

IMPLEMENTATION SPECIFICATION FOR ROAD **WORKS**

SERIES IM/150

ACCEPTANCE WITH PRICE REDUCTION - CRITERIA



*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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150 ACCEPTANCE WITH PRICE REDUCTION CRITERIA

151 General and Scope

- 1 This Series is part of the Specification for Road Works (Implementation). Whilst it is particularly relevant to the subject matter in its title it must be read in conjunction with the general requirements in Series 000 and 100 and with all other Series relevant to the specification for the works to be undertaken.

Exclusion

- 2 This Series shall not apply to products and materials that are within the scope of the CEN harmonised standards as described in regulation EU No. 305/2011, Construction Products Regulation (CPR).

152 Price Reduction - General

- 1 The Overseeing Organisation may carry out price reductions for non-conforming products, processes and works as described in this sub-clause and according to the relevant formulae and directions for the relevant test characteristics.
- 2 The Overseeing Organization shall not be under any contractual obligation to apply the price reductions in lieu of corrective and remedial action or rejection and full replacement .
- 3 Price reductions may be applied to single or multiple test characteristics - in the latter case the price reductions shall be added (cumulative).
- 4 Price reductions:
 - a) shall not in any way limit the actions and rights of the Overseeing Organisation in respect of the non-conforming product including the right of rejection and/or the rectification of the defect.
 - b) shall not waive the conditions of the performance guarantee.
 - c) shall not be applied as the default action in cases where normal remedial measures other than and/or in addition to the price reduction can be taken by the Contractor for the rectification of the non-compliance.

153 Price Reduction – Bituminous Mixes

Note: Price reductions will be dependent on the test evidence of a correct (normal) relationship between the mix properties which are inter-related. Abnormal value relationships in the test properties must be considered (Eg. It is abnormal that a higher test bitumen content than the mix design value would result in significantly higher voids).

Thickness

- 1 If the specified thickness is not achieved a price reduction will be calculated according to the relevant formulae in **Annex 1**.

Bitumen content

- 2 If the bitumen content does not fall within the specified tolerance when compared with the approved mix design a price reduction will be carried out in accordance with the relevant formulae in **Annex 1**.

Degree of Compaction

- 3 If the degree of compaction falls below the specified value a price reduction will be carried out to the relevant formulae in **Annex 1**.

Regularity of the Surface Course

Note: If the permissible irregularities do not exceed the number shown in Table 700-3, Series 700 the road sector under consideration is deemed to be conforming.

- 4 If the regularity exceeds the specified number of permissible irregularities, a price reduction is carried out according to the relevant formula in **Annex 1**.

154 Price Reduction – Pavement Concrete

- 1 Whenever the compressive strength of the pavement concrete is less than the compressive strength as specified a price reduction may be applied by the Overseeing Organisation.
- 2 Similarly and whenever the compacted thickness of the pavement concrete is less than specified, a price reduction may be permitted by the Overseeing Organization.
- 3 Price reductions are not applicable in cases where the Overseeing Organisation through its own expertise determines that the residual serviceability is insufficient. The Contracting Authority will examine the retained sufficiency of the serviceability in terms of safety, structural integrity, durability, performance and fitness of purpose. The levels of retained sufficiency and/or adequacy shall be determined solely by the Contracting Authority and based on measurable engineering judgement.
- 4 The price reduction will be carried out after considering the non-conformity clauses in both BS EN 206 (Cubes) and BS EN 13791 (Cores) and using the guidance in **Annex 1**.

Compressive Strength (Lower than Specified)

- 5 If the specified compressive strength is not achieved a price reduction will be calculated according to the relevant formulae in **Annex 1**.

Thickness (Lower than Specified)

- 6 If the thickness falls short of the required values a price reduction will be carried out in accordance with the relevant formulae in **Annex 1**.

Regularity of the Surface Course

- 7 If the surface regularity does not fall within the specified tolerance a price reduction will be carried out in accordance with the relevant formulae in **Annex 1**.

