

INFORM

INFORMATION FOR HISTORIC BUILDING OWNERS

Interior Paint

A guide to
internal paint
finishes



Introduction

Traditional coatings are frequently safer and less environmentally harmful than modern paints, and produce a visually appealing finish that is more appropriate to the character of the building's interior. This INFORM is intended to assist building owners and occupiers understand the traditional range of finishes and to suggest available options when undertaking internal decoration of traditional properties. It considers:

- The benefits of traditional paints and finishes
- The historical context of traditional finishes
- The types of finishes available
- How these finishes can be applied today
- Paint analysis
- Choosing the right paints for the right surfaces

Finally, the INFORM also gives guidance on choosing modern equivalent finishes and provides suggestions for further reading on the topic.

Benefits of traditional finishes

Historically, nearly all interiors had some form of painted surface finish. Coloured or otherwise; this often reflected the use and function of the rooms. While the use of many modern paints and finishes can be tempting, reverting to a traditional decorative scheme can be surprisingly rewarding.

Traditional finishes can have a number of advantages. Principally that they often:

- provide shading and depth of colour, offering subtly changing hues in different light conditions. This is because they contain a variety of pigments, each with differing properties in terms of size, shape and reflectivity.
- are breathable and allow moisture to disperse freely. In areas of damp, applying a porous coating can, in conjunction with other measures, assist in reducing the problem.
- are safe to use and environmentally friendly. Unlike some modern paints they are largely solvent free and produce fewer noxious fumes.



A traditional limewash finish ©Author

Use of Colour

The types of coating traditionally available were limited, both in terms of texture, finish and available colours. This only began to change in the Victorian era. When advances in synthetic dye production allowed for the first time the widespread use of bold, bright colours that were previously affordable only for high status decorative schemes (hence names such as Royal Blue or Imperial Purple). Colours historically had more significance than today, and were often function-associated. For example, the interiors of larders and store cupboards were often painted dark blue (thought to discourage flies), and dining rooms dark green. Facings and finishes in service areas were often painted in darker reds and browns (probably due to the lower costs of the pigment) distinguishing them from the lighter coloured or varnished timber surfaces in the principal rooms.

Types of coating

In general terms, traditional finishes can be divided into four main categories:

Limewashes – Although mainly associated with external work, limewashes have been used as interior coatings for centuries. Limewash is quicklime mixed in a water suspension (in a process called ‘slaking’). Additives were sometimes included to give a degree of protection against water penetration. Colour was provided by natural pigments. Only a limited range of materials were suitable due to the caustic (strong alkali) nature of the lime. Highly permeable, limewash was painted directly onto lime plaster or masonry. Limewash reflected light well; with the cured carbonate containing tiny refractive crystals which sent light out in different directions. Unless highly filtered and strained, limewash finishes provided an uneven, textured finish that can be appropriate for pre-18th century structures



A modern, non-permeable emulsion paint flaking off lime plaster. ©Author



Limewash, coloured with yellow ochre. ©Author

(although this makes it unsuitable for classical or formal rooms). Limewash was largely superseded by the use of distemper in the 19th century.

Soft distempers – From the mid-18th century onwards, distemper was the primary finish used on the plaster walls and ceilings of everyday interiors, where practicality took precedence over display. It is formed by mixing chalk powder with an animal glue binder and natural pigments to produce a soft matt finish. There are various regional names, but was sometime called “Paris White”. Often other binders were included to give added durability; such as milk and, latterly, casein, (a by-product of cheese-making) or linseed oil. This gave a “washable distemper”.

Due to its non-alkali composition, a larger variety of pigments were used in distemper than in limewash. However, the durability provided



A strongly coloured distemper. ©Author

by the white chalk powder also resulted in a dilution of these pigments. This made it unsuitable for use in areas where bold colours were required. Sometimes the chalk powder was left out of the mix to give more colour intensity. This resulted in a thin, concentrated layer.

Oil based paints – Traditional oil based paints were very flexible, resisted cracking and gave a greater depth of colour and texture to the surface than modern paints. They were used primarily on joinery and ironwork. Due to the bold colours and versatile range of finishes achievable. Finishes ranged from ‘flatted’ matt to glossier sheens (achieved by varying the ratio of oil to binder), although the effect was different from today’s high sheen gloss paints.

Traditionally all oil paints were made from a paste of oil and pigment (usually with a base of



A soft, off-white distemper on the ceiling, with a stronger pigment for the walls. ©Author

powdered white lead). The paste was diluted with more oil and sometimes mixed with turpentine for ease of application. To speed up the hardening of the paint, additives called dryers were often added. Zinc sulphate was the most widely used. As today, surfaces were first primed, and one or more undercoats added in advance of the final coat. By the early 20th century, linseed oil was increasingly replaced by synthetic equivalents.

Varnishes and stains – In the 18th century, most internal wooden surfaces were painted, or given a wood grain effect. By the 1850s a dark stain and varnish was frequently applied to elements of finishing joinery. This consisted of a linseed or walnut oil based stain (normally incorporating the natural pigments yellow ochre and burnt umber), and a clear varnish layer as a top seal. Boiled linseed oil, Danish oil and tung oil are the most natural modern alternatives.



