



# IPAG

*Irish Pavement Asset Group*

Pavement Asset Management  
Guidance  
Section 5.2:  
Condition Surveying and Rating -  
Footway  
Version 1.0  
December 2014

## Document Information

<b>Title</b>	Pavement Asset Management Guidance, Section 5.2: Condition Surveying and Rating – Footway
<b>Author</b>	Paul Hardy, exp consulting
<b>Description</b>	This section describes the condition surveying and rating method proposed for footways.

## Document History

Version	Status	Author	Checked	Changes from Previous Version
1.0	Published	PH	CM / MMcN	

# 5.2 Condition Surveying and Rating – Footway

## 5.2.1 Overview

### Scope

This section gives guidance on how to assess footway condition, using a method of visual condition assessment. It is designed to enable the road authority's own inspection resources to carry out the survey, in conjunction with other inspection duties.

### Purpose

The footway condition survey method described provides data that can be used to:

- Prioritise and programme footway renewals / resurfacing schemes.
- Record and report condition (locally and nationally).

### Output

The survey results are ratings for lengths of footway that would realistically be used in schemes. The results are summarised to record and report overall condition. Condition is reported by percentage in each of the four condition categories for each footway hierarchy. It does not report individual defects. The inspection, categorisation and response to defects, such as small potholes and other small defects requiring patch repairs, is covered in *Section 4: Routine Maintenance Management*.

### Survey Regime

It is recommended that condition surveys be undertaken by the road authority's inspectors. It is recommended that footways are surveyed at least every two years. This may not be practical initially. A staged implementation may be appropriate, to enable each authority to train their inspectors to undertake condition surveys as part of their normal duties.

If a sample survey is to be undertaken, it is essential that the sections of footway selected are representative of the road authority's footway network. *Appendix 5.2.a* provides a process for selecting a sample of sections, that ensures material types and hierarchies are proportionally represented in the survey.

## 5.2.2 Survey Preparation

### Inventory

The following inventory data should be gathered prior to commencing the survey:

- Street name / road number.
- Footway hierarchy (e.g. 1, 2 or 3 as per *Section 4: Routine Maintenance Management*).
- Urban centre / suburban / rural.
- Material type (concrete, bituminous, modular paving).
- Length and width (or area if recorded in GIS / polygon format).
- Footway length start and end point.

### Preparing Survey Routes

For maximum efficiency, condition survey routes should preferably match the road authority's routine inspection regime. As an alternative, specific survey routes can be prepared. Data should be collated, prior to commencing the survey of each segment, either by setting segment length while building electronic routes or by the use of GPS co-ordinates along with a text description. For the purpose of the survey, the footway network shall be broken down into lengths as follows:

- a) Footway lengths shall be from junction to junction.
- b) Footway lengths shall not exceed 500m.
- c) Footway lengths shall not be less than 50m (unless junction to junction is <50m).

### Electronic Data Collection

It is expected that road authorities will collect the data electronically. Authorities that do not collect inspection data electronically should acquire the computer hardware and software to enable this. The reduction in time spent manually handling data will more than pay for the cost of the technology.

### Surveying as Part of Inspection Regime

Completion of the survey, as part of the road authority's inspection regime, means that condition will be recorded each time a footway is inspected. For some footways, this will mean condition assessment will be monthly. Once the first survey has been carried out, the exercise will be one of confirming that the currently held condition rating remains valid.

## 5.2.3 Survey Procedure

### Survey Requirements

1. Record the condition of sections of footway that would realistically be used in schemes.
2. Each footway length shall be allocated a single condition level of 1, 2, 3 or 4.
3. The condition level recorded shall be the weighted average condition of the section.
4. Isolated defects that would be picked up as during safety inspections should not influence the assessment of the condition.
5. If there are changes of condition within a segment, this should be recorded, unless the length is <50m.
6. The material type should be confirmed, and a note made, if the material on site does not match that recorded in the inventory.
7. Footway condition surveys should be walked.

### Rating Criteria

The rating criteria are as follows:

Condition Level	
<b>4</b>	Good
<b>3</b>	Safe, but poor appearance
<b>2</b>	Minor (functional) deterioration
<b>1</b>	Major (structural) deterioration

The following pages provide illustrative examples of each condition, for different footway material types.

## Concrete Footways

### 4 Good

The footway is in good condition.

Requires no work to be carried out on it.



✓ Check – Requires no treatment.

### 3 Poor Appearance

The footway is free of defects. It is safe, but has a poor appearance.

