

GGG-H-86c  
INTERIM AMENDMENT-2(GSA-FSS)  
March 15, 1971  
SUPERSEDING  
Interim Amendment-1  
June 12, 1963

INTERIM AMENDMENT

TO

FEDERAL SPECIFICATION

HAMMER, HAND (FORGED STEEL HEAD)

This Interim Amendment was developed by the Standardization Division, Federal Supply Service, General Services Administration, Washington, DC 20406, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for changes to the preparing activity at the address shown above.

The General Services Administration has authorized the use of this Interim Amendment as a valid exception to Federal Specification GGG-H-86c, dated March 8, 1963.

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Paragraph 2.1, under "Federal Standards:" Delete "Fed. Std. No. 102 - Preservation, Packaging, and Packing Levels and Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies)." Add "Fed. Test Method Std. No. 406/GEN (General Provisions) - Plastics: Methods Of Testing and Fed. Test Method Std. No. 406/7061 - Resin In Inorganic-filled Plastics."

Paragraph 2.1, under "Federal Specification:" Add "PPP-P-40 - Packaging and Packing of Hand Tools."

Paragraph 2.1, under "Military Specifications:" Delete in its entirety.

Paragraph 2.1, under "Military Standards:" Delete "MIL-STD-130 - Identification Marking of U. S. Military Property."

Paragraph 2.2, under "Department of Commerce:" Delete in its entirety and add:

American National Standards Institute (ANSI):

B46.1 Surface Texture.

(Application for copies should be addressed to the American National Standards Institute, 10 East 40th Street, New York, NY 10016.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

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Paragraph 3.2.2.1, at the end of paragraph: Delete "or better as specified in Simplified Practice Recommendation R77-45."

Paragraph 3.2.2.3: Delete and substitute the following:

3.2.2.3 Fiberglass reinforced plastic handles. Fiberglass reinforced plastic handles shall be well proportioned and molded of a thermo-setting type plastic, reinforced with a minimum 60 percent fiberglass by weight that is unidirectional, longitudinal, and continuous throughout the shaft (see 4.4.10). The grip portion shall be covered with vinyl, neoprene, or other comparable material that will minimize shock transmission, the deteriorative action of oil or grease, and be so attached to the handle shaft that it will not twist nor slip upon the shaft during normal use. The eye portion shall be inserted substantially through the full length of the eye of the hammer head available for assembly, be perpendicular to the center line of the head, and be bonded by means of a chemical adhesive conforming to paragraph 3.2.4 or otherwise affixed so that the handle will not loosen under any working condition. When the handle does not conform to or fully fill the eye, a ferrule, adapter, or similar device shall be used to cover the gap between the handle and the eye opening at the eye front. The exposed portion of the handle shaft shall be smoothly finished to a maximum roughness height value (RHV) of 63 (see ANSI B46.1). The assembled head and fiberglass handle shall not rupture nor show external splintering, separation of fiberglass filaments, or permanent set exceeding 1/8 inch when tested as specified in 4.4.8. The fiberglass handle shall not become separated from the head when tested as specified in 4.4.9.

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Paragraph 3.2.4, second sentence: Delete and substitute the following:

"The eye portion of the head and that portion of the handle to be bonded to the head shall be free of all foreign matter that could affect the bond. On through eye holes, the bond shall fill the eye to the surface and contour of the hammer head. The assembled hammer shall meet the applicable requirements of 4.4.6."

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Paragraph 3.3.1.5, third sentence: Delete "26" and substitute "32".

Paragraph 3.4.6: Delete and substitute:

3.4.6 Enameled coating. An enameled coating shall be paint or enamel that is baked on a clean metal surface so as to produce a hard finish capable of meeting the rust-resisting test in 4.4.7.

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Paragraph 3.10, third sentence: Delete and substitute the following:

"The extreme end where the claw terminates shall have a thickness of between 1/32 and 3/64 inch on the nail pulling side, and the opposite side of the claw shall have a thickness of between 1/32 and 1/16 inch. With both measurements taken from the claw tip and around the periphery of the claw back (see figure 2), the length of the nail pulling slot shall be at least 48 percent of the distance from the claw tip to the center of the eye. The slot shall terminate in a sharp V."

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Paragraph 3.11.1.1, tenth line: Between the words "front" and "and" insert ",sides,".

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Paragraph 3.24, at the end of the first sentence: Add ", hammers shall be well balanced and the handles with grips shall be smoothly finished and well proportioned."

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Paragraph 4.2.3, fifth sentence: Delete "L-8" and substitute "S-4".

Paragraph 4.2.4, fifth sentence: Delete "L-4" and substitute "S-2".

Between paragraphs 4.2.4 and 4.3, insert the following:

4.2.5 Sampling for rust resisting test (4.4.7). When applicable (see 3.4.6), one enamel coated hammer shall be selected from each inspection lot. If the hammer fails the test, the lot shall be rejected.

## PAGE 30

Paragraph 4.4.6, at the end of paragraph: Add "Prior to testing, each of the sample hammers shall withstand 20 full swinging blows by an average built man (160 to 180 pounds), commensurate with the end use and weight of the hammer against a large steel object. The hammer shall then be visually examined for looseness of the head and damage to the adhesive."

