

SECTION 05310 – METAL DECK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS APPLY TO WORK OF THIS SECTION.

1.02 SUMMARY

- A. EXTENT OF METAL DECKING IS INDICATED ON DRAWINGS, INCLUDING BASIC LAYOUT, FASTENING AND TYPE OF DECK UNITS REQUIRED.

1.03 SUBMITTALS

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF DECKING AND ACCESSORIES. INCLUDE MANUFACTURER'S CERTIFICATION AS MAY BE REQUIRED TO SHOW COMPLIANCE WITH THESE SPECIFICATIONS.
- B. SHOP DRAWINGS: SUBMIT DETAILED DRAWINGS SHOWING LAYOUT AND TYPES OF DECK PANELS, ANCHORAGE DETAILS, AND CONDITIONS REQUIRING CLOSURE PANELS, SUPPLEMENTARY FRAMING, SUMP PANS, CANT STRIPS, CUT OPENINGS, SPECIAL JOINTING OR OTHER ACCESSORIES.
- C. INSURANCE CERTIFICATION: ASSIST OWNER IN PREPARATION AND SUBMITTAL OF ROOF INSTALLATION ACCEPTANCE CERTIFICATION AS MAY BE NECESSARY IN CONNECTION WITH FIRE AND EXTENDED COVERAGE INSURANCE.

1.04 QUALITY ASSURANCE

- A. CODES AND STANDARDS: COMPLY WITH PROVISIONS OF THE FOLLOWING CODES AND STANDARDS, EXCEPT AS OTHERWISE INDICATED OR SPECIFIED:
 - 1. AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
 - 2. SDI "DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS".
- B. FM LISTING: PROVIDE METAL ROOF DECK UNITS WHICH HAVE BEEN EVALUATED BY FACTORY MUTUAL SYSTEM AND ARE LISTED IN "FACTORY MUTUAL APPROVAL GUIDE" FOR "CLASS I" FIRE RATED CONSTRUCTION.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS WHICH MAY BE INCORPORATED IN THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. METAL ROOF DECK UNITS:
BOWMAN/E.G.SMITH, DIV. CYCLOPS CORP.
CONSOLIDATED SYSTEMS, INC.
EPIC METALS CORP.
MAC-FAB PRODUCTS, INC.
ROLL FORM PRODUCTS, INC.
UNITED STEEL DECK, INC.
VULCRAFT/DIV. NUCOR CORP.
UNITED STEEL DECK, INC.
WHEELING CORRUGATING CO.
WOLVERINE DECK CO.

2.02 MATERIALS

- A. STEEL FOR GALVANIZED METAL DECK UNITS: ASTM A 446, GRADE E (80KSI).
- B. MISCELLANEOUS STEEL SHAPES: ASTM A 36.
- C. SHEET METAL ACCESSORIES: ASTM A 526, COMMERCIAL QUALITY, GALVANIZED.
- D. GALVANIZING REPAIR PAINT: HIGH ZINC-DUST CONTENT PAINT FOR REPAIR OF DAMAGED GALVANIZED SURFACES COMPLYING WITH MILITARY SPECIFICATIONS MIL-P-21035 (SHIPS).
- E. FLEXIBLE CLOSURE STRIPS: MANUFACTURER'S STANDARD VULCANIZED, CLOSED-CELL, SYNTHETIC RUBBER.

2.03 FABRICATION

- A. GENERAL: FORM DECK UNITS IN LENGTHS TO SPAN 3 OR MORE SUPPORTS, WITH FLUSH, TELESKOPED OR NESTED 2" LAPS AT ENDS AND INTERLOCKING OR NESTED SIDE LAPS, UNLESS OTHERWISE INDICATED.
- B. ROOF DECK UNITS: PROVIDE DECK CONFIGURATIONS COMPLYING WITH SDI "ROOF DECK SPECIFICATIONS", OF METAL THICKNESS, DEPTH AND WIDTH AS SHOWN.
- C. REQUIRED SECTION PROPERTIES:
 1. **CLASSROOM ADDITION** - TYPE 1.5B 20 GA. $I = .192 \text{ IN}^4$ $SP = .213 \text{ IN}^3$ $SN = .221 \text{ IN}^3$ $FY = 80 \text{ KSI}$

PART 3 - EXECUTION

3.01 INSTALLATION

- A. GENERAL: INSTALL DECK UNITS AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, FINAL SHOP DRAWINGS, AND AS SPECIFIED HEREIN.

