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HEALTH & SAFETY LABORATORY

Review of the 3-Year HSE Mattress Manufacturing Initiative: Short Report

ERG/09/35

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1 BACKGROUND

In 2005 the Health and Safety Executive (HSE) commenced a three-year initiative with bed manufacturers with support from the National Bed Federation (NBF). During 2005 HSE undertook visits to twenty-five manufacturers with a focus on manual handling risk factors and musculoskeletal injuries. The aim was to reduce the number of injuries within the industry. Manufacturers were asked to submit an 'Action Plan' to the HSE on how they planned to tackle the risks from manual handling over the next three years (2005-2007). HSE were due to follow up with manufacturers at the end of this period in 2008. However, due to personnel changes within HSE there was no one to follow up with this project and a delay of a year resulted. At the beginning of 2009 a new HSE officer was responsible for driving the project forward. This report presents the findings from the follow up conversations and site visits with the twenty-five manufacturers that participated in the initial project.

2 OBJECTIVES AND METHODOLOGY

The aim of this research was to complete a review and assessment of the effectiveness of the HSE initiative that was undertaken with mattress manufacturers that began in 2005. In order to achieve this aim the following activities were carried out:

1. Telephone interviews with manufacturers who had previously submitted action plans to the HSE were undertaken;

2. Up-to-date action plans that determined changes that manufacturers had made were reviewed;

3. From the telephone interviews companies where there had been positive changes as a result of the intervention were identified and revisited to document the changes;

4. The findings, particularly any good practice that had been identified, were reported in order to continue to raise awareness of the risks from manual handling in this industry and to offer solutions to reduce the risks employees are exposed to.

3 MAIN FINDINGS

- **Response Rate:** Of the twenty-five companies initially contacted in this follow up project, only eight were available and accepted the invitation to comment on their involvement in the HSE initiative. Of these, five site visits were undertaken, however, two of these were with the same company. The low response rate was due to a variety of reasons, such as companies closing down over the summer period, or HSL being continuously unsuccessful in being able to speak with the right person in the organisation. However, the information obtained from the manufacturers that did contribute was useful and it is apparent that within these companies positive steps have been taken to reduce the risk of musculoskeletal injury from manual handling.
- **MSD Injuries:** The eight companies that participated in this follow up, reported that they had seen a reduction in musculoskeletal injuries over the last four years, which they attribute to the interventions that they had implemented, including the introduction of mechanical handling aids. One manufacturer reported that in 2004/05 they had 93 injuries related to manual handling and in 2008/09 this had reduced to 53 manual handling related injuries. However, as one manufacturer reported, part of this decline could also be partially attributed to a reduction in the workforce as a result of the current economic situation. Many companies have restructured their payment methods,

opting to remove piece-rate pay schemes, which is viewed as a positive step forward by the HSE in reducing the risk of musculoskeletal disorders (MSDs).

- **Work Organisation:** Of those that participated, manufacturers have considered work organisation factors that may reduce the risk from manual handling. One example of this was a modification to the flow of products through the factory, minimising the need for the products to be manually handled. As an additional benefit several manufacturers reported increased productivity as a result of improving work organisation. Photograph 1 shows a mattress leaving a mattress turner and being moved directly onto the conveyor to move through the production line.

a. b.

Photograph 1. Mattress leaving the mattress turner and moving onto the conveyor system

- **Use of Mechanised Equipment:** Companies reported that they were still willing to invest in mechanised equipment however, significant changes may currently be delayed until the economy improves. Examples of mechanised equipment are the installation of mattress turners, conveyors, assisted tape-edging machines, and automated packaging, and tufting machines. Other small changes that were observed during site visits that may help to reduce the risk of injury from manual handling. These included: having workbenches at the same height so that products can be slid from one workbench to the other rather than lifting and carrying (Photograph 2).

a. b.

Photograph 2. Workbenches set at the same height as the conveyor

- **Use of Handling Aids:** A variety of trolleys and dollies remain an important and simple means of transporting mattresses and divans within a factory, reducing lifting and carrying items (Photograph 3).

Tipping trolley for mattresses Tipping trolley for mattresses Modified trolley for fabric rolls

a. b. c.

