

SECTION 017329

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This Section covers procedural requirements for cutting and patching, including but not limited to the following:
1. Standard requirements for all cutting and patching to be done on the Project, whether by the General Contractor, Filed Sub-Contractors or other subcontractors.
- B. Sustainable Design Intent: Refer to Section 018113 - SUSTAINABLE DESIGN REQUIREMENTS for certification level and certification requirements.
- C. Refer to the following Sections for related work:
1. Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for temporary protection, shoring and construction aids.
 2. Section 017419 – CONSTRUCTION WASTE MANAGEMENT, for disposal of demolished materials.
 3. Division 2 through Division 14 Sections, for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 4. Section 033000 – CAST-IN-PLACE CONCRETE, for cutting, patching and repair of concrete.
 5. Section 055000 – METAL FABRICATIONS, for furnishing of lintels where required for all penetrations through new and existing masonry.
 6. Section 078400 – PENETRATION FIRESTOPPING, for patching fire-rated construction.
 7. Division 9 – FINISHES, for all patching of new and existing construction, except for masonry and concrete.
 8. Section 092110 – GYPSUM BOARD ASSEMBLIES, for cutting and patching gypsum wallboard construction.
 9. Section 092120 – GYPSUM SHAFT-WALL ASSEMBLIES, for cutting and patching gypsum shaft-wall construction.
 10. Section 099000 – PAINTING AND COATING, for final preparation of existing, new and patched surfaces as required for application of paint, and for paints and coatings applied to patched surfaces.
 11. Division 21, 22, 23 – MECHANICAL and Division 26 – ELECTRICAL, for coring and drilling for all items to be installed by mechanical and electrical trades, except as otherwise indicated.
 12. Division 21, 22, 23 – MECHANICAL and Division 26 – ELECTRICAL, for items to be installed by mechanical and electrical trades, except as otherwise indicated.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.
- C. Coring: Any new penetration cut through existing or new construction using core drill and measuring no more than 6 inches in diameter, or 6 inches by 6 inches. Larger cores are considered under cutting.

1.4 RESPONSIBILITY FOR CUTTING AND PATCHING

- A. General: All cutting and patching shall conform to the requirements of this Section, whether or not the work is to be done by the Contractor, a Filed Subcontractor or other Subcontractor.
 - 1. Patching shall be performed so as to maintain the integrity of acoustical rating of adjacent construction.
 - 2. Refer to Section 078400 – PENETRATION FIRESTOPPING, for requirements for maintaining the integrity of fire-rated construction at penetrations.
- B. Coordination: The General Contractor shall be responsible for the following:
 - 1. Obtain locations and dimensions of penetrations required through walls and floors from trades requiring penetrations.
 - 2. Coordinate those penetrations with the requirements of other trades.
 - 3. Forward locations and dimensions of requested penetrations to the trades responsible for performing the cutting and patching work.
- C. Coring: All coring shall be performed by the trade requiring the new penetration.
- D. New Penetrations in Non-Masonry Construction:
 - 1. Exposed locations: Cutting and patching shall be provided by the trade(s) responsible for surrounding construction.
 - 2. Concealed locations: Cutting and patching shall be provided by the trade(s) responsible for surrounding construction.
 - 3. Locations at roof: Cutting and patching of roof deck and substrate shall be coordinated with the work of Section 075300 – EPDM ROOFING.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio. Structural elements include but are not limited to the following:
 - 1. Reinforced concrete columns and beams. Coring of concrete foundation walls and slabs will be permitted where shown on drawings or required for mechanical and electrical work.
 - 2. Steel columns, beams, joists and connections.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased

maintenance or decreased operational life or safety. Operating elements include but are not limited to the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Partitions and other construction required to provide acoustical separation.
4. Fire-suppression systems.
5. Mechanical systems piping and ducts.
6. Control systems.
7. Communication systems.
8. Conveying systems.
9. Electrical wiring systems.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include but are not limited to the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations. Refer to Section 015000 – Temporary Facilities and Controls for additional requirements.
- C. Adjoining Areas: 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. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
 - 2. Cutting of openings in roofs shall be delayed as long as feasible, and preferably until the Roofing Subcontractor is at the site and can provide permanent roof covering immediately. Otherwise, protect roof openings so made in a weather tight manner until permanent roof is installed. Protect existing roofing to remain. Do not damage or alter existing roofing and flashing to remain when doing work under this Section. Refer to Section 015000 – TEMPORARY FACILITIES AND CONTROLS, for additional requirements for protection from the weather.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces, in such a manner as to ensure a minimal difference between the cut area and new materials when patched.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Use extreme care when cutting through construction containing concealed mechanical and electrical lines. Coordinate cutting and patching work with the following work to be performed under Division 21, 22, 23 and 26 Sections.
 - a. Cut off pipe or conduit in walls or partitions to be removed.
 - b. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Hazardous Materials: If unanticipated hazardous materials which would be disturbed by cutting and patching are discovered at any time during the course of work, cease work in the affected area only and continue work in other areas, and notify Architect and the Owner of such discovery. Do not proceed with work in such affected areas until written instructions are received.
 7. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: 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. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 3. Restore damaged pipe covering to its original condition.
 4. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 5. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 6. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
- 3.4 DEBRIS REMOVAL AND CLEANING
- A. Dispose of all materials under Section 017419 – CONSTRUCTION WASTE MANAGEMENT.
 - B. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION