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**Part 1            GENERAL**

**1.1                SUMMARY**

- .1        This Section includes procedural requirements for cutting and patching.
- .2        Related Sections include the following:
  - .1        Section 02 41 19 - Selective Structure Demolition for demolition of selected portions of the building.
  - .2        Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
  - .3        Section 07 84 13 - Penetration Firestopping and Section 07 84 43 - Joint Firestopping and for patching fire-rated construction.

**1.2                DEFINITIONS**

- .1        Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- .2        Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

**1.3                QUALITY ASSURANCE**

- .1        Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- .2        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 result in increased maintenance or decreased operational life or safety. Operating elements include the following:
  - .1        Primary operational systems and equipment.
  - .2        Air or smoke barriers.
  - .3        Fire-suppression systems.
  - .4        Mechanical systems piping and ducts.
  - .5        Control systems.
  - .6        Communication systems.
  - .7        Conveying systems.
  - .8        Electrical wiring systems.
- .3        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 result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
  - .1        Water, moisture, or vapour 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.
- .4 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 Departmental Representative's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- .5 Cutting and Patching Conference: Before proceeding, meet at Project site 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.

#### **1.4 WARRANTY**

- .1 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**

- .1 General: Comply with requirements specified in other Sections.
- .2 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**

- .1 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**

- .1 Temporary Support: Provide temporary support of Work to be cut.
- .2 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.
- .3 Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- .4 Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

### **3.3 PERFORMANCE**

- .1 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: 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.
  - .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 Division 31 Sections where required by cutting and patching operations.
  - .5 Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - .6 Proceed with patching after construction operations requiring cutting are complete.
- .3 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.
    - .1 Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - .2 Restore damaged pipe covering to its original condition.
  - .3 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.
    - .1 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.
  - .4 Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  - .5 Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
- .4 Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

**END OF SECTION**