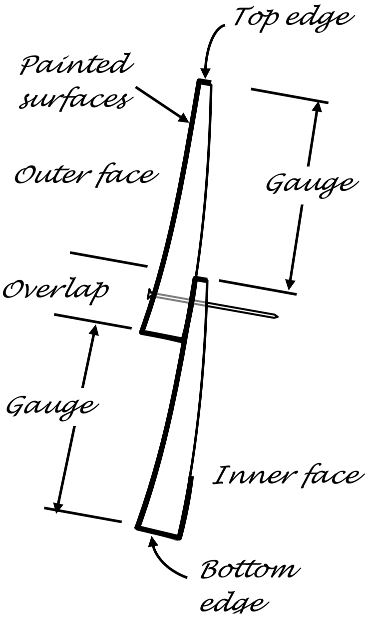
MILLS SECTION

Vincent G Pargeter

WEATHERBOARDING

1 History of Weatherboarding

Most windmills and many watermills in England were covered with wooden weatherboarding to protect their timber framing from the elements. This method of cladding is very ancient, and the weatherboards usually have a tapered cross-section, the narrow edge being placed at the top, and the wide edge at the bottom. This tapered section may have originated when the boards were formed by cleaving a straight-grained oak log longitudinally. The boards were overlapped in the manner of a clinker-built boat so that they formed a weatherproof wall, which was often tarred or painted. When saws became available, weatherboards were cut out using pit saws, and later, powered reciprocating, circular and band saws.



Nomenclature, showing "Featheredged" Boarding

Weatherboarding was made weatherproof by overlapping the boards and securing to the vertical timber framing with nails. The vertical timber frame members to which the weatherboards were attached were known as "studs", and were usually of fairly light section timber. The studs were normally spaced quite closely at about 18" (457mm) centres so that the boards were prevented from warping and separating.

Early weatherboarding may have been left untreated, but it became common to apply tar or paint to prevent the boards degrading in rain and sun, and to help stop the wood (particularly elm) from absorbing water. Medieval weatherboards were often of random widths, and would usually have been made from oak or elm. As mechanical sawing was introduced, the boards were cut to more uniform widths, and imported pine from Europe or Scandinavia was used in increasing quantities.

By Georgian times, mill weatherboarding would usually be very uniform, with accurate coursing rivalling that of brickwork. The width of the boards was eventually standardised to 7" (178mm) with a bottom edge thickness of approximately ¾" (20mm) and a top edge thickness of ¼" (6.5mm). The boards would be left with a sawn finish when tarred, but would be planed when paint was to be applied but the finished dimensions would be the same.

By the 1920s, rebated edge boards evolved, which required a moulding machine to cut the rebate. This type of board is unsuitable for use in exposed conditions, as the overlap is very small. It was never used on windmills, but may possibly have been used in late times on watermills. It is not recommended because it offers little weather protection. The final development of weatherboarding was the "shiplap" profile, formed entirely with a moulding machine. This style was developed for portable buildings, and has the same drawbacks as rebated boarding

1.1 Weatherboarding Yesterday and Today

During the working life of mills, no particular care was taken to ensure that their weatherboarding and the framing that it protected would last a long time. The timber quality was usually very good, and this would ensure a reasonably long life for the building. The mills were usually well looked after when in lucrative commercial use and would be painted at least every four years and repaired regularly.

When the mills and their millers fell on hard times, maintenance was often the first thing to be economised upon, they were seldom painted and repairs were botched. Later they were abandoned completely and became derelict.

Today, we expect our mills to last for ever, yet we inherited them in a bad state, and they were only designed to last while earning their keep. To achieve our aim of longevity, we need to take more care in the way we repair and maintain our mills, and one of the keys to this is to make our weatherboarding more weatherproof than it was before. Furthermore, the weatherboarding itself must last longer, as it is expensive to renew.

