

Vehicle and Pedestrian Separation

On Holcim Sites

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Contents

Introduction

What is vehicle & pedestrian separation?

Why focus on vehicle & pedestrian separation?

Vehicle and Pedestrian Separation Principles

Examples of improvements made in areas

Examples of evaluations of areas

Appendix 1 - Signage

Appendix 2 - Vehicle & Pedestrian Separation Principles Field Sheet

1. Introduction

Vehicle and pedestrian interaction is a key risk area for Holcim. Whilst it is recognised that the nature of our industry means that these interactions cannot be fully eliminated, further improvements can be made to reduce them as far as practicable. This document establishes a set of principles for vehicle and pedestrian separation. Implementing these principles at all sites (Concrete, Aggregate and Humes) will lead to a reduction in the incidence of vehicle and pedestrian interaction events.

The aim of this process is to:

- have sites complete an assessment that focuses on vehicle and pedestrian separation,
- have sites focus primarily on installing more physical separation by barrier or similar, and
- share “good practice” material in order to reduce / eliminate the potential for injuries where equipment and people interaction occurs.

This document defines the pedestrian and vehicle separation principles that shall be used on all Holcim sites. These principles will guide all sites and ensure effective and consistent methods are used to manage pedestrians. Every site is different and that is why prescriptive solutions have not been mandated in this document. Vehicle and pedestrian separation principles have been developed and a number of good practices (see Attachment 3.04F) have been included to help guide sites to improve this issue.

This process will focus primarily on physical separation by barrier or similar. Other types of controls such as the Quarry 10 20 30 rule, high visibility clothing, mobile plant minimum standards, etc. will not be covered. These controls are adequately covered in the Holcim Safety & Health Management System.

2. What is vehicle & pedestrian separation?

Vehicle and pedestrian separation is about reviewing our sites to determine areas where we can separate vehicles and pedestrians.

For the purposes of this document the following definitions shall apply:

- Pedestrian - is any person walking or working on foot.
- Vehicle – equipment used for transporting people or goods. This includes load shifting equipment (such as forklifts, mobile cranes, etc.), heavy earthmoving equipment (front end loaders, dump trucks, etc.), light vehicles, etc.

The vehicle and pedestrian separation assessment process is not about reviewing the entire traffic management process at the site. The primary focus is to increase vehicle & pedestrian separation. For other aspects of traffic management (for example speed limits, site map preparation, etc.) refer to SHE Guideline 3.04 Traffic and Pedestrian Management.

3. Why focus on vehicle & pedestrian separation?

There have been 26 fatal incidents on Holcim sites globally from 2009 to 2014 that relate to Vehicle & Traffic Safety and a number of these involved pedestrians. Holcim has also experienced a number of high potential near hits involving vehicles and pedestrians.

As an example the following fatality occurred at a Holcim site overseas in June 2012 due to inadequate vehicle and pedestrian separation.

An employee and a co-worker (sub-contractor) were going towards the cement mill from the tool room. They were walking on a pedestrian path, when a crane came from behind (which was also on the pedestrian path) and sounded its horn. On hearing the horn, the co-worker moved to the far left side of the pedestrian path while the deceased (Holcim employee), hurried to the right side and crossed over in front of the oncoming crane. The crane left front wheel bumper struck him and then ran over him, as a result he was badly injured. The victim was immediately shifted to the site hospital in ambulance. On the way to hospital, he succumbed to the injury and the site doctor declared him dead on arrival



Shows the place where deceased body was found

4. Vehicle and Pedestrian Separation Principles

The following principles have been established for use when assessing a site's level of vehicle and pedestrian separation.

Pedestrian Access and Egress to Site

1. Where pedestrian access into or egress out of the site occurs, minimal clear signage shall be installed to guide pedestrians into the site and out of the site.

Vehicle Parking Areas

2. Vehicle parking areas shall be arranged to minimise the need for vehicle and pedestrian interaction.

Regular Pedestrian Access Paths

3. Regular pedestrian access paths shall be clearly defined and separated from vehicles as far as practicable.
4. Regular areas where pedestrians work shall be clearly defined and separated from vehicles as far as practicable.
5. Where practical, barriers and/or fencing should be used at the side of pedestrian areas to direct/contain/separate pedestrians.

Pedestrian Path / Vehicle Roadway Crossing Points

6. Pedestrian path / vehicle roadway crossing points shall have suitable visibility (for example clear of vegetation, provision of mirrors, adequate lighting, etc.) for both vehicle drivers and pedestrians.
7. Pedestrian path / vehicle roadway crossing points shall be clearly sign posted with clear right of way rules (for example do pedestrians have to give way to vehicles or do vehicles have to give way to pedestrians).

