



MANUAL HANDLING ASSESSMENT GUIDANCE

The Manual Handling Assessment Charts (MAC) is a tool aimed to assist Site Management teams and Maintenance operatives to help assess the most common risk factors in lifting (and lowering), carrying and team handling operations and was developed to identify high-risk manual handling. It will point you towards the factors you need to modify to control these risks.

What does the law say?

The Manual Handling Operations Regulations 1992 set out a clear hierarchy of measures for dealing with risk likely to cause harm from manual handling. These are:

- Avoid hazardous manual handling operations so far as reasonably practicable;
- Assess any manual handling operations that cannot be avoided,
- Reduce the risk of injury to as low as reasonably practicable

How to complete a MAC assessment

The purpose of the assessment is to identify and then reduce the overall level of risk of the task. You need to put measures in place to control the risks you have identified. There is space to list your control measures on the score sheet.

G = GREEN - Low level of risk Although the risk is low, consider the exposure levels for vulnerable groups such as pregnant women, disabled, recently injured, young or inexperienced workers.

A = AMBER - Medium level of risk Examine tasks closely.

R = RED - High level of risk Prompt action needed. This may expose a significant proportion of the working population to risk of injury.

P = PURPLE - Unacceptable level of risk Such operations may represent a serious risk of injury and must be improved.

Identify the tasks to assess. Choose the ones that you know are hard work or that employees complain about.

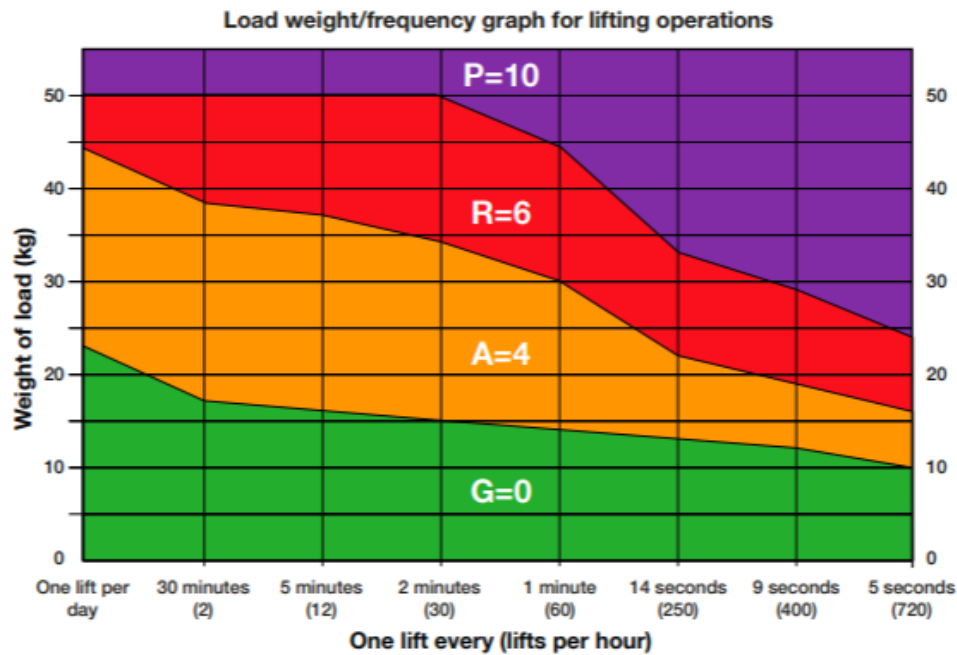
- Consult the operatives on the manual handling risks from their work and ways to manage and/or control these risks. Aim to gain insight into the demands of the job from the perspectives of all employees carrying out the task.
- Observe the task carefully (videoing may help) and make sure that you look at how it is normally done.
- Select the appropriate type of assessment (lifting, carrying or team handling). If a task involves lifting and carrying, consider both.
- Follow the appropriate assessment guide and flow chart to determine the level of risk for each risk factor. Always assess the worst-case scenario if unsure.
- Enter the colour bands and numerical scores on the score sheet and use them to identify which risk factors need to be examined and the total level of exposure to risk.
- Look for ways of modifying the task to reduce the red risk factors to amber or green and to reduce amber risk factors to green.
- If the individual does a number of tasks, assess each one separately.
- Prioritise action by addressing the task with the highest total score first. The total scores do not relate to specific action levels.