PLACE DECK UNITS ON SUPPORTING STEEL FRAMEWORK AND ADJUST TO FINAL POSITION WITH ENDS ACCURATELY ALIGNED AND BEARING ON SUPPORTING MEMBERS BEFORE BEING PERMANENTLY FASTENED. DO NOT STRETCH OR

CONTRACT SIDE LAP INTERLOCKS.

LAYOUT SHALL BEGIN ON EITHER SIDE OF THE RIDGE WITH NO MORE THAN A ONE (1) INCH GAP AT THE RIDGE. COVER RIDGE WITH A CONTINUOUS 14 GA. BY 16" GALVANIZED BENT PLATE CONFORMING TO THE SLOPE OF THE ROOF. ATTACH BENT PLATE TO DECKING WITH #12 SDS AT 12" CENTERS EACH SIDE. DECKING SHALL CONTINUE FROM THE RIDGE TO WITHIN 1/4" OF THE PERIMETER FRAMING ON ALL SIDES.

PLACE DECK UNITS IN STRAIGHT ALIGNMENT FOR ENTIRE LENGTH OF RUN OF CELLS AND WITH CLOSE ALIGNMENT BETWEEN CELLS AT ENDS OF ABUTTING UNITS.

PLACE DECK UNITS FLAT AND SQUARE, SECURED TO ADJACENT FRAMING WITHOUT WARP OR EXCESSIVE DEFLECTION.

DO NOT PLACE DECK UNITS ON CONCRETE SUPPORTING STRUCTURE UNTIL CONCRETE HAS CURED AND IS DRY.

COORDINATE AND COOPERATE WITH STRUCTURAL STEEL ERECTOR IN LOCATING DECKING BUNDLES TO PREVENT OVERLOADING OF STRUCTURAL MEMBERS.

DO NOT USE FLOOR DECK UNITS FOR STORAGE OR WORKING PLATFORMS UNTIL PERMANENTLY SECURED.

B. FASTENING DECK UNITS:

1. FASTEN ROOF DECK UNITS TO STEEL SUPPORTING MEMBERS USING MECHANICALLY FASTENED TEK SCREWS NO SMALLER THAN #12, FASTENER PATTERN TO BE 36/7 AT EVERY SUPPORT, AND AT CLOSER SPACING WHERE REQUIRED FOR LATERAL FORCE RESISTANCE. IN ADDITION, SECURE DECK TO EACH SUPPORTING MEMBER IN RIBS WHERE SIDE LAPS OCCUR.
2. MECHANICALLY FASTEN SIDE LAPS OF ADJACENT DECK UNITS BETWEEN SUPPORTS, USING A #10 OR LARGER TEK SCREW WITH MINIMUM OF 3 SCREWS PER SPAN. FASTEN SIDE LAPS TO PERIMETER DECK EDGE SUPPORTS USING #10 OR LARGER TEK SCREWS AT MAXIMUM 12" CENTERS.
3. UPLIFT LOADING: SEE PLANS FOR FORCE DIAGRAMS.
4. CUTTING AND FITTING: CUT AND NEATLY FIT DECK UNITS AND ACCESSORIES AROUND OTHER WORK PROJECTING THROUGH OR ADJACENT TO THE DECKING, AS SHOWN.
5. REINFORCEMENT AT OPENINGS: PROVIDE ADDITIONAL METAL REINFORCEMENT AND CLOSURE PIECES AS REQUIRED FOR STRENGTH, CONTINUITY OF DECKING AND SUPPORT OF OTHER WORK SHOWN.
6. NOTIFY ARCHITECT/ENGINEER UPON COMPLETION OF DECK FASTENING AND PRIOR TO COVERING THE METAL DECK TO SCHEDULE INSPECTION OF FASTENERS.

END OF SECTION