

Asphalt Handwork

pavement work tips — no. 26

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INTRODUCTION

Hand working of asphalt is often necessary in conjunction with paver placing to complete longitudinal and transverse joints, finish areas inaccessible to paver spreading, and correct deficiencies in paver placed materials.

Generally, handwork should be kept to a minimum by planning the job to maximise efficient use of paver spreading and by good paver control to eliminate the need for handwork to correct variations in level or surface texture of the paver spread material.

HANDWORK GENERALLY

Asphalt should be placed in full shovelfuls and not cast or thrown over the new mat or area to be paved. Generally, a slight excess of material is placed that is then screeded to level.

Wooden lutes are most commonly used for hand screeding. Their light weight enables smooth screeding of hot materials. Where practicable, the screeding should be done with a head of material in front of the lute, and using a single pass that leaves a uniform surface of fresh asphalt. Excessive working of the surface leads to separation of coarse materials, and should be avoided.

Coarse segregated materials resulting from handwork must be completely removed from the surface along with any other excess material. Attempting to avoid wastage and clean-up of surplus asphalt is false economy if it results in inferior quality in the finished work.

Handwork should be carried out as quickly as possible to avoid excessive cooling of the asphalt. All surface correction should be completed prior to commencing compaction.

The only exception to hand broadcasting or scattering of asphalt material is in correcting minor tearing or isolated areas of open texture in paver spread asphalt. A shovelful of asphalt, skilfully broadcast over the unrolled asphalt, can provide additional material to correct open textured areas. Such hand broadcasting should

not be undertaken indiscriminately. If spreading texture deficiencies persist, the source of the problem should be determined and corrected. Possible causes include incorrect paver screed temperature, front and rear settings of paver crown, and segregation of asphalt mixes as a result of deficiency in mixing, loading or spreading practices.

Key Summary

This issue of 'pavement work tips' provides a guide to good practice in hand finishing in conjunction with paver spreading of asphalt

MATCHING ADJOINING SURFACE LEVELS

When matching the levels of an adjoining surface, there must be an excess of asphalt at or beyond the edge that enables the forming of a vertical face of fresh asphalt. Generally, an excess of material should be initially placed, or carefully pulled back to the edge, and subsequently screeded away from the edge using a head of material on the lute. Dragging the minimum amount of material to barely fill to an edge, particularly at corners of patches or transverse joints, will almost certainly result in segregated material against the edge and poor density.

Hand spread asphalt has a lower uncompacted density than paver spread asphalt so that a slightly greater allowance must be made for compaction than the usual allowance for paver placed asphalt.

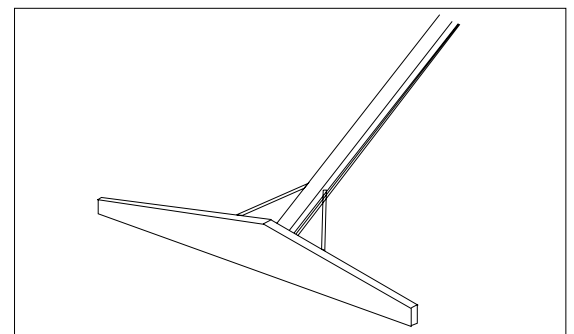


Figure 1: hand lute

continued on reverse



LONGITUDINAL JOINTS

Asphalt should be spread by paver with about 50 mm overlap of the adjoining mat. The surplus overlapping material is then removed or pushed back to a vertical edge that is level with, or slightly above, the uncompacted paver laid asphalt. The raised edge then receives the full weight of the roller to firmly compact it against the previously placed mat and obtain a high density at the joint.

It is poor practice to reduce the level of the fresh material so that it is flush with the previous mat, before rolling, as it will result in low density along the joint.

TRANSVERSE JOINTS – COMMENCING PAVER RUNS

The asphalt screed must be supported at the correct level before commencing spreading. This generally requires suitable wooden blocks as spacers. If the paver screed is not supported at the correct height, such as resting it directly on the existing mat, it will result in insufficient thickness of asphalt as the paver moves away from the joint. Paver controls must be set to ensure that the paver maintains the correct

thickness, with due allowance for compaction, without the need to chase levels over the first few metres.

Failure to support the screed at the correct level, and variations to initial paver spreading thickness, can result in additional handwork that increases the risks associated with deficiencies in surface finish, compacted density or ride quality in the vicinity of the transverse joint. Where necessary, a straightedge should be used to check surface levels prior to compaction.

JOINTS – FINISHING PAVER RUNS

When finishing flush against an existing surface, the paver should maintain sufficient material in front of the screed to pave to the end of the run.

It is poor practice to finish machine spreading several metres before the end of the run, lifting the screed, dumping asphalt from the paver, and then hand spreading the remaining material to finish the run. This hand spread material rarely matches the surface finish and uniformity of the machine laid material.

For more information on any of the construction practices discussed in "pavement work tips", please contact either your local AUSTRROADS 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. Material may be freely reproduced providing the source is acknowledged. This edition was prepared by John Rebbechi in consultation with members of the National Asphalt Research Coordination Group (NARC).

1. Dump loose asphalt with ample material overlapping edge

2. Push back asphalt to near vertical edge

3. Screed loose asphalt to level and feather out with a minimum number of smooth strokes

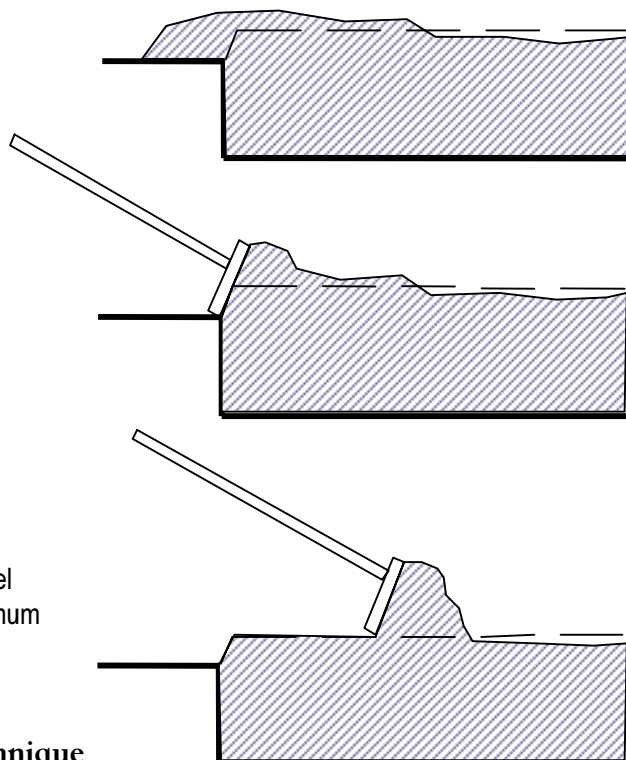


Figure 2: handwork technique

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