

Weld mesh — Specification

Public review Draft

KS 2177: 2017

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Weld mesh — Specification

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Foreword

This Kenya Standard was revised by the Steel Technical Committee, under the guidance of the standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Weld mesh is widely used in the country in many applications and there exists a great potential for its development and use. This standard lays down the specifications of weld mesh and emphasis is laid on the mesh sizes and wire diameters. It was noted that technology has changed and the weld mesh is produced at different sizes as in edition 1. This second edition thus gives the latest information on mesh wire.

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Weld mesh — Specification

1 Scope

This Kenya standard covers the requirements for weld mesh for general engineering works.

2 Definitions

For the purposes of this standard, the following definitions shall apply:

2.1

elongation

the increase in length of a tensile test piece under stress

2.2

mesh size

the pitch or centre to centre distance of line and cross wires

3 Types of weld mesh

Weld mesh shall be of the following types;

- i) welded;
- ii) weaved.

4 Designations and description for ordering purposes

When ordering weld mesh to this standard, the purchaser shall give the following requirements in the same sequence:

- i) mesh size;
- ii) mesh reference;
- iii) the number of sheets.

5 Quality of steel

All weld mesh shall be manufactured from hard-drawn steel wire in accordance with KS 02-105, Specification for hard-drawn steel wire for reinforcement of concrete.

6 Manufacture

The weld mesh shall be formed by spacing the main and the cross wires, which shall be fixed at points of inter-section by fusion welding or interweaving, so as to be sufficiently stable to withstand normal handling in transport and during fixing without displacement.

Butt joints in the wires of the weld mesh shall be fusion welded and the joints shall be staggered or the trailing wire shall be made to reach the leading wire at the breakage point.

7 Dimensions

The preferred mesh references and wire sizes shall be as shown in Table 1.

