

# 13 REINSTATEMENT OF PAVEMENTS

## 13.1 FINAL CUTTING OF SURFACE

### 13.1.1 General

All joints must be saw cut to a depth sufficient to avoid disturbance of the adjoining pavement. Normally this would be to the depth of the proposed surface pavement layer (e.g. either 70mm or 90mm for asphalt on a Main road)

### 13.1.2 Standard trimming allowance

The top pavement layer must be cut back at least 100mm as shown in figure 10 from both the excavation, and from any damage that has been done to the pavement or the road foundation,.

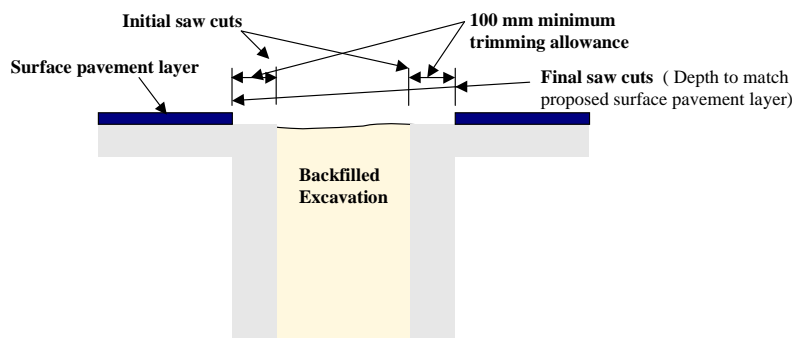


Figure 10 – Standard Trimming Allowance

### 13.1.3 Neat cutting pattern

All joints must form a neat simple pattern such as in Figure 11. Generally this will mean a rectangular pattern.

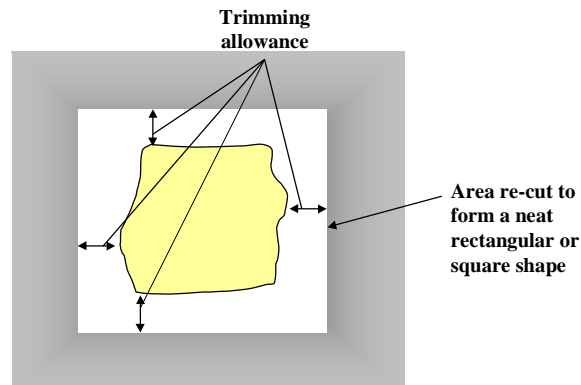


Figure 11 – Simple pattern

Saw cuts on either side of a trench must be parallel and straight for not less than 5 metres unless the dimensions of the job are less such as in figure 12

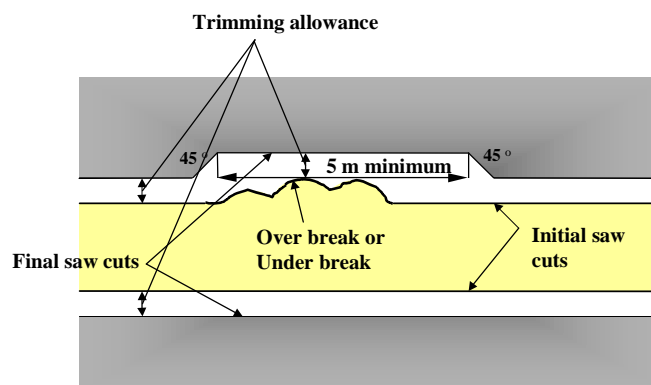


Figure 12 - Parallel cutting of joints and minimum length

Any protruding corner of the pavement surface must be trimmed back 500 mm such as in figure 13.

