

# Reducing the Manual Handling of Roof Panels

## Information Sheet

November, 2013

### Introduction

This information sheet aims to highlight the physical risk factors associated with the manual handling of roof panels and to present examples of how such risk factors can be reduced.

Composite roof panels are widely used in building construction. They create the thermal covering that reduces internal temperature loss and provide protection against external temperatures. The roof panels come in different sizes and thickness; they can range in length from 1.5 to 24 metres, are normally 1 metre in width and are 100 mm in thickness. The weight of the roof panels increases as the length and thickness of the roof panel is increased.



### Example

If a roof panel has a weight per metre of 10.70kg, it means that a 24 metre length of panel could weigh 257kg. The characteristics of such a load may present a risk of injury as it is too heavy, too large, unwieldy and difficult to grasp.

### Risk Factors

There are a range of manual handling activities that may be required to move a roof panel into position and these include: grabbing the roof panel at each end; and manipulating and rotating the roof panel to ensure it is in the correct orientation prior to carrying it across the roof.

The picture above illustrates an example of manual handling activity required when lifting, carrying and manipulating roof panels.

Examples of risk factors in this work activity which may increase the risk of injury include:

- The roof panels are too heavy; each man is lifting and manipulating in excess of 30kg while maintaining an awkward posture.
- The roof panels are too large and difficult to grasp.



- The physical effort is too strenuous as the construction workers have to manipulate the load away from the trunk when rotating the load to its correct orientation for fitting.
- The roof panels are stacked in a location away from the point of use and have to be carried over a long distance.
- The activity can involve prolonged physical effort, particularly during the manipulation and rotation of the insulated roof panel to the correct orientation.
- The work takes place while working at a height and where there is an uneven work surface.

The Manual Handling of Loads Regulation was developed to regulate manual handling of loads involving the risk of back injury. The regulation has three key requirements:

- Manual handling operations should be avoided where possible.
- Manual handling that cannot be avoided must be assessed.
- Actions to eliminate or reduce the risks must be taken by the employer.

These regulations apply where there is a real risk and a foreseeable possibility of injury. The handling of insulated roof panels is an example of a work activity that is governed by the Manual Handling of Loads Regulation and where actions need to be taken to avoid or reduce the risk of injury.

## Actions to Avoid or Reduce the Risk

In the work activity described, it is evident that the total weight of the roof panel is significant and efforts should be made to investigate interventions at workplace level to avoid or reduce risk factors. These interventions include:

### Use of Mechanical Handling Aids

Mechanical aids are available which can eliminate a significant amount of manual handling of insulated roof panels. There are many types of mechanical lifting aids which provide solutions. Sheets which are delivered interleaved can also be flipped mechanically using vacuum devices, and then hoisted to roof level.

Below are examples of mechanical aids at work:



The benefits of using a mechanical handling solution for handling roof panels include:

- Eliminates panel end laps and enhances roof integrity
- Reduces number of people required to fit the roof panel in place while working at a height.
- The system of work eliminates manual handling of very heavy loads.
- Reduces the likelihood of damage to the roof panels.
- Enhances roof integrity.
- The use of the vacuum lift simplifies the lifting of panels into position on the roof.
- Reduces lifting and carrying in unsafe conditions.
- Improves working postures and results in less strain on workers.

### Design Specifications

The dimensional specifications will impact on the weight of the roof panels. Designers need to consider the implication of their design specification and be aware of manual handling issues that may arise out of their design features, construction methods or through specifying certain products.



### Location of Panels

Roof panels should be stacked as close as possible to where they have to be installed. This will reduce the distance that the load has to be handled, therefore reducing the risk.

### Planning

Consideration of interventions to reduce manual handling at the planning stage of your work will allow an opportunity to consider handling options for roof panels to reduce the risk factors.

There may also be other possible improvements that could be considered. The rationale for deciding on a control measure must be clearly documented in that it should outline why other control measures were not possible and how the suggested control measure will help to avoid or reduce risk of injury.

## Conclusion

The manual handling of roof panels should be the exception rather than the norm. Efforts should be made to investigate if the work activity can be organised to allow the use of mechanical or other means to avoid or reduce the need for the manual handling of loads by employees in the workplace. It is necessary to evaluate the controls that are feasible for each situation.

Consultation is necessary to ensure that all parties are working together to determine whether the recommended control measures are practical, to solicit feedback on other possible controls and to ensure the effective implementation of the plan of action.

The introduction of any control measure such as a mechanical aid or a new work layout means the introduction of a new system of work. Therefore a new system of work must also be assessed to ensure that any new hazards are identified and controlled.

The improvements or solutions suggested in this factsheet are not exhaustive and it may be feasible to develop an alternative solution to meet the specific needs of your business without having a negative impact on the health of the people involved in the handling activity.