Lifting Operations Assessment Guide

A Load weight/frequency

Note the weight of the load and the frequency (or repetition rate) of the lifting operation. Read the risk band from the graph below and enter the colour band and numerical score onto the score sheet. If the colour band is purple you should examine the task very closely as it may represent a serious risk of injury and must be improved.



To assess lifting at more than once every five seconds you should carry out a full risk assessment.

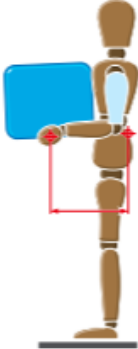


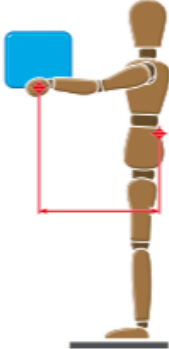

Repetitive handling of light items will fall within the green zone, but may be associated with upper limb problems.



Lifting operations assessment guide






Hand distance from the lower back

Observe the horizontal distance between the worker's hands and lower back. You should assess the 'worst-case scenario', including picking up and putting down. Use the following illustrations and descriptions as a guide:

					
Upper arms vertical AND torso upright	Upper arms angled away from torso	Torso bent forward	Torso upright. Arms fully outstretched	Upper arms angled away from torso AND torso bent forward	
Hands close to the low back	G/0	Hands at moderate distance from the low back	A/3	Hands far from the low back	R/6

Vertical lift zones

Observe the vertical position of the worker's hands at both the start and end of the lift. Record the 'worst-case'

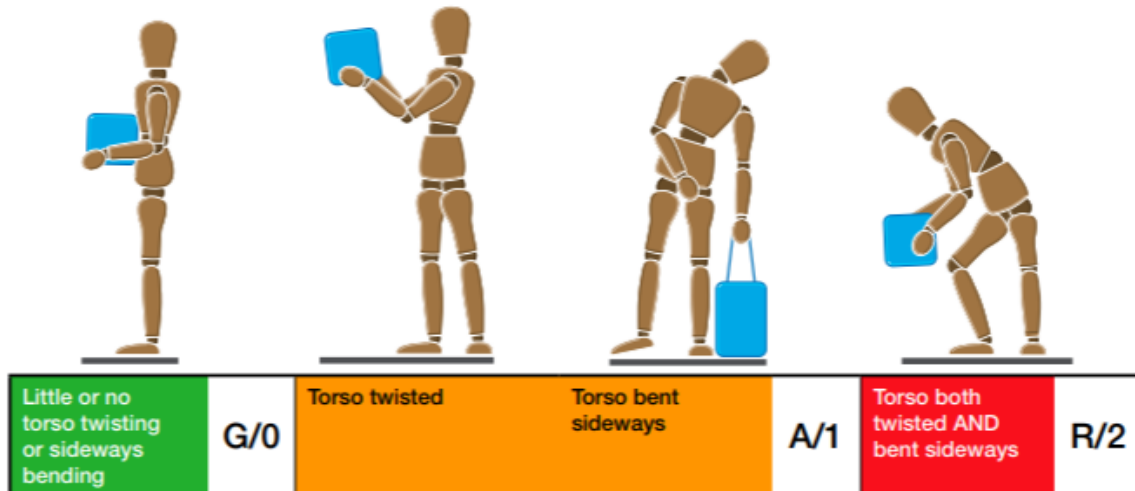
						
Hands between knee and elbow height	G/0	Hands between elbow height and head height	A/1	Hands at floor level or below	Hands at head height or above	R/3



Lifting operations assessment guide

Torso twisting and sideways bending

Observe the worker's torso as the load is lifted. If the person twists the torso in relation to the hips OR leans to one side as the load is lifted, the colour band is amber and the score is 1. If the torso both twists AND bends to the side as the load is lifted, the colour band is red and the score is 2.



