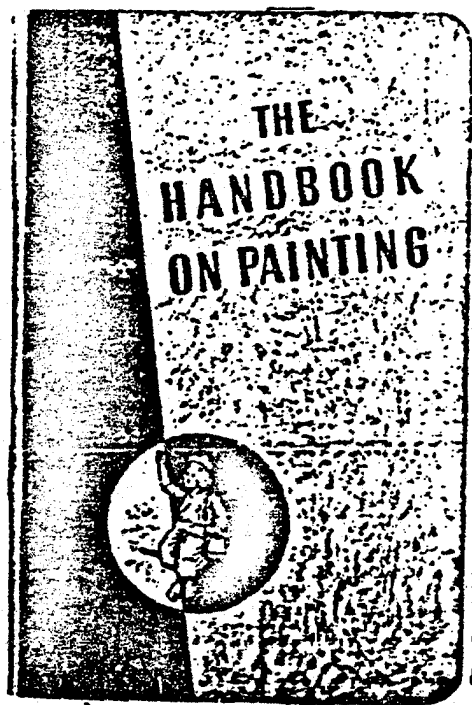


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The HANDBOOK ON PAINTING



NATIONAL LEAD COMPANY

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INTRODUCTION

PAINING is an art that cannot be learned from books.
It requires practice under actual working conditions
combined with study and intelligent observation. This is
why the trained painter gets results that satisfy and please
his customer.

This Handbook on Painting is not designed to convert
an amateur into a skilled painter. Rather it is a storehouse
of practical paint knowledge and, as such, is a valuable
guide and reference work for the painter, the architect, the
builder, the engineer, the building manager as well as for
many other users of paint.

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THE DE LEE BOY TRADEMARK



This famous character is put on our products as a source of identification and as a protection to the buyer. Look for the De Lee Boy trademark as well as the De Lee Boy name. It assures you of high quality products made to fit the needs of the job.

CHAPTER I

Materials for Painting

BEFORE taking up the actual mixing and use of paint, it may be helpful to review briefly the various materials employed in painting. After checking over the information the painter will be able to decide intelligently what is needed to do the best job.

White Lead

White lead is derived from the metallic lead as familiar to everyone. Acids and carbon dioxide gas are used to convert the metallic lead to basic carbonate white lead. This basic carbonate white lead, after a series of grinding and sifting operations, is reduced to an exceedingly fine white powder that, when mixed with the proper liquids, becomes white lead paint—the white lead paint that has been used on houses as long as the colored lead paint.

Pure white lead paint has an excellent and well-earned reputation for durability. The surface it stands up steadily against the attacks of weather and wears down slowly by a very gradual chalking of the surface. This leaves an ideal surface for repainting, free from cracking, scaling or other defects that might interfere with the proper application of new paint. The cost of repainting is thereby reduced substantially because lessening of the remaining old paint, necessary when the old paint has a hard, leathery surface.

The intrinsic white lead is desired for its unique resistance and solid basis of finish. Also, the durability of white lead paint enables it to stand up under frequent washing—a big saving over in such places as hospitals and hotels.

Soft Paste and Heavy Paste—These two paste white lead is usually made into paint by mixing with oil—either linseed, lead stearic or flax oil—and in some cases thinner and driers before it is ready to brush on the surface.

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MATERIALS FOR PAINTING

The paint is sold in two forms - soft and heavy. These terms refer to the paint's consistency. Both forms are ground in oil but the soft paint has thinner added and is more quickly mixed into paint than is heavy paint. The finishing paint, however, is exactly the same as before use.

Dutch Boy put in white lead may be cleaned at practically any time without paint. It is sold in the pound and comes in 100, 25, 25 and 125-pound packages.

Dutch Boy Pure White Lead Paint In addition to the pure form, Dutch Boy white lead is also sold as a paint already mixed. It is the same pure white lead mixed with the proper amount of oil, thinner and driers to make it ready for the brush.

There are two forms - an exterior primer and an outside white - especially designed for use together. They make a combination that in surface hiding is unsurpassed by any



Figure 1

MATERIALS FOR PAINTING

known combination on the market and that, even on iron, will produce a sparkling white job in two coats.

Dutch Boy Pure White Lead Paint is the exterior use. While it comes only in white it can be tinted with Dutch Boy colors in oil just as can paint made with pure white lead. It is sold in 100 size - quart, gallon, five gallon and twenty gallon.

Red Lead

Metal surfaces that are subject to rust and corrosion should be painted with red lead paint. Red lead is a paint prepared from metallic lead through heating processes that oxidize the metal and turn it to the bright orange color so frequently seen on metal structures. Protecting exposed iron and steel with at least two coats of pure red lead paint is a proved and tested method of preventing loss and decay.



Figure 2

MATERIALS FOR PAINTING

tection from rust. Whether it is a rusty ledge or a small metal surface around the house, red lead will save it.

Dutch Red lead is available in both paste and wash to suit taste. The former is sold in 50, 25 and 12 1/2 pound packages. The wash to use red lead may be obtained mixed with linseed oil. This is known as Dutch Red Lead and comes in one, two and three gallon containers. Ready mixed red lead paint also comes in quart, pint and half pint sizes. Dutch Red Lead comes in two types: Dutch Red Quick Drying Red Lead, which dries for covering in from four to six hours, and Dutch Red Semi Quick Drying Red Lead which dries for covering the following day. Both are packed in convenient size containers.

Red lead may also be obtained in dry form in 50, 25 and 12 1/2 pound packages and in 1000 pound casks.

Oils

Paste when lead is mixed with oil to make paint. For the average exterior job on a wood surface the oil used is pure linseed oil. The exterior masonry surfaces Lead Whiting Oil is recommended and for interior surfaces either Lead Whiting Oil or Flaxing oil should be used with the white lead.

Linseed oil when mixed with white lead produces a glassy paint for exterior use. The customers that paint for interior work or make to mix with white lead with either Lead Whiting Oil or Flaxing oil. If a high gloss is desired on any interior surface a prepared enamel should be used.

Linseed Oil The linseed oil used with white lead should be of the best quality because poor oil will reduce paint life. Dutch Red Linseed oil is especially manufactured to insure the utmost high quality and is sold in one and two gallon containers that are sealed at the factory. Two forms are available: raw and boiled. Both are pure linseed oil but differ somewhat in their characteristics.

MATERIALS FOR PAINTING

Raw Linseed Oil Dutch Red raw linseed oil is prepared from selected flaxseed, aged and well stirred to clear out the "floats" or pits like matter above present in fresh oil. White lead paint mixed with raw linseed oil will dry to itself if given enough time. However, this is seldom practical and therefore driers are added to the paint to speed up drying.

Boiled Linseed Oil To make Dutch Red Linseed oil the raw linseed oil described above is combined, at the factory, with certain drying compounds in the presence of heat. Since boiled oil already contains drying agents, it is not usually necessary to put additional driers in the paint when boiled oil is used.

Lead Whiting Oil Dutch Red Lead Whiting Oil, when mixed with white lead in the proper proportions, makes the paint that can be used on exterior as well as interior surfaces.

The surfaces of brick, concrete or stone the sealing properties of Lead Whiting Oil stop the surface surface and keep

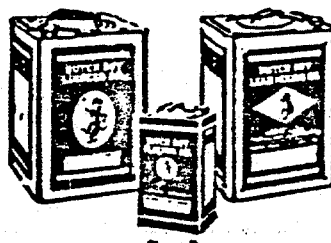


Figure 2

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MATERIALS FOR PAINTING

not dampness and moisture. Furthermore, white lead and Lead Mixing Oil has the same wear and tear of finish characteristic of all white lead paint, whether exposed to weather or not made.

White lead and Lead Mixing Oil can be used for all coats on plaster and masonry. It seals the surface and provides a finish with the appearance of having that rich white lead flat gloss. It makes an excellent undercoat for an enamel finish.

Thick Lin Lead Mixing Oil can be purchased in one and two gallon cans.

Finishing Oil Thick Lin Finishing oil is a special vehicle intended for mixing with white lead to produce a flat paint that can be applied to a sharp texture. It also can be mixed with color to make an excellent stain for wood. In addition it is a good glazing liquid and in the proper ratio to use with white lead and coloring for plastic paint. Thick Lin Finishing oil is packaged in quart, gallon and two gallon cans.

Stain

Thick Lin liquid stain was developed especially for use in white lead paint. Its formulation is properly balanced

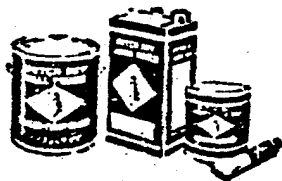


Figure 1

MATERIALS FOR PAINTING

to bring about efficient drying of the paint and it is almost uniform in strength and quality. Colors in half-pints, pints, quarts and gallons.

Colors

The materials used for tinting white lead paint are known as colors in oil. These are various color pigments such as, yellow, green, brown, red, blue and black, ground in linseed oil to make a paste. This paste is of such a soft buttery consistency that it can be readily stirred into the white lead paint.

Thick Lin colors are carefully manufactured to produce clean, clear tints. They are also high in tinting strength so that a little goes a long way. And to make sure that they will stir into the paint easily and quickly they are ground exceedingly fine in pure linseed oil and then combined with a small amount of volatile thinner.

Thick Lin colors can be purchased in half-pints, quarts and gallons. Some of the commonly used colors are also available in tubes holding about two liquid ounces.

Detailed instructions on tinting, together with various color formulas, will be found in Chapter III starting on page 21.