WEATHERBOARDING

1.2 Short life of today's timber

Most weatherboarding on mills today is of European or Scandinavian red pine (*pinus sylvestris*), known as "redwood" in the timber trade. While this is basically the same timber that was used for weatherboarding in antiquity, it has one major difference – its lasting qualities. Today's pine is "farmed" and cut after a relatively short growing cycle. This means that the timber is immature, and has not yet developed the natural decay resistance of a really old forest tree. Often, the tree's diameter is not much greater than the width of the boards cut from it.

This means that modern redwood as fitted and painted today may only last for 5 years or so in an exposed situation before starting to rot. Once decay has set in, it will progress rapidly through the timber until the whole of the board is reduced to absorbent pulp. Such decayed wood harbours damp, and the rot spores released will infect adjacent timber until the whole structure becomes weak and eventually collapses. This makes no sense at all, and must be avoided at all costs.

Pressure treatment with a wood preservative system will extend the life of the timber, and it is essential that all softwood timber to be used on the outside of a mill be pre-treated with an adequate preservation system.

2 Practicalities

2.1 Timber Quality

Timber quality is crucial for weatherboarding to be effective. "Unsorted" redwood is the only grade suitable for weatherboarding. Other grades called "5ths" or "carcassing" should not be used in mill repairs. Unsorted redwood, as implied by its name, needs to be sorted to eliminate unsuitable boards. The term "Best Joinery Quality" describes what is required for weatherboards, but few timber suppliers are willing to do much sorting. Some may allow the customer to select suitable boards, and this is probably the best way to obtain the quality required.

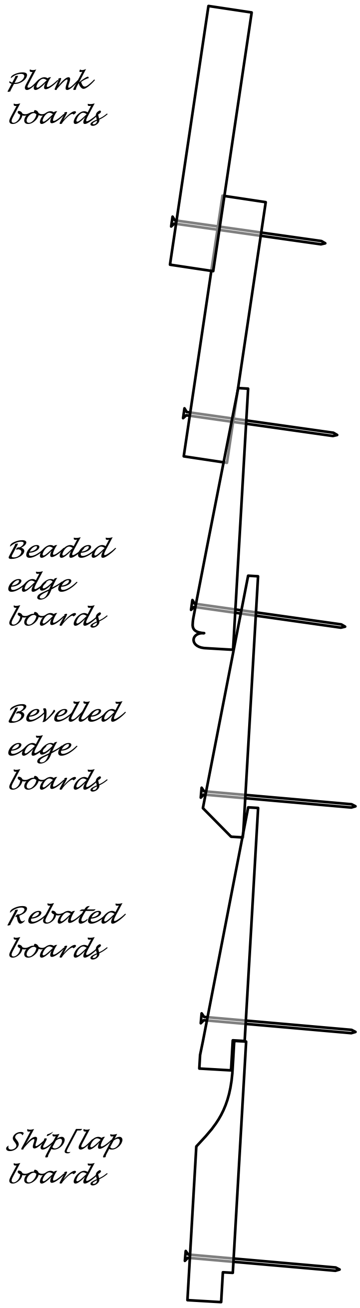
Boards are shipped in "packs" of the same width and thickness, but of random lengths. Packs are strapped up in a semi waterproof covering material, and need to be cut open for sorting. The boards need to be sorted for the required lengths and quality, and it may be necessary to reject 50% or more to get what you need.

The worst defect in a weatherboard is a split. Boards cut from near the heart of the log tend to develop splits along the middle, and boards containing the "pith heart" are best rejected anyway. The splits may only be hairline cracks, but they tend to become worse as the boards dry out, and are sometimes difficult to see, but such boards must be rejected.

Boards with large or numerous knots should also be rejected. Whilst a sound knot may be acceptable, rotten knots should be avoided. Rotten knots are very black, and are soft, rotten and easy to gouge out. They may be large or small, but if they occur in a weatherboard they will leak unless gouged out and filled, which is time consuming and best avoided.

Boards sometimes have a "waney" edge where the sawyer has included some of the outside of the log. This usually occurs at one end, and means that the board cannot be used full length.

Also look out for uneven grain, which may mean that the board will warp, and also for damage, where careless handling with a fork lift truck has splintered an edge or end.