A traditional oil-based finish on timber surfaces. ©Author



A traditional varnish finish on an early 20th pitch pine shutter. ©Author

Many properties now have their internal timber elements stripped bare. Historically this was not the case as bare wood was rarely seen. Where original varnished woodwork still exists it should be preserved. Such surfaces may have a little ‘crazing’ (cracking) on the surface but this is consistent with age and can be freshened up with a thin coat of Danish oil. While some may find dark finishes somewhat heavy-looking, the application of surface varnish or light stain (matching or a little darker than the wood) will seal the timber, assist cleaning, and be more in keeping with the original scheme. Obtaining an appropriate varnish to replicate dark Victorian woodwork is a matter of staining present day varnishes with the required tone.

Paint Analysis

It is always preferable to follow original historic paint schemes, and careful



A traditional oil-based finish on timber surfaces. ©Author

examination of the remaining paint layers can give a good indication of how the space was originally conceived and decorated. For those seeking a very precise consideration of the original colour schemes on plaster and woodwork, a paint analysis can be done. This service is available from a specialist conservators. The tests allow the identification of the various layers of paint, their composition and likely age, thereby allowing a closer colour match to be made that has a similar performance.

Choosing the right paints

Ceilings – There are some regional variations, but essentially most domestic ceilings were painted with an off-white distemper. Known as ‘broken distemper’ this was deliberately toned down from a brilliant white. This finish was frequently considered as a sacrificial coat, as smoke and fumes from lamps and



*19th century joinery finished with a new traditional paint.
©Author*

gas fittings obliged regular repainting. A soft distemper is a good modern equivalent to 'broken distemper'.

Cornice - As with the ceiling, the plaster cornice is normally off white in colour. Oil or emulsion paint should be avoided because of the difficulty that a layer of such paint can cause for future maintenance.

Walls – Plastered walls mounted on studs and laths are most suited to a soft distemper. Due to surface damage many decorators use lining paper to give a smooth surface. Distemper will take to lining paper, although traditionally the paint was applied direct to the plaster. For plaster directly onto masonry ('on the hard') a soft distemper or limewash is more appropriate as they give maximum permeability. Gloss paint on lime plaster can be frequently encountered. This should be removed if the traditional coating

is to adhere properly. Careful removal of paint using paint stripper is preferred, although time-consuming. Limewash is available ready-mixed and coloured, or can be bought white and tinted with natural pigments to suit.

Joinery and timber finishes – Most woodwork is likely to be overpainted with oil based traditional paint or modern 'heritage' paints, but removal of earlier coats will give better definition to the mouldings and better adhesion but extreme care needs to be exercised during removal to avoid damage. Take care also to examine the layers and establish if there was any graining or marbling effect.

When removing old lead paint lead vapour or dust could be released; This work needs to be done with caution. In order to be sure, most DIY stores stock small test kits to allow the householder to do their own tests for lead content. (see Further Reading for a useful guide to removing old lead painted surfaces).

Sourcing

All the traditional paints mentioned in this INFORM continue to be made by specialist suppliers. Due to modern economic pressures, even traditional paints are unlikely to be artisan-made and their exact composition may be unclear. They are not generally available from mainstream hardware and DIY stores

Modern paints

Modern 'heritage' paints are now obtainable in a range of traditional colours and surface textures. These coatings use a modern base and chemical pigments to provide close matches to traditional finishes. However, they are modern and may be inferior to traditional paints in terms of breathability and surface texture. Where possible traditional materials should be used.

Useful Contacts

Historic Scotland, Longmore House, Salisbury Place, Edinburgh, EH9 1SH:
0131 668 8600 www.historic-scotland.gov.uk

Historic Scotland Conservation Bureau & Technical Enquiry Service – Longmore House,
Salisbury Place, Edinburgh, EH9 1SH, 0131 668 8668
hs.conservation.bureau@scotland.gsi.gov.uk

Historic Scotland TCRE Group Publications Department: 0131 668 8638:
Fax - 0131 668 8669

Historic Scotland Investments and Projects Team:
0131 668 8801: Fax - 0131 668 8788 hs.grants@scotland.gsi.gov.uk

Historic Scotland Inspectorate:
Listed buildings: 0131 668 8745: Fax - 0131 668 8722 hs.listings@scotland.gsi.gov.uk

The Institute of Conservation (ICON) – 3rd Floor, Downstream Building, 1 London Bridge,
London, SE1 9BG, 020 7785 3807, www.icon.org.uk

The Society for the Protection of Ancient Buildings (SPAB) – 37 Spital Square, London
E1 6DY, 020 7377 1644, www.spab.org.uk

British Coatings Federation – James House, Bridge Street, Leatherhead, Surrey, KT22 7EP.
01372 360660, www.coatings.org.uk

The Traditional Paint Forum – www.traditionalpaintforum.org.uk

Further Reading

Bristow, Ian. *Interior House Painting Colours and Technology 1615–1840* New Haven and London:
Yale University Press, 1996.

Georgian Group, The. *The Georgian Group Guide No 4 – A brief guide to the colours and application
of paint in Georgian houses* London: 2004. Available for purchase from www.georgiangroup.org.uk

Heaton, Noel. *Outlines of Paint Technology* London: Charles Griffen and Company, 1947.



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