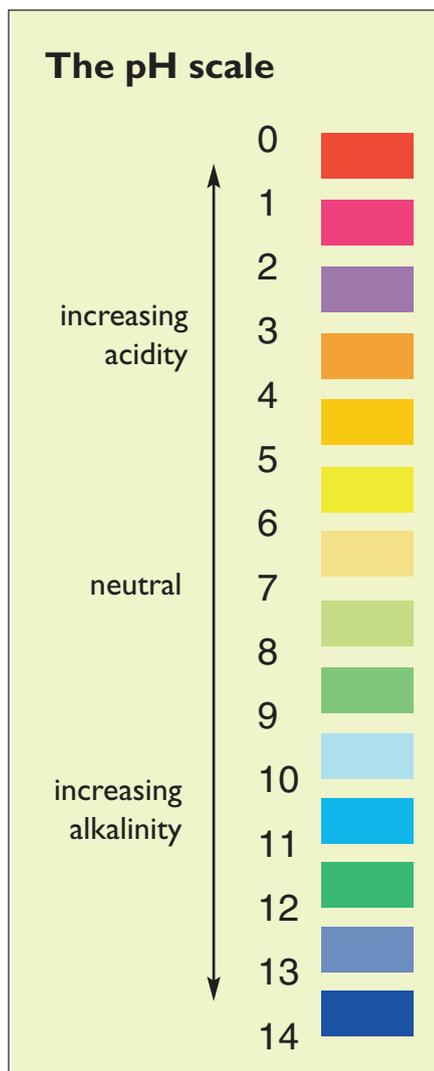


# Framing myths explained: mountboard

Technical framing jargon can bewilder even the most experienced framer. Here, [Mal Reynolds GCF Adv](#) addresses a number of the myths surrounding mountboard technology, as well as the natural and environmental elements that affect its longevity



**W**hen you first step into the framing world you hear numerous terms and phrases being banded around; their meanings are often a complete mystery and are not fully explained in any 'glossary of terms.' Perhaps it is a fear of being seen as uneducated that stops us asking our mentors questions such as, 'What is Lignin?' and 'Blue Wool Scale - something to do with sheep?'

But this is not just a beginner's problem. Often experienced framers are heard discussing framing issues, either amongst themselves or through online forums, and it is evident that they have either misunderstood the explanation of a term or they have not learnt its full meaning.

## Standards

So how has this confusion arisen? Much mountboard terminology is a result of the Fine Art Trade Guild's standards for mountboard and other boards used in framing. These standards, published in 2004, were the result of extensive collaboration between the leading mountboard suppliers and manufacturers in Europe and the USA.

Other terms have been taken from the textile and papermaking industries over the years. These terms or scales

may differ slightly internationally, but those used in the UK are accepted by the British Standards Institution.

The Guild's mountboard standards relate to the composition and characteristics of papers and boards used in framing. There are three categories of mountboard: Cotton Museum, Conservation and Standard.

The Guild's Five Levels of Framing were devised to help framers understand which materials and techniques are appropriate for each job, and thus avoid litigation. The Five Levels make it clear which type of mountboard is suitable at each Level. The Five Levels of Framing are:

**Museum** - The ultimate protection for your artwork

**Conservation** - Helping to preserve your artwork for future generations

**Commended** - Guarantees a degree of protection, with design playing an important part

**Budget** - Visually pleasing, but offering no long-term protection

**Minimum** - Putting economy first.

In simple terms, Cotton Museum board can be used at any level, whilst Conservation board can be used at Conservation Level and below, and Standard board may be used only at the lowest three levels.

Boards with a white core usually fall



**What is lignin? And The Blue Wool Scale? Is that something to do with sheep? Such concerns are not just for beginners; experienced framers can be confused too**



between Conservation and Standard grades; which category the board falls into is mainly dependent upon the level of bleed resistance of the facing papers. This can and does cause confusion. This confusion becomes evident when a Standard board, albeit termed 'Whitcore', has been used for Conservation Level framing in the Guild Commended Framer examination. The category into which each white core board falls should be clearly stated on

the supplier's mountboard selector.

The differences between the three categories of mountboard are considerable. With the exception of solid core board (self explanatory), mountboard comprises three constituents: facing and backing papers and a core. The core or pulp may comprise a variety of constituents.