Vehicle and Pedestrian Interaction

8. Where production processes dictate that it is not practical to eliminate vehicle and pedestrian interaction, documented processes shall be established to minimise the risk (for example the use of exclusion zones, forklift loading/unloading procedures, temporary barriers, etc.).

5. Examples of improvements made in areas

This section details an example of an assessment and improvements that were made at a site.

The Vehicle and Pedestrian Separation Principle used was:

Where practical, barriers and/or fencing should be used at the side of pedestrian areas to direct/contain/separate pedestrians.

This demonstrates how sites can use the principles to assist in developing and implementing improvement actions in relation to vehicle and pedestrian separation.

<p>Recommendation</p> <p>Some bollards should be installed so that personnel are visible to the forklift operator when they are exiting the building.</p>	<p>BEFORE</p> 
<p>Improvement installed</p> <p>Bollards have now been installed in this area</p>	<p>AFTER</p> 

6. Examples of evaluations of areas

This section details examples of recommendations that have been made at some sites. This shows how sites can use the principles to assist in developing improvement actions in relation to vehicle and pedestrian separation.

Principle

Where practical, barriers and/or fencing should be used at the side of pedestrian areas to direct/contain/separate pedestrians.

Recommendation

Bollards should be installed in this area to separate pedestrians from trucks



Principle

Where pedestrian access into or egress out of the site occurs, minimal clear signage shall be installed to guide pedestrians into the site and out of the site

Recommendation

Signage needs to be installed to direct a pedestrian out of the site



Principle

Where practical, barriers and/or fencing should be used at the side of pedestrian areas to direct/contain/separate pedestrians.

Where pedestrian access into or egress out of the site occurs, minimal clear signage shall be installed to guide pedestrians into the site and out of the site

Recommendation

A barricade should be installed along the walkway (concrete path on the left hand side of the photo).

A pedestrian crossing needs to be installed from the walkway to the office across this roadway.

Signage should be installed to indicate where the entrance to the office is located.



Appendix 1 - Signage

This section details some specific information in about some key signage related to vehicle and pedestrian separation. Personnel can review this section to determine whether the appropriate signs are installed on their site.

All signage and markings used shall be as per the Road Rules. For example in Australia they shall comply with Australian Road Rules / Australian Standard AS1742 Manual of uniform traffic control devices. Contact the Procurement department for the recommended suppliers.

Pedestrian access paths shall be clearly sign posted



Crossing points where the pedestrian does not have right of way shall be clearly sign posted



The pedestrians sign below is used to warn of the presence of pedestrians crossing a road where such activity might be unexpected.



Pedestrian crossing (zebra crossings) sign below is used where the pedestrian has right of way and shall consist of markings across the full width of the roadways together with the "Pedestrian Crossing" sign displayed for both directions of vehicle travel.



Appendix 2 - Vehicle & Pedestrian Separation Principles Field Sheet

This sheet can be used when completing the assessment in the field. Add extra pages if needed.

Date	
Who	
Site	
Area within site	

Note: Take photos of the current situation

Vehicle and Pedestrian Separation Principle	Yes / No / NA	Comments / Action
Pedestrian Access and Egress to Site		
1 Where pedestrian access into or egress out of the site occurs, is minimal clear signage installed to guide pedestrians into the site and out of the site?		
Vehicle Parking Areas		
2 Are vehicle parking areas arranged to minimise the need for vehicle and pedestrian interaction?		
Regular Pedestrian Access Paths		
3 Are regular pedestrian access paths clearly defined and separated from vehicles as far as practicable?		
4 Are regular areas where pedestrians work clearly defined and separated from vehicles as far as practicable?		
5 Where practical, are barriers and/or fencing used at the side of pedestrian areas to direct/contain/separate pedestrians?		
Pedestrian Path / Vehicle Roadway Crossing Points		
6 Do pedestrian path / vehicle roadway crossing points have suitable visibility (for example clear of vegetation, provision of mirrors, adequate lighting, etc.) for both vehicle drivers and pedestrians?		
7 Are pedestrian path / vehicle roadway crossing points clearly sign posted with clear right of way rules (for example do pedestrians have to give way to vehicles or		

do vehicles have to give way to pedestrians)?		
Vehicle and Pedestrian Interaction		
8 Where production processes dictate that it is not practical to eliminate vehicle and pedestrian interaction, are documented processes established to minimise the risk (for example the use of exclusion zones, forklift loading/unloading procedures, temporary barriers, etc.)?		

Once complete all assessments and actions must be entered into the INX database.