Styles of Weatherboarding

2.2 Western Red Cedar

Western Red Cedar is a naturally durable timber sometimes used for weatherboarding. It was not used by the millwrights of old, but has been used in recent times for high quality mill work. The timber is very expensive compared with redwood, but does not need to be preservative treated. It is not as strong as redwood, but this is not normally important for cladding timber. It accepts paint well, is light in weight, and bends easily round curves. For this reason it has been used for the boarding on boat-shaped and ogee mill caps.

The grade of cedar to specify is "Clear", and this used to mean that no knots or other defects were present. Nowadays, defects are often present, and the boards need to be sorted as for redwood. The main defects are rotten knots, splits and sapwood, and these should not be present. When imported, cedar planks are usually very wet and need to dry out before cutting and planning. Ask the supplier to place the planks in stick to dry before they machine them to your requirements.

2.3 Other cladding timbers

Timbers such as home-grown larch and Douglas fir are also used for cladding, and can be acceptable if the quality is good. They will need careful selection as previously detailed for redwood, and will need to dry out before sawing to feather edge. These timbers are no more or less durable than redwood, and will need the same preservative treatment.

2.4 Extending timber life by pressure treatment

Modern timber can be made to last much longer by pressure treating it with an insecticide/fungicide such as Tanalith "E" to PT 3 specification. It is important that an appropriate level of pressure treatment is chosen. PT 3 is the correct level for cladding and timber to be used outside. Lesser levels are only intended for indoor timber, and are inadequate for outdoor timber. Some timber suppliers are not knowledgeable about treatment processes, and your requirements must be stressed when ordering.

Preservative treatment is normally carried out by the supplier immediately before the timber is delivered, and the timber will arrive saturated with chemical solution and will need to be dried out before use. The boards will need to be stacked on level transverse timber bearers at 1 metre intervals, and will need to be separated by numerous battens of 25mm square softwood set vertically above the bearers. The boards should not touch anywhere, and must be protected from rain and direct sun, but must have a free passage of air. Stacks are best capped by corrugated steel sheets, laid with a slope, and suitably prevented from blowing away in the wind.

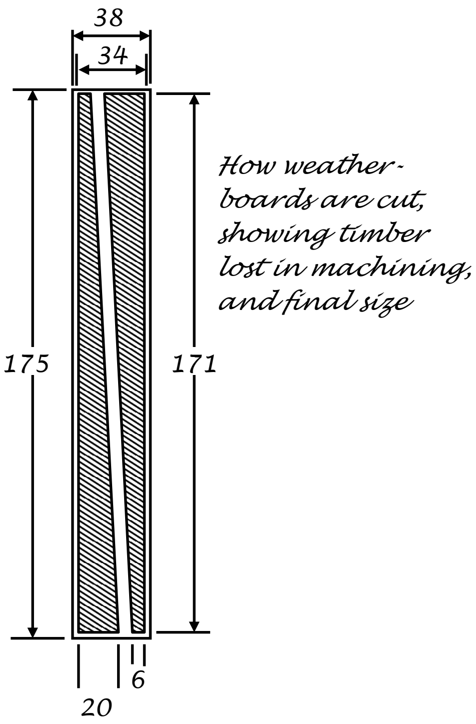
Drying may take from 2-6 weeks depending on the time of year and hence the dryness of the air. If boards are used before they have dried, paint will not take well, and the boards may split after nailing in place due to shrinkage. Once dry, the boards may be close stacked for storage before fitting.

2.5 Timber size and finish

Weatherboards are formed by making a deep cut along an ordinary plank board at a slight angle, thus obtaining two lengths of weatherboard from each plank. Weatherboards are also known as "feather-edge boards", which can be misleading, as it implies a very thin edge. In fact, the narrow edge should be no thinner than 6mm. The thick edge should be about 20mm. These dimensions should be considered as the minimum required.

