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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
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SUBJECT: **Guidelines on Patching Pavement Defects**

For the guidance of all concerned and to assure the quality of pothole patches on asphalt and concrete pavements, the following general guidelines and procedures should be strictly followed:

**I. Preparation of the Area to be Patched**

1. The area to be patched must be marked (at least a foot outside the distressed area) in order that the workman doing the cutting can easily and quickly remove the failed materials.
2. For defects such as potholes, severe scaling, disintegration, and the like, the defective area should be cut and shaped so as to form a square surface over which the patch can be placed. The walls of the cut should be made vertical to provide a good surface for adhesion and locking-in of the patch during compaction.
3. All debris must be removed from the hole.
4. If the cut has been made to the base or subbase, these materials must be compacted.
5. For raveled areas or when only levelling is needed, the defective area may not be cut but should be rid of all loose materials and dirt.
6. A tack coat should be applied on the surface of the area to be patched to provide bond between the old and the new surface. If the defect reached the base course or subbase course, a prime coat should be applied instead of a tack coat.

**II. Placing the Patch Materials**

1. Patches thicker than 15 cm should be laid and compacted in more than one lift.
2. Placing should be done with a shovel per lift, working from one side of the area to be patched to the other.
3. The cut should be overfilled by 0.5 to 2 cm, depending on the depth of the hole (0.5 for holes up to 5 cm deep, 1cm for holes 5 to 10cm deep, and 2cm for holes greater than 10cm deep), to allow for compaction settlement.

4. For raveled areas and levelling, surface treatment should be applied (slurry seal, sand seal, aggregate seal, pre-mix bituminous treatment, depending on the condition of the surface and amount of the traffic).

### III. Compacting the Patch

1. The patch should be compacted using small-to-medium sized vibratory plate or roller compactors.
2. Care should be taken by the compaction machine operator to ensure that the compaction force is directed only on the patch and not to the surrounding pavement.
3. When compaction is complete, the patch surface should be just slightly higher than the surrounding pavement so that a "birdbath" or low spot does not exist where the water can collect and cause future failures. The edges of the patch should be sealed to keep the water from entering through the joint between the pavement and the patch. Use fine sand to blot the seal and prevent bleeding.

Patching works should be done preferably during warm and dry weather. However, when it is necessary to patch during damp or cold weather, much greater care should be observed. Further, appropriate patching material, such as cold-laid paving mixture, should be used.

In using patches of all types, extreme care should be exercised not to use a mix with excess bituminous material. For best patching mixture, a laboratory analysis should be conducted on the materials to be used. All samples of materials to be used should have been tested and passed quality control requirements.

To easily pinpoint responsibility for inferior materials, only one supplier of patching materials shall be assigned to a particular road section.

To insure the safety and to facilitate the flow of traffic, warning signs and lighting facilities (for night operations) should always be placed prior to and during the patching activities, and should be removed after the completion of the work. The area around the patch should be thoroughly cleaned of debris before leaving.

  
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Secretary