

**STANDARD SPECIFICATIONS**

**STD 421-80-03**

**FOR**

**MAGAZINE, STEEL  
OVAL-ARCH, EARTH COVERED**

**DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF ENGINEERS  
WASHINGTON, DC**

**APRIL 1993**

## GENERAL NOTES

1. This standard specification is to be used in the preparation of project specifications in accordance with ER 1110-345-720. It will not be made a part of a contract merely by reference; pertinent portions will be copied verbatim into the contract documents.
2. The designations for publications listed in the Applicable Publication paragraphs are those that were in effect when this standard specification was being prepared.
3. Additions to or deletions from this standard specification will be only that which is necessary to adapt the specification to site conditions such as foundation design or abnormal climate conditions.
4. This specification is intended to be used in specifying Earth Covered Steel Arch Magazines as shown on the following drawings:

<u>Drawing No.</u>	<u>Sheet No.</u>	<u>Title</u>
STD 421-80-03	G-1	DRAWING INDEX
STD 421-80-03	S-1	PLAN AND SECTIONS
STD 421-80-03	S-2	PORTAL WALL PLAN, ELEVATION AND DETAILS
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STD 421-80-03	S-4	MISCELLANEOUS DETAILS, PLAN, ELEVATION AND SECTIONS
STD 421-80-03	S-5	10'-0" BLAST DOOR
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STD 421-80-03	S-7	MISCELLANEOUS BLAST DOOR DETAILS
STD 421-80-03	E-1	ELECTRICAL PLAN AND SECTIONS
STD 421-80-03	E-2	ELECTRICAL DETAILS

5. The following Corps of Engineers Guide Specifications were used in preparation of this standard specification:

<u>Division</u>	<u>Title</u>	<u>Guide Specification No./ Date/Latest Notice</u>
02	Drainage Composites	
02	Excavation, Filling and Backfilling for Buildings	CEGS 02221/Mar 91/N1
02	Foundation Drainage System	CEGS 02711/Apr 89/N3
03	Concrete for Building Construction	CEGS 03300/Dec 88/N5
05	Corrugated Structural Plate Arches	
05	Doors and Miscellaneous Metal	CEGS 05500/Jan 89/N5
07	Fluid-Applied Waterproofing	
07	Bituminous Dampproofing	CEGS 07160/Dec 88/N3
07	Caulking and Sealants	CEGS 07920/Mar 89/N1
09	Painting, General	CEGS 09900/Feb 89/N5
16	Electrical Work	CEGS 16415/Dec 91/N1
16	Lightning Protection System	CEGS 16670/Dec 88/N2

## TECHNICAL NOTES

## 1. Section 02147:

a. Paragraph 2.1.1: Select maximum and minimum Apparent Opening Sizes (AOS) for geotextile based on the soil materials to be used as fill over the fabric. Guidance on geotextiles is contained in Civil Works Guide Specification CW-02215.

## 2. Section 02221:

a. Paragraph 2.1.5: Indicate maximum allowable particle size, based on site conditions. See TM 5-818-2.

b. Paragraphs 2.2.1 and 2.2.2: Sand and gravel filter materials gradations must be designed for the particular conditions present at each individual site. Guidance on filter design is contained in TM 5-820-2.

c. Paragraph 3.2: Indicate depth of topsoil removal.

d. Paragraph 3.6: If rock excavation is not anticipated, excavation should be unclassified.

e. Paragraph 3.7: If blasting will be permitted, provide reference to appropriate safety standards for blasting, and provide POC at the installation Safety Office for coordination.

f. Paragraph 3.9: Define source, extent, and quality of available borrow at the site. Delete bracketed text if bidding is on a lump sum basis.

g. Paragraph 3.12: Determine requirements for moisture content control of fill material and provide allowable limits.

h. Paragraph 3.17: (1) Select appropriate test method(s) for the particular site. (2) Provide specific types and frequencies of tests required for the particular site in question.

i. General: Ground cover over igloos must be provided in the Specifications as required by local conditions. This cover should be grass only and should not be any species with roots that would penetrate deeper than the 4-inch topsoil layer.

## 3. Section 02711:

a. Paragraph 2.1: Select materials for contract requirements. Correlate materials with other sections. When design requires pipe to be of a particular quality, strength, or bituminous coated, acceptable options shall be retained and specification requirements modified accordingly. Thickness of metal pipe will be shown on the drawings. Drain tile shall not be used for drains crossing or adjacent to paved areas. Special-quality concrete drain tile shall be specified for tile laid on soils that are acidic or contain

unusual quantities of sulfates. Porous concrete pipe and perforated corrugated aluminum alloy pipe shall be deleted if soils are acidic or contain unusual quantities of sulfates. Perforated asbestos-cement pipes shall be specified by type where required by soil or water conditions.

4. Section 07160:

a. Paragraph 2.1: Where dampproofing would be exposed to temperatures of more than 122 degrees F, after application, references to coal-tar bitumen should be deleted and Type III asphalt should be specified.

5. Section 09900:

a. Paragraph 2.1.1: White paint conforming to Fed. Spec. TT-P-102, Type I, will be specified for surfaces which are to be completely white and where uniform chalking and rain-washing of the film will maintain a completely clean film for the life of the coating. When nonchalking paint is required or in hot, humid climates where ultraviolet light is intense and in industrial, swamp, or other areas, white paint conforming to Fed. Spec. TT-P-102, Type II, will be used.

b. Paragraph 2.1.2: Appropriate materials will be selected. SSPC-Paint 1 is a very slow-drying, lead-containing primer for poorly cleaned steel. SSPC-Paint 2 is a slow-drying, lead-containing primer for steel which has been handtool cleaned. SSPC-Paint 5 is a two-component, zinc-dust primer designed for use on commercial blast-cleaned steel or clean, galvanized surfaces. SSPC-Paint 11 is a zinc-chromate primer with properties similar to SSPC-Paint 2. SSPC-Paint 25 contains no toxic pigments; its application properties are similar to those of SSPC-Paints 2 and 11; however, corrosion protection is reduced.

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