The most common width was 7", nowadays reduced to 175mm by metrication. If the boards are to be tarred or stained, a sawn finish is adequate. If the boards are to be painted, a planed finish is normally chosen, at least on the outside face and edges. Due consideration must be given to the choice of plank from which the weatherboards are to be cut, otherwise the resulting boards may be too thin. For sawn-finish boards, 175mm x 32mm plank is more than adequate, but a 175mm x 25mm plank is too thin. No metric plank is ideal, as it cannot match exactly an old Imperial plank. Also remember that at least 3mm is removed as sawdust during the feather-edge cut. 22mm to 7mm is the best thickness for sawn weatherboarding, but if an exact match to the original is needed, the timber may need to be thicknessed through a saw or planer before the feather-edge cut is made.

Planed weatherboards also need to be of adequate thickness as approximately 2mm is planed off each face of the plank before cutting, so the dimensions are reduced by 4mm in each direction before sawing. Thus, planed boards are best cut from 175mm x 38mm planks. The inside face may be left as sawn, giving a slightly thicker board.



Cutting weatherboards

2.6 Paints

The type of paint used on mills can be crucial to the length of time the timberwork will last. Many modern paints are purely decorative, and will not preserve or protect the timber in any way. Some are actually destructive to wood, and will cause decay by harbouring dampness and peeling.

The best kind of paint for preserving wood is one based on linseed oil. These paints are not perfect, and need to be renewed on a regular basis, but they deteriorate in a predictable way, and are much easier to prepare when repainting.

Many mill owners (understandably) seek the perfect paint that will last indefinitely, to eliminate the high cost of regular painting. Unfortunately, no such paint exists yet, and although some manufacturers make extravagant claims, but these are false. If a paint lasts a long time, consider what is happening underneath the paint film. In recent times "plastic paints" have been used on mills, and have, indeed, lasted a long time. However, it has been found that, underneath the paint, the timber has become completely rotten due to harboured damp. The end result is that all the timber involved has to be renewed, so that the use of these paints can be a very expensive experiment.

Linseed oil paint degrades by "chalking", ie the surface becomes powdery, and gradually wears away. Such a surface is easy to prepare for repainting by light sanding and brushing down. The recommended recoating for linseed is to alternately apply oil alone (starting on the first occasion), and paint (on the next). A lot depends upon how well the colour is standing up to weathering. Harder paints based on alkyd resins tend to blister or peel, leaving some areas of wood bare, and some with paint still adhering. These areas need hard scraping, and much more sanding to achieve a suitable surface for repainting. They also require multiple coats, starting with primer, when recoating.

2.7 Pigments and driers

The pigment of a paint is the coloured powder that is added to the oil to form the paint. This is usually a metal-based chemical, and lead carbonate was commonly used in white paint into the 1950s. Lead paint is very toxic, and its use is now banned by law. It can still be used on some high-grade buildings, but permission for its use must be obtained from English Heritage. Nowadays, other less toxic pigments are used, such as titanium dioxide.

Driers are often added to paint by the manufacturers to speed up the drying. These are also metal-based chemicals, often of cobalt or calcium. Sometimes driers are called “terebene”. If they are used at all, only small amounts of driers should be added, as they can cause early degradation of the paint film in excess.

2.8 Pre-painting

Modern building techniques, and the division of skills are likely to result in short-lived results if applied to mill repairs. Often, weatherboards are fixed by the carpenter, and the painter then paints them in place. This leads to rapid decay, as rainwater will be driven between the overlap of the boards, or will be drawn in by capillary action, and will then soak into the unpainted wood between them. This area will remain damp for a long time, and may also soak into the studwork carrying the boards. Any timber with a moisture content of more than 20% is prone to decay caused by the rot spores that are always present in the air. Preservative treatment of the boards will help, but pre-painting the boards will provide the belt-and-braces defence against decay needed by windmills.

New weatherboards should be painted over the whole outside face, the bottom (wide) edge, and the area that will be lapped over the board below. The area of the board above the overlap, which will be visible on the inside, and the narrow edge should not be painted. This will provide an area for any moisture in the board to dry out by evaporation.

Pre-painting the boards also has the added advantage that they are protected if they get a shower of rain after fixing. Also, it can save on the time that scaffolding has to remain in place – always a costly factor. Often, voluntary helpers can pre-paint the boards on the ground, saving craftsmen’s time.