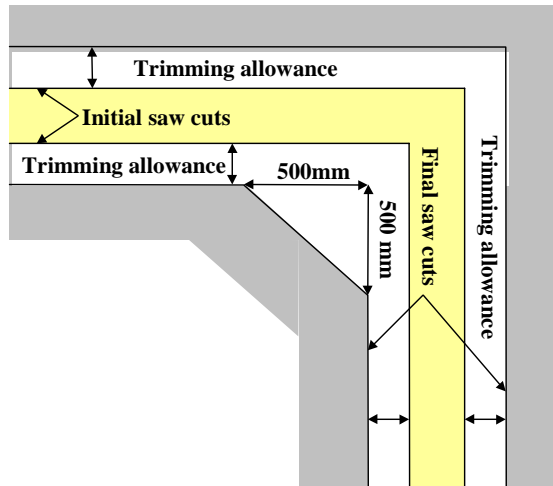


Figure 13 – Trim back protruding corner

### 13.1.4 Extra trimming near surface joints/cracks

If an excavation approaches to within 500mm of the edge of the pavement surface, or other surface joint, or crack the remaining area must be removed and included in the area to be reinstated.

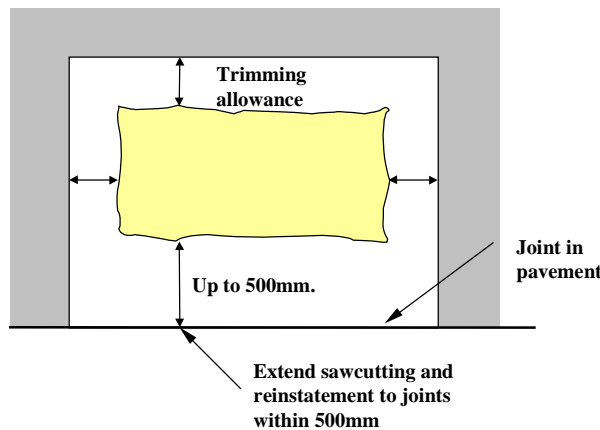


Figure 14 - Extension of area to nearby joints

### 13.1.5 Extra trimming in new surfaces

Where the carriageway surface is less than 2 years old the standard trimming allowance must be increased to 200mm or more as may be required by the Road Controller.

### 13.1.6 Full width reinstatement of cycle lanes

Any trench of any size within a defined cycle lane must be reinstated to not less than the full width of that cycle lane.

### 13.1.7 Full width reinstatement of footpaths and driveways

#### 13.1.7.1 General

The full width of any affected footpath, or driveway must be reinstated over the affected length and beyond as indicated in figures 15 and 16, except that for concrete surfaces and small holes further adjustments apply as indicated below in Sections 13.1.7.2 and 13.1.7.3 respectively.