Wall Primer

Walls of plaster or masonry that have excessive cracks and have not been previously pointed can best be sealed with Thick Lin wall primer. Not only does this Thick Lin paint product stop the surface cracks and seal the cracks but it binds the surface as well. It is a water and a paint coat combined that provides an ideal foundation for the succeeding coats of white lead flat paint.

It is sold in quarts and gallons as well as in three-gallon kits and two-gallon drums.

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MATERIALS FOR PAINTING

Volatile Thinner

The term volatile thinner refers to the liquid portion of the paint that evaporates before the paint dries. It performs a very useful function in making paint brushable. For example, a combination of one and one-half gallons of linseed oil and one hundred pounds of white lead is too spread for the second coat as soon as it is produced a sufficiently hard film. Yet this mixture by itself would be entirely too heavy to brush. When one and one-half gallons of turpentine are added, however, the paint can be easily spread and the resulting paint film, after it has dried, will still contain the proper proportions of white lead pigment and linseed oil.

Turpentine, derived from the pine tree, is one of the most widely used thinners. It is sold by every white lead dealer.

Varnish

Varnishes may be roughly classified in two groups: spirit varnishes, which are solutions of gum or resin in volatile solvents, and oil-soluble varnishes, which are combinations of resins and drying oils, also in volatile solvents.

A common example of a spirit varnish is shellac. Shellac is made from the hardened secretions of a tree, when properly applied, is a very satisfactory and durable surface finish. Most stains cover two types, orange and white. The latter, being much lighter, is used for work where the darker orange color might be objectionable. Seven ounces carry the 1 pound oil, which means four pounds of shellac gum in a gallon of denatured alcohol.

Oil-soluble varnishes are made for various purposes. Spirit varnish is the most generally applied to those resistant to surface exposure. However, there are only a few types in quality among varnishes on the list made in to

MATERIALS FOR PAINTING

which a reputable brand and follow the manufacturer's recommendations as to the product's use.

Clear varnish is not as satisfactory as paint for extreme exposure on surfaces that are not to be frequently handled. Exposed to weather, varnish soon turns to glass and compared to white lead paint, its life is short.

Enamel

The characteristics of any enamel finish are smoothness and hardness. The degree of gloss is determined upon the type of enamel used and there are several variations available. The interior work, where a gloss finish may be desired, an enamel should always be used rather than a linseed oil paint.

Enamel should be applied over a flat paint such as is produced with white lead and lead flaking oil. The surface should also be well rubbed before enamel is applied.

Stains

There are several types of stains classified according to the vehicle or liquid used.

Aluminum stain is an effective preservative but once it has been used the surface cannot be painted satisfactorily with a light colored oil paint. It kills the stain with "lead" flaking and discolors any paint applied over it. This is true even when the old stain is well weathered.

Oil stain is generally most satisfactory for either exterior or interior use. It is durable and can be painted over if it is desired to change from a stained to a painted surface. For the exterior, use a mixture of three parts Dutch Boy Lead Flaking Oil and one part Dutch Boy Linseed Oil. For the interior, use, if preferred, one part turpentine and two parts Dutch Boy linseed oil.

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MATERIALS FOR PAINTING

SINGLE STAIN CLEAR FINISHES

Quantities of Dutch Boy colors in oil per gallon of liquid

Gray	Dark Green
2 1/2 lb. white lead	1 1/2 pt. carbon chrome green
1/2 lb. black lead	Red Brown
1 pt. turpentine	1 pt. red oxide
1 pt. red brown	Golden Brown
1 pt. black lead	1 pt. red oxide
1 pt. carbon chrome green	1 pt. red oxide
1 pt. red brown	1 pt. red oxide

Straight Dutch Boy flatting oil is an excellent vehicle for an interior woodwork stain. A mixture of one part Dutch Boy red brown and one part turpentine and one half part Dutch Boy liquid drive may also be used. Values formulas for oil stains will be found on page 161.

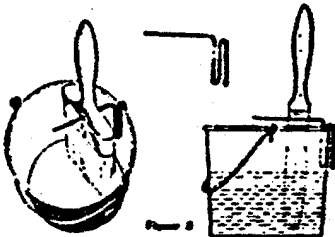


Figure 1
"Brush-dipper" consisting of a 3/4-gallon white lead pail partially filled with turpentine or kerosene. The brush is dipped into the liquid to a depth of a few inches and then shaken to remove the excess.

MATERIALS FOR PAINTING

The use of preservative stains, like water stains or oil stains, is usually confined to inside woodwork and furniture. In this type of stain, the dye used to reproduce mahogany or walnut will bleed through oil paint. Two thin coats of good shellac applied before any painting is done will usually prevent such trouble.

Brushes

Get good brushes and then keep them clean. In purchasing a brush, see that it is well bristled and that the bristles are springs. A poorly made brush will neither hold paint nor distribute it evenly. This is the disadvantage of having a cheap brush with the intention of throwing it away when the job is finished.



Figure 2
Left to right: 2 inch varnish brush, 2 inch paint brush, 1 1/2 inch paint brush, 1 inch paint brush, 1/2 inch paint brush, 1/4 inch paint brush.

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HOUSEHOLD FOR PAINTING

The secret of keeping a brush clean is to move for the paint or wash due to it. When this happens it is very difficult, and often impossible, to clean the brush properly. During the course of a job, every brush out of use for more than an hour or so should be put in a "brush keeper". A simple type is shown in Figure 5. When the job is finished, clean the brush in turpentine or kerosene. A brush used in shellac should be thoroughly cleaned with denatured alcohol immediately after use. If the brush has been used in alkyd paint, turpentine or kerosene may be used to clean it with better results.

If the brush is not going to be used for some time, it is good practice to suspend the above procedure. Wash out the brush with a soap solution made with ordinary yellow laundry soap, clean with clear warm water, and

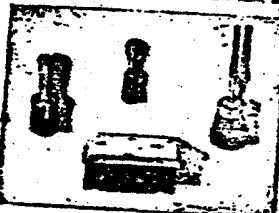


Figure 5
A simple brush keeper. Upper row, left to right: 1. hole and 2. hole around handle, painter's choice. Lower row, yellow laundry soap.

HOUSEHOLD FOR PAINTING

after the brush has thoroughly dried, wrap the handle in paper to keep out dust and dirt. It is also important to select a brush that is the right size for the job. A long one is used on doors and brush on large surfaces not only wastes money but it also prevents proper spread of the paint. On the other hand, the edge of a large brush will be squelched to move the excess edge to point to small surfaces that should be done with a one or two inch brush.

Putty

Putty is a very important part of the painter's kit. Poor quality cover material is to called upon to patch the wall holes, cracks, corners made and other defects. These can be filled in with putty and when painted over, will be completely hidden.

The type or grade of putty is important. For the work on such surfaces as interior trim, ceiling, but the best when used putty should cover by good. The cheap type of putty, made with double dust or such products, will, are not suitable for use just due to its poor quality. This kind of putty will always crack, and therefore the paint.

While best putty can be made, made by using shellac and good white lead and fine talc. Wash the talc in denatured alcohol, leaving the water with the brush or even so it is the easiest to handle. The weight of talc required will be about one-third that of the white lead putty.

Another good white lead putty recipe contains two white lead and more talc than is given in the above formula.

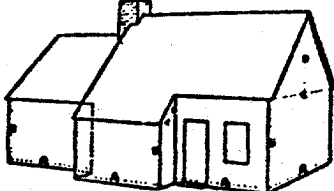
If putty has dried out or hardened in the container it can be softened up by mixing for a small quantity of kerosene oil. Never use a petroleum oil for this purpose.

Putty should be kept in an airtight container which should be dried or made so. For grade of a month or two putty will stay soft if kept under water.

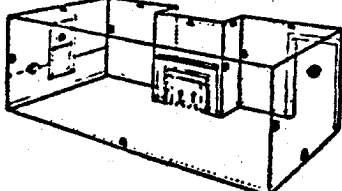
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HOW TO MEASURE SURFACE AREAS



Multiply 6 x 11 for square feet area of each section of house. For gables, multiply their widest part in feet (11) by half the height (11). Add together all these square foot figures to obtain the total area to be painted. For roof, square one gallon of paint for each 200 feet of roof width area.



Multiply the area of the (1) measurements in feet by the height of walls in feet (11) to get the square foot area of the wall surfaces. For the ceiling multiply length by width. From the total deduct the square foot area of doors and windows (11). For chair rail (11), baseboard, window frames and similar trim, measure the number of running feet and allow about one pint of paint per hundred feet.

CHAPTER II

Estimating Amount of Paint

To determine how much paint will be required for a given job it is first necessary to measure the number of square feet in the surface to be painted. The accompanying diagrams show how this can be done for both the exterior of a building and the rooms inside a building.

The conversion of this data into gallons of paint is done by dividing the total area of each type of surface (clapboard, wood shingles, plaster, concrete and so on) by the number of square feet each gallon of paint will cover. The spreading rates will be found in Chapter IV under each surface section. Of course, as will be seen, the spreading rate figure varies for the different surfaces and for the different coats. This is because surfaces differ in the degree of absorption and also in smoothness. For example, plaster absorbs paint and metal does not; the rough surface of a wood shingle takes more paint than the same area on smooth clapboard.

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FROM PASTE TO PAINT IN TWO SIMPLE STEPS



Figure 10

Stir the paste enough so
that it is one-fourth liquid
and three-fourths solid. Add
the liquid called for by
the formula. Add water
if desired.

A THOROUGH STIRRING AND THE MIXTURE LEAD PAINT IS READY



Figure 11

NOTE: Pour off the mixture completely all over
again on top of paint. PAINT. Pour back the
liquid, a little at a time, stirring it in thoroughly.