Between paragraphs 4.4.6 and 4.5, insert the following:

4.4.7 Rust resisting test. The sample enamel-coated hammer shall be placed in a pan (or tray) of water with the handle resting nearly horizontal on the edge of the pan. The depth of the water shall be such as to cover approximately one-half of the hammer head. The hammer shall remain in the water for 24 hours at room temperature. Upon removal of the hammer from the water, there shall be no evidence of rust, such as a rust colored film on the coated surface.

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4.4.8 Fiberglass handle bending moment test. Types I and II, style B fiberglass handled hammers shall be subjected to this test (see 3.2.2.3). The head shall be firmly affixed in an upright position in a holding fixture with the handle centerline parallel to the testing machine (vertical hydraulic press) platen. At a point on the handle 10 inches from the top of the head, apply the applicable load listed in table XXXIX vertically to the hammer handle. The load shall start at zero and increase at a constant rate, holding the specified load for not less than 10 seconds prior to release.

TABLE XXXIX. Bending moment test loads

Claw hammers Head Weight (ounces)	Applied load (pounds minimum)	Machinists ball peen head weight (ounces)	Applied load (pounds minimum)
13	200	4	70
16	300	8	100
20	325	12	150
		16	200
		20	250
		24	300
		28	300
		32	400
		40	400
		48	400

4.4.9 Fiberglass handle overstrike test. One representative sample hammer from the lot submitted shall withstand twenty three full swinging overstrike blows by an average built man (160 to 180 pounds), commensurate with the end use and weight of the hammer (see 3.2.2.3). The blows shall be against that portion of the handle directly behind the head and on a substantially supported steel object having a minimum 3/8 inch full radius.

4.4.10 Fiberglass content and continuous fiber test. One representative sample hammer shall be used to verify minimum fiberglass requirements specified in 3.2.2.3, in the following manner:

- (1) Determine resin content per method 7061 of Federal Test Method Standard No. 406. The test specimens shall be three sections, one inch in length cut from the handle shaft at the point where the handle enters the eye, enters the grip, and at the butt end of the handle shaft (after stripping away the grip material). Each section shall be tested separately.

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- (2) After determining resin content in (1) above, the total inorganic residue remaining shall be placed on a flat clean surface. The glass fibers shall then be physically and carefully separated (using the fingers, bristle fiber paint brush, air, etc.) from the pigment and filler, and then weighed. The fiberglass content shall then be computed as a percent of the original specimen weight as follows:

$$\text{Fiberglass Content, Percent by Weight} = \frac{\text{Weight of Fibers}}{\text{Original Specimen Weight}} \times 100$$

Failure of the average fiberglass content of the three sections to be in accordance with the applicable specification requirements shall be cause for rejection.

Paragraphs 4.5, 4.5.1, 4.5.2, and all of section 5: Delete in their entirety and substitute the following:

4.5 Inspection of preparation for delivery requirements. An inspection shall be made to determine that the preservation, packaging, packing, and marking comply with the requirements of PPP-P-40.

#### 5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, packing, and marking. Preservation, packaging, packing, and marking shall be in accordance with PPP-P-40. Preservation, packaging, and packing shall be level A, B, or C, as specified (see 6.1).

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Paragraph 6.2: Delete "(h)" and "(i)" and substitute the following:

- (h) Applicable levels of preservation, packaging, and packing (see section 5).

**GENERAL SERVICES ADMINISTRATION - FEDERAL SUPPLY SERVICE**  
**SPECIFICATION COMMENT SHEET**

BUDGET BUREAU NO.  
**29-R0175**

**INSTRUCTIONS**

This form provides a way for users of this specification to inform the originator of problems encountered in its use. It is not to be used to request changes to accommodate proprietary features. All comments will be considered and appreciated, but please do not expect a reply. To comment: detach, complete, and mail to: General Services Administration, FSS (FMSK), Wash., DC 20406.  
 NOTE: Comments on this form do not constitute or imply authorization to waive any part of the document or serve to amend contractual requirements.

**1. SPECIFICATION**

GGG-H-86C (Int. Amend. 2) Hammer, Hand (Forged Steel Head)

2. CONTRACT NO. (If any)

3. QUANTITY ON CONTRACT (Optional)

4. DOLLAR VALUE (Optional)

5. GENERAL NATURE OF PROBLEM (e.g., inspection difficulties, manufacturers unable to meet tolerances, containers collapse under normal warehousing conditions, etc.)

6. SPECIFIC REQUIREMENTS AFFECTED (Include paragraph number and lines of wording)

7. SPECIFIC PROBLEMS (e.g. tests in 4.2.2 will not assure that the battery will last required time; temperature ranges in table 2 do not conform to commercially available items.)

8. RECOMMENDATIONS

9. NAME OF MANUFACTURER, ASSOCIATION, GOVT., AGENCY, ETC.

10. ADDRESS (Number, Street, City, State and Zip Code)

11. NAME AND TITLE OF SUBMITTER

12. DATE