Postural constraints

Look for factors that force workers to modify their postures. If their movements are restricted when lifting because of the space available (eg lifting in a narrow aisle or in a crowded or disorganised storage area) or lifting through narrow gaps, the colour band is amber and the score is 1. If the posture is severely restricted (eg lifting in an area with a low ceiling) the colour band is red and the score is 3.

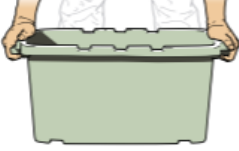
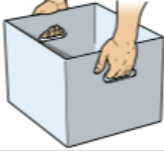


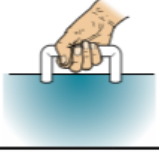



No postural constraints	G/0	Restricted posture	A/1	Severely restricted posture	R/3
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Lifting operations assessment guide

Grip on the load

Look at the quality of the grip that the worker can use to get hold of and control the load. The worker may need to reposition their hands on

			
Fit-for-purpose handles/ handholds matched to the size and weight of the load	Handles or handholds too small or lack finger clearance or only the fingers support the load	No handles or handhold areas	Rough, slippery or with pressure points
			
Cylindrical handles or items the whole hand can wrap round comfortably	No handles or handholds but can be held underneath, or has strap or loop handles	Palm, pinch or fingertip grip or force used to keep items together	Irregular, bulky or non-rigid
Good grip	G/0	Reasonable grip	A/1
		Poor grip	R/2

G Floor surface

Look at the condition of the floor where the handling task takes place. Note that for outdoor work this will depend on the weather. Always assess the 'worst-case scenario'.

Non-slip, dry, clean, firm, level and undamaged		Mostly dry and clean (damp or some debris), OR reasonably firm OR minor damage		Slippery (greasy, oily, wet, icy) OR much debris OR soft OR unstable OR severe damage	
Good floor surface	G/0	Reasonable floor surface	A/1	Poor floor surface	R/2

