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Preparing Activity: Agency

UFC 1-300-02 FORMAT STANDARD for
UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated

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DIVISION 05 - METALS

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AIRCRAFT STEEL REVETMENTS

03/21

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AIRCRAFT STEEL REVETMENTS
03/21

NOTE: This specification covers the requirements
for AIRCRAFT STEEL REVETMENT SYSTEMS applied in
various locations in Korea.

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A1064/A1064M	(2024) Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM A307	(2023) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A653/A653M	(2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM C94/C94M	(2025) Standard Specification for Ready-Mixed Concrete

KOREAN INDUSTRIAL STANDARDS (KS)

KS B ISO 10683	(2023) Fasteners - Non-electrolytically applied zinc flake coating systems
KS D 3503	(2018; R 2023) Rolled Steels for General Structure
KS D 3506	(2024) Hot-Dip Zinc-Coated Steel Sheets

	and Coils
KS D 3751	(2008; R 2023) Carbon tool steels
KS D 3752	(2019; R 2024) Carbon steel for machine structural use
KS D 7017	(2023) Welded Wire Mash and Bar Fabrics
KS D 8308	(2016; R 2021) Zinc Hot Dip Galvanizings
KS D 8352	(2014; R 2024) Phosphate conversion coatings for metals - Method of specifying requirements
KS F 4009	(2024) Ready-Mixed Concrete
KS K 2630	(2023) Nonwoven geotextiles
KS M ISO 4898	(2024) Rigid Cellular Plastics - Thermal Insulation Products for Buildings - Specifications

1.2 DEFINITIONS

The aircraft steel revetment system is the vertical and assembling steel wall to be installed on the earth or pavements for protection of aircrafts, fighting equipment, ordnance materials, military establishments and military personnel from the enemy gunfire. The steel revetment system specified in this specification is of the bolt connecting type for the convenient work of assembling and disassembling and handling.

1.3 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for

Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation; G

SD-03 Product Data

Aircraft Steel Revetment System; G

Installation Data; G

SD-05 Design Data

Performance Analysis; G

SD-10 Operation and Maintenance Data

Operation, Maintenance and Disassembly; G

1.4 DELIVERY, STORAGE AND HANDLING

Aircraft steel revetment system must be delivered to the site with all components mechanically connected at the production facility. Materials must be stored in a clean, dry, well ventilated area protected from damage one day prior to installation. Handle carefully to prevent damage or deformation.

1.5 PRE-INSTALLATION CONFERENCE

Pre-installation conference will be required by the Contracting Officer. Ensure that all of the involved subcontractors, suppliers, and manufacturers are represented. The date and time of the conference must be furnished to the Contracting Officer for approval.

1.5.1 Performance Analysis

Submit five copies of performance analysis with regard to bomb blast on the steel revetment. Steel revetment performance must meet protection at least 500 kgf bomb blast at 3 meters away. Analysis report must be prepared and approved by a registered professional engineer. Following performance analysis data must be included, but not limited to :

a. Weight of general purpose bomb

- b. Distance from wall of blast
- c. Dimension of steel revetment kit
- d. Analysis result report

1.5.2 Verification of Dimensions

After becoming familiar with all details of the work, verify all dimensions in the field, and notify the Contracting Officer of any discrepancy before conducting steel revetment installation.

1.6 MANUFACTURER'S SERVICE

Field quality control personnel must be provided by the manufacturer to observe and approve the installation/application of their products. The representative must be present at the site at all times during the installation of the steel revetment system.

1.7 GENERAL REQUIREMENTS

1.7.1 Standard Products

Materials and equipment must be standard products of the manufacturer regularly engaged in the manufacture of the products. Equipment must be supported by a service organization that is, in the opinion of the Contracting Officer, reasonable convenient to the site.

1.8 WARRANTY

Apart from the provisions of Section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS, AND MISCELLANEOUS PROVISIONS, the manufacturer must provide at least 2 year warranty after the date of acceptance by Contracting Officer after installation is completed.

PART 2 PRODUCTS

2.1 AIRCRAFT STEEL REVETMENT SYSTEM

2.1.1 Structural Parts

2.1.1.1 Column

ASTM A653/A653M, SS GR.33 (G210) or KS D 3503, SS330 or SS400, hot-dipped galvanized with 550 g/square meter in conforming to KS D 8308. The galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.2 Stringer

ASTM A653/A653M, SS GR.33 (G210) or KS D 3506, SGC340 or SGH 340 (Z60). The galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.3 Connecting Channel

ASTM A653/A653M, SS GR.33 (G210) or KS D 3503, SS330 or SS400, hot-dipped galvanized with 550 g/square meter in conforming to KS D 8308. The galvanized surfaces must be treated with phosphate coating with 2.5

g/square meter in conforming to KS D 8352.

