

# Banding of sawn timber packs

**In the last edition of WOODNIG NEWS we provided details of the WOODNIG's current research projects. We now have the results of one of the projects and will keep you updated about the others in future editions.**

A significant number of accidents occur each year involving stacks of wood. This prompted the WOODNIG to commission research to investigate common timber banding materials and to carry out tests on timber packs under controlled conditions.

The results of the work carried out by scientists at the Health and Safety Laboratory in Sheffield show polypropylene banding, of the type chosen for the tests, is not suitable for banding timber packs greater than 0.5 m<sup>2</sup> in cross-section. The shape and tightness of the pack is unlikely to be retained when the pack is transported or moved giving rise to a risk of the pack coming apart or a stack of banded packs collapsing.

The recommendations in this article will be incorporated into guidance prepared by the WOODNIG in due course. In the meantime we strongly suggest you review your banding operations and storage arrangements in the light of the findings. Further details of the research can be obtained from the WOODNIG.

The banding materials used in the study were:

Steel - width 12.7 mm            QBS 560 kgf (5.5 kN)  
 Polyester - width 19 mm        QBS 1900 kgf (18.6 kN)  
 Polypropylene - width 12 mm    QBS 285 kgf (2.9 kN)

(Note: QBS = Quoted breaking strength)

A number of different timber configurations were examined to allow comparison between sawn, planed square-edged and treated and untreated packs. (The typical pack size used for the tests was 0.5 m x 0.45 m x 2.7 m.)

### *Advantages and disadvantages*

Each of the banding materials have their own advantages and disadvantages (see Table 1). The most suitable band material for a given application should be carefully selected bearing in mind the band's characteristics and what will happen to the banded pack in terms of storage, transport, treatment etc.

Table 1

Material	Advantages	Disadvantages
Steel	Available in high strengths.  Low creep.	Stiff (difficulty in applying tension and fixing the band). Difficulty of disposal. Corrosion of unprotected bands. Danger to user (sharp/stiff).
Polyester	Available in high strengths. Easy to tension and fix, good at absorbing energy from impacts, dynamic loads etc. Ease of use, storage and disposal. Many kits use buckles which allow re-tensioning if banding comes loose. Little danger to user.	Slight creep. Material properties may vary with environmental conditions.
Polypropylene	Easy to tension and fix. Good at absorbing energy from impacts, dynamic loads etc. Ease of use, storage and disposal. Little danger to user. Cheap and widely available.	Creeps noticeably. Only low strengths appear to be available. Material properties may vary with environmental conditions.

### Main recommendations

- Decide when to band after determining whether the timber is likely to expand or contract due to the surrounding storage conditions or treatment etc. Some packs may need re-banding after treatment or a period of storage.
- Polypropylene banding is not suitable for banding timber packs with cross-sections greater than 0.5 m<sup>2</sup> and masses greater than 400 kg.
- Hammer and/or shake the pack during band tensioning, to ensure that a tight and secure pack is achieved.
- Take care while applying bands to packs of timber. Non-squarely applied bands will be likely to come loose when the pack is transported or any external load is applied to the pack.
- Carry out periodic inspection of timber storage areas at regular intervals to highlight broken/damaged bands, out-of-square packs, non-squarely applied bands, loose bands and loose timbers.

## POSTERS - SAFE WOODWORKING PRACTICES

Enclosed with this edition of **WOODNIG NEWS** are two new woodworking posters produced by the WOODNIG. They show safe working practices at:

- narrow band saws;
- manually operated cross-cut saws.

You may already have copies of our four existing posters in the 'Safe Working Practices' series. They will be revised and updated in the near future to take account of changes in the new Woodworking Approved Code of Practice.

The revised posters and new posters will form a poster six-pack that will be priced at £7.50 and will be available through HSE Books on ISBN 0 7176 2433 1. Single copies of the posters will not be available.

## Welfare facilities in woodworking

Not all woodworking establishments give sufficient emphasis to the provision of suitable welfare facilities and a recent survey has produced some disappointing statistics. Welfare provision in terms of toilets, washing facilities, rest facilities, and eating and drinking facilities were looked at in a sample of premises.