CHAPTER 100

Mixing and Tinting Paint

LEAD paint is heavy, weighing from sixteen to twenty
pounds to a gallon, so make sure that the mixing
bucket is stout enough. It should hold at least a fourth
more than the quantity of paint you expect to make and it
should be clean and free of grease. Never use a wooden
bucket that has held butter or food because there is no way to
remove all of the grease.

A good paddle is also needed. This can be made from
three-quarter inch wood of suitable width cut to a con-
venient length and well rounded up.

Mixing White Lead Paint If you are making paint from
paste white lead all you need
to do is shown in Figure 10. Put in the oil and thinner
called for by the formula, a little at a time.

The procedure is better with Dutch Boy Pure White Lead
Paint as illustrated in Figure 11. Use of this method will
save time in thoroughly incorporating the ingredients.

Mixing Red Lead Paint Paint can be mixed from paste
and lead in the same manner
as that given for paste white lead.

Dry red lead can be mixed into paint by using the fol-
lowing procedure: Into one quart of linseed oil, mix twenty
pounds of dry red lead, a little at a time. Allow this paste
to stand for several days before then add another quart of
linseed oil and stir thoroughly.

A few hours before you are ready to apply the paint,
add to one quart of a mixture consisting of two-thirds
turpentine and one-third drier. The total yield using the
above quantities is about one gallon.

Mixing Plastic Paint If the plastic paint is being made
with white paste, first stir the white
paste with all the flaking oil over Formula 234, page 485.

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MIXING AND TINTING PAINT

and mix thoroughly with the white lead. Then add the dyes and work turning colors as may be required.

If heavy paste white lead is used, mix half the flaking oil into the white lead and use the remainder to thin the coloring. Then mix the two batches together thoroughly, adding the dyes and colors in oil.

Use Sufficient Paint Be sure to mix enough paint to do the job, particularly if it is a tinted paint. Reference paste white lead paint, regardless of its color or its formulation, is always suitable for odd jobs.

Coated portions of paste white lead or red lead can be kept soft and free from dust if a wet cloth is kept on the surface of the lead and the top kept tightly covered. The lead should first be scraped down from the sides of the tray. Of course, the water should be removed before the lead is again stored.

Straining Paint

Straining freshly mixed paint improves its brushing qualities and, in the case of tinted paint, it prevents the possibility of color streaking. With paint that has stood for some time it removes dust and hardened particles.



Figure 10

Straining paint through cheesecloth.

MIXING AND TINTING PAINT

A section of four mesh wire screening makes a handy paint strainer. On a piece of double cheesecloth will serve equally well. The wire screening can be used again and again if it is rinsed in thinner immediately after use.

Tinting Paint

White lead paint can be colored to a wide range of shades and tones, through the use of colors in oil. A list of the possible colors are suggested in the formulas starting on the next page. These are based on the use of thick fine colors, which are particularly designed for the colorist and efficient tinting of white lead paint.

While it is the best practice to tint before all of the liquid has been added to the paint, thick fine colors are so manufactured that they can be added even when the paint has been completely thinned.

Always add small quantities of color at a time and store the color in completely. This not only prevents lumping, but also avoids the addition of too much color. Put in a little color, mix thoroughly, then check with the color that is being matched.

If you get a color too dark it can be lightened only by adding more white paint and this will usually result in having too much paint for the job. This is why it is so important to use color as directed above.

The simplest colors to mix are those made with only one color in oil. If two or more are called for, follow the relative proportions given in the formula as you mix in the colors, a little at a time.

Tinting Printing Color Even when the finish is to be white, the addition of thick fine colors to the printing paint improves the final appearance of the job. Use about one-eighth pint each of color to every two gallons of paint.

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FORMULAS FOR INTERIOR COLORS
 1 lb liquid color covers 2 1/2 sq yd on 1/2" fabric

EX-109	BUICK BOY COLONIS 16 004	Quantity Per 100 lbs of Shank Lard
SHADOW BLUE	Not a Bay Shoe	2 1/2 Pk
LT. GREEN BLUE	C P Chrome Green Dark	1 1/2 Lb
	C P Premium Shoe	1 1/2 Lb
NAVY BLUE	Dark Bay Shoe	2 1/2 Lb
	See Under Lampshade	1 1/2 Lb
FOG GRAY	See Under Lampshade	2 Pk
SLATE GRAY	Lampshade	2 Pk
	Under Red	1 1/2 Lb
SAGE	See Under C P Chrome Green Dark	1 1/2 Pk
GLD OILED	C P Chrome Green Dark Green	2 Pk
GLD OILED	C P Chrome Green Dark Green	2 Pk
GRAY OILED	C P Chrome Green Dark Green	2 Pk
EMERALD GREEN	See Under	2 Pk
BUCKRAM	C P Chrome Green Dark	2 Pk
WINE	Dark Green	2 1/2 Lb
	Under Red	1 1/2 Lb
	Vermilion Red	2 Pk
APPLES OF SHIRAZ	Vermilion Red	2 Pk
	Dark Under	2 Pk
IRISH TROUS	Dark Under	2 Pk
BRIGHT PINK	C P Chrome Yellow Orange	2 1/2 Lb
	Under Red	2 1/2 Lb
SALE PINK	Vermilion Red	2 Pk
PLACID	C P Chrome Yellow Orange	2 Pk
MAINT BUFF	See Under New Under	2 1/2 Lb
LIGHT YELLOW	C P Chrome Yellow Orange	2 Pk
	C P Chrome Green Dark	2 1/2 Lb
YELLOW TALLIP	C P Chrome Yellow Orange	2 Pk
YELLOW TALLIP	C P Chrome Yellow Orange	2 Pk
PINK TAN	French Green	2 Pk
	Dark Under	2 Pk
GRASS	See Under Dark Under	2 1/2 Lb
WHEAT	See Under	2 Pk

PREPARING THE SURFACE

over an interior surface. In all cases the systematic use of the mandrel should be followed as to the use of the scraper. Caution should be exercised to avoid using a non-adhesive paint remover to sand.

Always wash the surface carefully with kerosene or turpentine after using removers to be certain that all residue is removed.

Scraper and Wire Brush. The scraper, either power or hand, is frequently used to remove the previous finish on surfaces such as floors. Scraping is also a method of removing rust and scale from metal surfaces, usually in conjunction with a chipping hammer. Next, when these or concrete surfaces are usually wire brushed to remove old coatings. The use of the wire brush either hand or power driven, is also one of the most thorough ways to remove scale, old paint and corrosion from metal surfaces.



Figure 10
Correct method of holding the brush.

AND APPLYING THE PAINT

Sand Blasting. This is an efficient method of surface preparation for metal surfaces. It takes off every bit of foreign matter, even mill scale, and leaves the surface in ideal condition for painting. Of course, it requires special equipment and is sometimes difficult to use on certain types of structures.

Washing. Surfaces that have been sanded should always be thoroughly washed to remove the old coating before repainting with an oil paint. The washing solution should be hot for best results.

Some paints can be softened up with a hot washing powder solution for removal with a scraper or stiff brush although it is a difficult job to get all the paint off. Leaving over some paint may result in peeling trouble later on.

Washing with a soap powder solution or with a prepared paint cleaner is also a common method of cleaning a surface for repainting. This is true of exterior as well as interior surfaces. In those days of old houses and heavy automobile traffic the exposure of houses to salt built up on exterior walls, accumulates a heavy deposit of grease and, likewise, interior walls, particularly those in kitchens, accumulate dirt and grease.

Paint Application

There are certain general facts about the application of paint that should be remembered no matter what is being painted. For example, no surface should be painted while it is wet or damp. The correct process surfaces, not painted, painted several days of clean, dry weather should provide application of the best way to make sure all moisture is removed.

Painting should not be done under extremely cold, frosty or damp conditions. If outside painting is necessary in these, thinner grounds when the weather is clear.

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PREPARING THE SURFACE

and the surface is dry. There is no danger in painting during extremely hot weather unless the air is too humid. Time between coats should be sufficient to ensure complete drying and a firm film. The various woods, such as spruce, require time between coats is required. A good test for adequate drying is to rub the surface with a sandpaper. If the sandpaper does not chip up with paint, the surface is ready for the next coat.

Brushing the Paint Brushwork is an extremely important factor in every paint job. It influences not only the final appearance of the job but the durability and life of the paint coating as well.

All paint or other coating materials should be applied as on the inner and outer spread and the proper film thickness. What this proper thickness should be is determined both by the purpose of the paint and its brushing characteristics. Of course, the brushing technique to be used is influenced by all of these factors.

When lead paint for exterior use should be applied with a full brush. If a three coat job is being done the paint should be brushed out well to form moderately thin coats, re-brushed and then brushed up with light strokes. On two coat work, the priming coat should be applied more freely with moderate brushing and allowed to level out.

A white lead flat paint should be applied with a minimum of brushwork. The usual method is to lay on the paint quickly with a fairly full brush over a square yard or less of surface. Then with light strokes, cross brush just enough to spread it uniformly. The paint should be practically dried on the surface, to reduce brushmarks.

Lead paint should be applied in a thin film over a well-buffed surface. Both enamel and varnish are applied in thin coats and should be brushed over with light brushwork. Just enough brushing to spread the coating evenly and avoid excessive thick-

AND APPLYING THE PAINT

ness of the film will produce a good job. The enamel or varnish has a natural tendency to smooth out.

