest interior decorating jobs in the country have been done with white lead and flattening oil paint. The beauty and charm of the finish it gives, the all-around economy of this paint and its thorough washability recommend it for all types of interior work—plain wall finishes, sponge-mottle and crumpled roll effects, the tiffany, etc.

The washability of a white lead and flattening oil finish is a point that should not be overlooked. This paint can be washed without injury not only a few months after it is applied but throughout its long life. Its pigment, white lead, is insoluble in water and remains so, not changing chemically under normal exposure indoors. Thus there is no unsightly streaking due to washing off of some of the pigment.

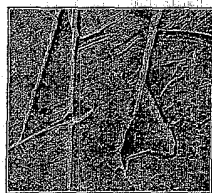
Dutch Boy flattening oil is sold in quart, gallon and 5-gal. cans sealed at the spout.

White Lead and Oil Plastic Paint

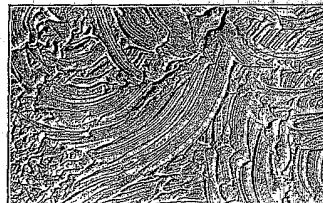
The trend is away from excessively rough surfaces as wall finishes but modified textures are gaining in popularity. This latter type of textural effect can be produced readily with a white lead and oil plastic paint. Such a paint is made with materials that the painter always has in his shop, is relatively low in cost and gives a finish that is durable and can be kept clean by washing.

The formula for white lead and oil plastic paint is 100 lbs. Dutch Boy white lead (heavy paste), 22 lbs. dry whiting, 1½ gals. Dutch Boy flattening oil and 1 gill drier. This formula, making about 5¼ gals. of paint, will cover about 275 sq. ft. of wall surface when spread to a thickness about equal to two ordinary paint coats.

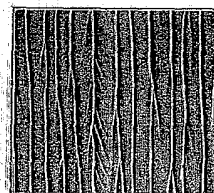
The resulting paint, although heavy, will brush out with comparative ease, after which it may be manipu-



A straight edge, moved with a simple twisting motion of the wrist—and this handsome design results.



A beautiful and interesting paint textured finish achieved by use of a sponge moved in a circular fashion to produce a swirl design.



An ordinary paperhanger's roller drawn over the plastic paint and this distinctive pattern is obtained.

Three of the Textures Obtainable with White Lead and Oil Plastic Paint

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Continued on next page

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lated with a paint-brush, whiskbroom, sponge, or any other means to give the texture desired. Three specimen textures are illustrated on preceding page.

The plastic paint prepared as described may be tinted prior to application, or may have colors-in-oil worked into it while it is still wet. The finish sets up overnight and can easily be glazed to lend additional color interest. No size coat is necessary to permit glazing.

When white lead and oil plastic paint is to be applied to new plaster walls, it is recommended that the walls first receive the customary priming coat. If the walls have been previously painted, and are in satisfactory condition for repainting, the plastic finish may be applied direct.

A booklet giving full information about white lead and oil plastic paint, and showing various textures in color, will be sent to any architect upon request.

Red Lead for Metal

Pure white lead, properly thinned to suit the special conditions under which the paint is to be used, gives the best protection for wood and other building materials except metal. When it comes to the painting of metal, white lead (though good for the purpose) must yield first place to pure red lead.

The chief requirements of a protective coating for metal are that it should have the ability to stick firmly to metal and that it should keep moisture, which combined with air forms rust, from getting through. The paint must also be able to resist the destructive action of atmospheric gases, acid from the surface oil, and salt spray near the seacoast.

Paint made of pure red lead meets these requirements. It is insoluble in water, unaffected by ordinary atmospheric gases, adheres closely to metal, and is a true rust preventive.

A great advance in the quality of red lead was made when Dutch Boy red lead was perfected. It is a more highly oxidized product than old style dry red lead and is sold in paste form, ready for use after the addition of more linseed oil. Its exceptionally high true red lead content and the fineness of its pigment particles insure a paint of excellent brushing qualities, good coverage and extreme durability. Sold in 100-lb. steel kegs and 50, 25 and 12½-lb. steel pails.

