

Segregation

Workplace transport site safety information sheet WPT21

This information will be useful to anyone who uses workplace transport or who works where it is used. It will help employers, managers and supervisors to assess their workplace and make improvements. The checklists will help you to prepare your risk assessment.

Where transport is used in a workplace, it is important that vehicles and pedestrians are kept apart whenever possible. To allow people and vehicles to move safely, the best approach is to separate vehicles from pedestrians entirely. This is called 'segregation'.

Pedestrians (and cyclists) are vulnerable where vehicles are being used. As well as segregating people from moving vehicles, you also need to keep them away from the area that a vehicle moves through when it is working, eg the area that a body of an excavator moves through.

The most effective way of protecting pedestrians is to provide separate routes away from vehicles, where possible.

Common problems

Pedestrians and vehicles sharing the same routes:

Problems can arise where shared routes are used if drivers don't see pedestrians. This may happen for several reasons, including blind corners, poor lighting or vehicles travelling too fast or going out of allocated areas. It may also happen if people are not following site rules or if they have not been made aware of the safety rules.

Reversing vehicles: Reversing vehicles cause particular problems for pedestrians as the driver of a wagon is unable to see anything directly behind.

Site rules not followed or enforced: If people don't follow site rules they may leave their designated routes and cross into the path of oncoming vehicles, or into areas where vehicles are reversing.



Checklist – what to look out for

- Pedestrians and vehicles sharing the same space.
- Poor visibility – for pedestrians seeing vehicles, and drivers seeing pedestrians.
- Misunderstanding or lack of enforcement of site rules, eg speeding or pedestrians crossing at unofficial crossing places.

How can you deal with common problems?

Many common problems are easy to avoid and overcome. There are many ways to increase segregation – think carefully about the best type of segregation for your site.

Footbridges and subways: These are useful on larger sites so that pedestrians don't have to cross a traffic route. Bridges over traffic routes should not interfere with high loads and access for disabled users must be provided.

Barriers: Protective barriers provide visible segregation to keep vehicles away from pedestrians. Barriers are useful but will not fully protect pedestrians if they are hit by a vehicle. Road markings to set apart vehicle and pedestrian routes are also effective. Where needed, you should provide suitable barriers or guard rails at the entrances and exits to buildings; at the corners of buildings; and in places to

Photo Jackie Stevens



prevent pedestrians from walking straight onto roads. Where pedestrians and vehicle routes cross, you should provide appropriate crossing points for people to use, with safe working areas where pedestrians can see and be seen. Lighting may be necessary.

Bollards: Bollards can be used as an alternative to barriers to mark out the different routes in some places. Bollards are not as effective as full barriers in preventing pedestrians from moving into vehicle routes and might need to be used with other measures such as kerbs or markings.

Separate access/doors: Provide separate vehicle and pedestrian doors wherever possible. Windows in doors can help drivers and pedestrians see whether it is safe for them to approach.

Kerbed footways: A kerbed footway will clearly show the difference between a pedestrian route and a vehicle route. The different routes will be shown by a difference in level. In areas where the risks are greater, barriers may also be required.

Crossing points: You need to reduce the risks to pedestrians where they have to cross vehicle routes. If bridges or subways are not practicable, specific crossing points should be provided. Crossing points should be suitably marked and signposted, and should include dropped kerbs if necessary. Provide barriers or rails to deter pedestrians from crossing at particularly dangerous points and to direct them to the crossing places. You can also use different types or colours of paving to guide pedestrians to the crossing points.

At a crossing point, pedestrians, cyclists and drivers should be able to see clearly in every direction. At busy crossing places, you should consider traffic lights, zebra crossings (or other types of crossing), or suitable bridges or subways as a way of segregating pedestrians from moving vehicles.

Where the number of vehicles, pedestrians or cyclists using a route is likely to change at regular times, consider

preventing pedestrians or vehicles from using the routes at these times to keep them apart. An example might be limiting the use of vehicles on a roadway during a shift changeover when a lot of pedestrians are likely to be crossing.

Coloured surfacing: A simple way of marking out areas for particular users is to use different coloured surfacing. This will not provide a physical barrier between pedestrians and vehicles and will rely on signing, communication of site rules and enforcement, ie making sure that people follow site rules.

Signage and markings: Provide signs and markings to reinforce any physical measures and also in areas where physical measures are inappropriate or impractical. Vehicle routes inside buildings should be shown by signs and markings on the floor to tell both drivers and pedestrians. Generally, you should use the normal road markings, as you would find in the Highway Code.

One-way systems: You could reduce risks to pedestrians by introducing a one-way system. This can be especially effective where there are a lot of blind corners. It may also help reduce accidents between vehicles.

Site rules: To make sure that your segregation measures work, it is important that everyone who has access to the site, including visitors, is made aware of the need to keep to the appropriate route. This will require effective communication with the workforce and enforcement of segregated areas.

Make sure that visitors report to the site office, if appropriate. Tell visitors about your site safety policies and procedures before they are allowed into areas where vehicles work. In some situations, it will be appropriate to make sure that pedestrians – staff and visitors – wear high-visibility clothing.

Reviewing and maintaining segregation measures: Once the works are completed, review how your chosen solution works in practice and whether any further works are required. You must also make sure that segregation measures are being used correctly and enforce any site rules you have put in place.



