

Sprayed Sealing - Minimising Handwork

pavement work tips — no. 22

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INTRODUCTION

Proper planning of sprayed work will ensure:

- A consistent high standard of work
- High productivity and lower cost
- Minimal hand work.

GENERAL

The sprayer should be used to apply binder on all trafficked areas. In addition the sprayer path should follow traffic paths to minimise problems associated with joints and variation of application rates.

Where practicable the sprayer should also be used:

- In all areas outside of traffic lanes.
- In areas being repaired or rectified, for example, rectification of a significant length sprayed with a blocked jet.

Maximising the use of the sprayer to apply binder will:

- Ensure that the application of binder is uniform both longitudinally and transversely, and hence better quality of work.
- Result in higher productivity and hence more economical work.

Handwork should be kept to the minimum and restricted to those areas away from the traffic lanes where variations in binder application rate will have minimal effect on the quality and appearance of work.

Handwork should not be undertaken with highly modified binders. The high pressures required in the hand lance to obtain an appropriate fan make such handwork difficult and dangerous.

EXAMPLES

Following are some suggestions for maximising the use of a sprayer and minimising papering and hand work when sealing tapers and roundabouts.

Tapers

A typical tapered area is shown in Figure 1. A procedure that minimises papering and will generally minimise hand work is to:

1. Spray the through lanes (major traffic path) (1).
2. Paper a proportion of the major traffic path (2a) and use a half width (or suitable width) bar to spray a reasonable length of the tapered area (3) taking care to keep the joints between runs out of wheel paths. This minimises problems associated with additional binder on the overlapped area.
3. Paper the remaining portion of the taper (2b) and use a half width bar to complete the tapered area (4).
4. Complete spraying the remainder of the ramp pavement (5).

Key Summary

This issue of 'pavement work tips' provides a guide to planning of sprayed seal work to minimise handwork.

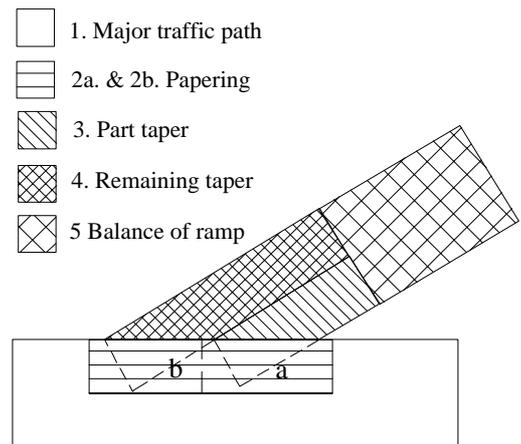


Figure 1. Spraying Tapered areas

Roundabouts

Roundabouts are difficult to spray effectively, particularly those of small radius. Large radius curves, with similar volumes of traffic on all approaches, can be sprayed by

continued on reverse



travelling around the roundabout, followed by picking up the legs. Rapid spreading of aggregate immediately behind the sprayer is required to enable finishing papers to be placed before the sprayer has completed the circuit of the roundabout.

The suggested procedure is as follows:

1. Spray binder and spread aggregate on the first lane (1) of the roundabout as shown in Figure 2.

It is important to consider the effect of a curved sprayer path on the difference in binder application rate between the outer and inner extremities of the spray bar. In most cases this will require a maximum spray width of one lane at a time as a full spray bar width (two lanes) could result in a significant variation in binder application rate. A further work tip in this series gives advice on variation of binder application rates for different radii of curves.

2. Spray binder and spread aggregate on the second lane of the roundabout (2) .
3. On each leg, paper sufficient of the completed works to permit spraying from or onto the skewed areas (4 & 5). To minimise papering this may involve spraying one lane or one half of a lane at a time.
4. Complete spraying the approaches and departures of the roundabout (6).

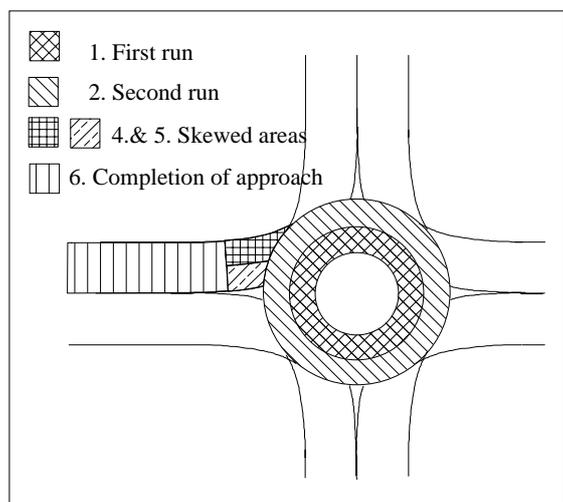


Figure 2. Procedure for large radius roundabout with equal movement on all approaches.

An alternative method of spraying roundabouts is described below. It is

particularly suited to situations where the major traffic movement is directly through the roundabout with little traffic on the adjacent legs.

1. Spray through the main legs of the roundabout as shown in Figure 3.
2. Protect the completed works then spray the remaining (in-fill) sections of the roundabout using short sprayer runs and minimal amounts of hand work. The comments concerning the width of spray bar mentioned above should be considered when completing these 'in-fill' areas.

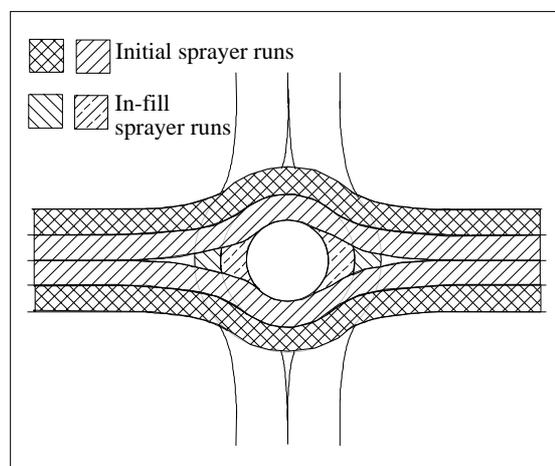


Figure 3. Alternative procedure for roundabout with major through movements

Turn Lanes at Intersections

It is common practice to widen roadways at intersections and T junctions to accommodate turning traffic. These areas are often referred to as "bell mouths".

Frequently, intersections are treated by spraying the through lanes straight up to the intersection, then completing bell mouths and other odd shaped areas by spraying by hand. In some cases it may be preferable to follow the line of turning traffic around the inside edge of the bell mouth with the sprayer, leaving a triangular area in the centre to be completed by hand spraying.

As with the previous examples, a study of traffic patterns, and careful planning, should maximise the use of the sprayer for application of binder for the major traffic paths, and restrict any handwork to those areas of least traffic.

For more information on any of the construction practices discussed in "pavement work tips", please contact either your local AUSTROADS Pavement Reference Group representative or AAPA — tel (03) 9853 3595; fax (03) 9853 3484; e-mail: info@aapa.asn.au A complete list of "pavement work tips" issues is available on AAPA's web site: www.aapa.asn.au Issues may be downloaded using Adobe Acrobat Reader. Copies may also be obtained from AAPA.

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