

rmp

Risk control The RAPP Tool



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The RAPP Tool

Introduction

The obligation on an employer to assess the risks from manual handling has existed for over 30 years.

Assessing manual handling risks can be daunting, especially if you are not familiar with more complicated activities of moving and handling in the workplace.

Varying standards achieved by employers in producing their risk assessment prompted the Health and Safety Executive in 2003 to develop the Manual Handling Assessment Chart Tool (MAC Tool)¹ to assist employers. The Risk Assessment of Pushing and Pulling (RAPP Tool)² is intended to be used alongside the MAC Tool.

The RAPP tool uses an observation approach to assist the assessor, looking at a structured series of factors that can have an impact on health and safety during pushing and pulling activities.

The tool focusses on two aspects of manual handling, the movement of loads on wheeled equipment, and the movement of loads without wheels which may involve the dragging, sliding, churning (pivoting and rolling) or rolling of the load.

Critical to the overall assessment is how often the load must be moved.

Traditional Approach

The original guidance published by the Health and Safety Executive in 1992 set out a framework based on looking at the following factors:

- Task
- Individual
- Load
- Environment
- Other (such as PPE)

The assessment consisted of a series of questions that an assessor can answer to build a picture of risk. Although the aspect of pushing and pulling was mentioned when considering the task, it has often been overlooked.

One potential drawback of this approach was the need for an assessor to appreciate how the responses to the questions contributed to the increased risk of injury.

Assessment Pitfalls

The employer is very dependent on the competence of an assessor in recognising the potential for injuries that poor manual handling techniques can cause.

An assessor working through the list of questions (in TILEO) does not have more detailed guidance to use while they watch an activity to help them consider the significance of each factor.

The need for a more holistic and practical tool has been addressed by both the MAC and RAPP Tools.

THE RAPP Approach

The tool is designed to help an employer address the most common risk factors in pushing and pulling while manual handling. It was originally developed to help identify high-risk aspects involved in pushing and pulling and directs the assessor to the factors that need to be modified to control the risks.

Each type of assessment is supported by an assessment guide and a useful flow chart to provide a score, and a scoresheet provided to record the results of the assessment.

The RAPP Tool is not designed to evaluate tasks involving repetitive movements and the risks associated with upper limb disorders. A separate tool called the Assessment of Repetitive Tasks of the upper limbs (ART Tool)³ should be used in that situation.

The RAPP Tool uses a scoring system which is both colour-coded and number based. For any factor under consideration the assessor can use a flowchart which includes examples to classify the risk as Green, Amber or Red, and attribute an associated number which is recorded on the scoresheet.

When considering the combined load weight and type of equipment an additional colour code of Purple is used together with an associated number.

RAPP Tool Opportunities

The tool provides the assessor with a flow chart of factors to consider and an indication of levels of risk attached to those factors.

As this is an observational technique, the assessor can watch someone carry out the task in the workplace and record as they go, comparing what they see with the flow chart examples.

In many workplaces there will be established practices for moving heavier items using mechanical handling aids the employer implemented in response to initial manual handling concerns. Although the main concern relating to manual handling may be considered addressed, there is still residual manual handling present unless the mechanical handling aids are powered.

Using Wheeled Equipment

The first factor that the RAPP Tool asks the assessor to consider is the load weight and the type of equipment used.

One or two wheels

In a situation where a person is using one or two wheeled equipment like wheelbarrows, wheelie bins or sack trucks with one or two wheels, the weight of the load is considered. This sort of equipment is ideal for loads less than 50kg. In situations where the load exceeds the rated capacity (manufacturer's recommended maximum weight) the situation would be rated Unacceptable (Purple).

Three or more fixed wheels and/or castors

Where a heavier load such as a roll cage or Euro bin is being pushed or pulled by a person, more force will be needed to start it moving. This sort of equipment is ideal for loads under 250kg. For varying loads, a separate table is provided indicating the level of risk.

Large, steerable or running on rails

For larger loads such using a pallet truck or overhead rail system, more force will be needed to start it moving. This sort of equipment is ideal for loads under 600kg. For various loads, a separate table is provided indicating the level of risk.

Posture

In addition to the question on load weight and equipment, the flowchart for pushing and pulling a load considers other factors, namely:

- **Position of the hands**, where the position of the hands between the hip and shoulder height less force is required to push or pull the load
- **Torso twisting and sideways bending** can mean the spine is not carrying the load equally
- **Hand grip**, the provision of handles that allow a comfortable power grip, with full hand contact allow the force to be transmitted effectively through the hands
- **Work patterns** can affect the recovery time for the person pushing or pulling the load. Where the work is repetitive and the pace is set by the work, not the worker, the level of risk increases

Other Factors

- **Travel distance** can influence how long the force must be applied to pushing or pulling the load and equipment
- **Condition of equipment** can impact how smoothly the pushing and pulling activity and forces applied are transmitted into moving the load

- **Floor Surface**, which may not be level, dry, firm or in good condition causing the equipment to become unstable
- **Obstacles along the route** such as steps, steep ramps can require additional forces applied to the equipment to negotiate past them
- **Environmental factors** such as excessive temperature, strong air movements and extreme lighting may cause to the person to lose their grip or unbalance the load

Each of these factors is scored Green, Amber, or Red depending on the observation. The assessor is then able to visually see the 'hot spots' (the Red and Amber factors) with the pushing and pulling activity and identify control measures to address these risks.

