



**The Gambia  
Standards Bureau**

# **Standards Specification For Welded Deformed Steel Bar Mats for Concrete Reinforcement**

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## **DATE OF PUBLICATION**

This Gambian Standard was Gazetted under the authority of the Bureau on 31st July 2017

## **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 Deformed Steel Bar 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 standards specification for Welded Deformed Steel Bar 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 DEFORMED STEEL BAR MATS FOR CONCRETE REINFORCEMENT<sup>1</sup>

*This standard is issued under the fixed designation GAMS ASTM A184/A184M; 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 (  $\epsilon$  ) indicates an editorial change since the last revision or reapproval.*

This standard has been approved for use by agencies of the Department of Defense.

### 1. Scope

- 1.1. This specification covers material in mat (or sheet) form fabricated from deformed steel bars to be used for the reinforcement of concrete. Mats consist of two layers of bars that are assembled at right angles to each other. Mats are assembled by welding at the intersections.
- 1.2. This specification is applicable for orders in either inch-pound units (as Specification A184) or SI units (as Specification A184M).
- 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:<sup>2</sup>

A615/A615M Specification for Deformed and Plain Carbon- Steel Bars for Concrete Reinforcement

A700 Practices for Packaging, Marking, and Loading Meth- ods 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:

MIL-STD-129 Marking for Shipment and Storage<sup>3</sup>

#### 2.3. U.S. Federal Standard:

Fed Std No. 123 Marketing for Shipments (Civil Agencies)<sup>3</sup>

*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.*

*Current edition approved Nov. 1, 2011. Published November 2011. Originally approved in 1936. Last previous edition approved in 2006 as A184/A184M – 06<sup>1</sup>. DOI: 10.1520/A0184\_A0184M-06R11.*

*2 For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto: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>.*

### **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,
- 3.1.2 Size and spacing of members in each direction,
- 3.1.3 Grade required (Grade 40 or 60) [280 or 420],
- 3.1.4 Type of steel as appropriate (see Section 4),
- 3.1.5 ASTM designation A184/A184M and year of issue.

NOTE 1—A typical ordering description is as follows: 1000 bar mats to ASTM A184– ; fabricated from Grade 40 bars to ASTM A615– ; 6 by 6 in.; No. 4 by 120 in. longitudinal tip to tip, outer bars spaced 54 in.; No.

3 by 60 in. transverse, outer bars spaced 114 in.

[1000 bar mats to ASTM A184M– ; fabricated from Grade 280 bars to ASTM A615M– ; 150 by 150 mm; No. 10 by 3000 mm longitudinal tip to tip, outer bars spaced 1350 mm; No. 10 by 1500 mm transverse, outer bars spaced 2850 mm.]