

SECTION 05315

STEEL DECK REPAIR/REPLACEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work includes, but necessarily limited:
  - 1. Repair or Replacement of existing damaged or corroded metal roof decking with new metal roof decking as needed.

1.02 RELATED SECTIONS

- A. Section 02050 -- Roof Demolition.
- B. Section 03521 – Lightweight Insulating Concrete Fill Repairs.
- C. Section 06100 – Rough Carpentry.
- D. Section 07220 – Roof and Deck Insulation.
- E. Section 07513 – Modified Bitumen Cap Sheet Built-Up Roofing.

1.03 REFERENCES

- A. Perform work in accordance with the recommendations of the Steel Deck Institute.
- B. All steel deck repair and replacement shall conform to Factory Mutual *Loss Prevention Data Sheet 1-28* and meet FM wind uplift requirements.

1.04 SUBMITTALS

- A. As provided in Section 01300 and as required by the consultant.
- B. Product Data:
  - 1. Manufactured Deck Panels.
  - 2. Finish.

1.05 QUALITY ASSURANCE

- A. As provided in Section 01400.
- B. Qualifications of Workmen

1. Provide sufficient workmen and supervisors who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of contraction involved and the materials and techniques specified.

C. Rejections

1. In the acceptance or rejection of the work, the City of Houston will make no allowance for lack of skill on the part of workmen.

1.06 PRECONSTRUCITON CONFERENCE

- A. As designated in Section 01200.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. As designated in Section 01610.

- B. Coordinate deliveries with consultant.

- C. Keep all materials clearly identified with identifying marks legible. Keep damaged material clearly identified as damaged and stored separately to prevent its inadvertent use.

- D. Do not allow installation of damaged or otherwise non-complying material.

- E. Make necessary damage repairs and replacements at no additional cost to the City of Houston.

1.08 SEQUENCING AND SCHEDULING

- A. As designated in Section 01620.

- B. Coordinate roof demolition and roofing replacement work in a manner for deck replacement to proceed unimpeded, and to ensure the facility is watertight in the event of rain or threat of rain.

PART 2 PRODUCTS

2.01 STEEL ROOF DECK

- A. Steel roof deck shall be 22 gauge galvanized steel, profile to match existing. Roof deck shall have a minimum yield strength of 33,000 psi, and a maximum sheet length of 42'-0".

- B. Steel roof deck shall extend over three or more spans.

- C. Steel roof deck shall be as manufactured by U.S. Steel, Vulcraft, Wheeling, or approved equal.

- 2.02 Metal screws shall be a self drilling metal type, minimum size 1/4" - #14 x 3/4" cadmium plated screw.

2.03 PRIMING PAINT

- A. Priming paint shall be Rust-Oleum 769 damp-proof red primer. Dry coat 1 to 2 mils thick.
- B. Underside of decking shall be painted to match existing including insulation fasteners.

2.04 PATCHING MATERIALS

- A. Metal screws shall be self-drilling metal type, minimum size 1/4 - #14 x 3/4" cadmium plated screw.
- B. Filler material (small hole or damage repair) shall be 20 gauge galvanized steel unless specifically shown on the detail drawings.

PART 3 EXECUTION

3.01 DEMOLITION

- A. Cut out damaged sections of decking less than 18" in any dimension where rust has penetrated into metal more than 3 mils or where existing decking exhibits pitting or rust perforations. Deteriorated or damaged sections of decking greater than 18" in any dimension shall be removed and replaced with new decking.
- B. Contractor is to provide protection to building interior, contents, and occupants to assure that debris does not enter building and to prevent harm to occupants.

3.02 SMALL REPAIR INSTALLATION

- A. Filler material shall be fastened to existing steel deck at 6" centers using metal screws. Overlap existing steel deck by a minimum of 6" in each direction.
- B. Cut and neatly fit filler material around roof top projections.
- C. Verify that all existing roof deck is securely fastened to supporting structural members.

3.03 REPLACEMENT INSTALLATION

- A. Steel deck units shall be anchored to supporting members, including bearing walls, to provide lateral stability to the top flange of the supporting structural members. New deck units shall be secured to a minimum of three bar joists.
- B. Steel deck units shall be anchored to supporting members to resist the gross uplift force of 45 pounds per square foot minimum.
- C. All deck shall be securely fastened to supporting structural members by the use of self drilling metal screws.

- D. All new metal roof decking shall be attached at a maximum of 12" O.C. at ends and intermediate supports of each deck unit and 6" O.C. at ends located in the perimeter and corner areas as defined on the drawings.
- E. For spans 6 feet, or less, side laps shall be fastened together at a minimum of 12" O.C.; and for spans greater than 6 feet, side laps shall be fastened together at a minimum of 24" O.C.
- F. End laps shall be overlapped a minimum of four (4) inches.
- G. Ensure that fasteners do not penetrate conduit or miscellaneous piping located at bottom of the decking.
- H. Place deck in straight alignment for entire length of run with adjoining deck units.
- I. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection.
- J. Cut and neatly fit deck around roof top projections.
- K. Provide approved structural supports at all penetrations larger than 6" on any side.

#### 3.04 RUST OR CORROSION REPAIRS

- A. Where corrosion or rust has not penetrated more than 3 mils into steel decking, perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations.
- B. Install one coat of damp-proof red primer uniformly over prepared surface.
- C. Surface rust shall be removed by hand or mechanical brushing.

#### 3.05 COORDINATION

- A. Coordinate all work closely with the City of Houston's representative.
- B. Work cannot disrupt the City of Houston's activities. Care shall be taken that no work is done without the City of Houston's approval on a daily basis.

#### 3.06 CLEAN UP

- A. Clean building interior where soiled by work of this section on a daily basis.
- B. At completion of all deck replacement work, remove all construction debris and equipment from job site.

3.07 VERIFICATION

- A. Upon completion of the installation in each area, visually inspect and verify that all components are complete and properly installed. Verify that fasteners are properly located and securely anchored.

- End of Section -