



**BLAST CLEANING &  
COATING ASSOCIATION OF  
NEW SOUTH WALES INCORPORATED**

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## **USE OF LEAD IN PAINT IN NSW - WHEN AND WHERE IT WAS USED**

The recent past there has been a move away from the use of white lead and of lead compounds generally in paint for the retail market. Although the use of lead pigments has continued for industrial paints used on motor vehicles railway rolling stock and industrial buildings and bridges and similar public utilities, the use of white lead as the prime white pigment for a durable paint coating ceased in approximately 1958. Although the use of coloured lead pigment continued for some years after this the closing of some pigment factories making coloured lead pigments in 1972 means that as far as domestic construction is concerned those buildings erected since 1972 may be expected to be free of paint which contains lead in a pigment form.

Between 1958 and 1972 there was gradual reduction in the quantity of lead pigment used for tinting or colouring of paints both exterior and interior.

Indeed the most valuable characteristic of the lead chromate pigments was their durability when exposed to the weather so that the use of these -colours continued well into the 1960s in the product ranges of some paint manufacturers.

To this day lead pigments are made in NSW and used on industrial buildings.

Around about this time however a white pigment known as calcium orthoplumbate was imported in considerable quantities and promoted for incorporation into primers for galvanised iron, galvanised steel and those steel surfaces which were thermally sprayed with metallic zinc. (An instance of this was the second road bridge over the Hawkesbury River, the box girders of which were abrasive blasted, metallised with zinc spray and then this was primed with calcium plumbate primer. Upon this was applied green exterior paint, which was pigmented with lead chromate.)

### **THE PERIOD FROM 1940 TO 1960**

Bear in mind that the sale of paint was controlled by the government during the war years and that a shortage of manufacture in the post war years up until 1950 led to a rationing of the sales of white lead base paints. The post war use of white lead paints for interior work was much less than had been the practice before the war. So it became common to use on domestic construction white lead paints upon the exterior including verandah joinery etc whereas the period from 1950 onwards was particularly marked with the development of water based paints for indoor use. The water-based paints which were then used included what were well known brands Muraltone and Kemtone which were alkyd resin emulsion paints. In this class of paint the white pigment lithopone a zinc sulphide based pigment, displaced white lead as the white pigment. These became extensively used for the painting of walls and ceilings to a large extent displacing the use of calcimines and distempers, which had characterised the years from 1940 to 1950.

Of course in public buildings the use of lead, that is, white lead containing paints as primers and undercoats on interior walls and timber trim continued unabated during this period.

## **BEFORE 1939**

Early colonial times did not use a great deal of red lead or of white lead on domestic construction. But in buildings of that age there would be considerable amounts of toxic mercurial pigments such as vermilion and arsenic greens such as emerald green. These were imported as pigments ground into oil and used for decoration and widely used in the decoration of wallpaper.

From about 1860, following the prosperity associated with gold discovery, white lead and red lead were imported into the various colonies and Brunswick Green which is a pigment largely composed of lead chromate was imported from about 1880.

Between 1880 and the 1940s quite a few- suburbs of weatherboard homes had cream paint on the exterior walls (which was white lead containing both lemon chrome and yellow ochre) and the trim work on windows and verandahs was a shade of Brunswick Green).

From this period until 1945 white lead was used extensively for application:

- a) In conjunction with red lead as "pink primer" for most timber.
- b) it was used in the undercoat, which was applied to most timber both indoor and outdoor. It was also applied as the priming coat to trowelled plaster walls (lath and plaster) and to cement rendered surfaces.
- c) Used for the exterior paint, top coats on weatherboards so that it may be said for these older homes the presence of white lead may be expected on any surface.

In addition there are the greens based on lead chrome, the Brunswick Green which was mentioned above and the primrose chromes, lemon chromes, oranges and Chinese red shades which were used in enamels. A very popular colour during the 1930s was called alternatively Nile Green or Eau De Nil for interior enamel work.

It was only after 1953 that in consequence of the legislation in Queensland, a general awareness of the desirability in certain locations of a lead free paint became widespread. However, until the 1960s there was quite a loose interpretation of the phrase "lead free". That is to say that a number of firms marketed flat oil paints which did not contain any white lead and therefore were referred to as a lead free range of paints, but which indeed used lemon chrome and Brunswick Green for reaching some of the pastel colours. In the 1953 to 1960 period a number of enamels were marketed as lead free but did contain certain colours (such as golden yellow and orange and post office red) which were indeed based on coloured lead pigments. (Such colours were of course marked as lead-based on the labels.)

## **SUMMARY**

There is some possibility that the age of a house can give a guide to the amount of lead pigments in the aged paint remaining on its surfaces and this will be seen by the discourse above. However, the same cannot be said for public buildings nor for factory buildings nor other structures which have been excluded from the ambit of the Uniform Paint Schedule.

Therefore, the people involved in long term exposure because of their employment in painting and coating have a problem with identification of the lead burden.

It is for this reason that we promote the motion which we moved at our second meeting that the working group should regard as its first priority the establishment of suitable test methods and procedures and education about these and at the same time should encourage or urge the government of NSW to bring in legislation which removes in NSW the possibility for putting lead paints onto industrial premises, or fabrications.

**Blast Cleaning & Coating Association of New South Wales**

**Written by John Hartley: 28 April 1998. Reprinted: 23 January 2006.**

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**Web published for the first time in January 2018, in memory of the great John Hartley who died in January 2001.**