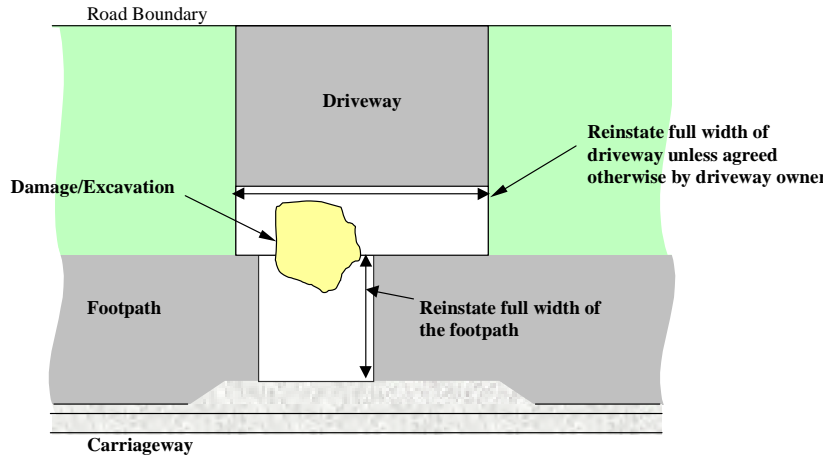


Figure 15 - Excavation/Damage in footpath or driveway

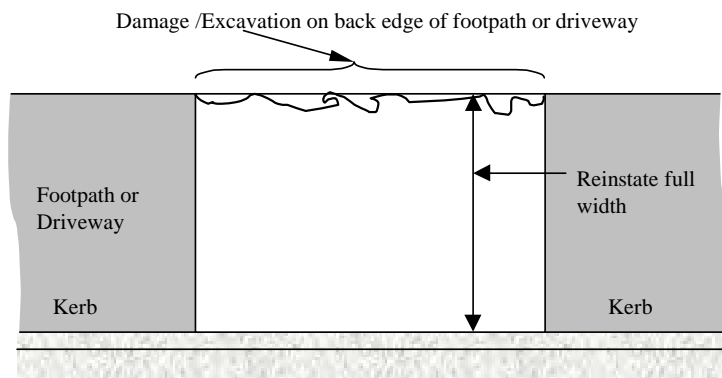


Figure 16 - Excavation/Damage on edge of footpath or driveway

#### 13.1.7.2 Concrete surface minimum panel length

In concrete footpaths, or driveways, a minimum panel length of 1 metre must be achieved. The reinstatement area must also extend to any other surface joint or crack within 1 metre. An example is shown in figure 17.

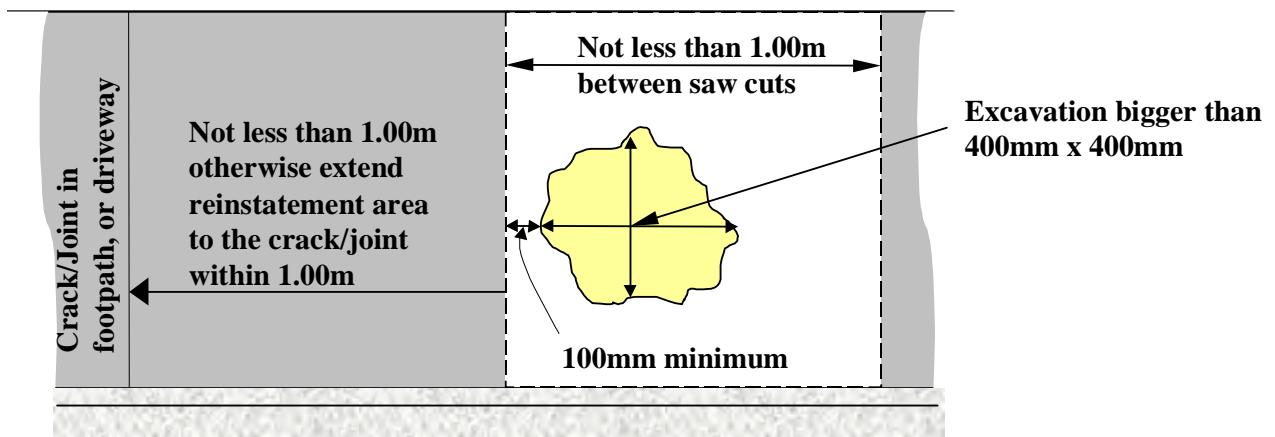


Figure 17 - Reinstatement of concrete footpaths or driveways

#### 13.1.7.3 Exception for small holes

Where an excavation, or pavement damage, is smaller than 400mm long and 400mm wide the reinstatement area may be less but must extend at least beyond the excavated area to provide the trimming allowance of 100mm. If the excavation approaches to within 500mm of the edge of the footpath/driveway, or other surface joint, or crack the remaining area must be removed and included in the area to be reinstated. All such joints must be cut to form a neat simple pattern to include these requirements. An example is shown in figure 18.