Photograph 3. Examples of specialised trolleys to transport mattress (a&b) and fabric rolls (c)

- **Use of Other Transportation Methods:** Other manufacturers have come up with unique solutions to move mattresses and divans from one area to another. For example, the use of chute systems (Photograph 4. The chute where mattresses are delivered from the upstairs production area (a) and the end of the chute on the ground level (b)conveyors, or lifts (Photograph 5), to transport mattresses from one level to another. The use of rollers was also observed to move divans stored in pallets (Photograph 6).

a. b.

Photograph 4. The chute where mattresses are delivered from the upstairs production area (a) and the end of the chute on the ground level (b)

Photograph 5. Lift used to transport items from one level to another

Photograph 6. Rollers used to help transport divan bases

- **General Issues:**
    - **Storage of Products:** Other improvements were observed in how raw products and the finished mattresses and divans were stored, making them easier to be transported on pallets or in stillages thereby reducing unnecessary manual handling (Photograph 7, 8, and 9).

Photograph 7. Raw products stored on pallets can be easily transported by pallet truck

Photograph 8. Material stored in cylinders making them easier to access

Photograph 9. Mattresses stored in allotted/organised storage areas

- **Reduction in Storage Heights:** The height at which products were stored or temporarily placed was also observed to have been lowered which will help to reduce the lifting and reaching above shoulder height.

Photograph 10. The painted red line indicates that products should not be stored above it

- **Clearly marked walkways:** These were observed and helped to keep the workplace ordered reducing some of the risks of individuals slipping or tripping (Photograph 11).

Photograph 11. An example of a clearly marked walkway with products stored in large trolleys so they can easily transported within the factory

4 RECOMMENDATIONS

- The findings of this project should be disseminated to the manufacturing industry as appropriate, and should be accessible through the HSE website. Ideally, HSE and the NBF should work together to raise awareness amongst manufacturers of the findings of the report. This will help to further inform manufacturers of the risks from manual handling and possible risk reduction measures to reduce the risks from MSDs.
- It is possible that there is still a need to reach smaller manufacturers who may not be aware of the manual handling risk factors and potential musculoskeletal injury they are exposing their workforce to. Therefore, every effort should be made to distribute this report to all manufacturers, not only those members of the NBF.
- To have the maximum impact within the industry, future research could best be directed at the distribution and delivery of mattresses once they have left the manufacturers site. In the meantime, manufacturers could reduce the number of mattresses in the vehicle so it is easier to unload or to take a trolley on board to assist with the delivery. However, it should be noted that decreasing the number of items in the vehicle is likely to have a cost implication. Further, in regard to home deliveries, manufacturers could give delivery drivers greater power to refuse to deliver if they consider that the route within the property is unsafe. In order to prevent non-deliveries, communication between the retailer, delivery driver, and customer will be important (e.g. to ensure a pathway within the house has been cleared so they can easily handle the mattress to where it is required). When delivering to retail premises it will be important to ensure that there is assistance for the delivery driver to help him unload the vehicle. A trolley stored within the delivery vehicle to assist with deliveries may also be possible.
- The Manual Handling Operations Regulations 1992 (as amended) does not place a duty on manufacturers or suppliers to mark weights on loads. However, they do have a duty under sections 3 and 6 of the Health and Safety at Work Act 1974 to protect people not in their employment who may be affected by handling loads they have supplied. Therefore, manufacturers still need to improve how they label the product weight on the finished item so it can quickly and reliably warn handlers when the load is heavy. Clearly marking products with the correct weight will help to enable all those in the distribution chain in making a dynamic risk assessment in terms of how they handle the product (e.g. do they need to use a trolley or seek assistance from a second individual?). An example of a handling warning is illustrated in Photograph 12.

Photograph 12. Example of a warning label for a heavy product

- Any changes to work organisation or to the work system should be trialled initially. Worker involvement in any new ways of working is of paramount importance from the outset. Manufacturers must also consider solutions that suit their individual needs. The introduction of any new equipment should be trialled first before widespread

implementation. In addition, individuals should be consulted at the start of the process in order to ensure the solution is something beneficial and practical for use. However, there is likely to come a point where the employer will have to enforce the use of the equipment. Changes to work organisation may also have an additional benefit of improving productivity.

5 FURTHER ASSISTANCE

If you would like to view the full report "*Review of the 3-Year HSE Mattress Manufacturing Initiative, ERG/09/24"* please contact the HSL Information Centre on 01298 218639 for a copy.

If there are any issues you would like to discuss further, please contact your local HSE Inspector in the first instance.

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