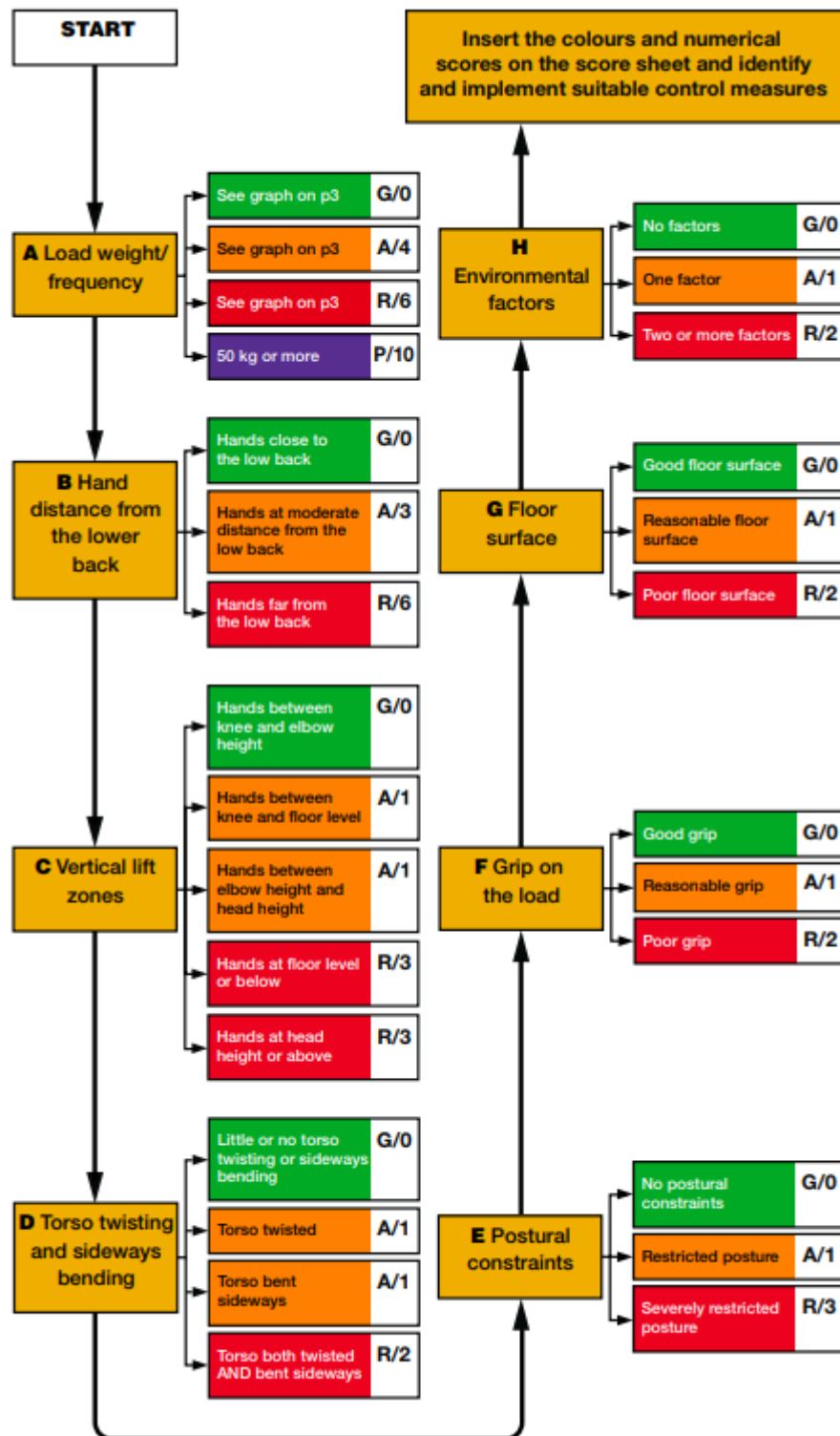
Environmental factors

Observe the work environment and score if the handling operation takes place: in extremes of temperature; with strong air movements; or in extreme lighting conditions (dark, bright or poor contrast). If one of the risk factors is present score 1, if two or more of the risk factors are present score 2.

No factors	G/0	One factor	A/1	Two or more factors	R/2
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Lifting operations flowchart

