



**The Gambia
Standards Bureau**

Standards Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement

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DATE OF PUBLICATION

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THE GAMBIA STANDARDS BUREAU

The Gambia Standards Bureau is a statutory Government specialized Agency established by The Gambia Standards Bureau Act 2010 to standardize products, methods, systems and for connected matters. Hence, the Bureau is the sole National Standardization Body. As such, it has been a member of International Standardization Bodies such as the International Organization for Standardization (ISO) since 2011, International Electrotechnical Commission (IEC) and the Standards and Metrology Institute for Islamic Countries (SMIIC) from 2012.

The objectives of the Bureau, as specified in its Act, are to: establish and promulgate standards for imported and locally-produced goods; facilitate domestic and international trade; foster and promote standards both for industrial efficiency and advancing economic development; promote the health and safety of consumers; enhance international cooperation in relation to standards and standardization. Thus, the National Quality Policy details the responsibilities of the Bureau in Standardization, Metrology and Conformity Assessment services in Testing, Inspection and Certification.

Therefore, the functions, of the Bureau are to define, prepare, publish, modify or amend Standards Specifications as well information-dissemination of standards. In addition to providing Testing, Inspection and Certification services for goods, systems and processes independently or in relation to conformity with its Standards Mark, the Bureau also conducts training and research. In Metrology, the Bureau serves as the custodian of primary national reference measurement standards through its National Metrology Laboratories and conducts calibration of measurement devices and physical standards.

The development of Gambian Standards (GAMS) is carried out by the Bureau through Technical Committees composed of a balanced representation of stakeholders, as may be appropriate to the subject in question. The Bureau ensures that Standards are developed in accordance with the *ISO_IEC_Guide_21-1_2005: Regional or National adoption of International Standards and other International deliverables* and the *World Trade Organization Code of good practice for the preparation, adoption and application of standards*. To the greatest extent possible, Gambian Standards are aligned to or are adoptions of relevant international standards.

For further information on and copies of Gambian Standards, please contact The Gambia Standards Bureau.

TECHNICAL COMMITTEE RESPONSIBLE: BUILDING AND CONSTRUCTION MATERIALS COMMITTEE

The Building and construction materials Committee developed this Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement. The Committee was set up by Bureau in 2016 to work on the development of national standards in the building and civil engineering field.

The BCM consists of representatives from the following Institutions/Organizations:

- Ministry of Transport, Works and Infrastructure
- National Road Authority
- Department of Physical Planning
- Association of Gambian construction Contractors (GACCON)
- University of the Gambia
- Gambia Technical Training Institute
- Insight Training Institute
- GACEM
- Social Security and Housing Finance Cooperation
- GAMWORKS
- Association Real Estates Companies
- Gambia Fire and Rescue Services
- Jah Oil Company
- Salam Cement Company
- Gambia Competition and Consumer Protection Commission
- ABSA Consultancy
- Finish Profiles the Gambia

The Gambia Standards Bureau is the Secretary to the Building and Construction Materials Technical Committee.

FOREWORD

This Gambian Standard was identified and developed by the Building and Construction Materials in response to the clear need at the national level for a detailed and comprehensive Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement

The standard addresses the following:

- Scope
- References Documents
- Material and Manufacture
- Fabrication
- Mechanical Properties
- Size, Dimension, and Tolerance
- Finish and Surface Condition
- Rejection of Retests
- Inspection and Test Report
- Rehearing
- Packaging and Package Marking

Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement

This standard is issued under the fixed designation A704/A704M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

- 1.1 This specification covers material in mat (or sheet) form fabricated from hot-rolled, plain steel bars or rods to be used for the reinforcement of concrete. Mats consist of two layers of bars or rods which are assembled by welding at right angles to each other.
- 1.2 This specification is applicable for orders in either inch-pound units (as A704) or in SI units [as A704M].
- 1.3 The values stated in either inch-pound units or SI units are to be regarded as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with this specification.

2. Referenced Documents

- 2.1 *ASTM Standards:*²
 - [A185/A185M Specification for Steel Welded Wire Reinforcement, Plain, for Concrete](#)
 - [A615/A615M Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement](#)
 - [A497/A497M Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete](#)
 - [A700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Shipment](#)
 - [A706/A706M Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement](#)
- 2.2 *U.S. Military Standard:*³
 - [MIL-STD-29 Marking for Shipment and Storage](#)

¹ *This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.05 on Steel Reinforcement.*

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² *For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.*

³ *Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS. Or visit: <http://assist.daps.dla.mil/online>.*

- 2.3 *U.S. Federal Standard:*³
 - [Fed. Std. No. 123 Marking for Shipment \(Civil Agencies\)](#)

3. Ordering Information

- 3.1 It shall be the responsibility of the purchaser to specify all requirements that are necessary for material ordered to this specification. Such requirements shall include, but are not limited to, the following:
- 3.1.1 Quantity, no. of mats or area, or both;
 - 3.1.2 Size and spacing of steel bars or rods in each direction;
 - 3.1.3 Plain bar or rod;
 - 3.1.4 Grade required (Grade 40 or 60 [280 or 420] as appropriate);
 - 3.1.5 Type of steel, as appropriate (see Section 4); and
 - 3.1.6 ASTM designation and year of issue.

NOTE 1—A typical ordering description is as follows: 1000 welded bar mats; Grade 40; to ASTM A704 – _____, 6 by 12 in.; 1/2 in. diameter by 120 in. longitudinal tip to tip, outer bars spaced 54 in.; 1/2 in. diameter by 60 in. transverse, outer bars spaced 108 in. [1000 welded bar mats; Grade 280; to ASTM A704M – _____, 150 by 300 mm; 12 mm diameter by 3000 mm longitudinal tip-to-tip, outer bars spaced 1350 mm; 12 mm diameter by 1500 mm transverse, outer bars spaced 2750 mm].