PAVEMENT RESTORATION GUIDELINES

City of Pinole - Public Works Department
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A. The final appearance of the street after the repairs are made should be acceptable with an engineered appearance. Street repairs that are satisfactory from a functional point of view may produce a negative reaction from the public if they give the appearance of being poorly planned or executed. The public's perception of street repairs is based primarily on shape, size, orientation, and the geometry of the patch.

B. Street repairs should leave a pavement in a condition at least as good as, if not better than, the condition prior to the repairs. In the case of major projects that involve excessive haul of materials or unusually heavy construction equipment or activity, non-destructive testing of the pavement condition before and after construction may be required at the city's discretion.

C. Excavations and street repairs, even well-constructed street repairs, shorten a pavement's life. Several types of street distress, settlement, alligator cracking, and potholes, often show up around patches. Quality street repairs should attempt to reduce the occurrence of these types of distress.

D. Avoid weakening or destroying the existing pavement around an excavation with heavy construction equipment, stockpiling, or delivery of materials, etc. When damage does occur, remove the damaged pavement, extending the limits of the street repair, before replacing the pavement. No stockpiling of backfill or road building materials is permitted on the pavement.

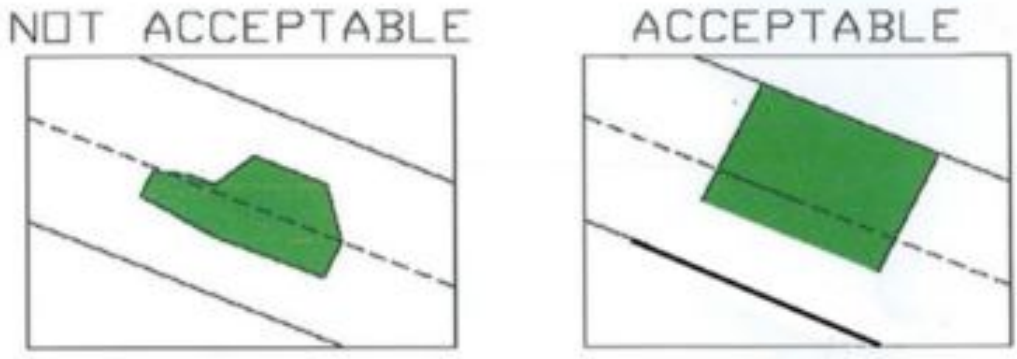
E. Contractors must adhere to the following pavement restoration guidelines:

1. Pavement shall be cut to a single, vertical line prior to excavation.
2. All excavated material shall be removed from the job site within twenty-four hours.
3. Any trench extending from the curb into the parking lane will require a complete two inch grind and overlay of the parking lane for twenty-five feet in each direction. All trenches extending into the traveled lane transversely will require the entire length of the trench up to the nearest lane line to be cold milled two inches and overlaid twenty-four feet in both directions from the center line of the trench.
4. Every trench must be backfilled or covered by trench plates the same day. Trenches can be backfilled with class 2 aggregate base as specified in the Caltrans Standard Specifications, Section 26, "Aggregate Base."
5. After a trench has been backfilled, and immediately prior to placing asphalt concrete, the existing asphalt concrete shall be saw cut, or milled to a vertical face. The cut shall be a "T-cut" and the new asphalt concrete paving shall be butt joined to the existing asphalt concrete vertical face. No feathering of new paving to existing paving is allowed. The vertical faces shall be tack coated.
6. In prohibition streets, placement of the final two inches of asphalt concrete wearing surface shall be done by a paving machine or a spreader box.
7. To allow for proper placement of the new pavement section, damaged pavement outside of the original trench cut lines shall be removed by cutting in lines perpendicular to or parallel to the original trench lines. No diagonal cuts are to be made. Undamaged pavement of three feet or less between two damaged areas shall also be removed.
8. For trenches in recently paved prohibition streets, the entire lane shall be key-cut two inches deep, and repaved with asphalt concrete unless the engineer gives written authorization to resurface with a polymer modified slurry seal instead. Authorization from the engineer to use slurry seal instead of asphalt concrete shall set forth the reasons for the authorization.

