



SPECIFICATION FOR SKID RESISTANCE DEFICIENCY INVESTIGATION AND TREATMENT SELECTION

1. SCOPE

This specification outlines the process for identifying skid resistance deficiencies and provides guidelines for prioritising the programming of resurfacing treatment.

2. INVESTIGATORY LEVELS (IL's)

The IL's for different site categories are shown in Table 1. Site categories 1, 2 and 3 are considered High Demand and sites 4 and 5 are Low Demand. These two demand levels impact on the treatment selection.

Table 1

Investigatory skid resistance levels

Site Category	Site Definition	Investigatory Level (SFC)	Demand Category
1	Approaches to railway level crossings, traffic lights, pedestrian crossings, roundabouts.	0.55	High Demand
2	Curve < 250m radius Down gradients > 10%	0.50	High Demand
3	Approaches to road junctions Down gradients 5 - 10% Motorway junction area	0.45	High Demand
4	Undivided carriageway (event - free)	0.40	Low Demand
5	Divided carriageways (event - free)	0.35	Low Demand

3. MODIFICATION OF THE INVESTIGATORY LEVEL

Where crashes occur as a result of 'loss of control' or 'skidding in the wet' and the road surface at the site has a SCRIM value at or above the IL, it may be necessary to review the IL. Guidelines for Assigning Skid Resistance Levels are outlined in the State Highway Safety Management Guidelines manual.

4. ANALYSIS OF SKID RESISTANCE DEFICIENCIES

To determine the priority for treating sites which are deficient in skid resistance, follow the steps (a) to (k) which are set out in three stages:

Stage 1

- (a) Generate a report entitled "SCRIM Deficiency by Seal Length and Site Category" from the RAMM database. This report identifies sites where the average deficiency is greater than or equal to 0.1 below the required IL over the category length, within a seal length.
- (b) From the sites identified in the report, subtract the following:
 - sites which are already included in the forthcoming resurfacing programme; and
 - sites that have been treated to improve the surface texture depth. These include activities such as "burning" to remove excess bitumen at flushed sites.
- (c) The remaining lengths, after subtracting the sites in (b) above, should be treated during the forthcoming resurfacing programme. A site visit will be necessary to confirm the appropriate resurfacing treatment.

Stage 2

- (d) Generate a report entitled "SCRIM Sites Where Deficiency >0.1 For One Region". This report identifies:
 - 10m lengths which have a deficiency of >0.1 below the IL;
 - concurrent deficient lengths, and provides the total length and average deficiency;
 - route positions for the deficient 10m length(s);
 - the demand category as High or Low Demand; and
 - details of the road surface.

From the RAMM database, select the following menus:

- ▶ **RAMM RN Reports**
 - ▶ **Summary Reports**
 - ▶ **Pavement**
 - ▶ **SCRIM def**

Then follow the input prompts as required.

- (e) Identify lengths of concurrent deficiency which meet the criteria outlined for High and Low Demand sites below.

Table 2

<i>Demand Category</i>	<i>Criteria</i>
High Demand	≥ 5 consecutive 10m lengths, ie a 50m, or greater, continuous length which has a deficiency of > 0.1 below the IL.
Low Demand	≥ 10 consecutive 10m lengths, ie a 100m, or greater, continuous length which has a deficiency of > 0.1 below the IL.

- (f) From the sites identified in the report, subtract the following:
- sites which have been identified in Stage 1 of this document;
 - sites which are already included in the forthcoming resurfacing programme; and
 - sites that have been treated to improve the surface texture depth. These include activities such as "burning" to remove excess bitumen at flushed sites.
- (g) The remaining lengths, after subtracting the sites in (f) above, should be treated during the forthcoming resurfacing programme.
Where lengths for resurfacing treatment have been identified, site visits will be necessary to confirm the appropriate treatment.

Stage 3

- (h) The deficient sites identified in the report entitled "SCRIM Sites Where Deficiency >0.1 For One Region" that do not meet the criteria in Table 2, should be included for treatment under a routine maintenance programme.
- (i) From the sites identified in the report, subtract the following:
- sites which have been identified in Stages 1 and 2 of this document;
 - sites which are already included in the forthcoming resurfacing programme; and
 - sites that have been treated to improve the surface texture depth. These include activities such as "burning" to remove excess bitumen at flushed sites.

- (j) Priority should be given to resurfacing the remaining lengths, after subtracting the sites in (i) above, where:
- Deficiencies which are 'longer in length' and are distributed throughout a seal length. See example in Figure 1, Appendix A.
- Note: Due to the significant combined length of deficiency, these sites may be included within the current resurfacing programme.*
- Deficiencies which are greater than 0.15 below the IL. See example in Figure 2, Appendix A.
- (k) Deficient lengths identified for treatment, will require a site visit to confirm the appropriate resurfacing treatment.

5. TREATMENT SELECTION

Determine the appropriate treatment with due consideration to the minimum Polished Stone Value Requirements and Resurfacing Lengths as outlined below.

5.1 Polished Stone Value Requirements

All resealing shall be performed with aggregate that has an appropriate polished stone value (PSV) to maintain the skid resistance above the IL for the design life of the seal. The following equation gives the relationship between skid resistance and PSV:

$$PSV = 100 * SR + 0.00663 * CVD + 2.6$$

SR = Investigatory Level value for the site in units of SFC

CVD = flow of commercial vehicles per lane per day. In this case a commercial vehicle is any vehicle that has a weight of 3 tonnes or more.

PSV = Aggregate Polished Stone Value

5.2 Resurfacing Lengths

To determine the length to be resurfaced, refer to AUSTRROADS Rural Road Design, Chapter 3. The length should be consistent for areas with high friction demand and due consideration given to geometric traps (e.g. a sudden tight curve amongst higher speed curves).

APPENDIX A

Figure 1

Location	Length Lane		Av. Defic.	Site Category

Surfacing: TEXT	from	5200 to 5700	Chip Size = 5	Surface Date: 04/03/1994
5.290 - 5.310	20	L	-0.14	4 - Low demand site
5.360 - 5.410	50	L	-0.14	4 - Low demand site
5.420 - 5.430	10	L	-0.14	4 - Low demand site
5.420 - 5.440	20	R	-0.15	4 - Low demand site
5.460 - 5.540	80	L	-0.15	4 - Low demand site
5.490 - 5.550	60	R	-0.16	4 - Low demand site

The above example highlights several sites that are not included under Stages 1 and 2 of the specification but include several significant lengths of deficiency, relatively close together and all within a common seal length. In this example a high priority should be given to treating these sites. Due to the significant length of intermittent deficiency consideration may be given to treating all the deficient sites under one Area Treatment, within the resurfacing programme.

Figure 2

Location	Length Lane		Av. Defic.	Site Category

Surfacing: RSEAL	from	7100 to 7800	Chip Size = 3	Surface Date: 25/12/1987
7.165 - 7.195	30	R	-0.19	2 - High demand site
7.245 - 7.255	10	R	-0.19	2 - High demand site
7.385 - 7.415	30	L	-0.12	2 - High demand site
7.485 - 7.495	10	R	-0.19	2 - High demand site
7.485 - 7.505	20	L	-0.12	2 - High demand site
7.505 - 7.525	20	R	-0.18	2 - High demand site
7.565 - 7.585	20	R	-0.16	2 - High demand site
7.615 - 7.645	30	R	-0.15	2 - High demand site
7.675 - 7.685	10	R	-0.15	2 - High demand site

The highlighted deficient sites are all less than the minimum 50m continuous length for High Demand sites but due to the severity of the deficiency a high priority may be given to treating these sites.