At least one coat may be pre-painted, but two coats are better. If using linseed based paint, the first coat should be of oil alone (traditionally applied hot to maximise the penetration).

2.9 End-grain painting

Inevitably, weatherboards have to be sawn to length and fitted together. This leaves end-grain exposed, which is extremely absorbent, and very prone to sucking up any moisture around. This end-grain should be painted with three coats of paint. Often this paint will have to be applied in the course of the work, as the sawn ends may not be exposed when the work is finished. The craftsmen fitting the boards should keep paint and brushes handy, and paint the end grain as work progresses. The end-grain should be regularly fed with paint as it is absorbed, without waiting for coats to dry. A thick paint is particularly suitable for this purpose.

2.10 Final painting

As work progresses, nail heads should be painted over to seal them in. This should be done at least twice. Any damage to the paintwork should be similarly touched-in.

A final third coat of paint should be applied over the whole of the weatherboarded area to complete the painting process.

2.11 Tarred mills

Tar was a cheaper alternative to paint, and was a very effective protection to wooden weatherboarding. In early times, wood tar or “Stockholm tar” was used, but when town gas began to be distilled from coal, coal tar was used as a very effective substitute. The advent of North Sea gas led to the end of large scale tar production, but a few specialist suppliers are still able to provide it.

Traditionally, a mixture of coal tar and coal tar pitch was melted in containers, and applied very hot to a thickness of about 6mm. Today, the coal tar pitch is thinned with xylene, and can be brushed on cold providing the weather is reasonably warm. However, at least two coats will be needed, and this will not equal the thickness and protection of the hot-applied tar of old. All the conditions stated for paint application also apply to tar. Coal tar is carcinogenic, and suitable protection must be used to prevent skin contact etc. Read the safety literature.

2.12 Other black finishes

Coal tar creosote has been used on mills in the past, but was not available during their working days. It did not provide a protective covering like tar, and the timber surfaces degraded, split, and eventually started to leak, due to the effect of sun and rain. Today, coal tar creosote, like coal tar, is difficult to obtain, and its use in any form is not recommended.

Black “tar varnish” is very thin and lasts only a very short time, degrading to a powder.

Tar substitutes like bitumen, tar emulsions etc. have not been evaluated yet, and should be treated with caution.

2.13 Overlap of boards

The overlap of the boards is what keeps a weatherboarded building water- and draught-proof. The amount of overlap required depends on the exposure of the building to wind and rain, and the angle of the surface to the vertical. More overlap gives better protection, and, incidentally, makes the structure stronger and more resistant to distortion.

Where the overlap is large, and there are always two thicknesses of weatherboards, the structure is sometimes termed “double boarded.”

2.14 Overlap in windmills

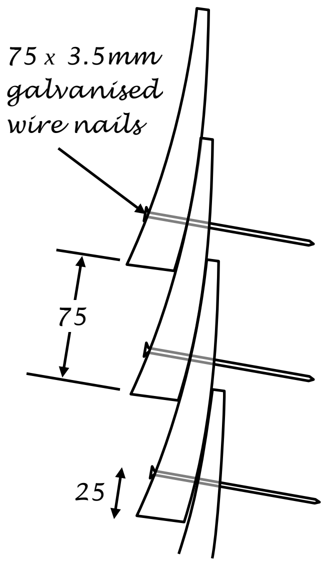
Windmills are deliberately placed in positions where they will receive the maximum onslaught from the weather: in consequence their weatherboards need to be overlapped much more than those of, say, a watermill. In the case of smock mills, the walls slope inwards which makes them even more vulnerable, and in need of a large overlap. On caps or postmill roofs near the ridge, the weatherboarded surfaces may be nearly horizontal, so a very large overlap is required here too.

On the vertical sides and rear of a postmill, an overlap of 2” (50mm) to 2 ½” (64mm) would be adequate. On the roof and the breast (front, behind the sails), an overlap of 3 ½” (90mm) to 4” (100mm) would be required. In the south of England, these large overlaps were commonplace, and sometimes exceeded, but in East Anglia, overlaps were often meagre and inadequate.