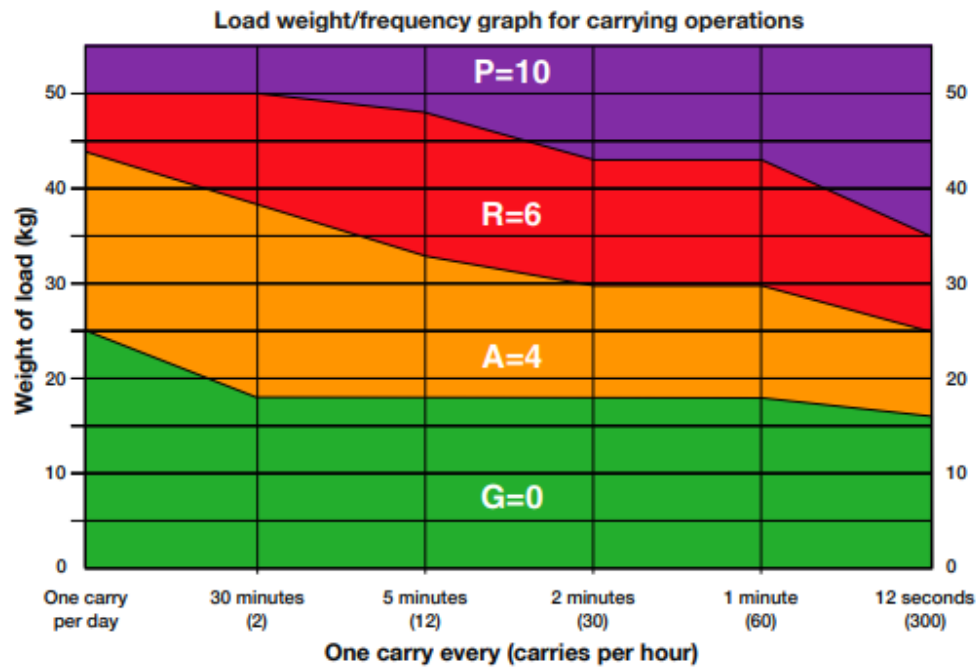




Carrying operations assessment guide

A Load weight/frequency

Note the weight of the load and the frequency (or repetition rate) of the carrying operation. Read the risk band from the graph below and enter the colour band and numerical score onto the score sheet. If the colour band is purple you should examine the task very closely as it may represent a serious risk of injury and must be improved.



To assess carrying at more than once every 12 seconds you should carry out a full risk assessment.

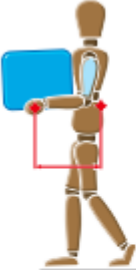
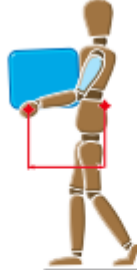
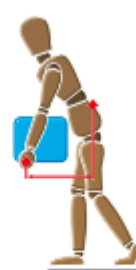

As the V-MAC7 takes account of carrying distance, when a job is complex because load weights vary significantly (eg in order picking/distribution) you can use it to assess the load weight/frequency risk factor instead of this graph, before returning to complete your MAC assessment.



Carrying operations assessment guide





Hand distance from the lower back

Observe the horizontal distance between the worker's hands and lower back. You should assess the 'worst-case scenario', including the start and finish of the task. Use the following illustrations and descriptions as a guide:

			
Upper arms vertical AND torso upright	Upper arms angled away from torso	Torso bent forward	Upper arms angled away from torso AND torso bent forward
Hands close to the low back	Hands at moderate distance from the low back		Hands far from the low back
G/0	A/3		R/6

Asymmetrical torso or load

When carrying, the posture of the worker's torso and the position of the load are risk factors associated with musculoskeletal injury. Use the following illustrations and descriptions as a guide:

			
Load AND hands symmetrical in front of the torso	Torso symmetrical but load is carried to one side	Load not symmetrical	Two-handed carrying to the side
G/0	A/1		R/2

Postural constraints

Look for factors that force workers to modify their postures. If their movements are restricted during the carry (eg a narrow doorway forces the worker to turn or move the load to get through) the colour band is amber and the score is 1. If the posture is severely restricted (eg having to bend forward to carry in an area with a low ceiling), the colour band is red and the score is 3.





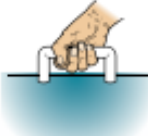



No postural constraints	G/0	Restricted posture	A/1	Severely restricted posture	R/3
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Carrying operations assessment guide

Grip on the load

Look at the quality of the grip that the worker can use to get hold of and control the load. The worker may need to reposition their hands on the object as a lift progresses. If this is so, assess the 'worst-case scenario'.

					
Fit-for-purpose handles/ handholds matched to the size and weight of the load	Handles or handholds too small or lack finger clearance or only the fingers support the load	No handles or handhold areas	Rough, slippery or with pressure points		
					
Cylindrical handles or items the whole hand can wrap round comfortably	No handles or handholds but can be held underneath, or has strap or loop handles	Palm, pinch or fingertip grip or force used to keep items together	Irregular, bulky or non-rigid		
Good grip	G/0	Reasonable grip	A/1	Poor grip	R/2

Floor surface

Examine the condition of the floor at the locations where the handling task occurs. Note that for outdoor work this will depend on the weather. Always assess the 'worst-case scenario'.