**Cotton Museum** board must be made from 100 per cent cotton fibre and contain no post-consumer waste

**Conservation** board must be made from chemically purified woodpulp or cotton fibre with an alpha cellulose content of no less than 84 per cent, and it should not contain post-consumer waste. Alpha cellulose is a highly refined insoluble cellulose from which most detrimental materials have been removed

**Standard** board may contain cotton but is more likely to comprise woodpulp. It is sometimes chemically purified, particularly white and coloured core boards, or it may be mechanically beaten to produce coloured core and cream core boards. Standard board is allowed to contain both pre- and post-

consumer waste.

The paper industry measures paper in terms of weight, for example gms/m<sup>2</sup>, but for picture framers mountboard thickness is more important, so we normally measure mountboard in microns. Sometimes thickness is referred to by sheet or ply instead, ie the number of layers of paper that have been laminated together to form the board. In the UK board thickness should be measured in microns: 1000microns equates to 1mm. The standard thickness for board in the UK is 1400microns, which is 1.4mm.

#### Terminology

The term 'buffering' causes confusion. Manufacturers of quality mountboard add an alkaline buffer, usually calcium carbonate (chalk), to all their categories of board. All mountboard will absorb acids from contact materials and the atmosphere and alkaline buffering slows this process down and hence increases the life of the board. A small number of cotton museum boards are not buffered as they are intended for use with alkaline



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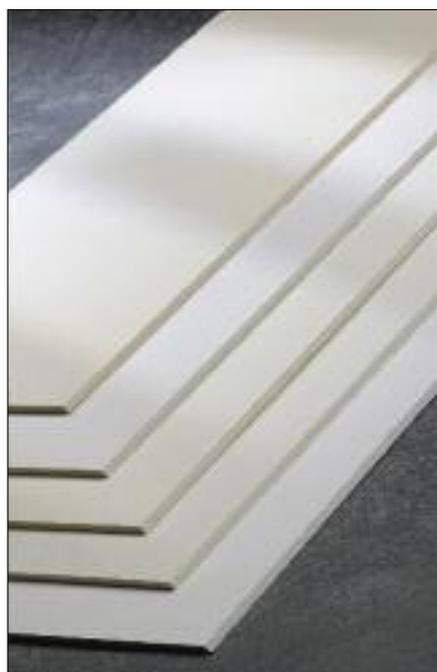
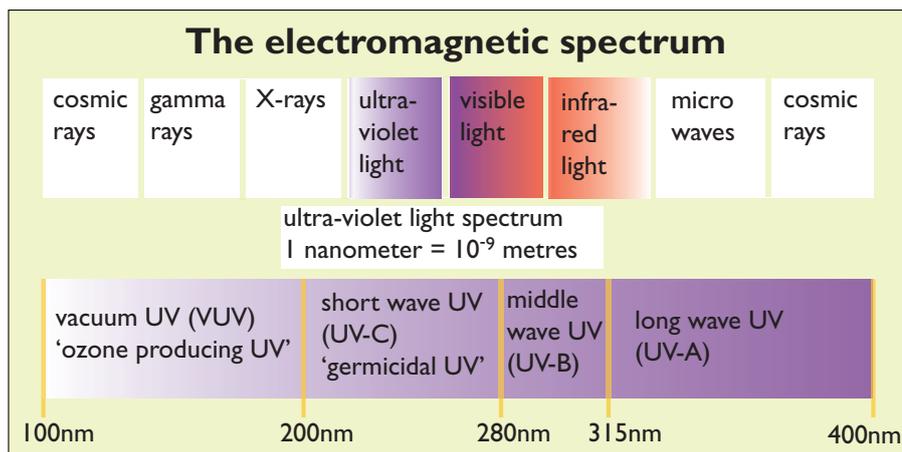
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Clockwise from top left:  
The electromagnetic spectrum;  
a mountboard selector from Arqadia, which clearly states how each board fits into the mountboard standards;  
Cotton Museum mountboard;  
whitecore mountboard;  
solidcore mountboard

sensitive materials such as photographs.

It can be difficult for framers to identify specific photographic processes, but most produce an alkaline sensitive emulsion which should not come into contact with buffered board. If in doubt, play safe and use unbuffered board. However, buffered boards may be used within the frame package if not in direct contact with the photograph.