To keep the appearance of a windmill authentic, wider boards may be used to achieve a greater overlap, yet still keep the courses of boards at the same spacing or “gauge”.

The sides of a smock mill in particular require a good overlap: 90mm to 100mm is adequate, and well-designed flashings and soakers are needed where the boards meet at corners, and around windows and doors etc.

Caps too need a good overlap: again, 90mm to 100mm is required, but on some Kentish caps this is reduced to 75mm on the lower part of the sides where they are near-vertical, particularly the skirt overhanging the smock tower. This also applies to the tail wall which is vertical and faces away from the wind.



Double boarding

2.15 Overlap in watermills

Watermills are rarely subjected to the extremes of windblown rain suffered by windmills, although damp and spray are likely to be present in particular spots. An overlap of 1 ½” to 2” (40mm – 50mm) is normally sufficient.

2.16 Fastening weatherboards

Weatherboards were normally nailed to all the vertical or near-vertical timbers which carried them. In the past, square-section rose-headed wrought-iron nails were used, and these were usually driven 1” (25mm) up from the bottom edge of each board. Some mills have been weatherboarded over some other cladding (such as vertical boards), in which case the nailing interval should be chosen to suit the underlying structure and its condition. Felting and battening should be considered when weatherboarding over existing cladding

Today, it is customary to fasten weatherboards with round wire nails. Reproduction rose-headed nails are obtainable, but are expensive, and are often badly formed with variable cross-section. This can lead to splitting the wood, and such nails are not recommended.

Wire nails can be hot-dip galvanised but stainless steel is preferred, and driven into holes bored through all the thicknesses of weatherboard. The holes should be a little smaller than the shank of the nail to be a tight fit, but not so tight as to split any of the boards. As a further safeguard, the nails may be dipped in paint before driving. This helps the nails through, and seals the hole.

The 1” up rule is still applicable today, and is recommended. Some say that nails should only penetrate one board, and should be placed above the overlapping area. This is to allow the boards to move seasonally in changing humidity. Experience has shown that this is not necessary, and that boards do not move enough to warrant it. It also has the merit of making repairs much easier. Nailing high up can allow the boards to curl, which is undesirable. Nailing through more than one board imparts considerable strength to the structure, in the manner of clinker-built boats.

Care needs to be taken when driving nails to ensure that they are not driven in too hard, causing the board(s) to split. It is not necessary to drive the heads in flush. Often it is a good idea to allow the boards to “settle down” for a few days, and then go back to see if the nails can be tightened down further with careful taps.

In order for the boards to lie down, it is necessary for them to assume a concave shape outside. This often happens spontaneously after a few days as the outside dries a little in the sun, and the inside remains a little damp inside the mill.

If a board is noticed to be **convex** on the outside before fixing, (as sometimes happens after pre-painting) the situation can be reversed by spraying the unpainted area of the other side with water using a garden sprayer. Such boards may be stacked in the shade with sprayed sides in contact, and they will soon improve their shape.

2.17 Joints in weatherboards

Wherever possible, weatherboards should be chosen of a length to fully span the area to be covered. This particularly applies to windmills for obvious reasons. In the past it was common to butt-join boards over a stud or other vertical timber. This allowed rainwater to be driven in and to rot the timber concerned. Worse still, the active decay was unlikely to be noticed until it became severe. It is essential that boards used for windmill caps, post mill roofs and breast walls, smock mill sides etc are not joined, except at windows, doors and corners.

Where very long boards are required, it is possible to scarf two lengths of weatherboard together to form a long length. This should be done after preservative treatment, and a suitable period of drying. The scarf should be about 5” (125mm) long at the wide edge, to about 1 ¼” (30mm) long at the narrow edge. These scarfs need to have no lips, and can be cut quickly using a hand-held electric planer. They can be finished with a jack plane, and glued with an epoxy resin glue. They need to be cramped until cured, and the surplus glue cleaned off with an electric belt sander. In the case of a watermill, or the vertical sides of a postmill, there may be long lengths that have to be butt-joined, but a sheet-metal "soaker" should be used to exclude water and to protect the timber behind. Such joints should be well staggered in the horizontal sense, using well-separated verticals or studs to avoid a vertical "stack" of joints in one place. Needless to say, the end-grain of the joined boards needs to be well painted.

