

RESIN EXUDATION IN JOINERY TIMBER

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This document provides general advice on the cause of resin exudation in joinery timber and the procedures which can reduce its effect in service.

SOURCE OF RESIN

Resin occurs in timber either as a natural substance or as a result of injury to the tree during growth. When occurring naturally it will contribute to the character of the wood. In these circumstances it may be in sufficient quantities to present a recurrent problem. Timbers with naturally occurring resin are used in situations which take advantage of the effect of the resin, e.g. where increased natural durability is needed.

The other form of resin is as a result of physical or natural injury to a tree. These can occur around knots which have not fully intergrown with the main bole of the tree. Occasionally physical injury can result in the build up of resin pockets within the tree.

TIMBER SELECTION

Timber used by BWF members in the production of general joinery is usually selected so as to be free of naturally occurring resin. However, resin produced as a result of injury to the growing tree can still be present.

Once converted the timber does not produce any new resin. During the seasoning, drying and selection process timber with obvious resin pockets is eliminated. When practical, joinery standards permit the cutting out and making good of resin pockets in joinery products.

RESIN APPEARANCE

However, even after this selection process, resin can still be present in joinery timber and may not manifest itself until sometime later.

There are various reasons for resin to unexpectedly appear at a later stage in timber products. Resin contains naturally produced oils. Over a period of time these evaporate and the resin hardens. If the timber is left to stand for a significant period of time all the resin in any piece of timber will harden completely. However, in modern joinery production it is not practical to hold stocks of timber for this length of time. The kiln drying process, used to reduce the moisture content of joinery timber, will help any resin which has access to the surface to be drawn out and this is eliminated at an early stage. However, another process used in joinery production can have the reverse effect.

Softwood joinery which is to be used in external conditions is often preservatively treated and usually with a solvent based organic preservative. This process is neither affected by the presence of resin nor affects the resin.

The problem of resin exudation usually manifests itself in the finished joinery product after the surface finish has been applied. It can also take a number of years to appear.

The machining process can expose fine routes to the resin pockets. Set in position certain parts of a joinery product can be warmed either by local heating sources or direct sunlight. Internal control heating systems can raise the surface temperature of joinery just sufficiently to draw the resin to the surface. Externally a combination of direct sunlight and dark finishing systems can also raise the temperature and cause the resin to flow.

The resin exuded can show itself on the surface in two ways. If a microporous paint or stain has been used the resin may bleed through the finish. If a non porous paint finish has been used the resin will lift the finish off the timber and expose the surface below. In either case the timber can be left until the movement of resin has ceased. However, this is not a very satisfactory solution if the timber is subject to attack by the weather or the aesthetics of the joinery is destroyed.

REMOVING RESIN

If a microporous paint or stain has been used the best solution is to leave the resin to harden on the surface. During the period of resin movement the finishing system will continue to perform its function. This can then be removed by light scraping. Alternatively, the process can be speeded up as detailed below.

Where the finishing system has been lifted a different solution must be employed. It is preferable to leave the resin, as before, until it has hardened, then scrape off and redecorate using a full finishing system on the bare wood areas. However, this method can only be used where the timber will not be subject to the weather. Protection to the exposed wood must be carried out as soon as is practical to prevent the moisture content rising and further finishing coats lifting due to the presence of excess moisture.

It may be possible to induce more resin to the surface by cleaning off the existing resin and applying gentle heat to the surface of the timber with an electric type blow lamp. Gently wiping the surface using a lint free cloth moistened with methylated spirits will remove the surface resin. For microporous finishes this process, if carried out carefully, will avoid the need to redecorate.

It is impossible to guarantee that resin will not appear and damage the decoration on any joinery item. In the past shellac and self knotting primers have been used but these only claim to reduce, not eliminate, staining of the coating system. These can never be completely successful because modern coating systems are designed to be flexible. Either they will not adhere to the area of knotting or the resin will force the decoration to separate from the timber.

Once the resin has come out to the surface and the procedures above carried out it is unlikely that the problem will reappear.