Stellar and brushing technique set up even more quickly than flat paints and enamels. Consequently they should be applied rapidly with a full brush.

Number of Coats The number of paint coats to be put on a surface can be generally stated as three coats on a previously unpainted surface and two coats on repainting work. However, there are exceptions to this recommendation.

For example, on unpainted exterior wood white lead jobs are being done today in two coats as well as in three coats. Of course, if good results are to be expected with two coats the paint has to be properly designed to give the necessary added volume and binding. The recommendation of that the Pure White Lead Interior Primer and that the Pure White Lead-Exterior White is designed for this very purpose as are the pure white lead formulas, 1d and 1e.

Two coat work is also done on unpainted exterior wood work, but for the best type of flat work or where an enamel finish is desired, three coats should always be used.

On unpainted exterior plaster, a two coat job should always be primed with that the Wall Primer which is a white and paint coat combined. However, experience has shown that three coats of paint on unpainted plaster are more satisfactory both for beauty and for durability.

In the case of iron and steel three coats are always recommended for permanently unpainted surfaces. In fact, four are required if the metal is subject to undercoating treatment.

IMPORTANT NOTE

All white lead and leaded oil formulas in this Handbook are based on the use of white lead and are not. If heavy paint is used, add 1 quart of turpentine to all formulas. When leaded based oil is used, add 1 quart.

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ASBESTOS CEMENT SHINGLES

ASBESTOS CEMENT SHINGLES

REPAIR PREPARATION:

Surfaces should be treated with a stiff brush to remove loose dirt and dust.

Surfaces should be completely dry. Painting should start on previously unpainted shingles only after and during a spell of clear, dry weather.

All loose paint should be removed. If the paint is cracking and scaling all of the paint should be removed.

PAINT APPLICATION:

Repainting asbestos cement shingles for 1-2 coats. Use Formula 134 as first coat. Follow with Formula 134 or 135. Formula 134 (Glass Finish) or Formula 135 (Glass Finish) as second coat. Repainting asbestos cement shingles: Prime or 1-2 coats. Use Formula 134. Follow with Formula 134 as second coat. Use Formula 134 (Glass Finish) or Formula 135 (Glass Finish) as third coat.

* If desired, Black Box Flat White Lead Paint should also be used instead of Formula 134.

SURFACES		FORMULAS		
		134	135	136
Black Box White Lead	gal.	100	100	100
Black Box Lead Oxide	gal.	2 1/2	2 1/2	2 1/2
Black Box Lead Oxide	gal.	1	1	1
Black Box Lead Oxide	gal.	2 1/2	2 1/2	2 1/2
Quantity of Paint Produced by 10 Gallons of Flat White Lead		100	100	100

Formula 134 is a white paint with a glass finish. Formula 135 is a white paint with a glass finish. Formula 136 is a white paint with a glass finish.

BRICK, STUCCO, CONCRETE & STONE

BRICK, STUCCO, CONCRETE AND STONE

REPAIR PREPARATION:

Surfaces not previously painted should be treated to remove all dirt and loose material.

If surface has not been exposed to air at least six months it should be washed with a solution made in the proportion of 2 pounds of zinc sulphate to a gallon of water and then allowed to dry thoroughly before painting.

Surfaces previously painted with an oil paint should be treated to remove all loose paint. All cracks or holes should be repaired with Portland cement or suitable material.

* If desired, Surfaces of masonry construction should also be treated with oil paint. A coat of oil paint will prevent the oil and water from the masonry reaching the surface of the paint.

PAINT APPLICATION:

Repainting Brick, Stucco, Concrete and Stone. When an oil paint has been previously used,* all prepared surfaces should first be spot primed with Formula 134 and allowed to dry. Then use Formula 134 as first coat for entire surface. Follow with Formula 134 (Glass Finish) or Formula 135 (Glass Finish) as second coat.

ALTERNATE: If Black Box Lead Oxide is used instead of Formula 134, then use Formula 134 as first coat for entire surface. Follow with Formula 134 (Glass Finish) or Formula 135 (Glass Finish) as second coat.

* If the previous paint was a water paint, then all of the old paint should be removed and the surface treated with oil paint.

* If desired, Black Box Flat White Lead Paint should also be used instead of Formula 134.

SEE FORMULA TABLE ON PAGE 151

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BRICK, STUCCO, CONCRETE & STONE

Expenditure Common Bricks: Prime with Formula 9d. Follow with Formula 10d as second coat. Use Formula 11d (Flat Finish) or Formula 1d (Glass Finish) as third coat.*

ALTERNATE FLAT FINISH COAT: (1) Duck Bay Lead Wearing Oil is not available: Use Formula 21d.

Expenditure Face or Hardened Bricks: Prime with Formula 12d. Follow with Formula 1d as second coat. Use Formula 11d (Flat Finish) or Formula 1d (Glass Finish) as third coat.*

ALTERNATE FLAT FINISH COAT: (1) Duck Bay Lead Wearing Oil is not available: Use Formula 21d.

Expenditure Stucco, Concrete and Stone: Prime with Formula 13d. Follow with Formula 1d as second coat. Use Formula 11d (Flat Finish) or Formula 1d (Glass Finish) as third coat.*

ALTERNATE: (1) Duck Bay Lead Wearing Oil is not available: Prime with Formula 21d. Follow with Formula 1d as second coat. Use Formula 21d (Flat Finish) or Formula 1d (Glass Finish) as third coat.

*If Duck Bay Lead Wearing Oil is not available, use White Lead Paint-Double White as second coat of Formula 1d.

BRICK, STUCCO, CONCRETE & STONE

MATERIALS		FORMULAS				
		30	45	50	55	100
Duck Bay White Lead	lbs.	100	100	100	100	100
Duck Bay Linseed Oil	gals.	2	2	2 1/2	3	3
Pure Turpentine	gals.	1	1	1 1/2	2	2
Duck Bay Liquid Soap	gals.	1	1	1	1	1
Duck Bay Lead Wearing Oil	gals.			1/2		
Galons of Paint Produced		7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
Sq. Ft. Covered Per Gal. 1 Coat		100	100	100	100	100

MATERIALS		FORMULAS				
		100	100	100	100	100
Duck Bay White Lead	lbs.	100	100	100	100	100
Duck Bay Linseed Oil	gals.	2	2	2 1/2	3	3
Pure Turpentine	gals.	1	1	1 1/2	2	2
Duck Bay Liquid Soap	gals.	1	1	1	1	1
Duck Bay Lead Wearing Oil	gals.			1/2		
Galons of Paint Produced		7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
Sq. Ft. Covered Per Gal. 1 Coat		100	100	100	100	100

100 sq. ft. which would be given independent estimate, depending on work

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INTERIOR WOODWORK

INTERIOR WOODWORK

GENERAL PREPARATION:

New woodwork should be unadorned smooth and doweled before painting.

Painted or varnished woodwork, if the old finish is in good condition, should be cleaned. All grease or dirt should be washed off with soap powder or paint cleaner, and any wax removed with benzene. The wood oak should then be sanded down with 20 or 30 sandpaper. If the surface is cracked, checked or scaled remove the old coating down to the wood with paint remover.

If woodwork was previously stained multi-pens or walnut stain it will be necessary to apply two thin coats of primer paint before painting to avoid the possibility of the dye in the stain from bleeding through the paint.

PAINT APPLICATION:

Repainting: Use Formula 54 as the first coat, 5-Flow with Formula 54 (1st Finish) or Formula 57A (Stain-Resistant Finish) as prepared enamel as second coat.

REPAIRS: If Dutch Boy Lead Mixing 4th is not available use Formula 24 as the first coat. Follow with Formula 24 (1st Finish) or Formula 24 (Stain-Resistant Finish) as prepared enamel as second coat.

Threading and Wash-Down: Prime with Formula 54 as 1st, follow with Formula 54 as second coat. Use Formula 54 (1st Finish) or Formula 57A (Stain-Resistant Finish) as prepared enamel as third coat.

REPAIRS: If Dutch Boy Lead Mixing 4th is not available Prime with Formula 54 as 1st, follow with Formula 24 as second coat. Use Formula 24 (1st Finish) or Formula 24 (Stain-Resistant Finish) as prepared enamel as third coat.

INTERIOR WOODWORK

Threading and Wash-Down: Prime with Formula 54, Use Formula 54 (1st Finish) or Formula 57A (Stain-Resistant Finish) for a second coat. NOTE: The above coat specifications should always be followed if a prepared enamel is to be used.

MATERIALS	FORMULAS									
	54	57A	57B	57C	57D	57E	57F	57G	57H	57I
Dutch Boy White Lead	100	100	100	100	100	100	100	100	100	100
Dutch Boy Linseed Oil	10	10	10	10	10	10	10	10	10	10
Pure Turpentine	10	10	10	10	10	10	10	10	10	10
Dutch Boy Lead Base	10	10	10	10	10	10	10	10	10	10
Dutch Boy Lead Mixing Oil	10	10	10	10	10	10	10	10	10	10
Dutch Boy Zinc Oxide	10	10	10	10	10	10	10	10	10	10
Versol	10	10	10	10	10	10	10	10	10	10
Colony Paint Products	10	10	10	10	10	10	10	10	10	10
By Pt. Covered For Gal. 1 Coat	100	100	100	100	100	100	100	100	100	100

Special Finishes for Interior Woodwork

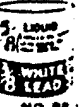
Antique: First paint the woodwork according to the previous list finish specifications. The final coat should be tinted to the desired color desired. Small pieces to be painted although other colors such as green may also be anticipated. After the final coat of paint is completely dry, brush on a glass made by mixing a quart of Dutch Boy Flatting oil with one half pint liquid mixture of Dutch Boy Lead Base. Keep the glass well stirred in the container as the color will settle out. Before the glass sets up wipe it off the painted parts of the trim with cheesecloth.