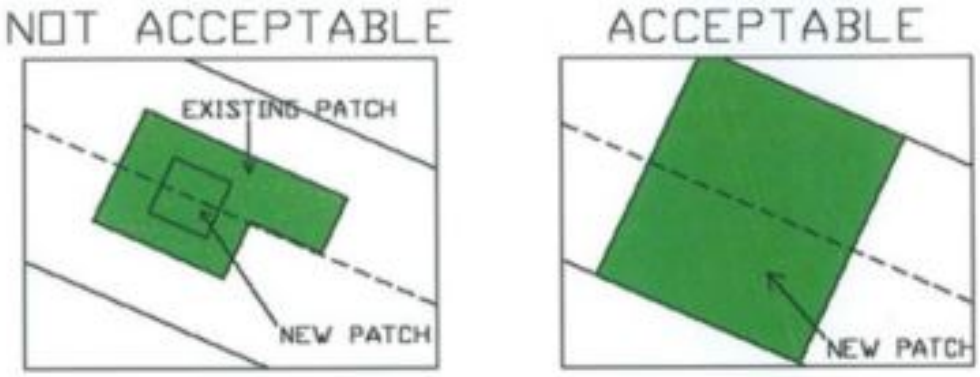
9. For trenches in recently slurry sealed prohibition streets, the entire lane shall be resurfaced with polymer modified slurry seal.
10. Trenches in concrete streets shall be repaved with concrete. The thickness of the new pavement shall be equal to the thickness of the existing pavement with the minimum thickness to be six inches in the roadway.
11. Trenches in arterial and collector streets shall be paved with not less than six inches asphalt concrete or match the existing pavement thickness (whichever is greater).
12. Pavement shall be restored within fourteen working days from the time the entire trench is backfilled, unless delay is excused due to circumstances beyond the contractor's control, such as inclement weather. For minor excavations such as service installations, the pavement shall be restored with in thirty working days from the time the entire trench is backfilled, unless delay is excused due to circumstances beyond the contractor's control, such as inclement weather.
13. Asphalt pavement shall be compacted to obtain a minimum of ninety-five percent relative compaction. The asphalt concrete wearing surface shall have no irregularity greater than five-sixteenths of an inch in ten feet in any direction.
14. On all streets steel plates shall be used to facilitate traffic flow and to protect the excavation until finish pavement is restored. Steel plates used to bridge a street opening shall be ramped to the elevation on the adjacent pavement and secured against movement in any direction. Temporary ramps shall be constructed of asphalt and shall have a gradual 30:1 slope or flatter using asphalt cutback.
15. All painted USA markings shall be removed by the permittee after the work has been completed.
16. All damaged pavement markings and striping shall be replaced and restored by the permittee.

F. Example of Repair Details.

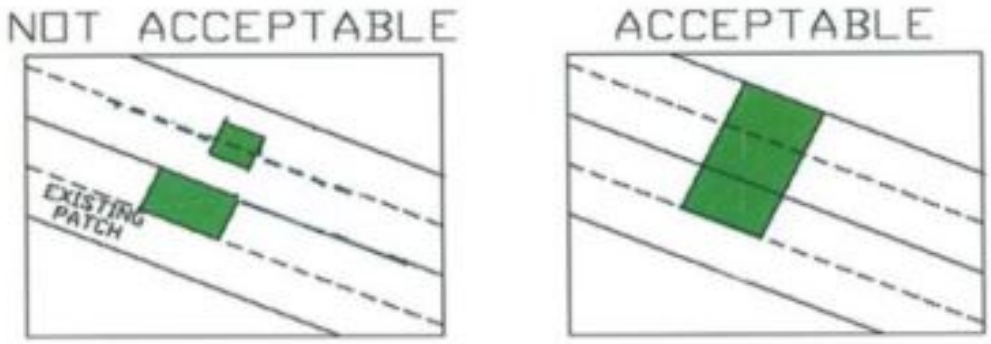
1. Existing pavements should be removed to clean, straight lines parallel and perpendicular to the flow of traffic. Do not construct patches with angled sides and irregular shapes. All patches that exceed fifty percent of the transverse pavement width shall be full lane width and the non-patched areas shall be milled and resurfaced.



