



Designation: A810 – 01(Reapproved 2009)^{ε1}

Standard Specification for Zinc-Coated (Galvanized) Steel Pipe Winding Mesh¹

This standard is issued under the fixed designation A810; 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.

^{ε1} NOTE—Reapproved with editorial changes in May 2009.

1. Scope

1.1 This specification covers various designs of welded wire mesh or twisted (woven) hexagonal wire mesh, zinc coated before fabrication, to be used as reinforcement for the concrete applied in the manufacture of negative buoyancy pipe needed for laying pipe in marshes or in water. The mesh is also used as reinforcement for concrete applied to pipe as a bendable or nonbendable mechanical protective coating when laying pipe in a harsh environment.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:²

A90/A90M Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
A370 Test Methods and Definitions for Mechanical Testing of Steel Products
A641/A641M Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
A902 Terminology Relating to Metallic Coated Steel Products
B6 Specification for Zinc

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, see Terminology A902.

¹ This specification is under the jurisdiction of ASTM Committee A05 on Metallic-Coated Iron and Steel Products and is the direct responsibility of Subcommittee A05.12 on Wire Specifications.

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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.

4. Classification

4.1 The steel pipe winding mesh is classified by type, based on method of manufacture, and by design number, related to width, number of longitudinal wires, and wire sizes.

4.2 Types of Fabric:

4.2.1 *Type TW*—Fabric manufactured by twisting wires to form a mesh with a series of hexagonal openings, as shown in Fig. 1. One of the edges of the fabric includes a straight selvage wire. Additional longitudinal reinforcing wires are included when specified.

4.2.2 *Type WW*—Fabric manufactured by welding a series of longitudinal wires to transverse wires to form a mesh with rectangular openings.

4.2.2.1 *Type WW-C*—Type WW fabric having uniform spacing of longitudinal wires, with the longitudinal wires crimped as indicated in Fig. 2.

4.2.2.2 *Type WW-N*—Type WW fabric having nonuniform spacing of longitudinal wires, by having the space between the edge wire and adjacent longitudinal wire double the spacing of the intermediate longitudinal wires. All longitudinal wires are crimped as indicated in Fig. 3.

4.2.2.3 *Type WW-S*—Type WW fabric having straight longitudinal wires (without crimping), with uniform spacing as indicated in Fig. 4.

4.3 *Design Numbers*—The design number is in the form of $A \times B \times C \times D$.

4.3.1 For Type TW fabric, where

A = nominal width of wire mesh fabric, in inches (millimetres),
 B = number of straight reinforcing wires, not including the straight selvage wire,
 C = nominal diameter of wire in hexagonal mesh and straight selvage wire, in inches (millimetres), and
 D = nominal diameter of straight reinforcing wires, not including straight selvage wire, in inches (millimetres). (Example: $7.5 \times 1 \times 0.054 \times 0.048$.)

4.3.2 For Type WW fabric, where

A = nominal overall width of wire mesh fabric, in inches (millimetres),

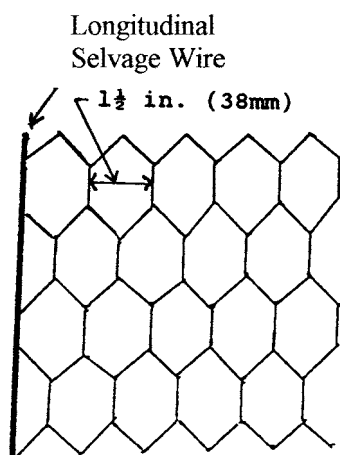


FIG. 1 Type TW—Twisted Hexagonal Mesh (Design Number 7.5 × 0 × 0.054 × 0)