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Volume Mixing Directions DUTCH BOY SOFT PASTE WHITE LEAD

REPAINT WORK

OUTSIDE WOOD (INCLUDING WOOD SHINGLES)	BRICK, STUCCO, CONCRETE AND STONE	INTERIOR PLASTER, WALL BOARD AND WOODWORK
POST COAT  1. LINSEED OIL 2. WHITE LEAD	POST COAT  1. LINSEED OIL 2. WHITE LEAD	POST AND FINISH COATS LEAD FINISH  1. LEAD 2. WHITE LEAD
FINISH COAT  1. LINSEED OIL 2. WHITE LEAD	FINISH COAT  1. LEAD 2. WHITE LEAD	NO BRICK REQUIRED

NEW WORK

USE PEOPLE FINISHING COAT BELOW FOLLOWED BY TWO COATS MIXED AS PER DIAGRAMS ABOVE

OUTSIDE WOOD	INTERIOR WOOD	LICK	STUCCO, CONCRETE AND STONE	INTERIOR PLASTER AND WALLBOARD
1. Post Coat 2. People Finishing Coat 3. People Finishing Coat 4. People Finishing Coat	1. Post Coat 2. People Finishing Coat 3. People Finishing Coat 4. People Finishing Coat	1. Post Coat 2. People Finishing Coat 3. People Finishing Coat 4. People Finishing Coat	1. Post Coat 2. People Finishing Coat 3. People Finishing Coat 4. People Finishing Coat	1. Post Coat 2. People Finishing Coat 3. People Finishing Coat 4. People Finishing Coat

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INTERIOR PLASTER

INTERIOR PLASTER (ALSO WALLBOARD AND FABRIC)

MAKING PREPARATION:

The new surface is clean and smooth, that there is no remaining grit, loose plaster, grease or surface irregularities. Care should be taken never to scratch or scratch the plaster.

Fill all cracks and holes with patching plaster. Large cracks should be spread up to the full size Figure 151, sealed with care and properly filled.

If surface has been previously scratched, it should be washed with warm water until all the caliche is removed.

Walls previously papered should have all paper taken off and then be thoroughly washed to remove all traces of paste.

NOTE: Painting over wallpaper is not good practice. Should the painted paper later require removal it would be a difficult job to do so without damage to the plaster.

If necessary to paint over wallpaper, be sure there is only one layer on the wall and that this layer is in good condition. Paint will not hold better on surface irregularities. Follow accepted plaster painting directions.

PAINT APPLICATION:

Repainting: 1 or Formula 5d for the first coat. Follow with a second coat according to the finish desired.

First	Second	Third
Formula 5d	Formula 15d	Formula 5d
No. 5d	Primer	Finish
Formula 15d	Formula 25d	Prepared Finish

NOTE: If Dark Dry Lead Using 5d is not available: Primer with Formula 15d or 25d. Follow with Formula 25d as second coat. 1 or Formula 25d (Flat Finish) or Formula 2d (Semi-Gloss Finish) or prepared enamel as second coat.

INTERIOR PLASTER

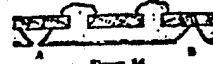


Figure 151

As shown method of setting one plaster crack with the wider part of "V" over to the left. The narrower method.

Three Coat Worked-up Plaster, Wallboard or Fabric: Prime with Dark Dry 5d Primer or Formula 15d. Follow with Formula 5d as second coat. 1 or a third coat according to the finish desired.

First	Second	Third
Formula 5d	Formula 15d	Formula 15d
No. 5d	Primer	Finish
Formula 15d	Formula 25d	Prepared Finish

NOTE: If Dark Dry Lead Using 5d is not available: Primer with Formula 15d or 25d. Follow with Formula 25d as second coat. 1 or Formula 25d (Flat Finish) or Formula 2d (Semi-Gloss Finish) or prepared enamel as second coat.

Two Coat Worked-up Plaster, Wallboard or Fabric: Prime with Dark Dry 5d Primer or Formula No. 5d. 1 or a second coat according to the finish desired. Each coat should be timed to approximate the same rule.

First	Second	Third
Formula 5d	Formula 15d	Formula 15d
No. 5d	Primer	Finish
Formula 15d	Formula 25d	Prepared Finish

SEE FORMULA TABLE ON NEXT PAGE.

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INTERIOR PLASTER

MATERIALS	FORMULAS				
	50	100	150	200	250
Dutch Boy White Lead	Gal.	120	100	100	50
Dutch Boy Lead Slime Oil	Gal.	1 1/2	1 1/2	2	1 1/2
Dutch Boy Filling Oil	Gal.	...	...	...	...
Dutch Boy Wall Paper	Gal.	...	...	...	...
Colors of Paint Produced	...	...	...	...	...
By 10 Gallons Per Cubic Foot	...	...	...	...	...

MATERIALS	FORMULAS				
	250	250	250	250	250
Dutch Boy White Lead	Gal.	100	100	100	100
Dutch Boy Lead Slime Oil	Gal.	...	...	...	...
Pure Turpentine	Gal.	1 1/2	1 1/2	1 1/2	1 1/2
Dutch Boy Lead Slime	Gal.	1	1	1	1
Dutch Boy Filling Oil	Gal.	1 1/2	1 1/2	1 1/2	1 1/2
Thermal	Gal.	1 1/2	1 1/2	1 1/2	1 1/2
Dry Whiting	Gal.	...	...	...	...
Colors of Paint Produced	...	...	...	...	...
By 10 Gallons Per Cubic Foot	...	...	...	...	...

WOOD FLOORS

WOOD FLOORS (EXTERIOR AND INTERIOR)

GENERAL PREPARATION:

New floors should be well-sanded and dusted to remove all dirt and grit.

Floors previously painted should be well-sanded and dusted, if paint is in good condition. Otherwise, remove all the old paint before painting.

FIRST APPLICATION:

Repainting Old Floors: Touch up bare spots with Formula 1st. Follow with Formula 1st as first coat. Use Formula 2nd as second coat.

Impregnated Old Floors: Prime with Formula 1st. Follow with Formula 1st as second coat. Use Formula 2nd as third coat.

Underlaid Parquet Floors: Prime top and groove edges of boards and underside of new parquet floors with Formula 1st or Dutch Boy Pure White Lead Paint (either Exterior Prime or Interior White).

MATERIALS	FORMULAS				
	50	100	150	200	250
Dutch Boy White Lead	Gal.	100	100	100	100
Dutch Boy Lead Slime Oil	Gal.	1 1/2	1 1/2	1 1/2	1 1/2
Pure Turpentine	Gal.	1	1	1	1
Dutch Boy Lead Slime	Gal.	1	1	1	1
Thermal	Gal.	1 1/2	1 1/2	1 1/2	1 1/2
Colors of Paint Produced	...	...	...	...	...
By 10 Gallons Per Cubic Foot	...	...	...	...	...

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ESTIMATION METHOD

Capitated Woods Primer with Dutch Run beyond
Red Lead No. 1 or Dutch Run (about) beyond Red Lead
on Dutch Run some (about) beyond Red Lead. Follow
with Dutch Run beyond Red Lead No. 1 or Dutch Run
about beyond Red Lead on Dutch Run some (about)
beyond Red Lead on second crest and Dutch Run
beyond Red Lead No. 3. Mark as a whole lead point
of the desired cube on third crest.

WORTH ONE VERY LAST STROKE

Regulating Roads: Some prior all have meted with
 Remarks 4:3 no Dutch Bars Lapped Road In. 1 no
 Dutch Bars (near) Having Road Lead on Dutch Bars Some
 Road Having Road Lead. Filled with Remarks 2d on
 Road road. 1 no Remarks 2d on Dutch Bars Mar. 2 later
 Road Point. - Outside 2 later on second road

Reproduced Models: Primer with Formula A-1 on back; Blue Taped Red Lead No. 1 on back; Blue Quick-Drying Red Lead on back; Blue Semi-Quick Drying Red Lead, 1-lb. tin with Formula 2d on curved end; and Formula 41 on back; Blue Paste 3 Red Lead Finishing Powder 3 Red on third end.

* French Flank the Campbell case to add it to the point of
lyric seven. The rule difference and an evening played piano.

[illegible]

NO. 140.-1907 BUREAU REPORT

WITNESSES TO SIGNATURE

IN THE FEDERAL TRIALS

All metal should be allowed to dry thoroughly and then be allowed to remain rust, grease, dirt or loose paint. The iron work the surface should be sandblasted, if possible.

PLANT IDENTIFICATION:

Representing Metal Subject to Endurance Experiments: Two prisms all have metal with which they (first Strong Red Lead, Yellow with three coats* of Black, then (Black Strong Red Lead.)

Impaired Wood Subject to Endocrine Changes: 1 or less cases of each sex (Heart-Disease and End.)

"It is requested order to demand for the bank note, replace the bond and bond note with a similar point, properly secured for satisfaction and I demand that the complainant may be added to alternative order to have the point and I get there. The difference in order with as much the one charged above.

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INTERIOR METAL

INTERIOR METAL

MEAL PREPARATION:

All metal should be thoroughly cleaned before painting to remove rust, grease, dirt or loose paint.

PAINT APPLICATION:

Repainting Interior Metals: Spot prime all bare metal with Formula 5-1 or Dark Gray Liquid Red Lead No. 1 or Dark Gray Quick-Drying Red Lead or Dark Gray Semi-Quick-Drying Red Lead or Formula 5d. Follow with Formula 2nd or best coat. 1 or a second coat according to the finish desired.