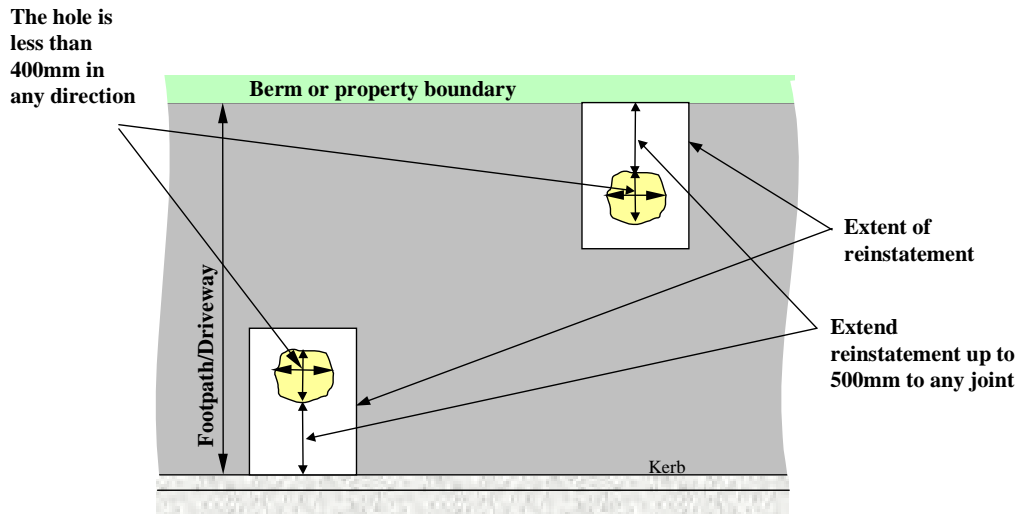


Figure 18 - Reinstatement of small excavation in footpath or driveway

## 13.2 CARRIAGEWAYS

### 13.2.1 General

The surface of any excavation in a carriageway is to be reinstated in similar material to the surface around it and in the following manner.

### 13.2.2 Permanent surface levels

Final surface levels of the pavement and any service covers shall match to within 0 mm below and 5mm above the adjoining surface level and shall be consistent with any camber and longitudinal grades on the adjoining carriageway.

In addition the roughness of the carriageway must not be increased by a factor of more than 15 % as a result of any work. The cost of any roughness tests performed by Council must be paid by the Principal, or their Contractor, if the roughness has increased by more than that amount.

### 13.2.3 Asphalt surfaces

#### 13.2.3.1 Tack coat

The basecourse layer must be swept free of all loose material before the tack coat is applied.

A tack coat of hot bitumen or emulsion must be sprayed or painted to the vertical joints of the existing pavement and the surface of the basecourse. The rate of application of the tack coat is to be 0.3 litres of residual bitumen per square metre.

#### 13.2.3.2 Asphalt

The asphalt material must be laid and compacted to the requirements of the Transit New Zealand Specification P9 1975 and any amendments. In this respect the compaction must be such that the air voids in the compacted mix are in the range of between 3% and 6% (i.e. between 94% and 97% of the maximum theoretical density).

The minimum depth and type of asphalt must be as follows:

- Main Roads and bus routes - 70 mm (45mm Mix20 bottom layer, and 25mm Mix10 top layer)  
Alternatively this may be 90 mm comprising 2 x 45 mm layers of Mix20.
- All other Roads - 30mm of Mix10

In the situation of the carriageway having a Friction Course mix then a matching friction course mix underlain with a grade 2 size chipseal must be laid instead of the tack coat and asphalt. These must be applied by a Contractor suitably skilled in the laying of those materials. The depth of friction course must match the depth of the adjoining friction course. The Road Controller will advise the Principal or the Contractor of situations where this is required.

In the situation of the carriageway having a Macadam asphalt mix (Course asphalt mix) the Road Controller may require the same type of mix to be replaced and be underlain with a grade 2 size chipseal.

### **13.2.3 Emulsion and sand sealing of joints**

All asphalt joints, except where friction course is used must be coated with a 100 mm wide emulsion and sand bandage. The emulsion must be applied by spray or be brushed to produce an uniform application not less than 1.0 litres of residual bitumen per square metre. The bandage must extend for not less than 50 mm on either side of the joint. The sand must be either Plastering Sand or a Coarse Sand and must be applied to completely cover the emulsion.

