

**SECTION 01 04 50
CUTTING AND PATCHING**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes:
 - 1. Information described under this section:
 - Definitions
 - Coordination
 - Submittals
 - Performance

1.2 DEFINITIONS

- A. "CUTTING AND PATCHING" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.
- B. "CUTTING AND PATCHING" is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
- C. "CUTTING AND PATCHING" performed during the manufacture of projects, or during the initial fabrication, erection or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".
- D. "REMOVALS," "DEMOLITION" and "SELECTIVE DEMOLITION" are recognized as related-but-separate categories of work, which may or may not require cutting and patching as defined in this section.

1.3 SUBMITTALS

- A. PROCEDURAL PROPOSAL FOR CUTTING AND PATCHING:
 - 1. Submit (to the COTR) the proposed procedures for cutting and patching at least 2 weeks prior to the timework will be performed.
 - 2. Include the following information, as applicable, in the submittal.
 - a. Describe nature of the work and how it is to be performed, indicating why cutting and patching cannot be avoided.
 - b. Describe anticipated results of the work in terms of changes to existing work, including structural, operational, and visual changes as well as other significant elements.
 - c. List products to be used and firms that will perform work.
 - d. Give dates when work is expected to be performed.
 - e. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily.
 - f. Indicate how long utility service will be disrupted. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily.
 - g. Indicate how long utility service will be disrupted.
 - h. Describe protection to existing plant, equipment, and products.
 - i. Where cutting and patching of structural work involves the addition of reinforcement, submit details and engineering calculations to show how that reinforcement is integrated with original structure to satisfy requirements.
 - j. Approval by the COTR to proceed with cutting and patching work does not waive the COTR's right to later require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

1.4 QUALITY ASSURANCE

- A. REQUIREMENTS FOR STRUCTURAL WORK: Do not cut and patch structural work without COTR's review and written approval.
- B. OPERATIONAL AND SAFETY LIMITATIONS:

1. Do not cut and patch operational elements of safety-related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased safety.
2. Provide any or all of the following as required for specific work being undertaken:
 - a. Shoring, bracing, and sheeting.
 - b. Primary operational systems and equipment.
 - c. Water/moisture/vapor/air/smoke barriers, membranes and flashings.
 - d. Noise and vibration control elements and systems.
 - e. Control, communications, conveying, and electrical wiring systems.
- C. VISUAL REQUIREMENTS:
 1. Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the COTR's opinion, result in lessening the building's aesthetic qualities.
 2. Do not cut and patchwork in a manner that would result in substantial visual evidence of cut and patch work.
 3. Remove and replace work judged by the COTR to be cut and patched in a visually unsatisfactory manner.
- D. If possible, retain the original installer or fabricator, or another recognized experienced and specialized firm to cut and patch exposed work.

1.5 COORDINATION

- A. The mechanical and electrical subcontractors shall be responsible for the timely and accurate layout of their work.
- B. The General Contractor shall be responsible for all cutting operations of new and existing surfaces, including walls, floors, and ceilings as required for the proper completion of the work.
 1. Contractor shall provide appropriate firestopping to close openings around pipes, conduit, and other drilled openings.
 2. Any holes drilled incorrectly are to be patched by the contractor at the expense of the subcontractor responsible.
 3. The Contractor shall fill all depressions in concrete slabs revealed after cutting operations.
- C. The contractor shall be responsible for all patching of areas of cutting. Patching shall be done in a manner to repair surfaces disturbed by cutting to their original condition.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:
 1. Except as otherwise indicated, or as directed by the COTR, use materials for cutting and patching that are identical to existing materials.
 2. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect.
 3. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching including mechanical and electrical trades.

Review areas of potential interference and conflict between the various trades.

Coordinate layout of the work and resolve potential conflicts before proceeding with the work.

3.2 PREPARATION

- A. TEMPORARY SUPPORT: To prevent failure provide temporary support of work to be cut.
- B. PROTECTION:
 - 1. Protect other work during cutting and patching to prevent damage.
 - 2. Protect existing products, personnel, and equipment from harm and dust.
 - 3. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. GENERAL: Employ skilled workers to perform cutting and patching work.
- B. CUTTING:
 - 1. Cut the work using methods that are least likely to damage work to be retained or adjoining work.
 - 3. Where possible, review proposed procedures with the original installer; comply with original installer's recommendations.
 - 4. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned.
 - a. Cut off conduit and pipe in walls or partitions to be removed.
 - b. After by-pass and cutting, cap, valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- C. PATCHING:
 - 1. Patch with seams which are durable and as invisible as possible.
 - 2. Comply with specified tolerances for the work.
 - a. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
 - b. Where removal of walls or partitions extends from one finished, area into another finished area, patch, and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance.
 - c. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.
 - d. Patch, repair, or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where work is performed or used as access to work.
- B. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit, and similar features before painting of other finishing is applied.
- C. Restore damaged pipe covering to its original condition.

3.5 MISCELLANEOUS ITEMS

- A. HOLES:
 - 1. Provide all holes and do all cutting for the work in a neat manner.
 - 2. Do not cut holes in structural steel without approval of the COTR.
 - 3. Drill holes in masonry or concrete with tools that will not spall, crack, or otherwise damage the structure.
 - 4. Close all unused holes in an approved manner.
 - 5. Coordinate the work of subcontractors and other contractors in locating, verifying, and cutting all holes.
- B. SLEEVES AND LINTELS:
 - 1. Provide pipe sleeves or lintels for all openings required in masonry walls and concrete slabs.
 - 2. Size sleeves and/or openings to allow job-installed insulation to be placed continuously through sleeve and/or opening.

3. Provide all floor openings with pipe sleeves with 2" projection above finished floor.
4. Fabricate sleeves from black steel Schedule 40 pipe or as indicated on the drawings.
5. Fabricate lintels from structural steel shapes or as indicated on the drawings.

END OF SECTION 01 04 50