Pushing or Pulling Loads

The first factor that the RAPP Tool asks the assessor to consider is the load weight and the type of equipment used.

The movement of loads without wheels may involve the dragging, sliding, churning (pivoting and rolling) or rolling of the load. In these situations, it is necessary to overcome the friction of the surface it is placed upon.

In situations where two or more activities are performed at the same time, an assessment would be necessary for each type of activity as the dynamics of the movement are different.

Rolling

This requires a force of 20% of the mass of mload to start it rolling, 10% of the mass of the load to keep it rolling, and 20% of the mass of the load to stop it rolling. Which places forces on the spine more unevenly. For loads above 400kg the level of risk increases.

Churning

This requires a person to move the load by pivoting/rolling the load along its base edge. For loads above 400kg the level of risk increases.

Dragging/hauling or sliding

This requires a person to move the load by pulling the load using available handholds. For loads above 25kg the level of risk increases.

Each of these factors is scored Green, Amber, or Red depending on the observation. As before, the assessor is then able to identify the 'hot spots' (the Red and Amber factors) with the carrying activity and identify control measures to address these risks.

Score Sheet

The assessor records what they have found while doing the assessment on the score sheet, which provides space to identify further control measures, carefully considering the hierarchy of control set out in the Manual handling Operations Regulations 1992.

This record of significant findings would help anyone concerned about the activity to see what has been done to address the risks.

Training

Where an operation retains a level of residual manual handling, the RAPP Tool also provides a very useful resource to enable an employer to specify the type of manual handling training required.

Training should be relevant to the type of work carried out and should cover:

- Manual handling risk factors and how injuries can happen
- How to use mechanical aids provided in the workplace
- How to carry out safe manual handling, including good pushing and pulling techniques
- Systems of work relevant to the worker's tasks and environment
- Practical work so that a trainer can identify anything the trainee is not doing safely and correct it

Beware of providing training which is too generic. The content of the training in safe handling techniques should relate to the specific tasks the employee must carry out.

Health and Safety at Work etc Act 1974⁴

Every employer must consider the health and safety of their own employees, and injuries or ill health. Manual handling presents a significant and ever-increasing problem for many employers.

The goal of the employer is to provide a safe place of work, safe systems of work, and ensure individuals receive the information, instruction and training they require.

To assist the employer in identifying how these risks can be specifically managed, given their workplace, an assessment of risk is required.

Risk Assessment

The Management of Health and Safety at Work Regulations⁵ (1999) Regulation 3 expects an assessment of risk and is seen as a high-level opportunity to acknowledge the risks that are present in a workplace.

The Manual Handling Operations Regulations 1992⁶, as amended, looks for the employer to consider specific factors more carefully such as:

- The nature of the premises
- The types of load weights and frequency of operations
- The individuals who can be expected to undertake manual handling including any personal factors such as pre-existing or developing medical issues
- The activities or tasks which present the opportunity suffer injury or ill health

This degree of focus required **may not feature on a routine or generic risk assessment initially prepared under Regulation 3**, as it needs the integration of specific information known about the individual which may change and evolve over time.

The RAPP Tool provides the opportunity to more carefully consider the more specific range of factors that the assessment must include.

Managing the Risk

A review of the assessment of manual handling risks should consider:

- More effective Strategic Risk Assessment to anticipate and recognise the opportunity to avoid the risks.
- Planning Stage Risk Assessments to ensure that resources deployed are proportionate to the manual handling risk.
- The competence of assessors to recognise manual handling risks
- The use of the RAPP Tool to allow specific details to be recorded relating to the handling operations.
- Assessor training in the tools like RAPP and MAC Tools
- Timely reviews of risk assessments following new information from individuals with manual handling related injuries or ill health
- Clearly documented reviews of risk assessments

As with other issues, adequate training and supervision should be provided to ensure that staff understand the risks, the precautions that have been implemented in the workplace, and the need to report any incidents or concerns to a responsible person.

Time for a Review

It is never too late to check that arrangements are effective in preventing harm from repetitive manual handling.

A regular review of arrangements is advisable to satisfy an organisation that it is doing to meet the requirements of so far as is reasonably practicable.

A robust policy and clearly documented process are essential in protecting the reputation of the organisation and minimising the risk from manual handling.

References

- 1 [Manual Handling Assessment Charts \(the MAC tool\)](#)
- 2 [The Risk Assessment of Pushing and Pulling Tool – RAPP tool Leaflet HSE Books 2016 INDG 478](#)
- 3 [Assessment of Repetitive Tasks of the upper limbs \(the ART tool\): Guidance for employers](#)
- 4 [The Health and Safety at Work etc. Act 1974 Chapter 37](#)
- 5 [The Management of Health and Safety at Work Regulations 1999 No 3242 \(as amended\)](#)
- 6 [The Manual Handling Operations Regulations 1992 No 2793 \(as amended\)](#)

Risk Management Partners and Gallagher Bassett would like to thank QBE European Operations for the material used to shape this toolkit segment.

Further information

For access to further RMP Resources you may find helpful in reducing your organisation's cost of risk, please access the RMP Resources or RMP Articles pages on our website. To join the debate follow us on our LinkedIn page.

Get in touch

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