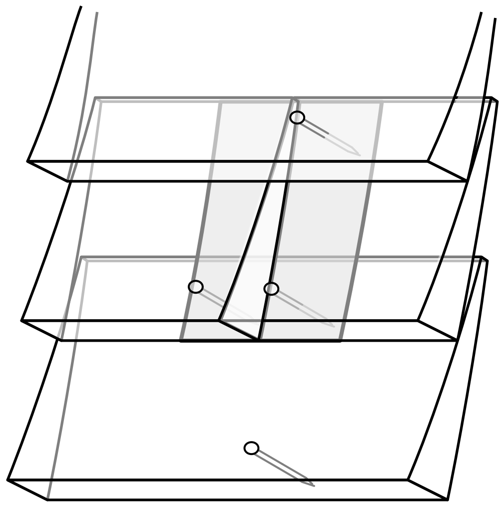
2.18 Soakers

Soakers are pieces of sheet metal used as a weatherproof "bridge" to a butt, mitre or lapped joint between two weatherboards. They protect the framing timbers behind the boards, and act as a chute to drain the joint. Soakers are made from a corrosion-resistant metal such as lead, copper, zinc or aluminium. Lead and aluminium are the most common.

The soakers should be wide enough to extend 3" (75mm) either side of the joint, and should be the same height as the weatherboards, usually 6" (150mm) wide by 7" (175mm) high. The thickness of the metal should be about 1.5mm for aluminium, copper, zinc etc, and Code 3 or 4 (1.25mm – 1.8mm) for lead. Thicker metal is undesirable as it separates the boards too much.

The soakers may be placed under each board joint, leaving the joint itself exposed outside, and hiding the soaker from view. This allows for repainting the joint later, and the soaker is secured by the nails fastening the board.

Another way of fitting soakers is to place them over the joint so as to be visible outside. It is then necessary to nail through the face of the soaker. One disadvantage of this method is that the corners of the soaker may lift and snag ropes, chains or sacks.

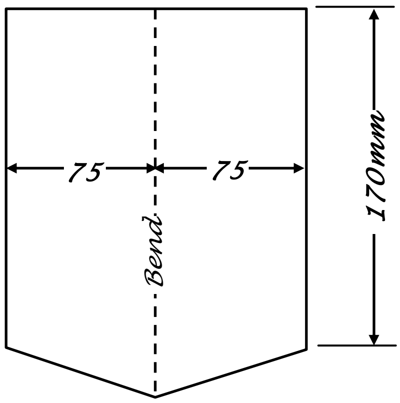


Soaker under a joint

Soakers are particularly vital at the corners of a smock mill. These need to be shaped and bent to conform to the corner, with one soaker for each board joint. The joints between the boards may be mitred or lapped left and right according to local style. If lapped, the soakers are best fitted under the joints.

The corners of some watermills may have the weatherboards butted against a vertical board nailed to the corner post. This looks attractive, but offers little protection to the corner post inside.

To retain the external appearance, a different strategy is needed. Both faces of the corner post may be covered entirely with a piece of thick bitumen DPC felt, bent round the corner. This may have to be warmed to prevent cracking. The DPC may be put on in lengths, starting from the bottom, where the felt must overlap a dripboard or the brickwork by 3" (75mm). Each successive length must overlap the last by 3" (75mm) until the eaves are reached. The original form of corner cladding may now be applied in the knowledge that any rainwater entering a joint cannot rot the structure. This method can also be used for postmill corners, but is not ideal for corners of roofs or smock mills where there is an inward slope.



