

INCH-POUND

MIL-A-12560H(MR)
AMENDMENT 3
27 September 2000
SUPERSEDING
AMENDMENT 2
26 July 1991

MILITARY SPECIFICATION

ARMOR PLATE, STEEL, WROUGHT, HOMOGENEOUS
(FOR USE IN COMBAT-VEHICLES AND FOR AMMUNITION TESTING)

This amendment forms a part of MIL-A-12560H(MR), dated 28 November 1990, and is approved for use by the Army Research Laboratory, Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

PAGE 1

- * 1.2, first sentence: Delete "shall" and substitute "should."
- * Add as new paragraphs:

"1.2.4 Class 4. Wrought armor plate which is heat treated to higher hardness levels than class 1 armor plate to develop maximum resistance to penetration."

"1.2.5 Class 4a. Wrought armor plate tempered to attain a minimum through hardness of HRc 47 (BHN 442)."

"1.2.6 Class 4b. Wrought armor plate tempered to attain a maximum through hardness of HRc 41 (BHN 381)."

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- * 2.2: Add two non-Government Standard reference documents.
- * Add the following to the list of ASTM references:
"ASTM E 140 Standard Hardness Conversion Tables for Metals"

Add the following after the parenthetical source statement below the ASTM address:

"SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

SAE J406 - Methods of Determining Hardenability of Steels

(Applications for copies should be addressed to Aerospace Material Specifications, 400 Commonwealth Drive, Warrendale, PA 15096)."

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* Add as new paragraph:

"3.2.2.1 Hardenability index (class 4 armor plate). An average hardenability index (D_I) shall be calculated for class 4 armor plate (see 6.1.4). This D_I calculation method utilizes a series of hadenability factors for each alloying element in the composition (see SAE J406).

* 3.2.3: Add the following at the end of the paragraph: "Class 4 armor plate shall be heat treated to higher hardness levels than class 1 armor plate to develop maximum resistance to penetration."

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* Add new paragraph

"3.2.5.1.1 Class 4 armor plate. "Surface hardness is required on every plate to insure quality and uniformity of product. In addition, first article samples must be tested for through hardness to verify that they are within the HB range specified in 1.2.5 and 1.2.6. Respective diameters of the Brinell hardness impression taken on an individual plate shall not vary by more than 0.15mm. Each lot shall be tested for through hardness. Acceptance for Class 4a material requires a minimum through hardness of HRC 47 (HB 442). Acceptance for class 4b material requires a maximum through hardness HRC 41 (HB 381)."

3.2.5.2: Add the following at the end of the paragraph:

"The Charpy value for class 4 armor plate shall be greater than 20 ft•lb (27 J)for all thickness."

* 3.2.6: Delete and substitute:

"3.2.6 Ballistic requirements. Ballistic requirements for class 1, 3 and 4 wrought homogeneous armor plate shall be in accordance with the appendix of this specification. Class 2 armor plate shall not be subject to ballistic test requirements. When a complete penetration can not be obtained for either class 1 or class 4 armor material, the following rule shall be in effect until a new ballistic acceptance round can be utilized. When four (4) partial penetrations are above the minimum requirement for the specific thickness, the material shall be certified as acceptable with a V_{50} (which obviously can not be specified) above the minimum requirement."

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* Table IV, title: After "Class 1" insert "and class 4."

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4.4.2.4: Change the first sentence to read: "All plates ½ inch and greater in thickness shall be examined ultrasonically."