There are two tests designed to check the compatibility of mountboard and photographs. The first is the **photographic activity test (PAT)** that highlights potential chemical reactions between mountboard and photographs. Boards that have passed PAT are unlikely to produce a chemical reaction that might harm photographic emulsions. The second is the **silver tarnish test**, which is a physical test to check for chemical impurities within mountboard that may have a harmful effect on photographic emulsions, especially silver bromides. Essentially

the difference between the two is that one test checks for a chemical reaction and the other checks for impurities.

The term **'acid free'** is often used to describe framing materials. This is an imprecise term that implies a material contains no acid, but it is misleading when describing board, paper or adhesives that have been treated to give them a pH value of more than seven. The pH scale measures the acidity and alkalinity of materials with a range of zero to 14; rather than 'acid free', a more accurate term is 'pH neutral.' This refers to a pH value of seven; below that, materials are acidic, and above that they are alkaline. As one would expect, the pH value of unbuffered board falls within a pH range of 6.5 to 7.5, whilst buffered board is in the range 7.5 to 9.5.

**Lignin**, and the damage it causes, is another concept framers often hear. This is a misconception. Different types of lignin are found in all plants; they are

essentially organic polymers that make plants woody. The function of lignin is to regulate the uptake of liquids in plants. Lignin is not in itself an acid; however, most lignins do contain carboxylic acids, and as wood (and board and paper made from woodpulp) deteriorate they give off acids. There is no lignin content in Cotton Museum board, since it is made from cotton rather than wood. There is a maximum 0.65 per cent lignin allowed in Conservation board, or a Kappa number of less than five. Kappa numbers refer to a test for the degree of lignification of pulps. There are no specifications about lignin for Standard board; the core contains chemically purified or mechanically beaten woodpulp.

**The Blue Wool Scale (BWS)** measures the permanence of colours. The test was traditionally used in the textile industry, but was adopted by the printing industry, as a measure of the

lightfastness of colourants. Lightfastness is the chemical stability of a pigment or dye under long exposure to light, and should not be confused with colourfastness, which is the resistance to fading of a pigment or dye – a subtle difference. The BWS has a range of one to eight; eight is the highest value, providing excellent lightfastness.

According to the Guild's Mountboard Standards, the BWS value of Cotton Museum board must not register less than five on the scale; Conservation quality board should have its minimum rating readily available to buyers, and there is no defined value for Standard board. Arqadia mountboard has the BWS value printed on the back, which is normally a minimum value of three.

I should mention **ultra violet (UV) radiation** and its affects on mountboard. UV light represents only five per cent of visible light (sunlight) and yet is responsible for 90 per cent of damage to materials. UV radiation is high energy light that results in the fading of dyes and pigments and the deterioration of board.

UV light is of relatively high

frequency and has short wavelengths of between four and 400 nanometres (nm), most of which is absorbed by the ozone layer. However, the proportion doing the most damage is between 300 and 380nm. UV light between the frequency range of 300 to 340nm causes lignin to deteriorate, thereby discolouring and embrittling paper, as seen when the core of Standard board turns brown. UV light of frequency greater than 340nm causes pigments and dyes to fade, which is the reason the Blue Wool Scale was adopted by the paper making industry. UV protective glass that blocks a high percentage of light in the 300 to 380nm range is available from suppliers but one should remember that this does not prevent artwork from deteriorating forever; it will delay embrittlement and fading, but not stop it completely.

The introduction of Mountboard Standards by the Fine Art Trade Guild was a significant step forward in helping framers understand the materials available to them, particularly when combined with the Five Levels of Framing. However, reputable manufacturers and suppliers should be

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**Lightfastness, the chemical stability of a pigment or dye, should not be confused with colourfastness, which refers to a colour's resistance to fading - a subtle difference**

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willing to assist with technical queries and help the customers make the correct product selection. Framers should not be afraid to ask. ● *Mal Reynolds GCF Adv, Harlequin Frames, is a well-known framing trainer and a consultant for the Valiani Support Group*  
The Guild's mountboard standards and the Five Levels of Framing are explained in full at [www.fineart.co.uk](http://www.fineart.co.uk)

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Wessex Pictures' Philip Younger (right) presenting the award to David Wilkie GCF

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