The same highly oxidized red lead can also be had in liquid form. The liquid product is called Dutch Boy liquid red lead and is ready for use. It comes in natural red lead color, light and dark brown, light and dark green, and black. Sold in 1-gal. cans and 2½-gal. kegs. We also make dry red lead of the highest grade.

General Painting Specifications

Following are general specifications for the painting of interior and exterior surfaces:

Preparation of Surface—(1) Woodwork—New woodwork shall be smoothed off with sandpaper where required and dusted clean before priming. From old woodwork which has been painted before, all loose paint, scale, dirt and dust shall be removed. Wash off with benzine or turpentine all parts where liquid paint removal has been used.

Before priming new woodwork all knots and sappy streaks shall receive one coat of pure alcohol shellac, brushed out thin. After the priming coat is thoroughly dry, putty up all knotholes, dents, cracks, and other defects with putty composed of equal parts of white lead and whiting.

(2) Plaster—Before applying any paint to plaster, either new or old, see that it is clean and smooth. Fill all cracks with plaster of paris or approved patching plaster. Where new plaster is to be painted, it shall be properly aged, it shall be treated before priming with a solution made by dissolving two pounds of zinc sulphate in one gallon of water.

(3) Brick and Stone—New brickwork shall not be primed until dry. At least 2 or 3 days of drying should precede painting. If any mortar has become loose or washed out, repoint all such damaged places with mortar or portland cement before applying paint. After priming, correct small defects in the surface with putty.

(4) Stucco and Concrete—Stucco or concrete should be allowed to stand and dry a year before paint is applied. If painted within a year, it shall be aged artificially by washing with a solution made by dissolving two lbs. of zinc sulphate in one gal. of water, or with carbonic acid water.

(5) Metal Work—Iron, steel and other metal work shall be cleaned thoroughly of all loose paint, dirt, oil, grease, rust, scale and other foreign matter before paint is applied.

The Paint and Its Application—(6) Designation of Paint to Be Used—All woodwork, plaster, brick, stone, concrete and stucco which are to be painted, shall be painted with NATIONAL LEAD COMPANY'S Dutch Boy white lead, Dutch Boy flatting oil, pure linseed oil, pure turpentine and pure drier mixed according to the formulas hereinafter designated for each kind of work. All metal shall be painted with NATIONAL LEAD COMPANY'S Dutch Boy red lead-in-oil, Dutch Boy liquid red lead, or pure dry red lead and pure linseed oil mixed according to formulas hereafter given for each specific purpose.

(7) Tinting Materials—In producing tints and shades, John T. Lewis & Bros. Company colors-in-oil or those of equally high grade shall be used. If colors-in-oil are used in quantities large enough to affect the consistency of the paint, the quantities of thinners named in the formulas shall be increased in amount equal to one-half the weight of the tinting material.

(8) Applying the Paint—No exterior painting shall be done when rain or snow is falling, during fog, or until after dew or moisture which may be on the surface has completely disappeared. Painting done in winter weather shall only be done when the temperature is above 50° F. and when all surfaces are dry. All exterior work shall be allowed to dry from 2 to 4 days before the next coat is applied and at least 24 hours shall be allowed between coats on interior work.

Formulas—The following white lead formulas take no account of tinting materials. See Paragraph No. 7 when adding colors to the formulas.

It will be noted that the formulas for painting exterior wood are on the basis of Dutch Boy soft paste white lead as well as heavy paste white lead. For flat effects inside, the heavy paste is to be preferred as the higher oil content of the soft paste will give more of a sheen to surfaces painted with it.

(9) New Woodwork Outside—Three coats of paint, mixed as follows, shall be applied to new unpainted woodwork outside:

	(a) Priming coat		(b) Second coat	
	Heavy Paste	Soft Paste	Heavy Paste	Soft Paste
Dutch Boy white lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure raw linseed oil	4 gal.	3 gal.	1½ gal.	½ gal.
Pure turpentine	2 gal.	1½ gal.	1½ gal.	1½ gal.
Pure drier	1 pt.	1 pt.	1 pt.	1 pt.

