

IRISH STANDARD SPECIFICATION

**ANTI-INTRUDER CONCRETE
FENCE POSTS**

I.S. 177 : 1980

Price £2.60

INSTITUTE FOR INDUSTRIAL RESEARCH AND STANDARDS

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DECLARATION

OF

SPECIFICATION

ENTITLED

ANTI-INTRUDER CONCRETE FENCE POSTS

AS

THE IRISH STANDARD SPECIFICATION FOR

ANTI-INTRUDER CONCRETE FENCE POSTS

The Institute for Industrial Research and Standards in exercise of the power conferred by section 20 of the Industrial Research and Standards Act, 1961 (No. 20 of 1961), and with the consent of the Minister for Industry, Commerce and Tourism hereby declares as follows:

1. This instrument may be cited as the Standard Specification (Anti-Intruder Concrete Fence Posts) Declaration, 1980.

2. (1) The Specification set forth in the Schedule to this declaration is hereby declared to be the standard specification for Anti-Intruder Concrete Fence Posts.

(2) The said standard specification may be cited as Irish Standard 177:1980 or as I.S. 177:1980.

3. (1) The Standard Specification (Anti-Intruder Concrete Fence Posts) Declaration, 1972, is hereby revoked.

(2) Reference in any other standard specification to the Instrument hereby revoked and to Irish Standard 177:1972, thereby prescribed, shall be construed, respectively, as references to this Instrument and to Irish Standard 177:1980.

SCHEDULE

Anti-Intruder Concrete Fence Posts

1. SCOPE

1.1 This specification applies to reinforced cranked concrete posts for use in anti-intruder fencing.

1.2 Three types of posts are covered viz:

intermediate posts,
straining posts and
corner posts

in overall lengths of 3.0 m, and one type of strut in lengths of 2.6 m. The 3 m posts are to take 1.8 m chain link fencing complying with Irish Standard 130:1980, Chain Link Fencing, and three lines of barbed wire complying with I.S. 121:1980, Galvanized Barbed Wire. The erection of the fence shall comply with I.S. 203:1980, The Erection of Anti-Intruder Chain Link Fences.

2. MATERIALS

2.1 **Cement:** The cement used in the manufacture of posts shall be Portland cement complying with Irish Standard 1:1963, or, alternatively, other cements specified by the purchaser may be used.

2.2 **Aggregate:** The aggregates shall comply with I.S. 5:1974, "Aggregates for Concrete" and shall not exceed 14 mm nominal size.

2.3 **Additives:** Additives used in manufacture may be:

2.3.1 Pigments complying with British Standard 1014, 1975, Pigments for Portland Cement and Portland Cement Products, published by the British Standards Institution, 2, Park Street, London W1A 2BS, to colour the finished product;

or,

2.3.2 Substances to improve the workability and impermeability of the concrete:

or,

2.3.3 Both.

Where additives are employed, they shall be used in such proportions as to have no harmful effects on the setting, hardening and durability of the concrete, and shall, where relevant, comply with the requirements of B.S. 5075: Part 1:1974 "Concrete admixtures".

2.4 **Reinforcing steel:** The reinforcing steel shall comply with the quality requirements of the following British Standards:

4449:1978: "Hot Rolled Steel Bars for the Reinforcement of Concrete",
4482:1969: "Hard Drawn Mild Steel Wire for the Reinforcement of Concrete",
4461:1978: "Cold Worked Steel Bars for the Reinforcement of Concrete".

Steel having a higher tensile strength may be approved by the purchaser. All reinforcement shall be free from loose rust, scale, oil and grease.

3. FORM

3.1 All long arrises of posts which are not rounded shall be free from sharp protrusions or other imperfections liable to damage the protective coatings of wire products. The heads of posts, excluding struts, shall be rounded, or otherwise suitably weathered. Where posts are tapered the taper shall be uniform.

3.2 Straining posts and corner posts shall be provided with suitably designed chamfered slots to provide a firm bearing for struts. On straining posts the slots shall be provided on the side faces. On corner posts the slots shall be provided on the adjacent faces of the inner corner. The joint between the slot on the post and the tenon on the strut shall be capable of resisting the applied forces resulting from the line wires.

3.3 The struts shall be designed to meet the posts at an angle of 45° on level ground and at a point within the top third of the vertical portion of the straining post or corner post which is above the ground.