Suitable and sufficient welfare facilities must be provided to meet the requirements of the Workplace (Health, Safety and Welfare) Regulations 1992. Additionally, under the Control of Substances Hazardous to Health (COSHH) Regulations 1999, eating, drinking and smoking is prohibited in work areas contaminated by a carcinogen. In COSHH, hardwood dust is classified as a carcinogen.

Of most concern are eating and drinking facilities. The Workplace Regulations require rest facilities, including facilities to eat meals, to be provided. There should also be an adequate supply of drinking water. Compared to industry as a whole, a relatively high proportion of woodworking premises were found to have either 'very poor' (11%) or

'poor' (6%) eating/drinking facilities. Only 5% of the woodworking premises sampled had 'very good' eating facilities - compared to 13% in industry as a whole.

While none of the woodworking premises sampled had 'very poor' toilets or washing facilities, the percentage of these facilities rated as 'very good' did not compare well against other industries.

As we move into the next millennium, HSE inspectors will be giving welfare facilities particular attention. Check that facilities are adequate in your workplace and make necessary improvements to ensure that enforcement action is not necessary.

### Useful publications:

*Workplace health, safety and welfare: A short guide for managers* INDG244 HSE Books 1997 (free) and *Workplace health, safety and welfare. Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practice and guidance* L24 HSE Books 1992 ISBN 0 7176 0413 6 (£5.00).

## LESSONS TO BE LEARNT

A sawmill company in the South-East was recently prosecuted under the Workplace (Health, Safety and Welfare) Regulations 1992 following a fatal accident to an employee who was run over in a timber yard.

An employee was reversing a side loader while carrying a very light load when he ran over another employee who received fatal crush injuries to the chest.

The operator was competent but there was limited rear vision, no organised traffic routes or systems to separate vehicles and pedestrians, no banksman and no reversing alarm or flashing beacon on the lift truck.

The company's risk assessment proposed some controls, but they had not been addressed and they were prosecuted for failing to organise a safe transport system. This caused a risk to the health and safety of workers and the public. They were fined £1500 and ordered to pay £3776 costs.

The Workplace Regulations require traffic routes to be organised in such a way that pedestrians and vehicles can circulate safely with ease. Guidance can be found in: *Managing vehicle safety at the workplace: A short guide for employers* INDG199 (free) and *Workplace transport safety: Guidance for employers* HSG136 HSE Books 1995 ISBN 0 7176 0935 9 (£7.50).

# EUROPEAN STANDARDS UPDATE

It is now more than 18 months since we last gave you a progress report on the production of European Standards (ENs) for the safe design of woodworking machines. Manufacturing machines in accordance with harmonised standards is one way in which manufacturers can comply with the requirements of the Supply of Machinery (Safety) Regulations 1992 - the 'CE Regulations'.

Two new Standards have recently been published. They cover two machines that between them account for 14% of all woodworking machinery accidents - vertical spindle moulders and routers. Some 29% of accidents on these machines result in amputations. Some of the key requirements follow:

## **BS EN 848-1: 1999 Vertical spindle moulding machines**

Guards and workpiece guides for both straight and curved work are required to be supplied with each machine, ie a set of pressure pads (Shaw guards) and a ring guide should be supplied as standard. The tool guard at the rear of the fence does not have to be interlocked, but it should be hinged (to allow for tool changing) and be capable of being locked in position during operation. On machines with more than one spindle speed, the selected speed should be indicated on the machine. Machines can have a reverse spindle rotation facility but certain additional safeguards must be fitted. Slotted spindles are not permitted.

## **BS EN 848-2: 1999 Routing machines**

A self-closing adjustable guard is required to prevent access to the tool from above and from the sides (in any horizontal direction). The machine table should be equipped with means to enable a fence to be fixed to the table - although the fence itself does not have to be provided. Where a fence is provided, a horizontal pressure pad should be supplied with it. CNC routers are covered by another as yet unpublished standard (prEN 848-3).

The Standards listed below are available from BSI Customer Services, 389 Chiswick High Road, London W4 4AL  
Tel: 0181 996 7000 Fax: 0181 996 7001.