	(c) Third coat	
	Heavy Paste	Soft Paste
Dutch Boy white lead	100 lb.	100 lb.
Pure raw linseed oil	3½ to 4 gal.	2½ gal.
Pure turpentine	1 pt.	1 pt.
Pure drier	1 pt.	1 pt.

Note: The painter may exercise his discretion in using a larger or smaller quantity of oil according to whether the wood is oil absorbing, as white pine, poplar and basswood, or less permeable, as yellow pine, cypress, spruce and hemlock. The painter may, in rare cases, find it advisable to increase the quantity of turpentine, as in southern exposure to prevent blistering. Where this is done, a corresponding decrease should be made in the specified amount of linseed oil. If the wood is very resinous, such as cypress, prepare it for priming by burning on a mixture of 1 pt. linseed oil, 1 pt. turpentine and 1 pt. drier.

(10) Old Woodwork Outside—Two coats of paint as follows shall be applied in repainting old woodwork outside:

	(a) First coat		(b) Second coat	
	Heavy Paste	Soft Paste	Heavy Paste	Soft Paste
Dutch Boy white lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure raw linseed oil	2 gal.	1 gal.	3½ gal.	2½ gal.
Pure turpentine	2 gal.	1½ gal.	1 pt.	1 pt.
Pure drier	1 pt.	1 pt.	1 pt.	1 pt.

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(11) *New Woodwork Inside*—Three coats of paint, mixed as follows, shall be applied to new unpainted woodwork inside:

	(a) Priming Coat	(b) Second coat
Dutch Boy white lead (heavy paste)	100 lb.	100 lb.
Dutch Boy flattening oil	3 gal.	2 to 3 gal.
Pure raw linseed oil	3 gal.	None
Pure drier	1 pt.	None

	(c) Third coat (Flat finish)	(d) Third coat (Eggshell gloss finish)
Dutch Boy white lead (heavy paste)	100 lb.	100 lb.
Dutch Boy flattening oil	2 to 3 gal.	1½ to 2 gal.
Pale varnish (suitable for enamel)	None	¾ gal.

Note: As on outside wood, the painter may exercise his discretion in the use of the thinner prescribed—tins on white pine, poplar and basswood, which more readily absorb oil, increase the quantity of linseed oil for the priming coat. On yellow pine, cypress, spruce and hemlock, use less linseed oil and more flattening oil.

(12) *Old Woodwork Inside*—Two coats of paint shall be used in repainting woodwork inside. For a flat finish, mix the paint for the first and second coats according to formula B in paragraph 11. For an eggshell gloss finish, mix the paint for the first coat according to formula B in paragraph 11 and according to formula D for the finishing coat.

(13) *Plaster Walls*—Three coats of paint shall be applied to plaster which has never before been painted. The priming coat shall be mixed as follows:

	Priming coat
Dutch Boy white lead (heavy paste)	100 lb.
Pure kettled-boiled linseed oil	7 gal.
Pure turpentine	1 gal.

Note: If boiled linseed oil can not be obtained, 7 gal. raw linseed oil with 3 pt. drier may be used instead, and will in most cases give satisfactory results. Boiled oil is much superior, however, and will obviate trouble when conditions are difficult. It seals pores in the plaster, and prevents suction.

Mix the paint for the second coat according to formula B in paragraph 11 and according to formula C for the finishing coat if a flat finish is desired. If an eggshell finish is wanted, mix the paint for the finishing coat according to formula D.

In repainting plaster walls, follow the practice recommended for new plaster, except that the priming coat may be omitted.

(14) *Brick and Stucco*—Three coats of paint, mixed as follows, shall be applied to brick or stucco which has never before been painted:

	(a) Priming coat	(b) Second coat
Dutch Boy white lead (heavy paste)	100 lb.	100 lb.
Pure linseed oil	7 gal. boiled or 7 gal. raw and 1½ pt. drier	4 gal. (¾ boiled, ¾ raw) or 4 gal. raw and 1 pt. drier
Pure turpentine	1 gal.	1 gal.

	(c) Third coat (gloss finish)
Dutch Boy white lead (heavy paste)	100 lb.
Pure linseed oil	3½ gal. (¾ boiled, ¾ raw) or 3½ gal. raw and 1 pt. drier
Pure turpentine	1 pt.