Table 1 — Weld mesh dimensions

Mesh reference	Size	Box Size (Pitch of wires,mm)		Wire diameter (mm)		Sheet Size (mm)		Overhang		Number of Wires nominally		Mass per Sheet (Kg)
		Main	Cross	Main	Cross	Length	Width	Main	Cross	Length	Width	Nom
		Nom	Nom	Nom	Nom	Nom	Nom			cross	main	
WM 5030	50x50x3	50	50	3.0	3.0	2440	1220	25.0	25.0	48.0	24.0	6.5
WM 5035	50x50x3.5	50	50	3.5	3.5	2440	1220	25.0	25.0	49.0	24.0	8.9
WM 5040	50x50x4	50	50	4.0	4.0	2440	1220	25.0	25.0	49.0	24.0	11.7
WM 5040	60x60x3	60	60	3.0	3.0	2440	1220	30.0	30.0	41.0	20.0	5.5
WM 5040	60x60x4	60	60	4.0	4.0	2440	1220	30.0	30.0	41.0	20.0	9.7
WM 6530	65x65x3	65	65	3.0	3.0	2440	1220	32.5	32.5	38.0	19.0	5.1
WM	65x65x3.5	65	65	3.5	3.5	2440	1220	32.5	32.5	38.0	19.0	7.0
WM 6540	65x65x4	65	65	4.0	4.0	2440	1220	32.5	32.5	38.0	19.0	9.1
WM 7525	75x75x2.5	75	75	2.5	2.5	2440	1220	37.5	37.5	33.0	16.0	3.1
WM 7530	75x75x3	75	75	3.0	3.0	2440	1220	37.5	37.5	33.0	16.0	4.4
WM 7535	75x75x3.5	75	75	3.5	3.5	2440	1220	37.5	37.5	33.0	16.0	6.0
WM 7540	75x75x4	75	75	4.0	4.0	2440	1220	37.5	37.5	33.0	16.0	7.8
WM 7540	75x75x5	75	75	5.0	5.0	2440	1220	37.5	37.5	33.0	16.0	12.2
BM 5030	50x50x3	50	50	3.0	3.0	1830	915	25.0	25.0	37.0	18.0	3.7
BM 5035	50x50x3.5	50	50	3.5	3.5	1830	915	25.0	25.0	37.0	18.0	5.0
BM 5040	50x50x4	50	50	4.0	4.0	1830	915	25.0	25.0	37.0	18.0	6.6
BM 6530	65x65x3	65	65	3.0	3.0	1830	915	32.5	32.5	28.0	14.0	2.8
BM 6535	65x65x3.5	65	65	3.5	3.5	1830	915	32.5	32.5	28.0	14.0	3.9
BM 6540	65x65x4	65	65	4.0	4.0	1830	915	32.5	32.5	28.0	14.0	5.1
BK 5030	50x50x3	50	50	3.0	3.0	1830	915	25.0	25.0	37.0	15.0	3.1
BK 5035	50x50x4	50	50	3.5	3.5	1830	915	25.0	25.0	37.0	15.0	4.2
BK 5040	50x50x4	50	50	4.0	4.0	1830	915	25.0	25.0	37.0	15.0	5.5
BK 6530	65x65x3	65	65	3.0	3.0	1830	915	32.5	32.5	28.0	12.0	2.4
BK 6535	65x65x3.5	65	65	3.5	3.5	1830	915	32.5	32.5	28.0	12.0	3.3
BK 6540	65x65x4	65	65	4.0	4.0	1830	915	32.5	32.5	28.0	12.0	4.3
Rectangular mesh												
	50x25x2.5	50	25	2.5	2.5	2440	1220	25.0	12.5	98.0	24.0	6.9
	50x25x3	50	25	3.0	3.0	2440	1220	25.0	12.5	98.0	24.0	9.9
	50x25x4	50	25	4.0	4.0	2440	1220	25.0	12.5	98.0	24.0	17.6
	75x25x2.5	75	25	2.5	2.5	2440	1220	37.5	12.5	98.0	16.0	6.1
	75x25x3	75	25	3.0	3.0	2440	1220	37.5	12.5	98.0	16.0	8.8
	75x25x4	75	25	4.0	4.0	2440	1220	37.5	12.5	98.0	16.0	15.6
	75x30x3	75	30	3.0	3.0	2440	1220	37.5	15.0	81.0	16.0	7.6
	75x30x4	75	30	4.0	4.0	2440	1220	37.5	15.0	81.0	16.0	13.6
a) WM denotes weld mesh.												
b) BM and BK denote bed mesh												

8 Sizes and tolerances

The tolerance on the wire diameter of the weld mesh shall be ± 2.5 % of the nominal diameter.

8.1 Size of sheet

The dimensions of the sheet shall be as shown in Table 1 and shall have tolerances of ± 25 mm.

8.2 Size of mesh

The number of spaces between the external wires in sheet shall be determined by the nominal pitch. The centre distance between two adjacent wires shall ±2.5 % from the nominal pitch. All sides of sheets shall have overhang on the meshes equal to one half the pitch.

8.3 Tolerance on mass of fabric

The tolerance on the mass of the fabric shall be $\pm 6\%$

Note:

9 Standard sheet sizes

9.1 The standard sheet size of the weld mesh shall be 2.44 m x 1.22 m, 1.83 m x 0.915 m and 1.83 m x 0.76 m.

9.2 The length/width of sheet shall be measured from the tops of the overhangs.

10 Strength of weld

The manufacturers shall ensure that where the inter-sections are welded, all such welds shall be capable of withstanding a load in a shear.

Shear test shall be carried out to determine the strength of the weld.

11 Shear test

11.1 Test pieces

The test specimens for the shear test shall be cut from the weld mesh so that each specimen conforms to Figure 1.

All dimensions in mm.