Fast	Stove	Stove Stove
Formula 5d	Formula 15d	Formula 16d
Seal-Form	Prime	Finish
Formula 17d	Formula 23d	Prepared Enamel

INTERIOR FINISH COATS: (1) Dark Gray Lead Blending Oil is not available? Use Formula 23d (1st Coat) or Formula 2nd (Semi-Gloss Finish) or prepared enamel as finish coat.

Repainting Interior Metals: Prime with Formula 5-1 or Dark Gray Liquid Red Lead No. 1 or Dark Gray Quick-Drying Red Lead or Dark Gray Semi-Quick-Drying Red Lead or Formula 5d. Follow with Formula 2nd or second coat. 1 or a third coat according to the finish desired.

Fast	Stove	Stove Stove
Formula 5d	Formula 15d	Formula 16d
Seal-Form	Prime	Finish
Formula 17d	Formula 23d	Prepared Enamel

INTERIOR FINISH COATS: See above.

EXTERIOR METAL

MATERIALS	FORMULAS				
	4d	5d	7d	9d	10d
Dark Gray White Lead	100	100	100	100	100
Dark Gray Liquid Red	2				
Pure Turpentine	1				
Dark Gray Liquid Red					
Dark Gray Liquid Blending Oil		100	2		1 1/2
Dark Gray Filling Oil				1 1/2	
Dark Gray Wall Primer					1
Galvanol of Paint Produced	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2
Sp. Gr. Covered Per Gal. 1 Coat	100	100	100	100	100

MATERIALS	FORMULAS				
	10d	15d	20d	25d	30d
Dark Gray White Lead	100	100	100	100	100
Dark Gray Liquid Red					100
Dark Gray Liquid Red	1 1/2				1 1/2
Pure Turpentine			1 1/2	1 1/2	1 1/2
Dark Gray Liquid Red	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Dark Gray Filling Oil		1 1/2			
Enamel		1 1/2		1 1/2	
Dry Blending					
Galvanol of Paint Produced	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2
Sp. Gr. Covered Per Gal. 1 Coat	100	100	100	100	100

CHAPTER V

Interior Decorative Effects

THREE are many decorative treatments possible with paint, other than plain walls, and in this chapter some of the more popular ones are described and illustrated. All are produced with a pound of white lead flat paint with equipment that is both inexpensive and easy to obtain.

Equipment Required A stippling brush is useful for rubbing a plain painted wall so for a blended paint effect. This is a circular brush with long bristles which when tapered across the wall pick up the wet paint as they pass giving the surface a uniform texture without brush marks or other irregularities.

Making tape is very useful for establishing a element two colors than one color is employed. The surface should be completely dry and hard before the tape is applied as the paint may be picked up when the tape is removed. Making tape can be obtained in various widths.

Search for another hand device for the decorator. There can be cut from stencil paper or purchased ready to use from the paint store of stencil manufacturers. For these are a stencil brush is required. This is a round brush with

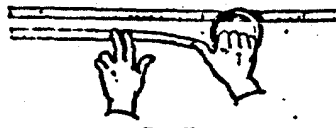


Figure 26

Long making tape to produce blending line. To insure accurate work, make the line on the surface about eight inches long and when tape is removed, the line will be straight.

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INTERIOR DECORATIVE EFFECTS



Figure 26

Hold stencil brush upright as shown. Work in paint by moving a little on a flat surface. Use one of making tape to hold one corner of stencil.

Use thick bristles and is used in the manner shown. A one inch brush is along right for the average size stencil.

Many effects can be made with the use of such inexpensive materials as newspaper, brownish or a sponge.

Stencil Effects

The simplest stencil effect is one where a different colored paint is brushed through the stencil openings onto the dry paint beneath. Removing the stencil leaves the design in the contrasting color as shown in Figure 27. Of course this is only one of an unlimited number of designs.



Figure 27

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INTERIOR DECORATIVE EFFECTS

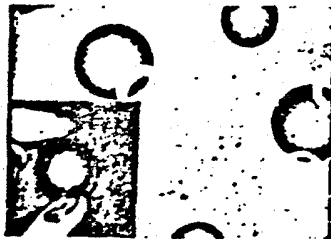


Figure 18



Figure 19

INTERIOR DECORATIVE EFFECTS



Figure 20

Another way to use a stencil is shown in Figure 18. Here the stencil is just a rougher opening and instead of painting over the entire opening the paint is applied only around the edge and then blended off toward the center by tapping it with the stencil brush.

Two further adaptations are shown in which the design is cut on the edge of the stencil. A simple border is shown in Figure 19 and a more elaborate one in Figure 20. A few points of contrasting color is applied and the stencil is removed the design is outlined as shown.

Crumpled Wall Effect

This effect is done over a dry ground but while the top coat of paint is still wet. A card of crumpled newspaper about a foot long is rolled down over the wet paint. As this is done the paper picks up some of the wet color and creates irregular areas of the dry paint beneath, giving a crumpled effect in an interesting design. Only about a third

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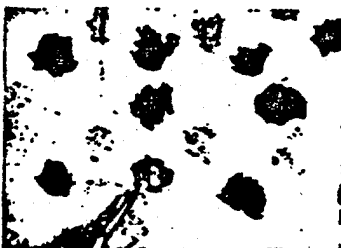


Figure 20

Figure 20. To produce a leafy blend the painted wall, after it is dry, is brushed with a coat of clear thick flax setting oil in strips of about twenty-five square feet. While this oil is still wet the colors to be blended are spread on as shown in Figure 21. The colors in oil should be mixed with enough flaxing oil to make a thin paste.

Use a rod of rheo-helm in a circular or figure 8 motion to blend the colors on the wet wall. Then wipe out high lights here and there and finish by putting the entire surface lightly with rheo-helm to get a smoothly blended effect.

The colors and colors either burnt or raw, are the most frequently used coloring colors. Tintings of other colors are also used sometimes to vary the effect. The ground coat of paint should be a light ivory or cream color for best results.

Figure 21. A blended effect similar in ground appearance to the leafy one is done without the use of flax. Instead, regular white lead flax paint, mixed to the various colors desired, is applied on the wall while the

INTERIOR DECORATIVE EFFECTS

brush coat of paint is still wet. Then the colors are blended together with a stippling brush. In this way the blending can be done without waiting for the ground to dry.

Plastic Finish

A plastic paint is a heavy loaded paint that will produce a great deal of texture and a composition that can be treated in various degrees. White lead plastic paint has a proportion of whiting added to produce the required stiffness. (See formula 22d, page 96.)

After the paint is on the wall it can be treated with a great variety of tools. For example, a sponge, a wheelbarrow, a flat board and a stiff brush are only a few of the objects that can be used. Figure 22 shows a type of design.

A ground coat can be prepared for improved appearance by placing white lead oxide and accelerating the design.

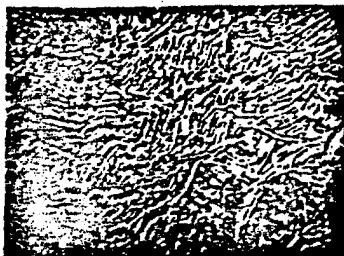


Figure 22

A texture produced by lifting the wet plastic paint with the flat side of a paint brush.

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INTERIOR DECORATIVE EFFECTS

Starching

This is not a decorative effect, strictly speaking, but it is a method used by some decorators to create a completely flat, uniform surface free from "shirts" or shiny spots.

The starch mixture is made as follows: Blend one pound of glass beads, starch, and even starch in a little lukewarm water, add one ounce of powdered alum and three parts boiling water into the solution until it thickens to jelly and becomes clear. Rubbed to brushing consistency with cold water. Apply with a clean four inch wall brush and immediately staple. If the wall has been plastered, add about two square of white soap flake to the above starch mixture.

Cleaning Painted Walls

One of the important advantages of pure white lead flat paint is its durability. Surfaces painted with it can be touched up without apparent injury to the finish, by washing with a good prepared paint cleaner or a soap solution. This is true not only of plain color walls, but also those treated with one of the decorative effects.

Washing a dirty surface should always proceed from the bottom up. If the operation is started at the top, the cleaning solution runs down the wall and leaves streaks on the uncleaned portion that are difficult to remove. Brush or sponge off a suitable section with the cleaning solution, then rinse with clear water. In the same way the adjoining area and so on across the bottom of the section. Then repeat the process on the upper sections.

CHAPTER 10

Handling Painting Trouble

GOOD paint doesn't fail permanently, unless it is improperly mixed, carelessly applied or asked to do the impossible.

To avoid all painting trouble due to improper paint mixture, follow the directions and formulas in this handbook and the thick line words to use points according to directions on the containers.

This handbook also gives certain instructions on paint application that should be followed. However, painted walls cannot replace the skill that comes with experience and, as in all trades, the man who knows his job will do it better than the layman. But even the layman will find that white lead paint is so much improved that serious trouble can be avoided by using it according to recent instructions.

Excessive Weathering One of the impossible things that paint is sometimes asked to do is to stay on a surface where constant moisture is present behind the paint film. This condition will loosen the paint's adhesion to the surface and is responsible for practically all the cause of paint peeling.

Construction Defects Obviously, no surface should be painted while it is wet but very frequently one can trouble occurs after the painting is done on a dry, or at least on apparently dry, surface. The difficulty in these cases can usually be traced to a defect in construction. To give a few typical examples:

1. Lack of flashing on the exterior side of it.
2. Poor fitting of sashes against door and window casings or masonry finish.
3. Improper installation of window frames to absorb moisture.