Keep your segregation measures in good repair and properly maintained so that they continue to be effective. This could include repainting barriers, re-marking floors and making sure signs are clearly visible.

Checklist

- Separate vehicles from pedestrians, using:
 - footbridges and subways;
 - barriers and bollards;
 - separate access/doors;
 - kerbed footways;
 - crossing points – zebra crossings, traffic lights;
 - coloured surfacing;
 - signage and markings; and/or
 - one-way systems.
- Make sure site rules are in place and all staff and visitors keep to them.
- Make sure all staff and visitors wear high-visibility clothing when on site.
- Make sure all areas are well lit at all times of operation.

Checking your site

Carry out a visual inspection of your site to look for problems with segregation. Walk around the premises, make notes and take photographs of any problems. Mark the problem areas on a site plan. In particular:

- check that routes are useable;
- check for areas that are used by vehicles and pedestrians;
- look for regular pedestrian routes through the site. Where possible, marked pedestrian traffic routes should represent the paths people would naturally follow (known as 'desire lines') to encourage people to stay on them. Paths should be wide enough for the number of pedestrians they are likely to carry;
- assess existing segregation measures;
- think about any areas where vehicles and pedestrians cannot be separated; and
- consider inspecting the site at different times of the day, and in different weather conditions, ie when it has been raining.

The site plan and photographs can be used as a reference when you are back in your office and assessing the whole area. Be especially aware of areas where 'near misses' or accidents have been reported, or areas where there is a high level of pedestrian or vehicle movement. Assess blind corners and think about how you could operate the site differently to increase safety levels, eg install mirrors or operate a one-way system.

If there are any existing segregation measures on your site, assess how effective they are at keeping vehicles and pedestrians apart and whether they can be extended or improved.

It might be useful to go through the *Site inspection: Workplace transport checklist* at www.hse.gov.uk/workplacetransport.

You may have areas of your site where pedestrians and vehicles cannot be fully segregated, eg where loading and unloading takes place. Consider how operations are carried out in these areas and whether they can be carried out more safely, eg by making sure that all pedestrians – including visitors – wear appropriate high-visibility clothing. Think about whether you need to introduce any areas where pedestrians are not allowed.

Checklist

- Carry out a visual inspection of segregation on your site.
- Pay for a professional inspection or survey if you feel you cannot do this properly yourself.
- Watch areas that you know are high risk and see how extra segregation could improve safety.
- Be especially aware of areas where 'near misses' or accidents have been reported, or areas where there is a high level of pedestrian or vehicle movement.
- Assess blind corners and think about how you could operate the site differently to improve safety, eg a one-way system.
- Check that pedestrians can always see and be seen.
- Check that paths are in good condition.
- Consider commissioning a traffic and pedestrian flow survey to identify any problems with existing segregation or areas where segregation may be needed.

Where to get help

If you have a problem with segregation, you might be able to fix it yourself. If you are unsure, speak to your health and safety workplace representative or contact HSE for advice. It may be more cost effective to have a professional assess your site and carry out the work, eg carry out a site survey, install bollards etc.

You can also get advice by speaking to other similar local businesses – look for examples of good practice. Contact your local trade association or Chamber of Commerce for recommended local suppliers or look in the *Yellow Pages*.

Checklist

- Can you fix the problem yourself or do you need professional help?
- Do you need to install bollards, barriers or other segregation?
- Speak to other site managers about how they have made good use of segregation measures.
- Speak to your health and safety representative and your staff.

What might it cost?

- Initial site inspection costs £1500–£2000.
- Bollards: cast iron £250 each, concrete £150 per bollard.
- Zebra crossing – two beacons at £400 each, crossing studs £200, black and white lines £100, two signs at £150 each, white lines £100. Approximate total £1500.
- Signs approximately £150 each.
- White line markings approximately £5 per metre.
- High-visibility pedestrian guard railing £60 per metre.

(These costs are a guide and may vary significantly for individual sites and circumstances. Construction costs must also be taken into account.)

Find out more

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance L21 (Second edition) HSE Books 2000 ISBN 978 0 7176 2488 1

Workplace transport safety: An overview Leaflet INDG199(rev1) HSE Books 2005 (single copy free or priced packs of 5 ISBN 978 0 7176 2821 6)
www.hse.gov.uk/pubns/indg199.pdf

Workplace transport safety: An employers' guide HSG136 (Second edition) HSE Books 2005 ISBN 978 0 7176 6154 1

Pedestrians Workplace Transport Information Sheet WPT16 HSE 2009 www.hse.gov.uk/workplacetransport

One-way systems Workplace Transport Information Sheet WPT15 HSE 2009 www.hse.gov.uk/workplacetransport

Further information

HSE priced and free publications can be viewed online or ordered from www.hse.gov.uk or contact HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA
 Tel: 01787 881165 Fax: 01787 313995. HSE priced publications are also available from bookshops.

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566
 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This document is available web-only at:
www.hse.gov.uk/pubns/wpt21.pdf.

© Crown copyright This publication may be freely reproduced, except for advertising, endorsement or commercial purposes. First published 11/09. Please acknowledge the source as HSE.