

IMPLEMENTATION SPECIFICATION FOR ROAD **WORKS**

SERIES IM/300 (IMPLEMENTATION)

FENCING



***This Specification Series implements the requirements in
Subsidiary Legislation 499.57, Part II (New Roads and Road
Works Regulations) in accordance with the Agency for
Infrastructure Malta ACT XXVIII, CAP. 588, Part I***

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300	FENCING.....	3
301	GENERAL.....	3
302	REQUIREMENTS FOR TEMPORARY AND PERMANENT FENCES.....	3
303	TEMPORARY FENCING.....	3
304	TIMBER QUALITY.....	3
305	FITTINGS.....	4
306	PERMANENT FENCING.....	4
	Planting Works Fencing.....	5
	Wire Mesh to Permanent or Existing Fencing.....	5
	Fenced Tree Guards.....	5
307	PERMANENT FENCING FOR ACCOMMODATION WORKS.....	5
308	GATES AND STILES.....	5
309	REMOVING AND RE-ERECTING EXISTING FENCES AND GATES.....	6
310	PRESERVATION OF TIMBER.....	6
311	PAINTING OF TIMBER FENCES, GATES, STILES AND POSTS.....	7
	General.....	7
	Priming.....	7
	Undercoats and Finishing Coats.....	7
	Coloured Wood-Stain.....	8

300 FENCING

301 General

- 1 Temporary and permanent fences shall comply with this Series.
- 2 Organisations involved in fencing works for highway schemes shall comply with this Series.

302 Requirements for Temporary and Permanent Fences

- 1 As soon as the Contractor is placed in possession of any part of the Site he shall immediately erect fencing on the boundaries of the land as shown on the Drawings. In places where permanent fencing cannot be erected immediately or where none is required, the Contractor shall erect, and when and where necessary, re-erect and maintain, temporary fencing and subsequently take down and remove as necessary. The type of temporary fencing shall be chosen by the Contractor, unless otherwise described in Appendix 3/1, and may be selected from the four standard types for highway works described in Clause 303, taking into account the usage of the adjoining land. Unless otherwise described in Appendix 3/1, the Contractor shall not use barbed wire in areas accessible to the general public. Access shall be made in temporary fencing as necessary for the use of the occupiers of adjacent lands.
- 2 Temporary fencing shall remain in position either until it is replaced by permanent fencing or until its removal on completion of the Works, unless otherwise described in Appendix 3/1.
- 3 When concrete for post footings is required, it shall comply with Clause 2602.

303 Temporary Fencing

- 1 Temporary fencing shall be appropriate to the usage of the adjoining land and, unless otherwise described in Appendix 3/1.
- 2 If temporary fencing is removed temporarily for the execution of any part of the Works it shall be reinstated as soon as possible and in the meantime the gap in the fencing shall be patrolled so that no unauthorised entry on to adjoining land takes place and no stock escapes from the adjoining land.
- 3 Unless otherwise described in Appendix 3/1, timber for temporary fencing need not have preservation treatment.

304 Timber Quality

- 1 Timber for use in permanent works shall be either of appropriate natural durability or be treated with wood preservatives in compliance with Clause 310. Where natural durability is used as the criterion, the timber shall be of class 1 if used in ground contact (e.g. fence posts)

- and of class 2 or better if used out of ground contact (e.g. fence rails) according to the classification given in MSA EN 350-1.
- 2 If any sapwood is present in the timber, irrespective of the natural durability of the heartwood, the timber shall be treated with preservative.
 - 3 Unless otherwise described in this specification and in Appendix 3/1, timber for permanent fencing shall comply with BS 1722-7, timber for field gates and posts shall comply with BS 3470; and timber for stiles, bridle gates and kissing gates shall comply with BS 5709.
 - 4 Temporary fencing shall be appropriate to the usage of the adjoining land and, unless otherwise described in Appendix 3/1.
 - 5 All timber for permanent fencing, field gates and posts, stiles, bridle gates and kissing gates shall be of sawn timber conforming to BS 1722-7 Annex A. Non structural timber in environmental barriers shall comply with the requirements of sub-Clause 2504.6. Structural timber in environmental barriers shall be stress graded and marked to comply with MSA EN 14081-1 and where appropriate BS 4978, BS 5756 or MSA EN 519 or other grading rules accepted in BS 5268-2 and MSA EN 1912.
 - 6 For checking compliance with strength requirements, samples shall be taken by the manufacturer or supplier in accordance with the suggested sampling plan in Annex B of BS 1722-7.
 - 7 All timber and wood contained in products supplied or used for fences, including field gates and posts, stiles, bridle gates, kissing gates, and environmental barriers shall comply with sustainability criteria described in Clause 125.

305 Fittings

- 1 Bolts, screws and nuts shall comply with MSA EN ISO 4016, MSA EN ISO 4018 and MSA EN ISO 4034, for MSA EN ISO 898-1 property class 4.6 or 4.8 unless otherwise described in Appendix 3/1. Washers shall comply with BS 4320. Nails shall comply with BS 1202. Bolts washers and nails shall be galvanised to comply with MSA EN ISO 1461 unless they are stainless steel.

306 Permanent Fencing

- 1 Permanent fencing shall comply with this Clause and the additional requirements described in Appendix 3/1. All permanent fencing, unless otherwise described in Appendix 3/1, shall be erected to present a flowing alignment both in plan and elevation following approximately the level of the ground and the Contractor shall trim the ground along the line of the fence when required in Appendix 3/1. Where the ground is uneven or undulating the Contractor shall

provide extra posts, stakes and ground anchors as necessary to ensure that the bottom line wire in planting works fencing does not rise more than 50 mm above ground level. The fencing shall be neatly and effectively joined to existing hedges, fences and to other structures, unless otherwise described in Appendix 3/1. Planting works fencing shall be joined to existing boundaries providing a secure joint capable of withstanding entry by cats or larger animals.