Non-slip, dry, clean, firm, level and undamaged		Mostly dry and clean (damp or some debris), OR reasonably firm OR minor damage		Slippery (greasy, oily, wet, icy) OR debris in several areas OR soft OR unstable OR severe damage	
Good floor surface	G/0	Reasonable floor surface	A/1	Poor floor surface	R/3

Carry distance

Observe the task and estimate the total distance that the load is carried (not the distance 'as the crow flies').

Between 2 m and 4 m	G/0	Between 4 m and 10 m	A/1	Over 10 m	R/2
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Carrying operations assessment guide

Obstacles on route

Count the number of different types of obstacle along the carrying route. If the person has to carry the load up or down a steep slope, up or down steps, through closed doors/narrow doorways or around tripping hazards or round bends and corners, the colour band is amber and the score is 2. If the task involves carrying items up ladders or past two or more obstacles, the colour band is red and the score is 3.

No obstacles AND carry route flat or slopes gently	G/0	One type of obstacle OR steep slope	A/2	Ladders OR at least two types of obstacle	R/3
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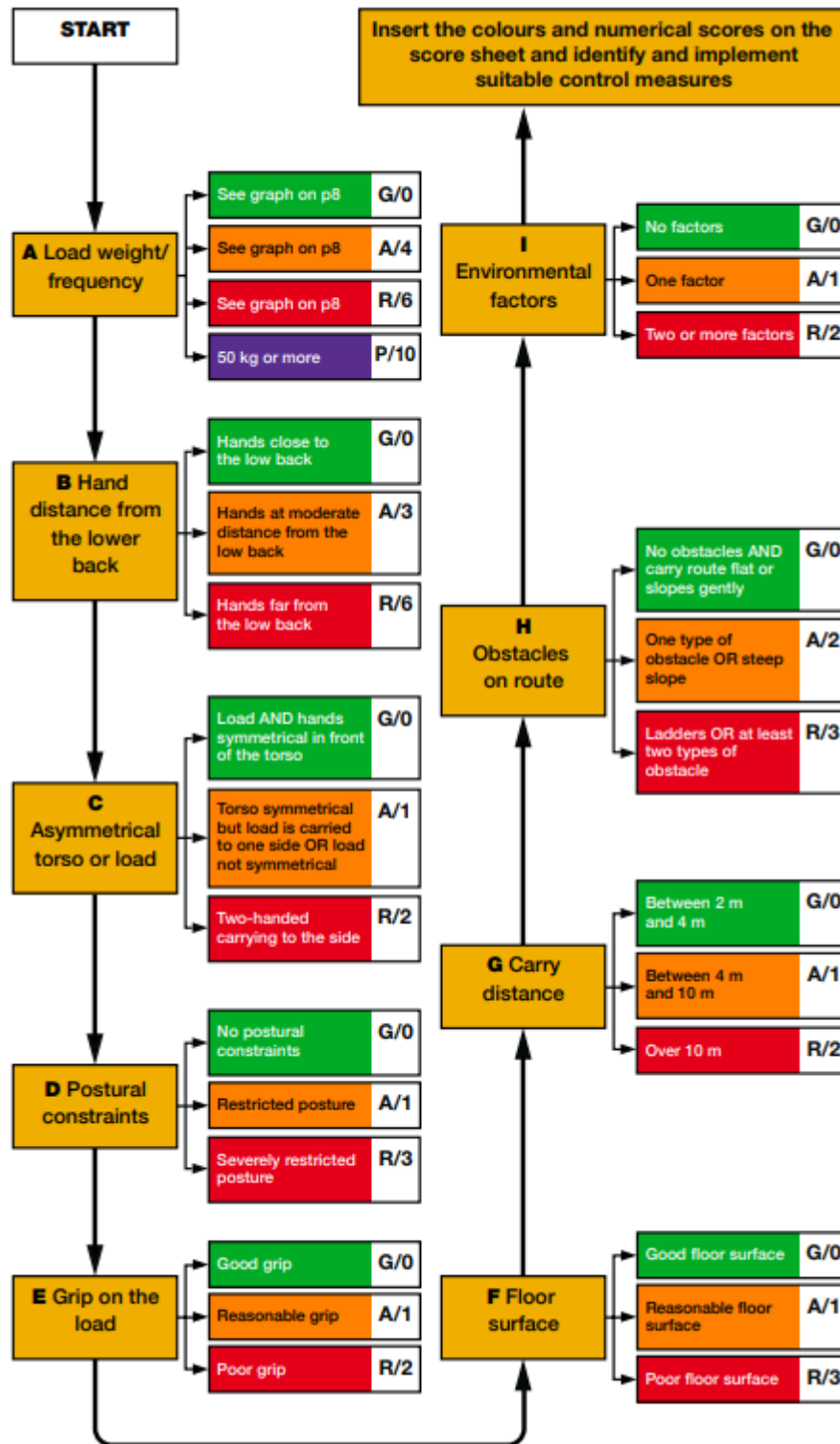
Environmental factors

