IRISH STANDARD SPECIFICATION

POST AND RAIL FENCING—CONCRETE

I.S. 252 : 1982

Price Code B

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DECLARATION

OF

SPECIFICATION

ENTITLED

POST AND RAIL FENCING—CONCRETE

AS

THE IRISH STANDARD SPECIFICATION FOR

POST AND RAIL FENCING—CONCRETE

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 and Energy, hereby declares as follows:

1. This instrument may be cited as the Standard Specification (Post and Rail Fencing—Concrete) Declaration, 1982.

2. (1) The Specification set forth in the Schedule to this declaration is hereby declared to be the standard specification for Post and Rail Fencing—Concrete.

(2) The said standard specification may be cited as Irish Standard 252 : 1982 or as I.S. 252 : 1982.

SCHEDULE

Post and Rail Fencing—Concrete

1. SCOPE

This specification applies to reinforced concrete posts and rails for use in fencing as shown in Fig 1.

2. MATERIALS

2.1 Cement. The cement used in the manufacturing process shall be Portland cement complying with Irish Standard 1 : 1963 " Portland Cement ". Where a cement other than Portland cement is required for a special end purpose the purchaser shall specify the standard of compliance.

2.2 Aggregate. The aggregates shall comply with Irish Standard 5 : 1974 " Aggregates for concrete ", and shall not exceed 14 mm nominal size.

2.3 Additives. Additives used in manufacture may be:

(i) Pigments complying with *British Standard 1014 : 1975 " Pigments for Portland cement and Portland cement products ", to colour the finished product;

or

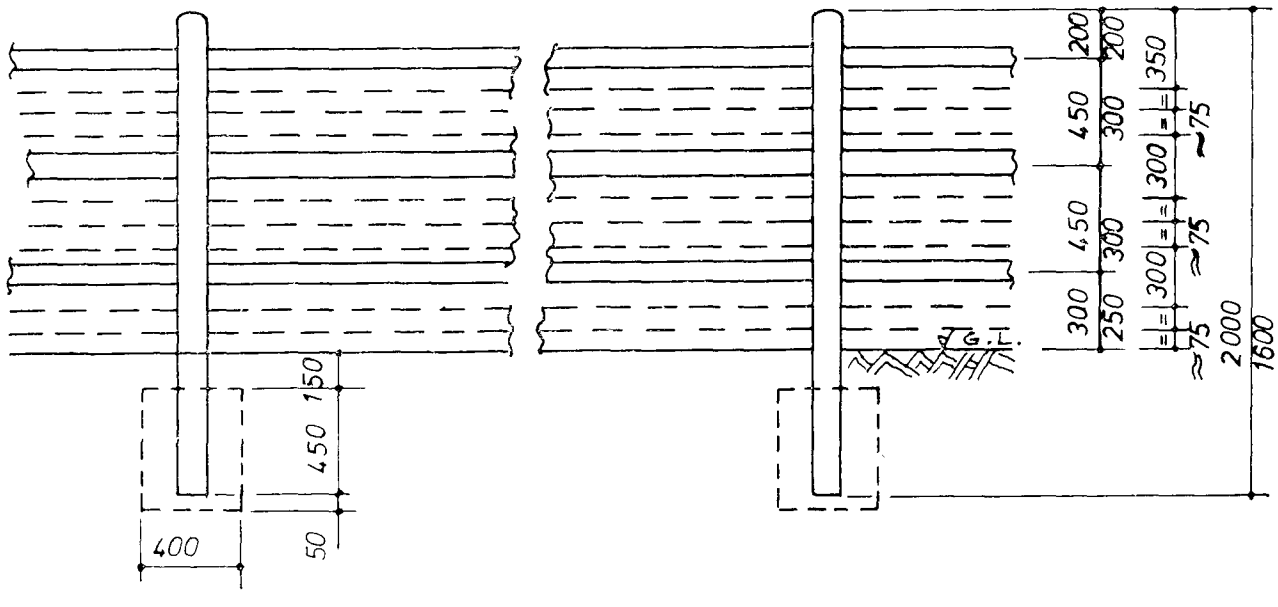
(ii) Substances to improve the workability and impermeability of the concrete;

or

both, provided no incompatibility exists.

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.

2.4 Reinforcing steel. The reinforcement used in the manufacture of posts shall comply with B.S. 4449 : 1978 " Hot rolled steel bars for the reinforcement of concrete ".



