

**SECTION 01 73 29
CUTTING AND PATCHING**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Cutting
- B. Patching
- C. Minor modifications to assure exposed surfaces retain a finished appearance.

1.2 RELATED SECTIONS

- A. Additional requirements for floor patching: Section 09 01 61, FLOOR PATCHING AND LEVELING

1.3 SUBMITTALS

- A. Product Data: Submit all materials to be used in patching that are not submitted under another Section of this Specification.
- B. Cutting and Patching Proposal:
 - 1. Where cutting or patching is found to be necessary to accomplish the Work as described in the Construction Document, provide a description of the cutting and/or patching to be done and the reason it is required. Include what materials and utilities will be affected.
- C. Approval by the Owner to proceed with cutting and patching does not waive the Owner's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.4 PAYMENT FOR COSTS

- A. Contractor shall be responsible for all costs of cutting and patching specifically stated in or reasonably implied by the Work described in the Construction Documents.
- B. Contractor shall be responsible for all costs of cutting and patching caused by ill-timed or defective work, or work not conforming to contract documents, including costs for additional services of the Architect/Engineer or Owner.
- C. Work done on instructions of Architect/Engineer or Owner (by change order), other than defective or non-conforming Work will be paid for by the Owner.

1.5 QUALITY ASSURANCE

- A. Employ skilled workmen to perform cutting and patching. Where work is of a specific trade (such as plaster) engage tradesmen skilled in that trade to execute the Work.
- B. Requirements for Structural Work: Do not cut or patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching structural elements including, but not limited to, the following:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Structural concrete.
 - d. Structural steel.
 - e. Preformed metal panels
 - f. Lintels
 - g. Timber and primary wood framing.
 - h. Structural decking.
 - i. Stair systems.
 - j. Miscellaneous structural metals.
 - k. Equipment supports.
 1. Piping, conduits, ductwork, vessels and equipment.
 2. Where a core drill is required through a floor or wall, verify the location of the concrete webs, steel joints or other structural elements below the slab or inside or on the other side of the wall before drillings and adjust location or request direction from the A/E as necessary.
- C. Operational and Safety Limitations: Do not cut or patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
1. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems including, but not limited to, the following:
 - a. Shoring, bracing, and sheeting.
 - b. Primary operational systems and equipment.
 - c. Air or smoke barriers.
 - d. Water, moisture, or vapor barriers.
 - e. Membrane and flashings.
 - f. Fire protection systems.
 - g. Noise and vibration control elements and systems.
 - h. Control systems.
 - i. Communication systems.
 - j. Conveying systems.
 - k. Electrical wiring systems.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials for patching that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.
 - 1. All substitute materials must be approved by the Owner before they may be used on the project.
- B. Use materials whose thermal, chemical or similar properties will not adversely affect the existing materials to remain.
- C. Where new materials are described in this Construction Documents provide patching materials that conform to those specifications in regard to quality unless otherwise indicated.
- D. Where no specific description of materials is found in the Construction Documents, provide materials of Professional or Commercial quality, heavy duty and top quality, meeting the highest commonly used standards in the trade or specialty under which the Work in question would normally be performed.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Where the cutting involves elements normally handled by differing trades, before proceeding, coordinate with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. To the extent possible, verify what is behind, under or over a surface before cutting or drilling into that surface.

3.2 PREPARATION

- A. Temporary Support: Provide all temporary support of Work to be cut as required to maintain the structural integrity of the remaining construction and as necessary to provide for a safe environment.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- D. Cutting of existing pipe, conduit or ductwork serving the building, which is indicated to be removed or relocated, must be schedule only after adequate provisions have been made to bypass them. Services must be maintained at all times.

3.3 PERFORMANCE

A. General

1. Proceed with cutting and patching in a timely manner as required to prevent delay of the Work.
2. Provide all cutting of existing construction as necessary to provide for installation of other components or performance of other construction activities or the subsequent fitting and patching required to restore surfaces to their original condition.
3. If utilities or structural elements of the construction are encountered which are not specifically noted on the Drawings, immediately inform the Architect/Engineer and await a response before proceeding.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping.
2. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces.
3. Temporarily cover openings when not in use.
4. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
5. Cut no utilities without specific, written authorization from the Owner.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
3. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Wherever a patch occurs, refinish the entire surface to a point where the surface changes such as at a corner, a joint, a change in plane or a change in material or color.

- b. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.
- D. Anchoring to Existing:
- 1. Do not anchor new items or new construction to existing construction in a way that will place an excessive load on the existing construction.
 - 2. Plaster and Gypsum Board
 - a. Do not anchor anything directly to gypsum board or plaster, always anchor to the framing system or substrate to which the gypsum board or plaster is anchored. If necessary open the gypsum board or plaster wall, provide additional blocking and repair the surface.
 - 3. Hollow Masonry
 - a. Do not anchor anything weighing more than 1 pound or capable of resulting in pressure being applied of more than 3 pounds in any direction to the face of hollow masonry.
 - b. Where loads heavier than those listed above must be anchored to hollow concrete block, provide one of the following:
 - 1) Open the core and grout solid at the core into which the anchor is to be placed plus at least one core above and two cores below where the anchor is to be placed. Patch and finish the surface of the block to match surrounding block.
 - 2) Provide a system that engages both walls of the concrete block and provides a rigid spacer/brace in the core between the walls similar to Hilti HIT HY 20 for Masonry Construction.
 - c. Under no circumstances use impact driven fasteners on hollow masonry unless the cores are grouted solid.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed and areas used as access including cleaning piping, metal framing, conduits, ducts and other similar features.
- B. Thoroughly clean and prepare all surfaces before painting or other finishing is applied.
- C. Completely remove paint, mortar, oils, putty and items of similar nature that are not a part of the intended finish.

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