

SECTION 07 01 50.19
PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Partial roof removal for installation of structural steel and new roof system/patching installation.
 - 2. Existing roofing membrane preparation for new roofing membrane system installation.
- B. Existing Roofing System: TPO
 - 1. Pavers and paver supports.
 - 2. Aggregate ballast.
 - 3. Roof insulation and drainage board
 - 4. Aggregate surfacing.
 - 5. Roofing membrane.
 - 6. Cover board.
 - 7. Roof insulation.
 - 8. Vapor retarder.
 - 9. Substrate board.

1.2 RELATED WORK

- A. Section 07 54 23, THERMOPLASTIC POLYOLEFIN (TPO) ROOFING: New Roofing System.
- B. Section 07 60 00, FLASHING AND SHEET METAL: Sheet Metal Counterflashing.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. American National Standards Institute/Single-Ply Roofing Institute (ANSI/SPRI):
 - FX-1 (R2016).....Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
- C. American Society for Nondestructive Testing (ASNT):
 - SNT-TC-1A (2019).....Personnel Qualification and Certification for Nondestructive Testing.
- D. ASTM International (ASTM):
 - C208-12(2017)e2.....Cellulosic Fiber Insulating Board.
 - C578-19.....Rigid, Cellular Polystyrene Thermal Insulation.
 - C728-17a.....Perlite Thermal Insulation Board.

C1177/C1177M-17.....Glass Mat Gypsum Substrate for Use as
Sheathing.

C1153-10(2015).....Location of Wet Insulation in Roofing Systems
Using Infrared Imaging.

C1278/C1278M-17.....Standard Specification Fiber-Reinforced Gypsum
Panel.

D4263-83(2018).....Indicating Moisture in Concrete by the Plastic
Sheet Method.

E. U.S. Department of Commerce National Institute of Standards and
Technology (NIST):

DOC PS 1-19.....Structural Plywood.

DOC PS 2-18.....Performance Standard for Wood-Based
Structural-Use Panels.

1.4 PREINSTALLATION MEETINGS

- A. Conduct preinstallation meeting minimum 30 days before beginning Work of this section.
 1. Required Participants:
 - a. Contracting Officer's Representative.
 - b. Architect/Engineer
 - c. Inspection and Testing Agency
 - d. Contractor.
 - e. Installer.
 - f. Manufacturer's field representative
 - g. Other installers responsible for adjacent and intersecting work, including mechanical and electrical equipment installers.
 2. Meeting Agenda: Distribute agenda to participants minimum 3 days before meeting.
 - a. Removal and installation schedule.
 - b. Removal and installation sequence.
 - c. Preparatory work.
 - d. Protection before, during, and after installation.
 - e. Removal and installation.
 - f. Temporary roofing including daily terminations.
 - g. Transitions and connections to other work.
 - h. Inspecting and testing.
 - i. Other items affecting successful completion.
 3. Document and distribute meeting minutes to participants to record decisions affecting installation.

1.5 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Submittal Drawings:
 - 1. Show size, configuration, and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Description of each product.
 - 2. Description of temporary roof system and components.
 - 3. List of patching materials.
 - 4. Recover board fastening requirements.
 - 5. Temporary roofing installation instructions and removal instructions. preparation instructions to receive new roofing.
 - 6. Existing roofing warrantor's instructions.
- D. Photographs: Document existing conditions potentially affected by roofing operations before work begins.
- E. Field Inspection Reports:
 - 1. Certify warrantor inspected completed roofing and existing warranty remains in effect.
- F. Infrared Roof Moisture Survey Report.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Same installer as Section 07 54 23, THERMOPLASTIC POLYOLEFIN (TPO) ROOFING
 - 2. Licensed to perform asbestos abatement in Project jurisdiction when removal of asbestos-containing material is required.
 - 3. Approved by existing roofing system warrantor when work affects existing roofing system under warranty.

