

Introduction

In 2008 a joint working party which included the Health and Safety Executive, the Health and Safety Laboratory, Bovis Lend Lease and members of the steel construction industry was formed to investigate the ergonomic and manual handling risks associated with the installation of traditional shallow profiled metal decking ranging from 46mm to 80mm deep. Other deeper profiled decking systems were already under review by another working party and were not therefore considered under this initiative. As part of the study the HSE initiated working party decided to engage with the work force over a range of issues to assist in determining the extent of the problem as perceived by the work force.

A survey was distributed to the floor decking group members of the Metal Cladding & Roofing Manufacturers Association (MCRMA). Approximately 200 questionnaires were distributed. A total of 123 questionnaires were returned for analysis. The objective of this survey was to provide a baseline measure of the status of manual handling risk management in metal deckers, as perceived by the work force. This measure will form part of an evidence base from which the industry working party can determine areas of prioritisation for potential improvements in manual handling in metal deckers.

There were four distinct sections in the survey. These were personal demographics; work place demographics and manual handling; work force attitude; and prevalence of musculoskeletal disorders.

Conclusions of the Survey

The findings from the survey suggest that metal deckers are a group of workers to which potential manual handling interventions could be targeted. The most common reports of trouble were in the lower back (42.0%) in the last three months and (24.1%) in knees for the last seven days. The lower back was also the site associated most frequently with disability (15.2%), the site most associated with trouble caused by the job (18.8%) and made worse by the job (13.4%). In a comparison of MSDs between metal deckers and three other groups (care workers, podiatrists and industrial workers), the metal deckers reported similar prevalence's to the industrial workers, except the metal deckers reported higher prevalence's than the industrial workers in the hips/thighs/buttocks and in the knees.

The survey generally suggests that workers have a positive attitude towards their management. The majority of workers (69.6%) believe management are committed to reducing the risks posed by manual handling on site. The majority (71.4%) also believed that management are keen to hear from front line staff on ways to reduce manual handling and the majority (63.4%) believe that management take appropriate action to reduce the risk associated with manual handling. When asked specifically about the responsiveness of site managers to complaints, 34.1% said that site managers would not respond and 22.4% said site managers would only respond sometimes. The Metal Decking Industry working party believe that this may be due to the limited options available to the decking managers once the materials are loaded out, as loading out is usually undertaken by the steel fabricator. This highlights the need to ensure the works are adequately planned for the loading out of one decking bundle in each steelwork bay and this is supported by 71.5% of the work force who suggested this would improve manual handling. The majority of the work force (91.6%) also believed that mechanical lifting of ancillary items such as edge trims would make their job easier.

The majority of the work force (62.5%) stated that they would prefer to fix shorter sheets which are 600mm wide even though this would increase the overall number of sheets that they were required to fix each day. In a separate question the majority (67.9%) also reported that they would prefer to fix lighter decking

sheets. Whilst it is not always possible for decking contractors to reduce the length of the sheets without impacting on the engineers design, it is often possible for decking to be detailed and manufactured to double span rather than triple span. Hence 9m long sheets can often be reduced to a greater number of 6m length sheets which from an ergonomic and manual handling perspective is thought to be generally preferable. The widths of decking sheets in the UK currently range from 1.00m to 600mm wide, the later of which is always lighter for a comparable product. The work force generally preferred to fix shorter sheets of a 600mm profiles (62.5%). There are design and considerable retooling costs associated with reducing the widths of the wider decking profiles on the market, but this could be an area for decking contractors to consider when redesigning their decking profiles for the future.

Manual handling training provided for the work force was thought to be practical (73.9%), but whilst the majority reported they had received some manual handling training, 38.4% reported that they had received no manual handling training. This is therefore an area where immediate improvements should be made by the decking contractors.

The industry working party has spent considerable time investigating the potential for the introduction of manual handling devices to reduce the requirement for the deckers to lay everything by hand. The working party has however concluded that such devices would not be a practical solution on site. 82.2% of the work force thought that manual handling devices would not be practical on site.

Discussion

The industry working group has spent considerable time investigating the potential for mechanical handling solutions, aimed at reducing the risks to those laying decking sheets which analysis has demonstrated is significant. However, no solution has been deemed to be reasonably practicable at present. Future developments and innovations in mechanical handling aids may lead to the need to review this guidance. As an interim measure, the working group has considered the results of the survey and produced some guidance and information on best practice. This covers the following topics and is aimed at lessening the risks associated with the manual handling of decking sheets:

SIG.00 Guidance on Manual Handling – Introduction

SIG.01 Manual Handling Survey

SIG.02 Off Site Cutting Procedures – HSE case study

SIG.03 Material Loading Out and Guidelines for Principal/Sub-Contractors

SIG.04 Manual Handling – Advice to Structural Engineers

SIG.05 Manual Handling of Decking Sheets – Reducing the Risk

The industry working group recommends that this survey should be repeated at some stage in the future, when improvements have been implemented, to gauge the impact of those improvements on the site work force.

Full survey available from HSE Construction Sector upon request.