Observe the work environment and score if the carrying operation takes place: in extremes of temperature; with strong air movements; or in extreme lighting conditions (dark, bright or poor contrast). If one of the risk factors is present score 1, if two or more of the risk factors are present score 2.

No factors	G/0	One factor	A/1	Two or more factors	R/2
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Carrying operations flowchart





Team handling operations assessment guide

Load weight

Note the weight of the load and the number of workers performing the task. Enter the colour band and numerical score on the score sheet. For teams of five people or more, a full risk assessment is needed. If the colour band is purple you should examine the task very closely as it may represent a serious risk of injury and must be improved.

2 people < 35 kg 3 people < 55 kg 4 people < 75 kg	2 people 35–65 kg 3 people 55–95 kg 4 people 75–130 kg	2 people 65–85 kg 3 people 95–130 kg 4 people 130–170 kg	2 people > 85 kg 3 people > 130 kg 4 people > 170 kg
G/0	A/4	R/6	P/10

Hand distance from the lower back. Observe the task and examine the horizontal distance between each worker's hands and their lower back. You should assess the 'worst-case scenario', including picking up and putting down. Use the following illustrations and descriptions as a guide:

Upper arms vertical AND torso upright	Upper arms angled away from torso OR torso bent forward	Upper arms angled away from torso AND torso bent forward
Hands close to the low back	Hands at moderate distance from the low back	Hands far from the low back
G/0	A/3	R/6

Vertical lift zones

Observe the vertical positions of the workers' hands at both the start and end of the lift. The effect of stature differences between team members is particularly important when lifting goes above elbow height. Record the 'worst-case' colour band/score. Use the following illustrations and descriptions as a guide:

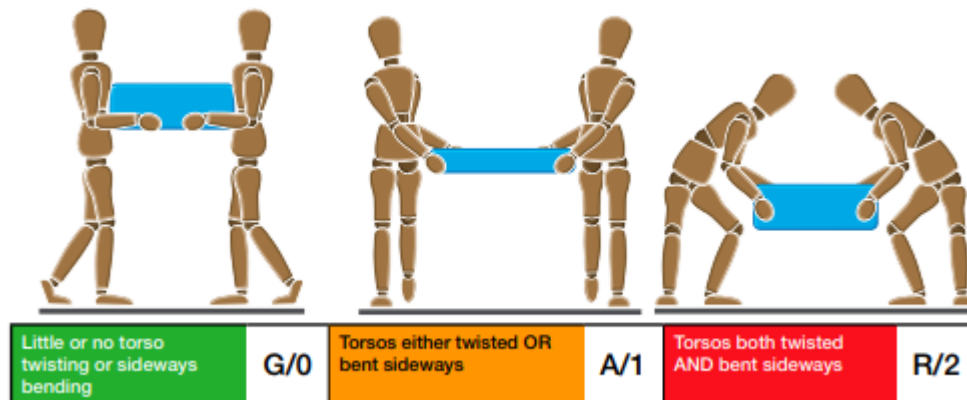
Hands between knee and elbow height	Hands below knee AND/OR above elbow height	Hands at floor level or below OR head height and above
G/0	A/1	R/3