The surface is sound, but does not look good, as a result of patches and / or trenches.



✓ Check – Would only warrant treatment to improve appearance, e.g. *slurry seal*.

## 2 Minor Deterioration

The footway has minor deterioration.

Minor fretting, fatting up, scaling, minor cracking, moderate local settlement / subsidence or trips between 10 -13mm.



✓ **Check – Warrants treatment to prevent expensive repairs being required, e.g. removal of surface and lay wearing course.**

## 1 Major Deterioration

The footway has major deterioration.

Major cracking, fretting, potholing, scaling, trip hazards >13mm, poor shape, severe local settlement / subsidence creating a difference in level >30mm.



✓ **Check – Warrants treatment to strengthen and repair, e.g. removal of surface and loose material, patch and level base and lay new wearing course.**

## Modular Paving Footways

### 4 Good

The footway is in good condition.

Requires no work to be carried out on it.



✓ **Check – Requires no treatment.**

### 3 Poor Appearance

The footway is free of defects. It is safe, but has poor appearance.

It does not look good as a result of:

- slabs of different colours / materials (including bituminous reinstatements in flagged footways);
- cracked, but sound, paving slabs with no movement.



✓ **Check – Would only warrant treatment to improve appearance, e.g. replacement of individual paving slabs and relaying of some uneven ones.**



## 2 Minor Deterioration

The footway has minor deterioration.

Cracked paving slabs showing some signs of movement, missing joint filler.



✓ **Check – Warrants treatment to prevent expensive repairs being required, e.g. replacement of part of the paving slabs and relaying of others.**

## 1 Major Deterioration

The footway has major deterioration.

Cracked and depressed or missing paving slabs, paving slabs with exaggerated movement, major cracking or trip hazards >13mm.

Poor shape, severe local settlement / subsidence creating a difference in level >30mm.



✓ **Check – Warrants treatment, e.g. relaying or replacement of the paving slabs across the majority of the rated section.**

## Bituminous Footways

### 4 Good

The footway is in good condition.

Requires no work to be carried out on it.



✓ Check – Requires no treatment.

### 3 Poor Appearance

The footway is free of defects, is safe, but has a poor appearance.

The surface is sound, but does not look good, as a result of patches and / or trenches, loss of coloured surfacing or severely faded material.



✓ Check – Would only warrant treatment to improve appearance, e.g. *slurry seal*.

## 2 Minor Deterioration

The footway has minor deterioration.

Minor fretting, fatting up, scaling or minor cracking, or moderate local settlement / subsidence or trips between 10-13mm.



✓ **Check – Warrants treatment to prevent expensive repairs being required, e.g. removal of surface and lay bituminous wearing course.**

## 1 Major Deterioration

The footway has major deterioration.

Major cracking, fretting, potholing, scaling, trip hazards >13mm, poor shape, severe local settlement / subsidence creating a difference in level >30mm.



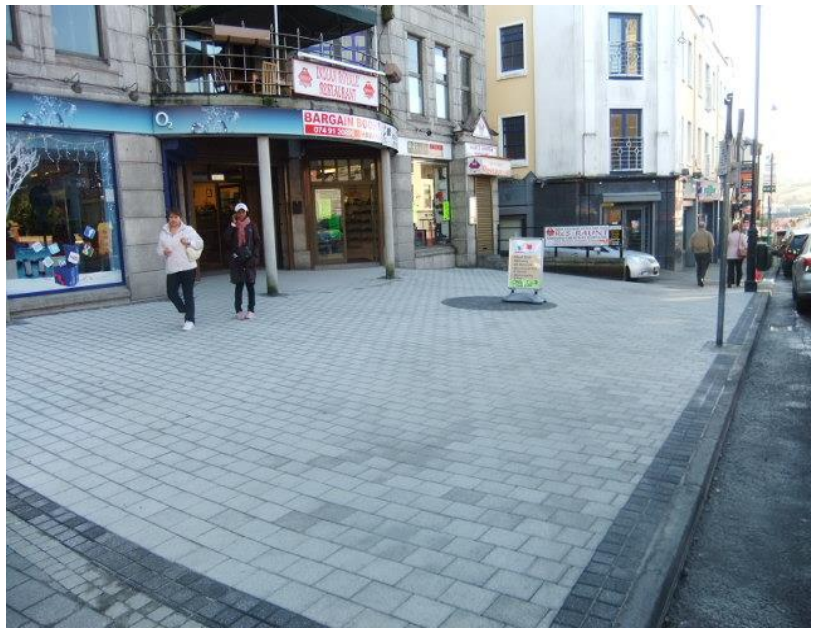
✓ **Check – Warrants treatment to strengthen and repair, e.g. removal of surface and loose material, patch and level base and lay new wearing course.**

## Modular Paved Footways

### 4 Good

The footway is in good condition.