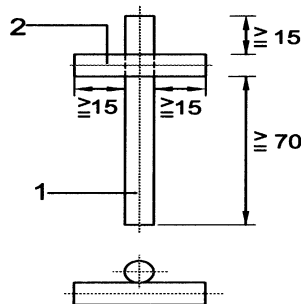
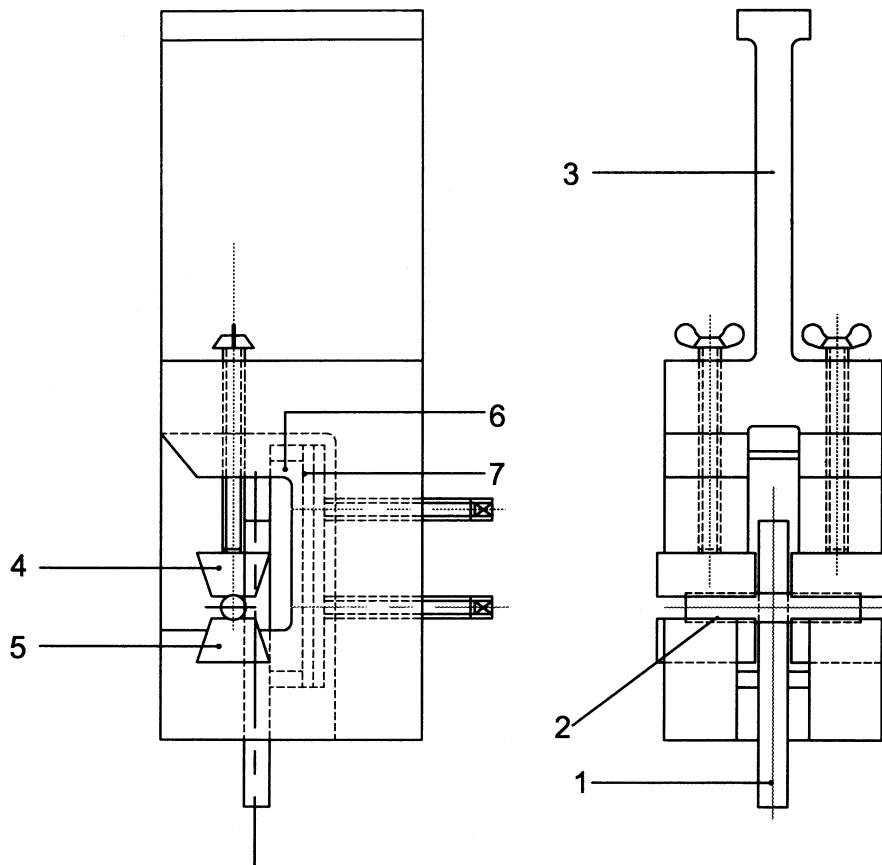


Figure 1 — Shear specimens of welded mesh

11.2 Method of test

The test specimen shall be firmly gripped in the test device shown in Figure 2 in such a manner that the pulled bar is loaded centrally and rotation of the anchoring bar prevented as far as possible. The upper free end of the pulled bar shall be so supported (e.g. by means of rollers) that the measured shear force is not increased by friction forces. The rate of loading shall not exceed 10 N (mm².s).



KEY:

- 1 Pulled bar
- 2 Anchoring bar
- 3 Extension for grips of testing machine
- 4 Clamp for anchoring bar
- 5 Rest for anchoring bar
- 6 Support to prevent bending of pulled bar
- 7 Low- friction sliding surface or roller bearing.

Figure 2 — Device for performing shear test

Damage to the ribs can be avoided by the use of an aluminium sheet insert placed between the specimen and the former.

12 Packaging and marking

12.1 Packaging

The weld mesh shall be secured in bundles for ease of transportation. Wiremesh should be secured in bundles of minimum 5 pieces.

12.2 Marking

When the weld mesh is delivered in bundles, the manufacturer shall attach a indelible and durable label bearing the following:

- i) manufacturer's name /trade mark, if any;
- ii) size of weld mesh;

- iii) mesh reference.

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