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AVOIDING PAINTING TROUBLES

1. Nicks on push skirt touching the coil.
 2. Excess air space between coil and floor.
 3. Hollow push rollers without ventilating holes at top and bottom.
- If counter, if any of these or other similar faults in construction are present, they must be corrected to prevent paint failure.

Another way of reporting the impossible is to paint a surface that has previously cracked and sealed, without first removing all of the old paint. The odds are high that any of the old paint still remaining will continue to crack and scale and take the new paint off with it.

AVOIDING PAINTING TROUBLES

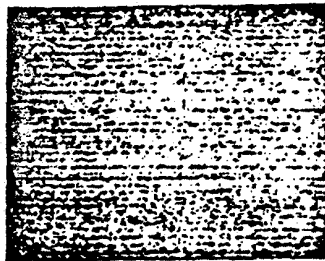


Figure 25

CRACKING

Cracks in the top coat only, which form a small irregular pattern. Such cracking does not detract from the durability and protective value of the paint.

CRACKING

Cracks too soft on undercoat.

CRACKING

When there is drying time between coats, make sure the paint being applied is formulated to produce a film that is no thicker than that of the undercoat.

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AVOIDING PAINTING TROUBLES

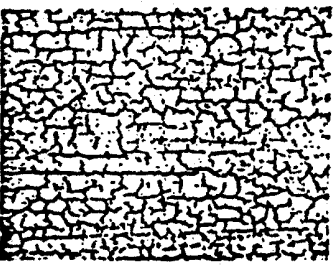


Figure 20

ALLIGATORING

Weak and deep cracks in the painted surface.

CAUSE:

The application of a hard type of paint film over a film that is much softer. The soft undercoat may be the result of improper formulation, the use of a soft drying pigment like yellow ochre, or the use of large amounts of volatile color pigments.

HOW TO REMEDY:

Do not apply a paint that will form a hard film over a paint film that is much softer. Allow ample time between coats for drying and hardening. Before repainting a surface that has alligatored extensively, remove all of the old paint, down to the sand.

AVOIDING PAINTING TROUBLES



Figure 21

CRACKING AND WEAVING

Two defects which, when taken together, is a sure sign of cracking. Cracking is a fissure in the paint film extending clear down to the sand. The paint cracks up at the edges of the cracks, pulls away from the surface and is blown off.

CAUSE:

Paint that has become hard and brittle due to its age or composition so that it can no longer follow the movement of the sand surface underneath.

HOW TO REMEDY:

Use properly formulated white lead paint. It remains elastic and retains its adhesion.

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AVOIDING PAINTING TROUBLES

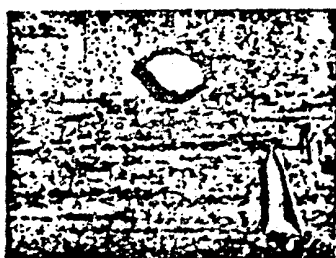


Figure 28

DENTING

Holes in the dry paint film that may eventually break.

CAUSE

Usually, excessive moisture, either present in the wood at the time of painting, or passing across to it at some later time. Heat of the sun, or heat from inside the house, causes the moisture through the wood to the underside of the paint film and loosens the paint's adhesion. If vapor pressure is then built up, blisters are formed.

REPAIR

Make sure that there are no construction faults (see page 51) and that the material to be painted is dry. Before repainting a blighted surface, remove all the old paint.

AVOIDING PAINTING TROUBLES

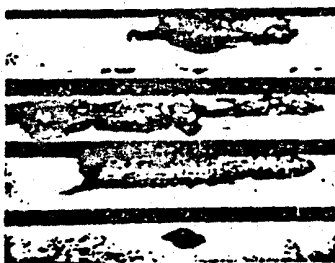


Figure 29

CRACKING

Paint running off the surface in strips or large areas.

CAUSE

It may be the use of the wrong type of paint or poor application on an inappropriate prepared surface. Frequently, it is excessive moisture in the material that is painted that causes the paint to run off the surface of the paint film so that the paint's adhesion is broken and the paint peels off.

REPAIR

Make sure that the material to be painted is clean and in proper condition to receive paint; that it is thoroughly dry, not only on the surface but throughout. If there are any construction faults (see page 51) the proper repairs should be made.

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AVOIDING PAINTING TROUBLES



Figure 20

WATER

Because removal of the paint or paint pigment by rain and moisture, usually evidenced by streaks near the lower edge of a lap-joint or at the foot of columns.

CAUSE:

The use of improper ingredients in the paint, such as water soluble materials or materials that become water soluble through change of reaction.

REPAIR AND PREVENTION:

Use properly formulated white lead paint which does not contain or form water soluble materials.

AVOIDING PAINTING TROUBLES

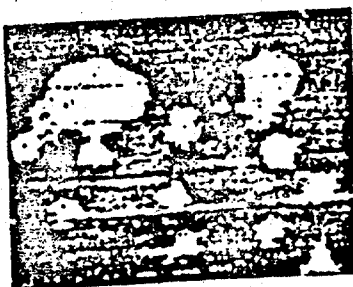


Figure 21

SPOTTING

Loss of gloss, fading or color, chalking or small areas over the painted surface. It usually shows up more prominently with dark tints and colors.

CAUSE:

Excess absorption of oil from the finishing coat in the surface underwork.

REPAIR AND PREVENTION:

This defect will not occur when the finish coat is applied over a properly sealed surface.

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AVOIDING PAINTING PROBLEMS

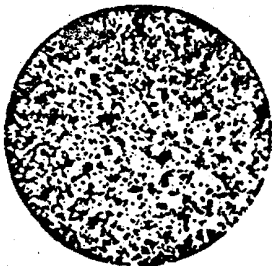


Figure 20

DUST DEGRADATION

Every painted surface collects dust as it ages. However, there is such a thing as excessive degradation while the paint job is still fairly new. The next section will address new paint jobs.

CAUSE

The use of a finishing coat that contains too much flaked oil or oil of poor quality.

HOW TO AVOID

Be sure the final coat is properly formulated. In locations where the atmosphere is particularly dirty use two flaked oil in the final coat.

*Formula 20 should be changed to contain 2% oils of flaked oil and 1% of oil of turpentine.

AVOIDING PAINTING PROBLEMS



Figure 21

DEGRADATION FROM SALT

Standard practice requires that the painted surface be kept away from exposed metal parts of the house.

CAUSE

Formation of metal salts washed down over the surface of the paint film by rain. When the paint contains certain water particles, the salts actually stain the film so that it is impossible to remove the degradation.

HOW TO AVOID

Paint where lead paint is not permanently stained by these salts and on normal the solution that is dependent on the surface of a white lead film from the water can be washed away.

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AVOIDING PAINTING TROUBLES

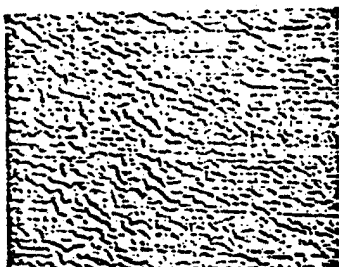


Figure 24

WRINKLING

Irregular ridges in the top film of paint. Sometimes so small they give the effect of flaking.

CAUSE

A paint film that dries so slowly under such conditions that it causes the already dry surface to wrinkle. Usually an excessively thick coat of paint will do this, particularly if there is too much dirt.

HOW TO AVOID

Wrinkling usually can be avoided if the paint is correctly formulated and properly brushed. When bad wrinkling has occurred, the correct way to get a flawless repaint job may be to remove the old paint. If there is only slight wrinkling, rub down the ridges with sandpaper and repaint.

AVOIDING PAINTING TROUBLES



Figure 25

BLEEDING UNDER KNIVES AND RAGS

Discoloration on the surface of the paint appearing over knots or raggy streaks.

CAUSE

Removal in the wood that reaches through the paint film.

HOW TO AVOID

First scrape with this coat of good shellac after the first coat of paint has been applied. Be sure to overlap the knots or raggy streaks with the shellac.

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AVOIDING PAINTING TROUBLES



Figure 26

HOW OBSTACLES CAUSE TROUBLE ON REPAIRS
Dark spots appearing through the paint film.

CAUSE:

Subtle colored substances in the wood that come to the surface of the paint.

HOW TO AVOID:

This trouble, usually confined to exterior, can be avoided by making sure that the lumber is of good grade and well seasoned and also that there is no moisture trouble due to construction defects (see page 63).

AVOIDING PAINTING TROUBLES

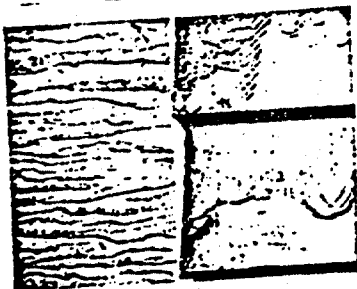


Figure 27

WRAPPING AND PEELING

CAUSE:

The application of too much paint. If the paint is high in oil content, the tendency is to apply it too thickly, and consequently the paint will run or sag.

HOW TO AVOID:

A piece of coarse sandpaper, brushed on a suitable surface in a wavy, random manner, serves well to show ridges of these defects.

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AVOIDING PAINTING TROUBLES

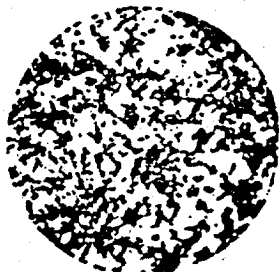


Figure 10

A dark distribution usually found on the shaded areas.