3.4 The posts shall be provided with cranked tops of either form indicated in Fig. 1. The tops shall be cast with the posts. They shall be such that the overall vertical height of the posts is 3.0 m.

3.5 The plane of the sides of the cranked portion of corner posts shall be at an angle of 45° with sides of the straight portion. Haunchings to facilitate casting may be provided.

4. HOLES

4.1 All holes shall be 10 mm to 12 mm in diameter and shall be free from obstruction. The holes shall be located as shown in Figure 1. The tolerance on individual holes shall be ± 5 mm subject to the dimension between the bottom and top holes of the vertical portion of the post being 1765 ± 10 mm.

4.2 Intermediate posts and straining posts shall be provided with suitable single-way holes. Corner posts shall be provided with suitable double-way holes (i.e. through holes at right angles) for the attachment of straining fittings of the line wires.

4.3 Struts shall be provided with slots or holes to match the holes in the posts unless otherwise specified by the purchaser.

5. DIMENSIONS

5.1 The dimensions of the posts shall be as set out in Table 1 below:

TABLE 1

Type of post	Overall height	Cross-section		
		At base	At top of straight portion	Cranked portion
Intermediate	m 3.0	mm 125 x 125	mm 100 x 100	mm 90 x 90
Straining	3.0	150 x 150	150 x 150	150 x 150
Corner	3.0	150 x 150	150 x 150	150 x 150
Strut	2.6	100 x 100	100 x 100	

5.2 The following tolerances shall apply:

for cross-section: $-3 \text{ mm} + 6 \text{ mm}$
 for length: $-12 \text{ mm} + 38 \text{ mm}$

A demoulding draw allowance of 3 mm on each of two sides is permissible in addition to the above tolerances for cross-section.

6. REINFORCEMENT

6.1 The reinforcement shall consist of a prefabricated cage of four steel bars secured by stirrups or spacers spaced at not more than 500 mm centre to centre. The stirrups or spacers shall be fixed to the bars and parallel to the faces of the posts.

6.2 The reinforcement in both posts and struts which may be of any of the specified characteristic strengths given in Table 2 below, shall be of the diameter given.

TABLE 2: SIZE OF REINFORCEMENT

Type of post	Specified characteristic strength in N/mm ²			
	250	410	460	485
	Diameters (mm)			
Straining posts and corner posts	10	8	6	6
Intermediate posts	8	6	6	5
Struts	6	6	6	5

6.3 The stirrups shall be not less than 2.6 mm in diameter except that where suitable preformed stirrups or spacers are used the reinforcement shall be held in position at least as well as with the stirrups specified.

6.4 The cover of concrete on all steel reinforcement shall be 20 mm subject to a tolerance of plus 3 mm minus 6 mm. The reinforcing bars shall extend to within 25 mm of each end of the unit. During manufacture the cage shall be controlled in position by means of suitable spacers to ensure that the required cover will be achieved.

7. MOULDS AND FINISH

7.1 **Moulds:** Moulds shall be so constructed that they remain rigid during the placing, compaction and curing of the concrete and prevent the loss of water, grout or mortar from the concrete. They shall be such that, after curing, the post or strut is accurate within the limits of dimension specified and shall produce the required finish.

7.2 **Finish:** The finish shall be that obtained by casting the unit in moulds complying with 7.1 above. The quality of the finish shall be agreed between the purchaser and manufacturer before casting commences.

Note: It is recommended that the quality of finish be agreed on the basis of samples approved by the purchaser.

8. COMPOSITION AND MANUFACTURE

8.1 **Cube strength:** The cube strength of the concrete mix shall be not less than 30 N/mm² when tested at 28 days.

8.2 **Mixing:** The concrete shall be mixed until there is a uniform distribution of the materials and the mass is uniform in colour and consistency.

8.3 **Placing and compaction:** The concrete shall be placed as soon as possible after mixing and no material shall be used after the initial set. An effective vibration process shall be used to compact the concrete.

8.4 **Protection from frost:** No material that has been exposed to temperature below freezing point shall be used until it has been completely thawed, neither shall units be moulded when the temperature of the moulds is below freezing point.

8.4.1 Units already moulded shall be protected from the action of frost for at least 48 hours immediately after casting.

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