1.7 FIELD CONDITIONS

- A. Building Occupancy: Perform work to minimize disruption to normal building operations.
 - 1. Verify occupants are evacuated from affected building areas when working on structurally impaired roof decking above occupied areas.
 - 2. Provide notice minimum 72 hours before beginning activities affecting normal building operations.
- B. Existing Roofing Available Information:
 - 1. The following are available for Contractor reference: NONE
 - 2. Examine available information before beginning work of this section.

C. Weather Limitations: Proceed with reroofing preparation only during dry weather conditions as specified for new roofing installation in Section 07 54 23, THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

1. Remove only as much roofing in one day as can be made watertight in same day.

D. Hazardous materials are not expected in existing roofing system.

1. Known hazardous materials were removed before start of work.

2. Do not disturb suspected hazardous materials. When discovered, notify Contracting Officer's Representative.

3. Hazardous materials discovered during execution of the work will be removed by Government as work of a separate contract.

1.8 WARRANTY

A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

B. Existing Warranties: Perform work to maintain existing roofing warranty in effect.

1. Notify warrantor before beginning, and upon completion of reroofing.

2. Obtain warrantor's instructions for maintaining existing warranty.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Patching Materials: Match existing roofing system materials.

B. Metal Flashing: See Section 07 60 00, FLASHING AND SHEET METAL.

C. Temporary Protection Materials:

1. Expanded Polystyrene (EPS) Insulation: ASTM C578-19.

D. Temporary Roofing System Materials: Contractor's option.

E. Recover Board: One of the following:

1. Insulation: See Section 07 22 00, ROOF AND DECK INSULATION.

2. Fiber Board: ASTM C208-12(2017)e2, Type II, fiber board; 13 mm (1/2 inch) thick.

3. Glass Mat Gypsum Board: ASTM C1177/C1177M-17, water-resistant; Type X, 16 mm (5/8 inch) thick.

F. Fasteners: Type and size required by roof membrane manufacturer to resist wind uplift.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Infrared Roof Moisture Survey: Ground-based, walk-over type performed according to ASTM C1153-10(2015).

1. Record the entire survey on DVD and provide one copy to Contracting Officer's Representative with report.
2. Include in report thermograms of suspect areas and corresponding daytime photos of same locations.
3. Conduct inspection by NDT test technician certified to at least Level 2 in Thermal/Infrared test method according to ASNT SNT-TC-1A.
4. Mark out roof areas determined to be wet to indicate minimum areas to be removed.

3.2 PREPARATION

- A. Examine and verify substrate suitability for product installation.
- B. Protect existing roofing system indicated to remain.
 1. Cover roof membrane with temporary protection materials without impeding drainage.
 2. Limit traffic and material storage to protected areas.
 3. Maintain temporary protection until replacement roofing is completed.
- C. Protect existing construction and completed work from damage.
- D. Protect landscaping from damage.
- E. Maintain access to existing walkways and adjacent occupied facilities.
- F. Coordinate use of rooftop fresh air intakes with Contracting Officer's Representative to minimize effect on indoor air quality.
- G. Ensure temporary protection materials are available for immediate use in case of unexpected rain.
- H. Ensure roof drainage remains functional.
 1. Keep drainage systems clear of debris.
 2. Prevent water from entering building and existing roofing system.
- I. Coordinate rooftop utilities remaining active during roofing work with Contracting Officer's Representative.

3.3 RE-ROOFING PREPARATION - GENERAL

- A. Notify Contracting Officer's Representative of planned operations, daily.
 1. Identify location and extent of roofing removal.
 2. Request authorization to proceed.

3.4 OVERBURDEN REMOVAL

- A. Remove aggregate ballast.
 1. Store aggregate ballast for reuse.
- B. Remove loose aggregate from bituminous membrane surface.
- C. Remove pavers and paver support.

