MILITARY SPECIFICATION

COATING, OXIDE, BLACK, FOR FERROUS METALS

This amendment forms a part of Military Specification MIL-C-13924C, dated 9 June 1980, and is approved for use by all Departments and Agencies of the Department of Defense.

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Paragraph 1.2 Classification. Line 2: Delete "see 6.4" and substitute "see 6.3.2".

Paragraph 1.2 Classification. Reinstate "Class 2 - Alkaline - chromate oxidizing process (for use on certain corrosion resistant steel alloys which are tempered at less than 900°F (482°C).

Paragraph 1.2 Classification. Line 7 and 8: Delete "Class 4 - Alkaline oxidizing process (for 300 series corrosion resistant steel alloys only)"; substitute "Class 4 - Alkaline oxidizing process (for other corrosion resistant steel alloys)".

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Paragraph 3.4 Alkaline oxidizing solutions (class 1).

Changes to read as follows:

"3.4 Alkaline oxidizing solutions (classes 1 and 2). Classes 1 and 2 oxide coatings shall be formed from a boiling alkaline-oxidizing or alkaline-chromate-oxidizing solution, respectively."

AMSC N/A

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Paragraph 3.4.1 Rinsing. Line 1: Rewrite line one as follows:

"3.4.1 Rinsing. All classes of black oxide coated pieces shall be rinsed."

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Paragraph 3.7 Coverage and color. Line 1: Insert "2" between 1 and 3, so that line one now will read as follows:

"3.7 Coverage and color. Class 1, 2, 3, and 4 coatings (see 1.2) shall"

Paragraph 3.8, lines 1 and 2

Change the first two lines to read as follows:

"3.8 Quality coating (oxalic acid spot test for classes 1, 2, and 3).

The black oxide coatings of classes 1, 2, and 3, prior to the application of a preservative,"

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Paragraph 4.3.2 Sampling of destructive tests. Line 4: Delete "1.0 percent defective" and substitute "4.0 percent defective."

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Paragraph 4.4.2, lines 1 and 2.

Change the first two lines of this paragraph to read as follows:

"4.4.2 Oxalic acid spot test (class 1, 2, and 3). The black oxide coated pieces of classes 1, 2, and 3 only, prior to the application of a preservative,"

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Paragraph 6.3.2 Processing. Line 4. The following guidance statement is to be inserted as the second to the last sentence of the paragraph as clarification for selection of which class is needed to process the different types of corrosion resistant steels.

Add the following sentence:

"Class 2 is used to process the 4XX series corrosion resisting steels, class 3 is used for 3XX and 4XX series, and class 4 is used to process those 300 series corrosion resisting steels which can meet the special salt spray test criteria and for those 4XX series corrosion resisting steels which do not have any special salt spray test criteria.

Paragraph 6.3.2 Processing. Table I - add: an additional row between 1 and 3 for class 2 as follows:

Class	Applicability ferrous metals	Process and possible chemicals	Approximate processing temperature	Approximate immersion time
2	Certain corrosion resistant steel alloys which are tempered at less than 482°C	Alkaline-chromate NaOH, $NaNO_3$, $Na_2Cr_2O_7$, Water.	250 ± 10°F (121 ± 5°C)	30 to 45 min

Paragraph 6.3.2 Processing. Table I, column 2, Applicability to ferrous metals, class 4: Delete "For 300 series corrosion resistant steel alloys only" and substitute "For corrosion resistant steel alloys."

Change paragraph 6.3.3 to read as follows:

"6.3.3 Cast and malleable irons, and certain 400 series corrosion resistant steels. Cast and malleable irons and 400 series corrosion resistant steels of the martensitic type can also be effectively treated in Class 4 proprietary baths, but will not meet the salt spray requirement of austenitic 300 series corrosion resistant steels."

Custodians:
Army - MR
Navy - OS
Air Force - 20

Review activities:
Army - AR, MI, EA, GL, AV, ME
Navy - AS
Air Force - 99

User activity:
Navy - SH
Air Force - 68

Preparing activity:
Army - MR

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