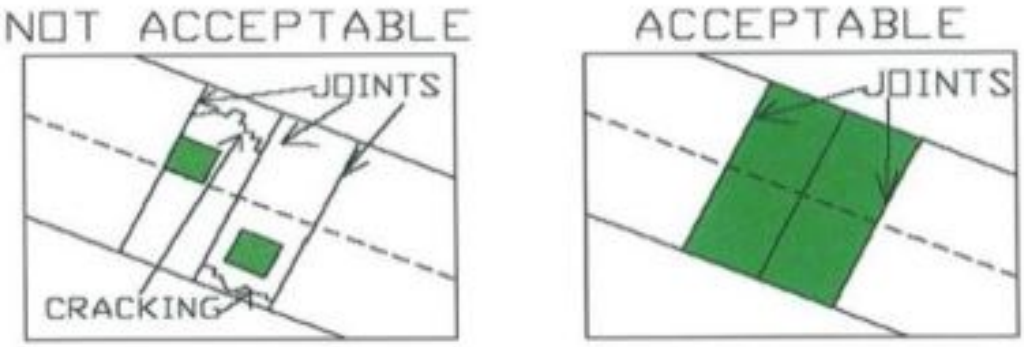
2. Avoid patches within existing patches. If this cannot be avoided, make the boundaries of the patches coincide. All repairs should be full lane width.



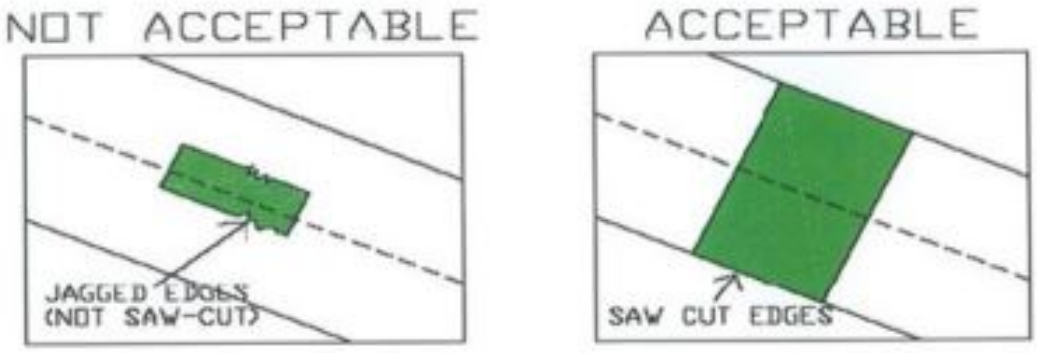
3. Do not leave strips of pavement less than one-half lane in width from the edge of the new patch to the edge of an existing patch or the lip of the gutter.

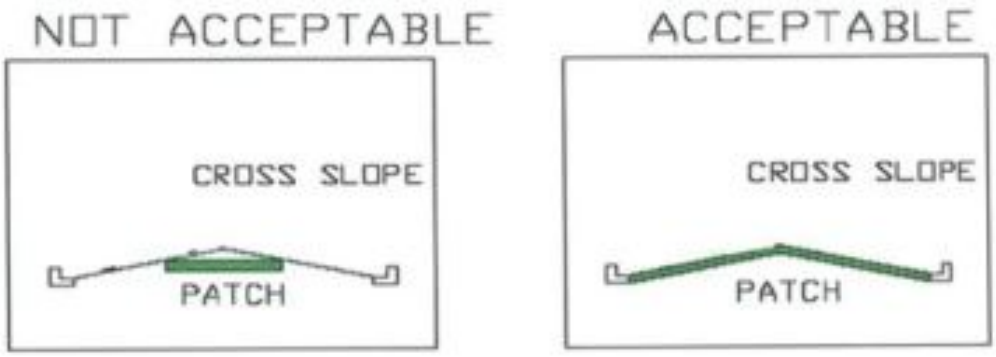


4. In concrete pavements, remove sections to existing joints, or new saw cut joints at midslab, that is in good repair. In damaged concrete, the limits of removal should be determined in the field by city inspector.