BS EN 847-1:1997 *Milling tools and circular saw blades*  
BS EN 848 -1:1999 *Single spindle vertical moulding machines*  
BS EN 848 -2:1999 *Single spindle handfed/integrated fed routing machines*  
BS EN 859: 1998 *Handfed surface planing machines*  
BS EN 860: 1997 *One side thickness planing machines*  
BS EN 861: 1998 *Surface planing and thicknessing machines*  
BS EN 940: 1997 *Combined woodworking machines*

It is hoped that during the next 12 months, Standards will be published on circular saw benches/dimension saws; horizontal beam/vertical panel saws; and bandsawing machines. The WOODNIG has been actively involved in the production of these Standards. We believe that they set a level of safety which is as good as, or in some cases better than, that which was common in the UK in the past.

## LOLER - New lifting Regulations

Most woodworking premises will have equipment for lifting and the law covering this equipment has now changed. The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) came into force on 5 December last year.

The Regulations implement the requirements of a European Directive and apply across all of industry. LOLER replaces outdated prescriptive lifting law, for example sections of the Factories Act 1961, with goal-setting regulations requiring the risks from lifting equipment and lifting operations to be managed safely.

The Regulations contain requirements on equipment strength and stability; positioning and installation; marking; organisation of the lifting operation; thorough examination and inspection; and record keeping.

LOLER applies to all equipment traditionally covered by the old legislation, ie cranes, lifts and hoists. However, LOLER applies to other equipment presenting similar risks. These include loader cranes on lorries; automated storage and retrieval systems; mobile elevating work platforms; scissor lifts; industrial loaders (eg log grabs); fork-lift trucks; tractors fitted with foreloaders; and vehicle tail lifts. Lifting equipment is defined as 'work equipment for lifting or lowering loads and includes its attachments for anchoring, fixing or supporting it'.

The WOODNIG strongly advises that you revise your risk assessments in relation to lifting operations in the light of this new legislation. Detailed guidance is given in *Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and Guidance L113 HSE Books 1998* ISBN 0 7176 1628 2.

## and finally . . .

'Alas, this is my last WOODNIG News', wrote Keith Dobson, the WOODNIG's Head in Issue 7 when he announced his retirement from HSE. Now it is my turn and I think that those words are equally appropriate for me to use now as they were for Keith back in March 1995.

The revival of this newsletter was one of my main goals when I became Head of the WOODNIG and judging by the comments that we received, you welcomed its return.

I am moving within HSE to an operational job and my successor will be my namesake (but no relation), Eddie Marshall.

I value the many contacts that I have made in the industry during my time in the WOODNIG and I genuinely feel that, together, we have made some progress and advanced the cause of health and safety.

I wish you all a prosperous, healthy and safe future.

John Marshall

## Further information

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 6FS. Tel: 01787 881165 Fax: 01787 313995.

HSE priced publications are also available from good booksellers.

For other enquiries ring HSE's InfoLine Tel: 0541 545500, or write to HSE's Information Centre, Broad Lane, Sheffield S3 7HQ.

HSE home page on the World Wide Web:  
<http://www.open.gov.uk/hse/hsehome.htm>

## NEW PUBLICATIONS FROM HSE

Details of recently produced HSE publications which may be of interest to the woodworking industry are listed below.

*Application of electro-sensitive protective equipment using light curtains and light beam devices to machinery* HSG180 HSE Books 1999 ISBN 0 7176 1550 2 (£7.95)

*Year 2000 risk assessment: Will you come through the millennium safely?* INDG287 HSE Books 1999 (free)

*Health risk management: A guide to working with solvents* HSG188 HSE Books 1999 ISBN 0 7176 1664 9 (£5.75)

*Safe use of lifting equipment: Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and Guidance* L113 HSE Books 1998 ISBN 0 7176 1628 2 (£8.00)

*Are you involved in the carriage of dangerous goods by road or rail?* INDG234 (rev) HSE Books 1999 (free)

*Employers' Liability (Compulsory Insurance) Act 1969: A guide for employees and their representatives* HSE36 HSE Books 1998 (free)

All these publications are available from HSE Books (for details see 'Further information' box).

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What would you like to see in future editions?  
Send your views to Chris Molde at the address below.

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WOODNIG NEWS is produced by the HSE's Woodworking National Interest Group based at the National Agricultural Centre, Stoneleigh, Kenilworth, Warwickshire CV8 2LZ.