CAUSE:

A darkened layer that grows on each paint film under the combined condition of moisture, warmth and shade.

HOW TO REMEDY:

Where rubbing has previously occurred, remove all foreign matter by washing surface thoroughly. Use a solution of pure cleaning compound or a mixture of appropriate grade of washing soda in a gallon of water. Rub well and paint according to repainting directions on paper.

* The finish of the formula 10 should be reduced to 75 percent and one quart of turpentine added to the formula.

AVOIDING PAINTING TROUBLES

75 and 75. The addition of mercuric chloride to the paint check coats each. For about an ounce to every gallon of white lead paint. It may be added to the paint in either of two ways. First method: Dissolve the mercuric chloride in alcohol by placing a container with a small amount of alcohol in a hot water bath that has an open flame. Second method: Make a very thin paste of the mercuric chloride and a small amount of turpentine and add gradually to the paint, stirring it as thoroughly.

EFFECTS:

Mercuric chloride is a death poison. Use with great care.

REPAIRING (FROM THE CAUSE)

Notable flaking of the surface within a week or two of completing the job, but necessarily uniform over the entire surface. May affect one side of the house or sometimes only one board in an entire area. It is purely a defect in appearance and does not impact the life or protective value of the paint.

CAUSE:

A faulty incorrect formulation of the paint or to the presence of moisture in some form (flood, rain, etc.) during the drying of the paint. A substrate that are too soft from insufficient time for drying may also distort the place of the final coat.

HOW TO REMEDY:

Be sure of the formulation of the paint and its application under proper conditions.

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APPENDIX

APPENDIX

Confidential Volume of Church Map, Wisconsin

• **9:00 - 9:30 AM**

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Recomposition of White-red Paint

For each component, to be as old and as uniform, of the other two
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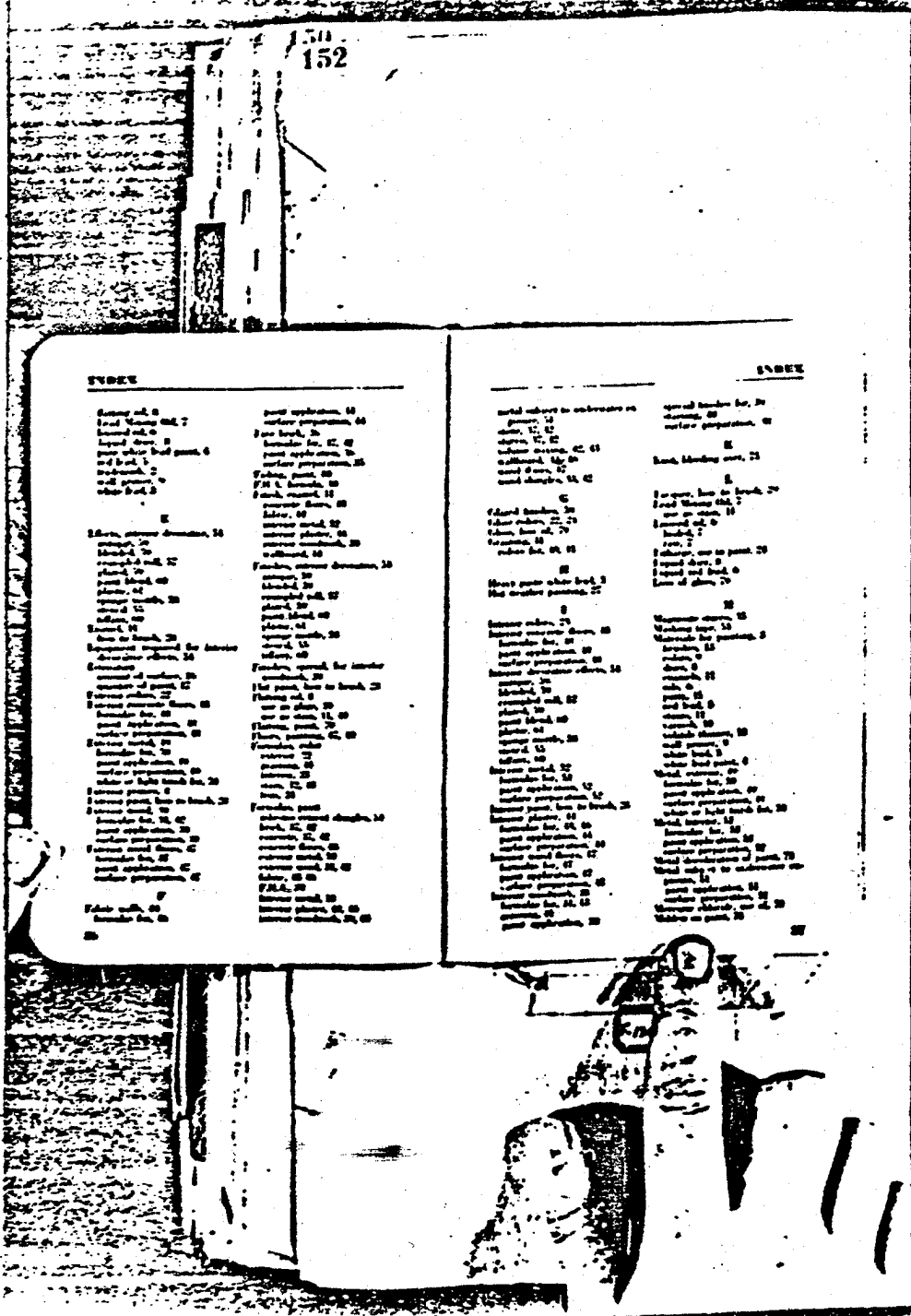
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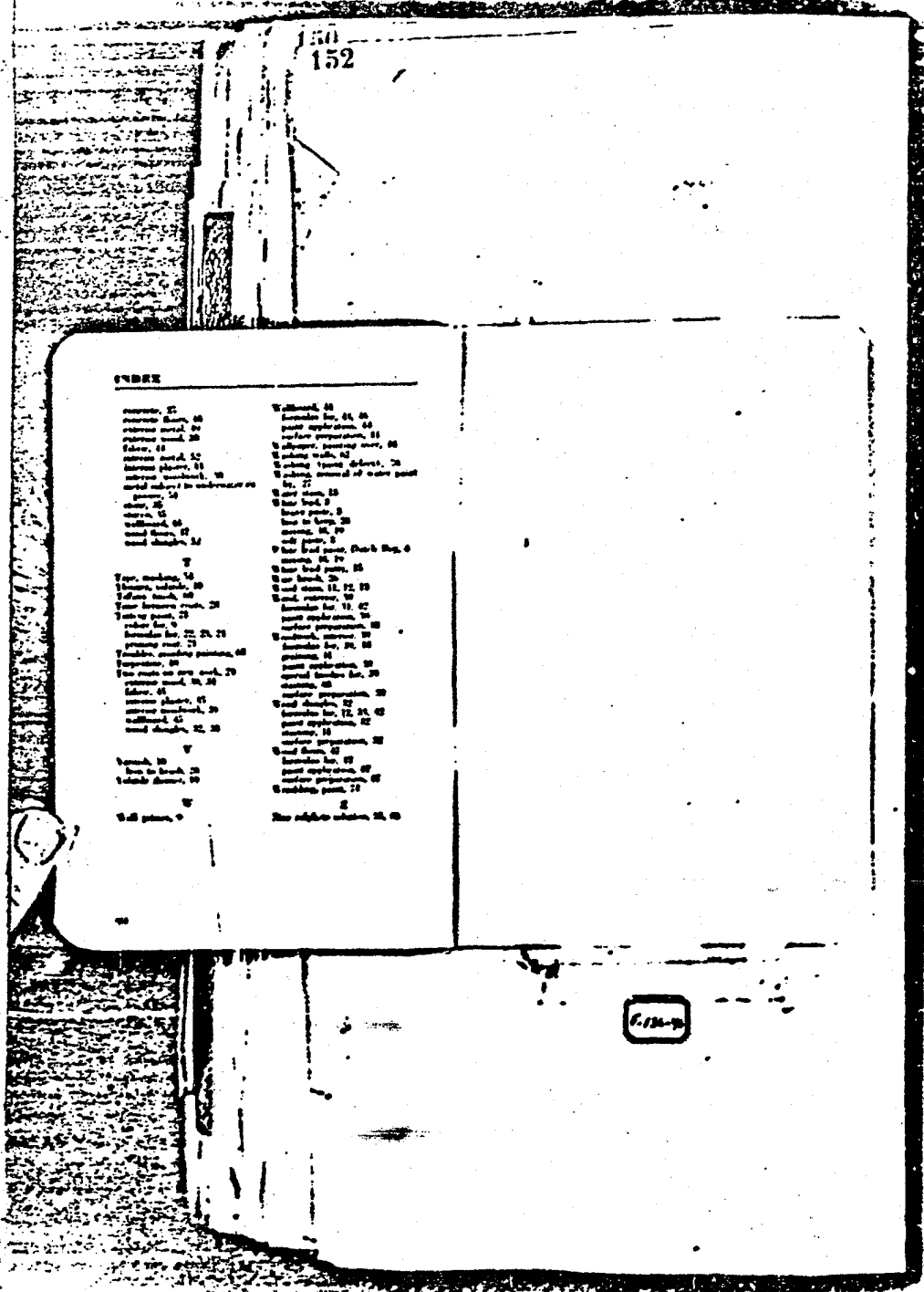
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