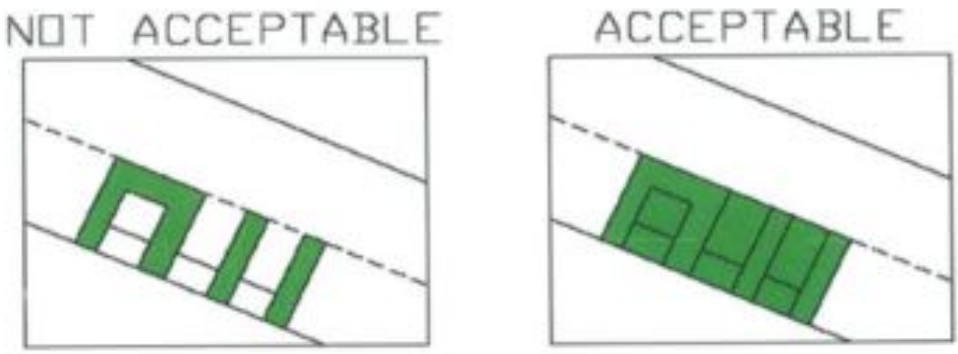


5. Asphalt and concrete pavements should be removed by saw cutting or grinding. Avoid breaking away the edges of the existing pavement or damaging the remaining pavement with heavy construction equipment. Patches should have a smooth longitudinal grade consistent with the existing roadway. Patches should also have a cross slope or cross section consistent with the design of the existing roadway.

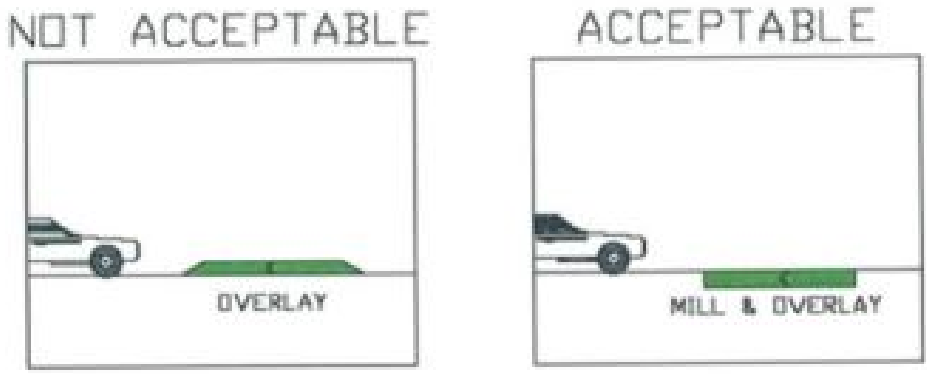




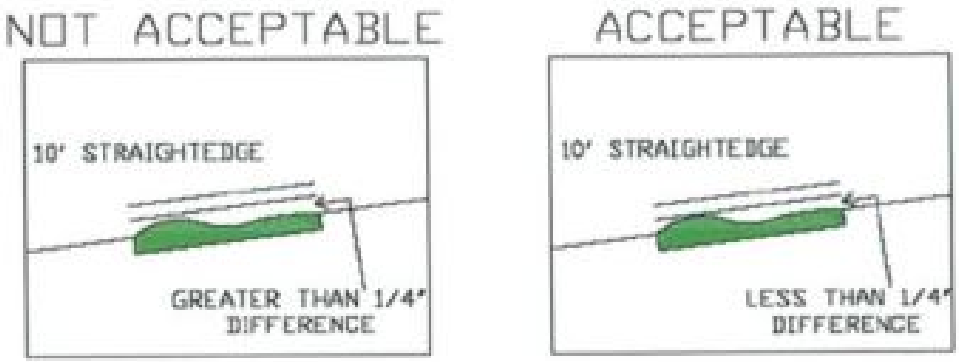
6. In the case of a series of patches or patches for service lines off a main trench, repair the pavement over the patches by grinding and overlay when the spacing between the patches is less than ten feet. In cases where the existing pavement is in poor condition (in the upcoming years resurfacing contract) and may require overlay within the next few years, this requirement may be modified or waived by the city engineer.



