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“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 2140 (1978): Stranded Galvanized Steel Wire for Fencing
[MED 10: Wire Ropes and Wire Products]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Wire Ropes and Wire Products Sectional Committee, EDC 32; Wire Products (Other than Wire Ropes) Subcommittee, EDC 32: 3 [Ref: Doc: EDC 32 (1988)]



Indian Standard

SPECIFICATION FOR

STRANDED GALVANIZED STEEL WIRE FOR FENCING

(First Revision)

1. **Scope** — Lays down the requirements for galvanized strand fencing wire of 3-ply and 7-ply constructions.

2. **Dimensions**

2.1 *Wire Strand, 3-Ply Construction*

Nominal Dia of Single Wire	Minimum Breaking Load		Length of Lay	Tolerance on Length of Lay
	Single Wire 540 N/mm ²	Completed Strand*		
mm	N	N	mm	mm
1.60	1 080	3 078	40	± 10
2.24	2 160	6 156	50	± 10
2.50	2 700	7 695	60	± 10
2.80	3 240	9 234	60	± 10
3.15	4 320	12 312	70	± 10
3.55	5 400	15 390	80	± 10

*The minimum breaking load of the completed strand is 95 percent of the minimum aggregate breaking load.

2.2 *Wire Strand, 7-Ply Construction*

Nominal Dia of Single Wire	Minimum Breaking Load		Length of Lay	Tolerance on Length of Lay
	Single Wire 540 N/mm ²	Completed Strand*		
mm	N	N	mm	mm
0.50	135	898	40	± 10
0.80	270	1 796	50	± 10
1.25	735	4 883	60	± 10
1.60	1 080	7 182	60	± 10
2.24	2 160	14 362	70	± 10
2.50	2 700	17 955	80	± 10
2.80	3 240	21 546	80	± 10
3.15	4 320	28 728	90	± 10
3.55	5 400	35 910	100	± 10

*The minimum breaking load of the completed strand is 95 percent of the minimum aggregate breaking load.

3. **Material** — The stranded galvanized fencing wire shall be manufactured from galvanized mild steel wire conforming to IS:280-1978 'Specification for mild steel wire for general engineering purposes (third revision)'. The wire shall have a tensile strength of 540 N/mm², *Min.*

3.1 The galvanized mild steel wire used in the construction of stranded galvanized fencing wire shall conform to the requirements for galvanizing as laid down for the 'heavily-coated wire' or 'medium coated wire' of IS: 4826-1968 'Galvanized coatings on round steel wires'.

4. **Lay** — The lay of stranded galvanized fencing wire shall be right-hand. The strand shall be evenly and uniformly laid. The length of the lay shall be as specified in 2.1 and 2.2.

5. **Freedom from Defects** — The strand shall be free from scale, irregularities, imperfections, flaws, sand-splits and other defects. The galvanizing shall be smooth, even and bright.

Adopted 24 July 1978

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6. Mass of Coil — Unless otherwise agreed to between the purchaser and the supplier, the mass of each coil shall be 50 kg subject to a tolerance of ± 5 percent.

7. Tests — The minimum breaking load of the single wire before manufacture and the completed strand shall conform to those given in 2.1 and 2.2.

8. Sampling — Unless otherwise agreed to between the supplier and the purchaser, the sampling plan as given in Appendix A shall be followed.

9. Packing — Each coil shall be wrapped in hessian or canvas and packed as specified by the purchaser.

10. Marking — Each coil shall be provided with a label, fixed firmly on the inner part of the coil, bearing the following information:

- a) Manufacturer's name or trade-mark;
- b) Lot number and coil number;
- c) A brief description and quality of the material;
- d) Mass; and
- e) Any other particular specified by the purchaser.

10.1 ISI Certification Marking — Details available with the Indian Standards Institution.

APPENDIX A

(Clause 8)

A-1. Scale of Sampling

A-1.1 Lot — All the coils of stranded galvanized steel wire for fencing of the same type and size and manufactured under essentially similar conditions of manufacture shall constitute a lot.

A-1.2 For ascertaining the conformity of the lot to the requirements of the specification, tests shall be carried out on each lot separately. The number of coils to be selected at random for this purpose shall be in accordance with Table 1.

TABLE 1 SCALE OF SAMPLING

Number of Coils in the Lot	Number of Coils to be Selected
(1)	(2)
Up to 25	3
26 „ 50	4
51 „ 150	5
151 „ 300	7
300 and above	10

A-2. Number of Tests and Criteria for Conformity

A-2.1 All the coils selected according to A-1.2 shall be examined for length of lay (see 2.1 and 2.2) and freedom from defects (see 5). If all the coils are found satisfactory for each of the above characteristics, the lot shall be considered conforming to the requirements of these characteristics.

A-2.2 When the lot is found satisfactory according to A-2.1, one test specimen each from every selected coil shall be taken and subjected to minimum breaking load test (see 6) and tests for galvanizing (see 3.1). The lot shall conform to the requirements of these characteristics if all the test specimen satisfy the relevant requirements.

A-2.3 When so desired by the purchaser one sample for chemical analysis shall be drawn. The lot shall be declared conforming to the requirements when the test results satisfy the relevant requirements.

A-2.4 The lot shall be declared conforming to the requirements of the specification if it is found satisfactory according to **A-2.1** to **A-2.3**.

A-2.5 In case the lot is not found satisfactory according to **A-2.1** to **A-2.3** then the lot shall be subjected to 100 percent retesting.

EXPLANATORY NOTE

This standard was first issued in 1962. The present revision has been taken up to include the modifications brought to the notice of the Sectional Committee since its publication. For the requirements of the manufacturing material reference has been made to IS : 280-1978 and the various values in the standard have been given in SI Units. Two grades of galvanizing coatings have been laid down in place of single grade specified in 1962 version of the standard.

Stranded wires are used in large quantities for fencing by Railways, Defence and other Government Departments.