

Engineering Brief # 40

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INFORMATION: Engineering Brief No. 40
Galvanized Steel Fencing

FROM: Engineering and Specifications
Division, AAS-200
TO: All Regions

ATTN: Manager, Airports Division

Engineering Brief No. 40 provides information and guidance on galvanized steel fencing.

The information in the brief is not to be construed as general approval by the Office of Airport Standards. Use of this product will be on a case-by-case basis and require prior approval by this office.

ORIGINAL SIGNED BY
JOHN L. RICE
for
Robert Bates

ENGINEERING BRIEF NO. 40

Galvanized Steel Fencing

The purpose of this engineering brief is to advise on the availability of galvanized steel fencing that may be considered as an alternative to chain link fencing.

The fence is composed of boards fastened to posts with rivets driven by a pneumatic screw nailer. The boards are fabricated from 26 to 22 gage steel in 6 and 8 inch widths and contain two ribs. The posts are fabricated from the same gage steel into 3x4 inch rectangles. The fence is assembled by placing the boards in open or solid; horizontal or vertical configurations as shown in the manufacturer's literature.

We believe that galvanized steel fencing may be a viable alternative for chain link fencing and it may be specified for use on AIP projects on a case-by-case basis. Approval for each project will be required by the Office of Airport Standards so that we will be aware of the locations where such fencing has been installed and can monitor and evaluate its performance.

Attached is an interim specification for galvanized steel fencing and manufacturer's literature describing the product.

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RICHARD WORCH

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GALVANIZED STEEL FENCING

1. DESCRIPTION

1.1 This item shall consist of furnishing and erecting a steel fence in accordance with these specifications and the details shown on the plans and in conformity with the lines and grades shown on the plans.

2. MATERIALS

2.1 BOARDS. Boards shall be 26 to 2@ gage steel conforming to the requirements of ASTM A-446-85, Grade B and shall have a hot-dipped galvanized coating in accordance with the requirements of ASTM A-525, Coating Designation G90.

2.2 END, CORNER, LINE AND GATE POSTS. All posts shall be 26 to 22 gage steel conforming to the requirements of ASTM A-446-85, Grade C or D and shall have a hot-dipped galvanized coating in accordance with the requirements of ASTM A-525, Coating Designation G90.

2.3 END CAPS. Caps to cover the exposed ends of boards and posts shall conform to the specification for the same material under paragraphs 2.1 and 2.2.

2.4 BARBED WIRE. Barbed wire shall be 2-strand 12 1/2 gage zinc or aluminum coated wire with 4-point barbs and shall conform to the requirements of ASTM A121, Class 3 for zinc coated and ASTM A585, Class II for aluminum-coated.

2.5 FASTENERS. Rivets used for fastening boards to posts shall be a zinc-coated screw type.

2.6 CONCRETE. Concrete shall be of a commercial grade with a minimum compressive strength of 2500 psi.

3. FABRICATION

3.1 BOARDS. Boards shall be fabricated by the roll form method in thickness of 1/2 or 3/4 inch and in widths of 6 or 8 inches, as specified in the plans. Each board shall be formed to include two ribs, with both edges formed to permit interlocking of the boards when specified. The length shall be as shown on the plans.

3.2 POSTS. Posts shall be roll formed into a rectangle measuring 3" x 4".

4. CONSTRUCTION METHODS

4.1 CLEARING FENCE LINE. All trees, brush, stumps, logs, and other debris which would interfere with the proper construction of the fence in the required location shall be removed a minimum width of 2 feet on each side of the fence centerline before starting fencing operations. The material removed and disposed of shall not constitute a pay item and shall be considered incidental to fence construction.

4.2 INSTALLING POST. All posts shall be set a minimum depth of 36 inches # in concrete footings with a minimum of 3 inches of concrete cover for posts up to 4 feet high and 4 inches of cover for posts greater than 4 feet. The post spacing shall be as shown on the plans. If the frost depth is greater than 36 inches, the posts should be set accordingly.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within 7 days after the individual post footing is completed.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches (50 mm) larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches (300 mm). After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

4.3 INSTALLING BOARDS. Boards shall be attached directly to posts with rivets, as specified in paragraph 2.5, with a pneumatic screw nailer.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched thereon to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 6 inches or less.

4.4 ELECTRICAL GROUNDS. Electrical grounds shall be constructed where a power line passes over the fence and at 500-foot intervals as shown on the plans. The ground shall be installed directly below the point of

crossing. The ground shall be accomplished with a copperclad rod 8 feet long and a minimum of 5/8 inch in diameter driven vertically until the top is 6 inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a that each element of the fence is grounded. Installation of i rods shall not constitute a pay item and shall be considered ground rods shall not constitute a pay item and shall be considered incidental to fence construction.

5. METHOD OF MEASUREMENT

5.1 Galvanized steel fence will be measured for payment by the linear foot. Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings.

Gates will be measured as complete units.

6. BASIS OF PAYMENT

6.1 Payment galvanized steel fence will be made at the contract unit price per linear foot.

Payment for gates will be made at the contract unit price for each gate.

The price shall be full compensation for furnishing all materials, and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:
Galvanized Steel Fence - per linear foot