Team handling operations assessment guide

Torso twisting and sideways bending



Observe the workers' torsos as they lift the load. If their torsos twist in relation to their hips OR they lean to one side as the load is lifted, the colour band is amber and the score is 1. If their torsos twist AND bend to the side as they lift the load, the colour band is red and the score is 2.



Postural constraints

Look for factors that force the team members to modify their postures. If their movements are restricted because of the space available (eg lifting in a narrow aisle or in a crowded or disorganised storage area) or lifting round obstructions, the colour band is amber and the score is 1. If the postures are severely restricted (eg lifting or carrying in an area with a low ceiling) the colour band is red and the score is 3.









No postural constraints	G/0	Restricted posture	A/1	Severely restricted posture	R/3
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Team handling operations assessment guide

Grip on the load

Look at the quality of the grip that the workers can use to get hold of and control the load. They may need to reposition their hands on the object as a lift progresses. If this is so, assess the 'worst-case scenario'.

			
Fit-for-purpose handles/ handholds matched to the size and weight of the load	Handles or handholds too small or lack finger clearance or only the fingers support the load	No handles or handhold areas	Rough, slippery or with pressure points
			
Cylindrical handles or items the whole hand can wrap round comfortably	No handles or handholds but can be held underneath, or has strap or loop handles	Palm, pinch or fingertip grip or force used to keep items together	Irregular, bulky or non-rigid
Good grip	Reasonable grip	Poor grip	
G/0	A/2	R/4	

Floor surface

Examine the condition of the floor at the locations where the handling task occurs. Note that for outdoor work this will depend on the weather. Always assess the 'worst-case scenario'

Non-slip, dry, clean, firm, level and undamaged	Mostly dry and clean (damp or debris in some areas), OR reasonably firm OR minor damage	Slippery (greasy, oily, wet, icy) OR debris in several areas OR soft OR unstable OR severe damage
Good floor surface	Reasonable floor surface	Poor floor surface
G/0	A/1	R/3

Carry distance

Observe the task and estimate the total distance that the load is carried (not the distance 'as the crow flies').

Between 2 m and 4 m	Between 4 m and 10 m	Over 10 m
G/0	A/1	R/3



Team handling operations assessment guide

Obstacles on route

Count the number of different types of obstacle along the carrying route. If the team has to carry the load up or down a steep slope, up or down steps, through closed doors/narrow doorways, around tripping hazards or round bends and corners, the colour band is amber and the score is 2. If the task involves carrying items up ladders or past two or more types of obstacle, the colour band is red and the score is 3.

No obstacles AND carry route flat or slopes gently	G/0	One type of obstacle OR steep slope	A/2	Ladders OR at least two types of obstacle	R/3
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Communication, co-ordination and control

A good team handling operation will be well planned. Communication between the individuals is essential when lifting as part of a team. An example of good communication would be the workers counting 'one, two, three' before they lift. Look to see if the team has control of the load, that it is lifted smoothly, and that all members lift together. An unco-ordinated team lift may leave one member of the team bearing the entire weight.

Good communication, co-ordination and control	G/0	Reasonable communication, co-ordination and control	A/1	Poor communication, co-ordination and control	R/3
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Environmental factors

Observe the work environment and score if the handling operation takes place in extremes of temperature, with strong air movements, or in extreme lighting conditions (dark, bright or poor contrast). If one of the risk factors is present score 1, if two or more of the risk factors are present score 2.

No factors	G/0	One factor	A/1	Two or more factors	R/2
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Team handling operations flowchart