Any surplus sand must be removed before opened to traffic to avoid any nuisance or hazard to vehicles and/or pedestrians, unless adequate signage is erected and maintained to warn traffic.

Any saw cuts not used are to be filled and bandaged in the same manner.

### **13.2.4 Reinstatement in chip seal surfaces**

Chip seal roads must be reinstated with asphalt as outlined in Section 13.2.3 “Asphalt Surfaces” above. The area of asphalt must then be recorded by the Contractor on the ‘Completion Notice’. A texturing fee will be included in the RWN fee to contribute towards the Council’s re-texturing costs caused by asphalt patches in chip seal road surfaces.

### **13.2.5 Block Paving surfaces**

Any chipped or damaged blocks must be replaced with the same type, both colour and shape. The Road Controller may be able to supply details of block types and Suppliers where replacement blocks are required.

Block paved surfaces are to be reinstated in the same materials, laying patterns, and in a manner consistent with good industry standards such as:

- “Paver Note One – Specifying and Laying Clay Pavers” ISBN 0 947-160 02, 7 July 1993 Revision
- NZS 3116:2002 ‘Concrete segmental paving’

Tolerances that must be achieved are:

- Joint widths between adjacent blocks must not exceed 4mm and should not be less than 2mm
- The final surface of the paving must be within  $\pm 10$  mm of the original level provided that the surface level is not below drainage channels or gully entries and continuously graded towards them
- The deviation of the surface from a 3 m straight edge or template must not exceed 8 mm and the difference in level between adjacent paving blocks must not exceed 2 mm

To re-establish a tight interlocking pattern with the above joint widths between blocks it is often necessary to remove all adjoining blocks and relay them up to a bordering physical feature such as the water channel.

Blocks must not be cut in any way unless they are on the outside edge of a block paving area and need to be cut to match the border feature such as a water channel. They may then be cut neatly to match that feature.

Joints must be filled with Pavelok or a similar stabilised block paver jointing sand to prevent removal by street suction cleaners.

Any surplus sand must be removed immediately to avoid any nuisance or hazard to vehicles and/or pedestrians.

Reinstatement of the surface around service chambers, poles, or other street furniture should be consistent with the general practice in that area. Typically this may be block pavers, concrete, or exposed aggregate concrete. A process to achieve an exposed aggregate surface is included in Appendix P. Any concrete border must be at least 100mm wide and must not extend more than one block length in distance from the base of the feature.

### **13.2.6 Special surfaces**

Any special surfaces, such as Imprinted asphalt, or, Coloured asphalt, must be reinstated in the same materials and to a standard at least equivalent to the original surface.

The Road Controller may be able to supply details of special surface materials, suppliers, and specialist contractors for those surfaces.

## **13.3 FOOTPATHS AND DRIVEWAYS**

### **13.3.1 General**

The surface of any excavation in a footpath or driveway must be reinstated in similar material and in the following manner.

### **13.3.2 Permanent surface levels**

Final surface levels of the pavement and any service covers must match to within 2 mm below and 3 mm above the adjoining surface level and must be consistent with any crossfall and longitudinal grades on the adjoining footpath or driveway.

### **13.3.3 Asphalt surfaces**

#### **13.3.3.1 Tack coat**

The basecourse layer must be swept free of all loose material before the tack coat is applied.

A tack coat of hot bitumen or emulsion must be sprayed or painted to the vertical joints of the existing pavement and the surface of the basecourse. The rate of application of the tack coat is to be 0.3 litres of residual bitumen per square metre.

#### **13.3.3.2 Asphalt**

The asphalt must be laid and compacted to the requirements of the Transit New Zealand Specification P9 1975 and any amendments. In this respect the compaction must be such that the air voids in the compacted mix are in the range of between 3% and 6% (i.e. between 94% and 97% of the maximum theoretical density).