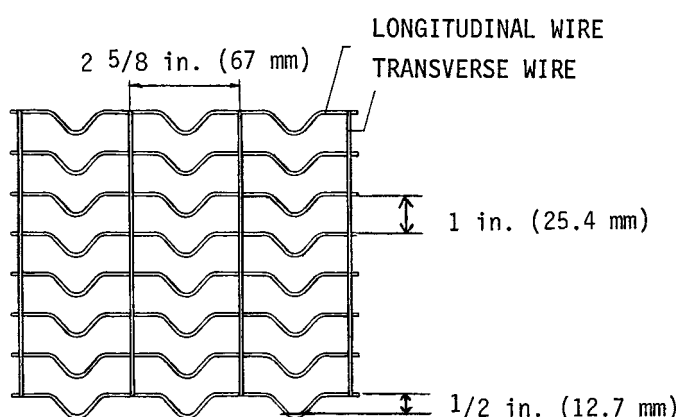


FIG. 2 Type WW-C—Crimped Welded Mesh with Uniform Longitudinal Wire Spacing

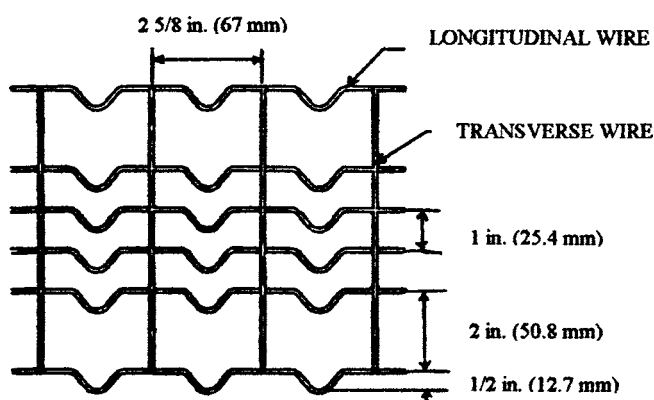


FIG. 3 Type WW-N—Crimped Welded Mesh with Non-Uniform Longitudinal Wire Spacing

- B = number of longitudinal wires,
 C = nominal diameter of longitudinal wires, in inches (millimetres), and
 D = nominal diameter of transverse wires, in inches (millimetres). (Example: 7.5 × 8 × 0.063 × 0.063.)

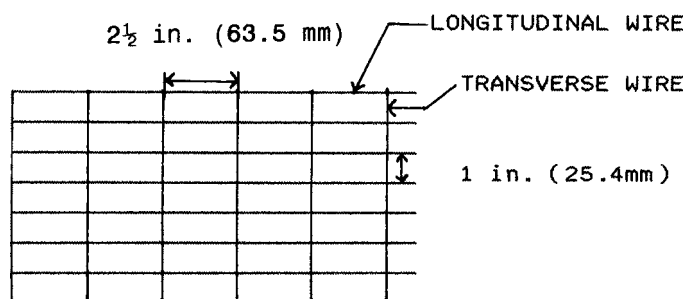


FIG. 4 Type WW-S—Welded Mesh with Straight Longitudinal Wires

5. Ordering Information

5.1 Orders for zinc-coated steel pipe winding mesh under this specification shall include the following information, as necessary to adequately describe the desired product:

- 5.1.1 Name of material (steel pipe winding mesh),
- 5.1.2 ASTM designation and year of issue,
- 5.1.3 Type of fabric (see 4.2),
- 5.1.4 Design number (see 4.3 and Tables 1 and 2),
- 5.1.4.1 Mesh dimensions for welded mesh (see 9.3 and Table 3),
- 5.1.5 Zinc coating class (see 8.1),
- 5.1.6 Quantity (number of rolls),
- 5.1.7 Width of fabric and length of rolls, and
- 5.1.8 Packaging (see Section 14).

6. Materials

6.1 The steel from which the wire is produced shall be made by any commercially accepted steelmaking process.

6.1.1 The base metal shall be a steel having composition to permit drawing to a finished size and also to ensure freedom from zinc flaking during weaving or welding into mesh.

6.1.2 *Wire for Welded Mesh*—Before welding the galvanized wire shall have a minimum tensile strength of 70 000 psi (483 MPa),

6.1.3 *Wire for Hexagonal Woven Mesh*—Before weaving the galvanized wire shall have a maximum tensile strength of 75 000 psi (515 MPa),

6.2 Slab zinc used for the coating shall be any grade of zinc conforming to Specification B6.

7. Manufacture

7.1 *Hexagonal Woven Mesh*—This fabric is manufactured by twisting wires to form a series of openings, hexagonal in shape, as specified in Table 1 and Fig. 1. One of the edges of the fabric shall be constructed to include a selvage wire. In addition to those specified in Table 1 and Fig. 1, other designs (width and other reinforcing wire configurations) are subject to agreement between the purchaser and manufacturer.

7.2 *Welded Mesh*—This fabric is manufactured by welding a series of parallel longitudinal wires to transverse wires to form rectangular openings. The longitudinal wires shall be crimped or not crimped as indicated for the type specified. Crimping