Planting Works Fencing

- 2 Fencing for the protection of planted areas shall be as described in Appendix 3/1.

Wire Mesh to Permanent or Existing Fencing

- 3 Where required in Appendix 3/1, wire mesh shall be attached to permanent or existing fencing.
- 4 The Contractor shall check the condition of the lengths of existing fencing to which mesh is to be attached before commencing work. Where there is damage to the existing fencing, the Contractor shall report this to the Overseeing Organisation before commencing attachment of the mesh.

Fenced Tree Guards

- 5 Where required in Appendix 3/1, fenced tree guards shall be provided.

307 Permanent Fencing for Accommodation Works

- 1 Permanent fencing shall be provided for accommodation works and shall comply with this Series and the particular requirements described in Appendix 1/15.

308 Gates and Stiles

- 1 Field gates and posts shall comply with BS 3470 and Clauses 304 and 310. They shall be provided as required in Appendix 3/1.
- 2 Stiles, bridle gates, kissing gates and gates in planting works fencing shall comply with BS 5709.
- 3 Concrete for post foundations shall comply with Clause 2602.
- 4 Any additional stock proofing required to gates and stiles shall be as described in Appendix 3/1.
- 5 Where access gates are to be provided in a length of fencing that incorporates wildlife mesh, the underside of the gate shall include the measures described in Appendix 3/1.

309 Removing and Re-erecting Existing Fences and Gates

- 1 Where required in Appendix 2/3, existing fences, gates and stiles, with posts shall be carefully taken down, laid aside, removed or later re-erected in compliance with this Series as specified in sub-Clause 201.9.
- 2 Fences, gates, stiles and posts which are to be re-erected shall have any existing paint removed and shall be prepared and treated to comply with Clause 311.
- 3 If any posts, rails or lengths of fencing are removed to facilitate repairs or renewal of existing fences, the gap in the fencing shall be patrolled or closed with appropriate temporary fencing in accordance with Clause 303 together with any existing wildlife mesh attachments.

310 Preservation of Timber

- 1 Prior to preservation treatment and when the moisture content is 28% or below, determined in accordance with MSA EN 13183-1 or MSA EN 13183-2, the timber quality shall comply with Clause 304. Defects unaffected by moisture content shall not be accepted at any time.
- 2 The preservation of timber shall be specified in accordance with the system described in MSA EN 351-1 and shall comply with the UK's National Highways Sector Schemes for Quality Management in Highway Works: Sector Scheme 4 – preservative treatment of timber or any other EU 27 accreditation scheme.
 - a) Unless otherwise specified in Appendix 3/1, the preservative used shall be one which can be used in accordance with BS 8417 for use classes 3 and 4 for a desired service life of 30 years as described in (b), (c) and (d) below.
 - b) For timber used out of ground contact the retention and penetration requirements of the preservative shall be in accordance with the relevant provisions of BS 8417 (30 year specification). Assessment for compliance with these requirements shall be carried out using the scheme described in (e) and (f) below.
 - c) For timber used in ground contact where the preservative is a creosote preservative complying with MSA EN 13991, the penetration and retention requirements shall be in accordance with the relevant provisions in BS 8417 (30 year specification). Assessment for compliance with these requirements shall be carried out using the scheme described in (e) and (f) below.
 - d) For timber used in ground contact where the preservative is any other acceptable type of formulation, the penetration requirements for all timber species shall be in accordance with the relevant provisions in BS 8417 (30 year specification). The preservative retention shall be derived from BS8417 (30 years specification) and 10 years ground contact field test data (for example BS 7282), interpreted according to the

principles in MSA EN 599-1. Assessment for compliance with these requirements shall be carried out using the scheme described in (e) and (f) below.

- e) To demonstrate that the required penetration has been achieved, the sampling scheme recommended in MSA EN 351-1 for direct testing shall be followed. The number of units to be sampled at random from the treated batch shall be determined using general inspection level II as defined in ISO 2859-1. Penetration shall be determined for each selected unit from sub samples (e.g. core borings) taken as recommended in MSA EN 351-2. To determine whether the treated batch has achieved the required penetration, an acceptable quality level (AQL) of 10% for permeable timbers and an AQL of 25% for resistant timbers shall be used to establish pass/fail criteria from ISO 2859-1.
- f) A Certificate of Treatment showing the basis of compliance with the specification shall accompany each batch or part batch delivered to site.
- g) Compliance with the retention requirement within a batch of treated timber shall be calculated from the chemical analysis of the combined analytical zones of the sub samples taken to determine penetration. The retention shall be equal to or greater than the appropriate value derived as described in (b), (c) and (d) above.

311 Painting of Timber Fences, Gates, Stiles and Posts

General

- 1 Painting shall be carried out in accordance with the recommendations in the Code of Practice BS 6150.
- 2 All timber fabricated into units before delivery to the Site and which is required to be painted shall be primed at the works.

Priming

- 3 Surfaces of wood shall be clean and dry before being primed. Priming paint shall comply with either Type C primer to BS 7956 or ready mixed aluminium priming paint complying with BS 4756.

Undercoats and Finishing Coats

- 4 After erection, all exposed primed surfaces shall be painted with one coat of undercoat as described in Appendix 3/1.
- 5 Two finishing coats of the colour and type described in Appendix 3/1 shall be applied.

Coloured Wood-Stain

- 6 Coloured wood-stains shall be applied as described in Appendix 3/1.