

Section 515 Steel Grid Floors

515.1 Description

- (1) This section describes providing steel grid floors of the open type, or concrete filled type.

515.2 Materials

- (1) Furnish materials conforming to the following:

Concrete	501
Paint	517

- (2) All steel in steel grid floors shall conform to [ASTM A36](#), with a minimum copper content of 0.2 percent.
- (3) Zinc coat open type grid floors according to [ASTM A123](#).
- (4) For concrete filled type floors, use grade C, C-FA, C-S, C-IS, C-IP, or C-IT concrete. Provide QMP for class I structure concrete as specified in [715](#).

515.3 Construction

515.3.1 Fabrication

- (1) Manufacture the steel grid floors to conform to the thickness, section, loading, and other requirements the plans show; and so if assembled in place they conform to the camber the plans show. The engineer will reject steel grid floors not within 1/2 inch of specified camber. Serrate the top edges of open type grid floors.
- (2) If fabricating the floor with the main elements normal to the centerline of the roadway, extend the units the full width of the roadway for roadways up to 40 feet wide. If multiple units are allowed, extend the units over at least 3 panels. If the main elements are parallel to the centerline of the roadway, extend the section over not less than 3 panels. If joints are required, weld the ends of all main floor members at the joints over their full cross-sectional area to provide full continuity and, preferably, place joints, if assembling the floor in place, over a supporting member.
- (3) Before fabricating, submit complete detailed shop drawings to the engineer for approval. These drawings shall show the spacing and size of component parts, the size and length of welds, splices and trims, and complete assembly details, including size and location of recommended erection welding.
- (4) Fabricate and construct steel grid floors being filled with concrete to provide adequate support for the concrete filler.

515.3.2 Erection

- (1) Assemble the units or sections of the grid floor on the structure and weld the abutting main elements and connecting members between the sections to provide full continuity for the entire floor or between any points the plans show. Weight the floor assembly down or clamp it in place to make a tight joint with full bearing on its supports before welding. If there is a roadway crown, weld beveled bars to the stringer flange to provide a bearing surface parallel to the crown, unless placing the stringers with their vertical axes normal to the crown. Use the location, size, and length of the welds that the manufacturer recommends or as the engineer approves.

515.3.3 Welding

- (1) Weld steel grid floors as the plans show and conforming to AWS D 1.1, Structural Welding Code - Steel.

515.3.4 Painting

- (1) Spot paint damaged places in the zinc coating and field welds with a department-approved zinc-rich paint. Clean field welds of scale or slag and neutralize the welds as specified in [517.3.1.3.1](#) before spot painting.

515.3.5 Concrete Filler

- (1) Mix, place, and cure the concrete as specified in [501](#) and [502](#). Unless directed otherwise, compact the concrete thoroughly by vibrating. The vibrating device and manner of operation are subject to the engineer's approval.

515.4 Measurement

- (1) The department will measure the Steel Grid Floor bid items by the square foot acceptably completed.

515.5 Payment

- (1) The department will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
515.4000	Steel Grid Floor Open (inch)	SF
515.5000	Steel Grid Floor Concrete Filled (inch)	SF

- (2) Payment for the Steel Grid Floor bid items is full compensation for fabricating, zinc coating, and furnishing the steel grid floor; for providing paint and concrete; and for erecting and welding, painting, placing and curing concrete.