2.1.1.1.4 Standard Spacer

ASTM A653/A653M, SS GR.33 (G210) or KS D 3506, SGC340 or SGH 340 (Z60). The galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.1.5 Bottom Spacer

ASTM A653/A653M, SS GR.33 (G210) or KS D 3506, SGC340 or SGH 340 (Z60). The galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.1.6 Base Plate

ASTM A653/A653M, SS GR.33 (G210) or KS D 3503, SS330 or SS400, hot-dipped galvanized with 550 g/square meter in conforming to KS D 8308. The galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.1.7 Machine Bolts and Nuts

ASTM A307 or KS D 3752, SM45C with zinc flake coating in conforming to KS B ISO 10683, flZnnc 480h. Surface treatment hot-dipped galvanized with 350 g/square meter in conforming to KS D 8308 and treated with phosphate coating with 1 g/square meter in conforming to KS D 8308 is also acceptable in lieu of the zinc flake coating.

2.1.1.1.8 Spring Nut

KS D 3751, STC5 with zinc flake coating in conforming to KS B ISO 10683, flZnnc 480h.

2.1.1.1.9 Column splice plate

ASTM A653/A653M, SS GR.33 (G210) or KS D 3503, SS330 or SS400, hot-dipped zinc coated with 550 g/square meter in conforming to KS D 8308. Galvanized surfaces must be treated with phosphate coating with 2.5 g/square meter in conforming to KS D 8352.

2.1.1.1.10 Sealing Material

KS M ISO 4898, Class 1.

2.1.1.2 Back Fill Materials

2.1.1.2.1 Gravel

shall consist of gravel or crushed rock with a particle size of 12 mm (1/2 inch) thru 19 mm (3/4 inch).

2.1.1.2.2 Sand

shall be a uniformly graded washed sand with a maximum particle size of 6 mm (1/4 inch) and less than 5 percent passing the 0.075 mm (No. 200) size sieve, and with not more than 3 percent by weight finer than 0.02 mm (No. 635) grain size.

2.1.2.3 Welded Wire Mesh

ASTM A1064/A1064M or KS D 7017

2.1.2.4 Filter Fabric

KS K 2630

2.1.3 Portland Cement Concrete

Portland cement concrete must conform to ASTM C94/C94M or KS F 4009, and compressive strength of each concrete component must comply with a compressive strength indicated on drawings.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 INSTALLATION DATA

Submit five copies of the manufacturer's printed installation manuals for the aircraft steel revetment system, including preparation of foundation and assembly guide before commencing the installation of the air craft steel revetment systems.

3.1.2 Shop Drawings for Installation

Submit five copies of installation drawings of aircraft steel revetment systems. Installation must not be commenced without Contracting Officer's approval of the shop drawings.

3.1.3 Assembling Structural Part

Whole activities must comply with the manufacturer's installation instruction. During assembly work, any components of the steel revetment system must not be damaged and if any damages are found during or after assembly, it must be notified to the Contracting Officer and the damaged steel revetment system or components must be replaced with undamaged ones at the Contractor's price.

3.1.4 Erection

Assembled steel revetment system must be located at the exact location in accordance with the manufacturer's installation instruction. If any damages are found during or after erection, it must be notified to the Contracting Officer and the damaged components must be replaced with undamaged ones at the Contractor's price.

3.1.5 Back filling

Back filling must comply with the manufacturer's installation instructions. During back filling activity, any damages to total steel revetment system or components must not occur and if any damages are found during or after back filling, it must be notified to the Contracting Officer and the damaged components or steel revetment system must be replaced with undamaged one at the Contractor's price.

3.1.6 Cleaning

After installation of the steel revetment system, debris, temporary erection equipment and all other matters must be removed and cleaned.

3.2 OPERATION, MAINTENANCE AND DISASSEMBLY

Submit five copies of the manufacturer's operation, maintenance and disassembly manuals. In case of disassembly, whole disassembly procedures must comply with manufacturer's disassembly manual. All the disassembled parts must be kept in clean and good condition.

-- End of Section --