1 ALL DIMENSIONS IN MM

2 ALTERNATIVE DIMENSIONS ARE SHOWN ABOVE AND BELOW DIMENSION LINES

Figure 1. Post and Rail Fence Assembly

* Published by the British Standards Institute, 2 Park Street, London W1A 2BS.

3. FORM

All long arrises of posts which are not rounded, shall be smoothed off. The heads of posts shall be rounded, pyramidal or weathered, or shall be of such shape as will provide no horizontal area for lodgement of water. Where posts are tapered, the taper shall be uniform throughout the length of the post.

Posts shall be provided with suitably designed holes or alternatively, chamfered slots on two faces, to provide a bearing for the rails. The holes or slots shall be positioned commencing 150 mm from the top of the post with succeeding holes or slots spaced at distances of 450 mm and 450 mm centre to centre. The rails when used with slotted posts shall be provided with a tenon having the following approximate dimensions: depth 15 mm, width 30 mm and length 125 mm. The design of the slot shall be such that the tenon fits comfortably into it.

4. HOLES FOR LINE WIRES

All holes for line wires shall be 10 to 12 mm in diameter and shall be free from obstruction. The holes shall be accurately positioned commencing 375 mm from the top of the post with succeeding holes spaced at distances of 450 mm and 475 mm centre to centre.

5. DIMENSIONS

The dimensions of the units shall be as set out below.

Type of Unit	Length	Cross-section as declared by the manufacturer but ∢
	m	mm
Post	∢ 1.60	100 , 150
Rail	As declared by the manufacturer but not more than 3.2	100 80

The following tolerances shall apply:

for cross-section of posts and rails	—3 mm -- 6 mm
for length (post)	—12 mm -- 40 mm
for length (rail)	--6 mm +3 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 Posts. The reinforcement to each post shall consist of a cage of four 6 mm diameter mild steel bars, secured in position by spacers of a type approved by the purchaser.

The cover to the main reinforcement shall be not less than 20 mm measured from the side of the unit or 30 mm measured from the end of the unit.

The use of high yield steel reinforcement shall be subject to approval by the purchaser.

6.2 Rails. Rails shall be designed for a vertical load of 0.9 kN and a horizontal load of 0.4 kN, each of which shall be assumed to act at the mid-span of the rail. The reinforcement shall be secured in position symmetrically in the rail cross-section.

The reinforcing bars shall extend to within 35 mm of each end of the unit. The cover of concrete on the reinforcing bars shall be 20 mm subject to a tolerance of plus 6 mm and minus 3 mm.

Prestressed concrete rails shall be designed and the design shall be approved by the purchaser.

7. MOULDS AND FINISH

7.1 Moulds. Moulds shall be so constructed that they remain rigid during the placing and compaction of the concrete. They shall be such that the finished product is dimensionally accurate within the limits specified.

7.2 Finish. The finish shall be that obtained by casting the unit in properly designed moulds. In addition, the surface shall be free from honey-combing, roughness, or other large blemishes.

NOTE: It is desirable to establish compliance on the basis of an agreed sample.

8. COMPOSITION AND MANUFACTURE

8.1 Concrete grade. The 28 day characteristic cube strength of the concrete shall be not less than 30 MPa.

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

8.3 Placing. The concrete shall be used as soon as possible after being mixed and no material shall be used if it cannot be compacted fully. An effective external mechanical vibration process shall be used to compact the concrete.

8.4 Protection from frost. Material which has been exposed to temperature below freezing point shall not be used until it has been completely thawed, neither shall units be cast when the temperature of the moulds themselves is below freezing point.

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

8.5 Maturing. Units shall not be delivered from the works until the concrete test cubes representing the units in question have reached their 28 days characteristic strength.

9. TESTS

9.1 Works cube crushing tests. Cube tests where required shall be carried out on cubes taken from the concrete at the time and place of casting. The tests shall be made in accordance with British Standard 1881 " Methods of testing concrete ".

9.2 Examination for reinforcement cover. The purchaser may select one unit in every consignment (with a maximum of 1 in 100), which unit shall be broken to ascertain if the position of the reinforcement complies with Clause 6.

If the reinforcement is found to be incorrectly positioned a second unit shall be selected, and if this also fails the consignment represented by the units tested shall be deemed to have failed.