Requires no work to be carried out on it.



✓ **Check – Requires no treatment.**

### 3 Poor Appearance

The footway is free of defects and is safe, but has a poor appearance. Surface does not look good, as a result of modular pavers of different colours / materials (including bituminous reinstatements in modular paved footways).



✓ **Check – Would only warrant treatment to improve appearance, e.g. replacement of missing or different colour modular pavers.**

## 2 Minor Deterioration

The footway has minor deterioration.

Modular pavers showing some signs of movement, missing joint filler.



✓ **Check – Warrants treatment to prevent expensive repairs being required, e.g. relaying of significant areas of modular pavers.**

## 1 Major Deterioration

The footway has major deterioration.

Cracked and depressed or missing modular pavers, modular pavers with exaggerated movement, trip hazards >13mm, poor shape, severe local settlement / subsidence creating a difference in level >30mm.



✓ **Check – Warrants treatment, e.g. take up and replace modular pavers.**

## 5.2.4 Quality Control

### Training

Prior to undertaking the survey, inspectors should complete an appropriate training course.

### Validation

To ensure accuracy, independent validation surveys shall be completed. The validating officer must be independent and cannot be one of the surveyors. Validation surveys should be as described below.

### Initial Validation

The objective of the initial validation survey is to ensure that the surveyors are completing the surveys correctly. The validating officer shall complete an independent survey on a minimum of 50% of the length of footway surveyed on the first day. The validating officer must have no access to the actual survey information, until the validation survey is completed. There are no specific requirements to which sections are included in this survey. The remainder of the survey cannot be completed until the validating officer has approved the accuracy of the first day's survey.

If the first day's survey does not meet the required level of accuracy, the validating officer and the surveyors will review the reasons for any discrepancies. The surveyors will then complete a second day's survey which will be required to be independently validated as above, with a minimum of 10km. This process will continue until the validating officer approves the standard of surveying.

### Ongoing Validation

The survey shall be subjected to ongoing validation. A validation survey should be completed on 5% of the surveyed sections, by the same officer that completed the initial validation survey. The initial sections surveyed are not counted as part of this 5%. The validating officer is responsible for selecting the sections to be validated. A minimum of 50% of the sections forming the validation survey must be completed in the second half of the survey.

### Validation Results

A section will be marked non-compliant, if the condition levels are different. The validating officer will compute and file the result of the validation, which shall be calculated as follows:

$$\text{Validation Survey Result (\%)} = \frac{\text{Number of Compliant Sections}}{\text{Total Number of Sections Surveyed}} \times 100$$

A validation survey will be deemed compliant if a result of 85% or more is achieved.

### 5.2.5 Performance Reporting

The results of the surveys should be reported annually. Results should be reported as the percentage (by area) of footway in each condition level by footway hierarchy.