Soaker for a smock mill corner

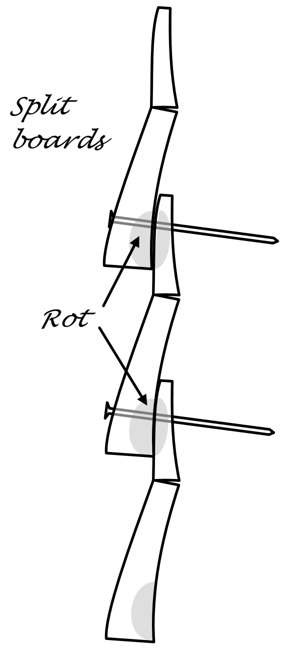
3 Repairs to weatherboards

Individual boards may become rotten or split, and require replacement. In the case of a split, an easy temporary repair can be effected by sliding a piece of thin sheet metal about 1 ½" (40mm) under the overlap of the board above. The sheet must be deep enough to cover the split, plus about another 1" (25mm) below it. The sheet can be fastened with small nails below the split, and may also be bedded on mastic

Renewing individual boards is not easy. Make sure that the neighbouring boards are sound before investing time on a single board. To remove a board, carefully split it along the grain with an old, sharp, strong chisel. Try to remove strips about ¾" (20mm) wide, starting at the bottom edge. Use the chisel and mallet horizontally, at a very acute angle to the face of the board, along the grain. Be careful not to go too deep so as to cut or split the board below, which will be fairly thin. Expose the nails by splitting the wood away from them. Bend them down a little to release the wood above.

Try to remove the nails by twisting with a Mole wrench. If they won't move, break them off flush using the Mole close to the surface of the board below, bending them back and forth. Do not lever against the board below because it will almost certainly split. If the nail stub projects, drive it flush carefully.

Next, each nail securing the board above must be cut twice. Use a fairly coarse hacksaw blade in a padsaw handle, arranged to cut on the pull stroke. Use the saw in the outermost gap to cut through the nails just behind the board above. If there is no gap, carefully open one up with a finely-tapered flooring chisel or two. When all the cuts are made, carefully slide a flooring chisel into each cut, and tap the surface of the board above. The cut nails should pop out to be gripped under the head and pulled



Typical deterioration

MILLS SECTION

ISBN 978-1-898856-32-0

right out. The nails then need to be cut between the board to be removed and the studwork. Use the flooring chisels to open a gap if necessary. Saw through the nails, and when they are all cut, the remains of the board should slide out. Renew the board using the removed piece as a pattern, plus measurements of the split part. Bear in mind all the preceding advice on treatment, painting etc.

4 Key Points

4.1 Must Do's

- Select timber
- Pressure treat with preservative
- Pre-paint
- Paint end grain (when cutting in-situ)
- Pre-drill nail holes
- Fit soakers to joints and corners

4.2 Must Avoid

- Poor timber
- Irregular grain
- Soft knots
- Splits from nails or handling
- Alkyd resin based paints (virtually all "modern" paints)

4.3 Materials and Advice

For help with finding millwrights and suppliers of materials or for further advice see the SPAB website http://www.spab.org.uk/advice/ or ring 020 7456 0916

Membership

The Society for the Protection of Ancient Buildings

37 Spital Square
London E1 6DY

Tel 020 7377 1644
Fax 020 7247 5296

info@spab.org.uk
www.spab.org.uk

A charitable company limited by guarantee registered in England and Wales

Company No 5743962
Charity No 111 3753
VAT No 577 4276 02

The SPAB Mills Section

- **Protects** hundreds of traditional Windmills and Watermills from proposals to demolish or damage them each year.
- **Campaigns** for the sympathetic repair of mills, and works to return buildings and machinery to working order.
- **Circulates** its newsletter **"Mill News"** to members four times per year.
- **Helps** to find new owners for mills at risk by issuing a list of old mills which are for sale.
- **Arranges** a programme of lectures, meetings and visits to mills.
- **Works** to raise public awareness of the need to save and conserve the country's dwindling number of wind and watermills by generating press interest.
- **Co-ordinates** and publicises **National Mills Weekend** on the second weekend in May each year.
- **Supports** the work of traditional **millwrights** across the UK.
- **Liaises** with independent groups of international and UK Molinologists.
- **Encourages** the survival of the traditional miller and his or her craft.
- **Supports** the care and development of our collections through the **Mills Archive**.