The minimum depth and type of asphalt must be 25mm of Mix 6 or Mix5. Alternatively Mix 10 asphalt may be used but a smooth slurry coat must be applied to achieve a tight waterproof surface.

All cold asphalt joints between stages in the work must be saw-cut to provide a vertical face and straight joint.

#### **13.3.3.3 Emulsion and sand sealing of joints**

All asphalt joints must be coated with a 100 mm wide emulsion and sand bandage. The emulsion shall be applied by spray or be brushed to produce an uniform application not less than 1.0 litres of residual bitumen per square metre. The bandage must extend for not less than 50 mm on either side of the joint. The sand must be either Plastering Sand or a Coarse Sand and must be applied to completely cover the emulsion.

Any surplus sand must be removed immediately to avoid any nuisance or hazard to pedestrians.

Any saw cuts not used are to be filled and bandaged in the same manner.

### **13.3.4 Concrete surfaces**

The concrete depth must be not less than 100mm. The concrete must have a strength of not less than a 20 MPa at 28 days. Where there was any reinforcing in the footpath or driveway it must be replaced to the same standard. The finished surface must be smooth with a light brush finish and all joints must be clean and tight. If the length of the affected footpath or driveway is more than 2.5 x width then transverse construction joints must be formed at intervals of not more than 2.5 x width. Transverse construction joints would normally be formed by placing a saw cut across the fresh concrete (within 3 days) to a depth of between 25% and 35% of the total concrete depth.

### **13.3.5 Block Paving Surfaces**

Any chipped or damaged blocks must be replaced with the same type, both colour and shape. The Road Controller may be able to supply details of block types and Suppliers where replacement blocks are required.

Block paved surfaces are to be reinstated in the same materials, laying patterns, and in a manner consistent with good industry standards such as:

- “Paver Note One – Specifying and Laying Clay Pavers” ISBN 0 947-160 02, 7 July 1993 Revision
- NZS 3116:2002 ‘Concrete segmental paving’

Tolerances that must be achieved are:

- Joint widths between adjacent blocks must not exceed 4mm and should not be less than 2mm
- The final surface of the paving must be within  $\pm 10$  mm of the original level provided that the surface level is not below drainage channels or gully entries and continuously graded towards them
- The deviation of the surface from a 3 m straight edge or template must not exceed 8 mm and the difference in level between adjacent paving blocks must not exceed 2 mm.

To re-establish a tight interlocking pattern with the above joint widths between blocks it is often necessary to remove all adjoining blocks and relay them up to a bordering physical feature such as the kerb.

Blocks must not be cut in any way unless they are on the outside edge of a block paving area and need to be cut to match the border feature such as a water channel. They may then be cut neatly to match that feature.

Joints must be filled with Pavelok or a similar stabilised block paver jointing sand to prevent removal by street suction cleaners.

Any surplus sand must be removed immediately to avoid any nuisance or hazard to pedestrians.

Reinstatement of the surface around service chambers, poles, or other street furniture should be consistent with the general practice in that area. Typically this may be block pavers, concrete, or exposed aggregate concrete. A process to achieve an exposed aggregate surface is included in Appendix P. Any concrete border must be at least 100mm wide and must not extend more than one block length in distance from the base of the feature. Any concrete used must be not less than 100 mm in depth.

### **13.3.6 Special Surfaces**

Any special surfaces, such as imprinted asphalt, coloured asphalt, or tiles are to be reinstated in the same materials and to a standard at least equivalent to the original surface.

The Road Controller may be able to supply details of special surface materials, suppliers, and specialist contractors for those surfaces.

### **13.3.7 Steps**

Any affected steps must be reinstated in a similar manner consistent with uniform step lengths and heights of adjoining steps. They must also follow any adjoining landing and step configuration.

In respect of reinforced concrete steps they must be built in a manner shown in Appendix N, except that step dimensions must be adjusted to match any adjoining steps.