	(d) Third coat (flat finish)
Dutch Boy white lead (heavy paste)	100 lb.
Dutch Boy flattening oil	2 gal.

Two coats of paint shall be applied in repainting brick and stucco. For the first coat, mix the paint according to formula B in paragraph 14 and for the finishing coat according to formula C or D.

(15) *Concrete and Stone*—Three coats of paint, mixed as follows, shall be applied to concrete and stone which have never before been painted:

	(a) Priming coat	(b) Second coat
Dutch Boy white lead (heavy paste)	100 lb.	100 lb.
Pure linseed oil	5 gal. boiled or 5 gal. raw and 1 pt. drier	3 gal. (¾ boiled, ¾ raw) or 3 gal. raw and 1 pt. drier
Pure turpentine	1 gal.	¾ gal.

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(c) Third coat (gloss finish)

Dutch Boy white lead (heavy paste)	100 lb.
Pure linseed oil	3½ gal. (¾ boiled, ¾ raw) or 3½ gal. raw and 1 pt. drier
Pure turpentine	1 pt.

(d) Third coat (flat finish)

Dutch Boy white lead (heavy paste)	100 lb.
Dutch Boy flattening oil	2 gal.

In repainting concrete and stone, apply two coats. Mix the paint for the first coat according to formula B in paragraph 15 and according to formula C or D for the second coat.

Excellent semi-flat finishes on brick, stone, concrete and stucco can be secured by applying over the second coat one or two coats of paint made with 100 lbs. white lead, 1½ to 2 gals. flattening oil and ¾ gal. spar varnish. For brick red finish on outside brick, thin the color with Dutch Boy flattening oil.

(16) *Metal Work, Exterior and Interior*—Three coats of paint, mixed as follows, shall be applied to exterior and interior metal work:

	(a) First coat	(b) Second coat
Dutch Boy red lead-in-oil	100 lb.	light brown
Pure linseed oil	2½ gal.	2½ gal.
Lampblack-in-oil	None	12 oz.

or

Pure dry red lead	100 lb.	100 lb.
Pure linseed oil	3¾ gal.	3¾ gal.
Lampblack-in-oil	None	13 oz.

(c) Third coat (dark brown)

Dutch Boy red lead-in-oil	100 lb.
Pure linseed oil	3¾ gal.
Lampblack-in-oil	6 lb.

or

Pure dry red lead	100 lb.
Pure linseed oil	4¾ gal.
Lampblack-in-oil	6½ lb.

Note: If genuine boiled linseed oil is available, use one-third boiled and two-thirds raw oil. If raw oil only is used, add ½ pt. drier to every gallon of paint. One-half pint of turpentine may be added to each 2 gal. of paint whenever it is deemed advisable to make the paint produced by any formula work more easily.

If liquid red lead is to be used, specify Dutch Boy liquid red lead No. 1 (natural red lead color) for first coat, Dutch Boy liquid red lead No. 6 (light brown) for second coat and Dutch Boy liquid red lead No. 7 (dark brown) for third coat.

Where a dark color other than brown is desired for the finishing coat, one of the following formulas shall be used according to the color desired:

	Light green	Dark green
Dutch Boy red lead-in-oil	100 lb.	100 lb.
Pure linseed oil	6 gal.	6½ gal.
Medium chrome yellow	31 lb.	15 lb.
Chinese or prussian blue	24 lb.	52 lb.

	Black
Dutch Boy red lead-in-oil	100 lb.
Pure linseed oil	13 gal.
Pure turpentine	1 gal.
Chinese or prussian blue	16 lb.
Lampblack	52 lb.

If liquid red lead is to be used, specify Dutch Boy liquid red lead according to the finishing color desired, that is: No. 8—light green; No. 9—dark green or No. 5—black.

Printed Specifications Furnished

To any architect who desires, we will supply printed specifications containing full and complete directions for the proper use of white lead in the painting of woodwork, plaster, brick, stone, concrete and stucco, and of red lead in the painting of metal.

Write our nearest branch office for "Standard Specification for the use of White Lead" or "Standard Specification for use of Red Lead."

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