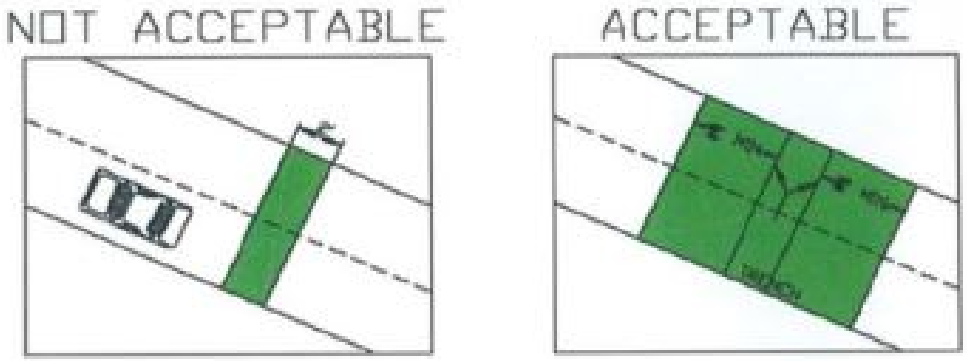
7. A patch should provide a smooth ride with smooth transitions on and off the repair and all joints should be located outside the wheel path. Overlays should be placed by first removing the existing pavement to the desired depth by grinding or milling, and then placing the pavement flush with the adjacent surfaces.



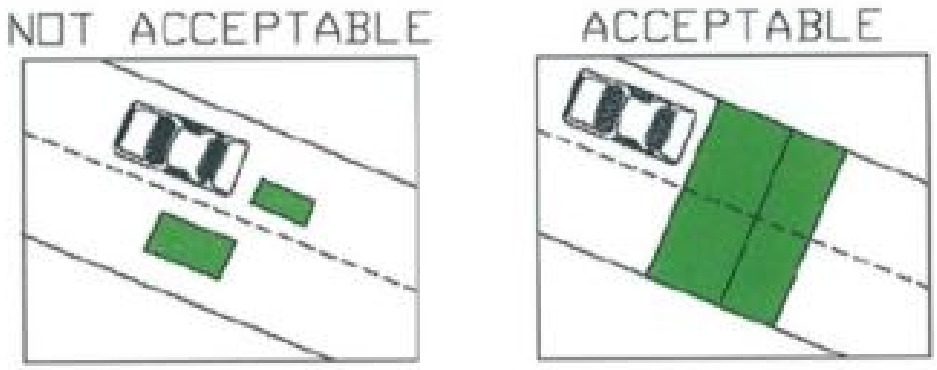
8. Surface tolerances for street repairs shall meet the standards for new construction. The finished surface of the pavement repair should be tested with a ten foot straightedge parallel to the centerline or perpendicular across joints. Variations measured from the testing face of the straightedge to the surface of the street repair should not exceed one-quarter inch.



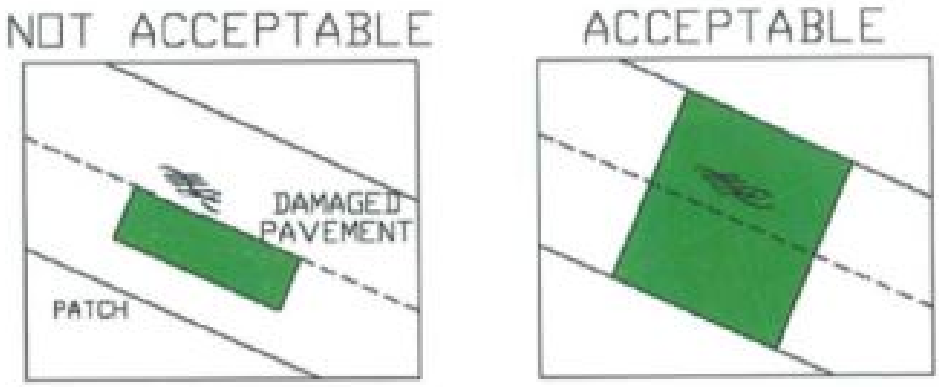
9. Transverse patches on arterial and collector streets shall be overlaid across the entire street width for a distance of two feet minimum on all sides of the trench using a T-patch.



10. Do not allow the edges of patches to fall in existing wheel paths. The edges of patches parallel to the direction of traffic shall be limited to the boundaries of lanes or to the centerline of travel lanes.



11. When the proposed excavation falls within ten feet of a section of pavement damaged during the utility repair, the failed area shall be removed to sound pavement and patched. Scarring, gouging, or other damaged pavement adjacent to a patch shall be removed and the pavement repaired to the satisfaction of the city inspector. Damaged pavement within ten feet of a patch must also be patched.



12. Patches must avoid frequent width changes.