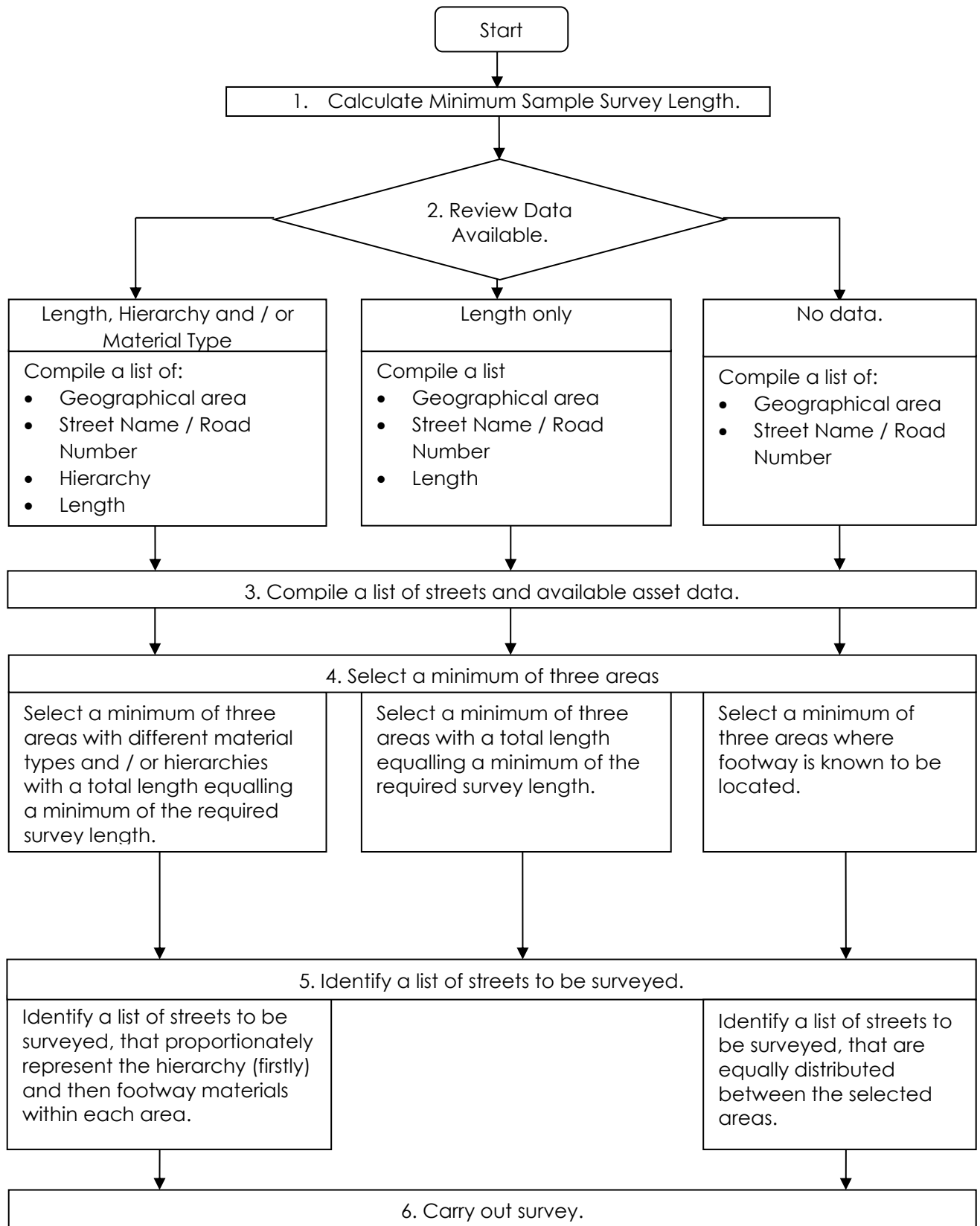
To aid presentation of the results the following colour coding shall be used:

- Condition Level 1 = **Red**
- Condition Level 2 = **Amber**
- Condition Level 3 = **Blue**
- Condition Level 4 = **Green**

The report should note the date of the survey and the percentage of the network surveyed.

In future, it is expected that a national performance indicator will be reported, which is likely to be the total of the sum of the Amber and Red percentages giving "the percentage of footway length to be considered for maintenance treatment".

## Appendix 5.2.a: Process for the Selection of a Representative Sample





1. In choosing a sample, a road authority should have regard to the geographical nature of their administrative area. For urban road authorities, the most appropriate method to select representative samples may be to divide engineering areas into sectors. For rural road authorities, the most appropriate method to select representative samples may be by selecting a random village, as a sample to represent the overall condition of footpaths in all villages within the county. Similarly, a town with a population 3,000-5,000 could be used as a sample to represent the overall condition of other similar size towns within the county and so on.
2. A minimum sample of 25% of the footway network, by length should be surveyed initially.
3. The survey sample size should be increased progressively, until a routine survey regime is achieved.
4. The methods adopted for selecting the sample will depend upon the data available.
5. Where the total length of the footway network is not known, the road authority can use their best judgement to estimate the length of footpath.
6. A schedule of streets within towns and villages, with any available footpath data shall be compiled. This schedule shall be used to compile the survey. The lengths shall be used to confirm that the sample size is correct, i.e. it is at least the minimum length calculated in *Point 2* above.
7. Initially, a minimum of three areas shall be selected for survey. These shall be as representative as possible of the whole of the road authority's footway network.
8. The survey shall, firstly, include representative samples by footway hierarchy (see *Section 3: Inventory and Data Management* for guidance on how to establish a hierarchy, if one does not currently exist) and then material type.
9. Where data exists on hierarchy and material type, this shall be used to calculate the required samples of hierarchy and material.
10. Where data does not exist, local knowledge shall be used to select areas to survey, that are known to contain footways that are typical of the footways network.