1. Store undamaged pavers and paver supports for reuse.
2. Dispose of damaged pavers.

3.5 COMPLETE ROOFING SYSTEM REMOVAL - NOT USED

3.6 PARTIAL ROOFING SYSTEM REMOVAL

- A. Remove existing roofing completely, exposing structural roof deck at locations and to extent indicated on drawings.
 1. Remove cover board, roof insulation, vapor retarder, and substrate board .

3.7 ROOFING MEMBRANE AND SELECTIVE ROOFING SYSTEM COMPONENT REMOVAL

- A. Remove existing roofing membrane, only, in locations and to extent indicated on drawings.
- B. Visually inspect cover board, roof insulation, vapor retarder, and substrate board for moisture immediately after roof membrane removal.
 1. Coordinate with Contracting Officer's Representative to observe inspections.
 2. Identify wet roofing system components required to be removed.
 3. Mark roofing system removal locations and extents.
- C. Remove wet roofing system components.
 1. Remove or cut-off roofing system fasteners when removals expose structural roof deck.
- D. Patch selective roofing system removals immediately after inspection and repair.
- E. Install patching materials to match existing roofing system.
- F. Patch roofing membrane to maintain building watertight, unless new roofing membrane is installed same day as removal and repair.

3.8 DECK PREPARATION

- A. Inspect structural roof deck after roofing system removal.
- B. Concrete Roof Decks:
 1. Visually confirm concrete roof deck is dry.
 2. Perform moisture test according to ASTM D4263-83(2018) each day for each separate roof area.
 - a. Proceed with roofing work only when moisture is not observed.
- C. Steel Roof Decks:
 1. Visually inspect structural roof deck installation and fasteners.
 - a. Notify Contracting Officer's Representative of unsuitable conditions and inadequate fastenings potentially affecting roof system performance.

3.9 TEMPORARY ROOFING

- A. Install temporary roofing to maintain building watertight.
- B. Remove temporary roofing before installing new roofing.
- C. Prepare temporary roofing to receive new roofing.

3.10 EXISTING MEMBRANE PREPARATION FOR NEW ROOFING

- A. Remove existing roofing surface projections and irregularities. Produce smooth surface to receive recover boards.
 - 1. Broom clean existing surface.

3.11 BASE FLASHING REMOVAL

- A. Expose base flashings to permit removal.
 - 1. Two-Piece Counterflashings: Remove cap flashing and store for reuse.
 - 2. Single Piece Counterflashings: Carefully bend counterflashing.
 - 3. Metal Copings: Remove decorative cap and store for reuse.
- B. Remove existing base flashings.
 - 1. Clean substrates to receive new flashings.
- C. Replace counterflashings damaged during removal.
 - 1. Counterflashings: See Section 07 60 00 FLASHING AND SHEET METAL.
- D. Remove existing parapet sheathing and inspect parapet framing.
 - 1. Notify Contracting Officer's Representative of damaged framing.
- E. Install exterior fire-retardant-treated plywood sheathing, 15 mm (19/32 inch) thick.

3.12 RECOVER BOARD INSTALLATION

- A. Install recover boards over existing roofing membrane with butted joints. Stagger end joints in adjacent rows.
- B. Fasten recover boards to resist wind-uplift.
 - 1. Fastening Requirements: See 07 54 23, THERMOPLASTIC POLYOLEFIN (TPO) ROOFING
 - 2. Uplift Resistance: Base on pull out resistance determined by specified field testing.

3.13 FIELD QUALITY CONTROL

- A. Field Tests: Performed by testing laboratory specified in Section 01 45 29, TESTING LABORATORY SERVICES.
 - 1. Fastener Pull Out Tests: ANSI/SPRI FX-1(2016).
- B. Existing Roofing System Warrantor Services:
 - 1. Inspect reroofing preparation and roofing installation to verify compliance with existing warranty conditions.
 - 2. Submit reports of field inspections, and supplemental instructions issued during inspections.

3.14 DISPOSAL

- A. Collect waste materials in containers.
- B. Remove waste materials from project site, regularly, to prevent accumulation.
- C. Legally dispose of waste materials.

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