155 Price Reduction – Trench Concrete and Backfill

- 1 The provisions in clause 154 shall also apply over the depth of the concrete as follows:
- a) trench pipe surround concrete

- b) trench backfill

156 Price Reduction – Concrete in Structures including Structures Designed by the Contractor.

- 1 This provision shall normally be applied in respect of structures in consequence class CC2 and CC3 as defined by the Eurocode 0 and whenever the compressive strength of the structure or structural element is less than the compressive strength specified.
- 2 The price reduction will be carried out after considering the non-conformity clauses in both BS EN 206 (Cubes) and BS EN 13791 (Cores).

B3.1 Consequences classes

(1) For the purpose of reliability differentiation, consequences classes (CC) may be established by considering the consequences of failure or malfunction of the structure as given in Table B1.

Table B1 - Definition of consequences classes

Consequences Class	Description	Examples of buildings and civil engineering works
CC3	High consequence for loss of human life, or economic, social or environmental consequences very great	Grandstands, public buildings where consequences of failure are high (e.g. a concert hall)
CC2	Medium consequence for loss of human life, economic, social or environmental consequences considerable	Residential and office buildings, public buildings where consequences of failure are medium (e.g. an office building)
CC1	Low consequence for loss of human life, and economic, social or environmental consequences small or negligible	Agricultural buildings where people do not normally enter (e.g. storage buildings), greenhouses

(2) The criterion for classification of consequences is the importance, in terms of consequences of failure, of the structure or structural member concerned. See B3.3

(3) Depending on the structural form and decisions made during design, particular members of the structure may be designated in the same, higher or lower consequences class than for the entire structure.

NOTE At the present time the requirements for reliability are related to the structural members of the construction works.

Figure 1 Eurocode 0: Consequence Classes

- 3 The Overseeing Organisation and the Contractor shall agree and appoint an independent experienced structural engineer to review the compressive strength “non-conformity” taking into consideration the following criteria and outcomes:
 - a) Residual safety of the structure and the corrective action required to upgrade to the specified requirements;
 - b) Reduction of the specified structural performance over the service life in the context of the prevailing exposure class and the corrective action required to upgrade to the specified requirements;
 - c) Quantification of any limitations and restrictions on service imposed by the “non conformity”;

- d) Reduction of the specified design life (excluding non-routine maintenance) and the corrective action required to upgrade to the specified requirements;
- e) Reduction of the protection of the concrete cover to the reinforcement and the corrective action required to upgrade to the specified requirements;
- f) Reduction in fire resistance (where applicable) and the corrective action required to upgrade to the specified requirements;
- g) Reduction in seismic resistance (where applicable) and the corrective action required to upgrade to the specified requirements;
- h) Reduction in water and/or aqueous vapour tightness (where applicable) and the corrective action required to upgrade to the specified requirements;
- i) Reduction of the durability for the specified design life and the corrective action required to upgrade to the specified requirements;
- j) Increased maintenance;
- k) Increased inspections and monitoring;
- l) Increased “out of service” windows for inspection, monitoring and maintenance;
- m) Increased potential for cracking;
- n) Aesthetic and architectural devaluation in case of remedials;
- o) Immediate and /or premature necessity for the application of protective coatings to EN 1504 criteria;
- p) Other criteria as may be established by the Overseeing Organisation (Eg. liquidated damages, social costs, environmental costs, load limitations etc)

The list above is non-exclusive and may be supplemented by other characteristics as necessary.

4 The above shall be:


- a) Supported by detailed technical explanations and calculations;
- b) Presented as a measurable reduction value for each and every identified criteria (cumulative if so required) to permit a numerically quantified price reduction value in Euro.
- c) Supported by non-destructive and destructive test results as required.
- d) Should the reduced performance of any one criteria affect another this shall also be considered.

5 The Overseeing Organisation shall then examine the required rectifications – as recommended by the appointed structural engineer and additionally by its own expertise – ensuring that the structure will retain the fitness of purpose and sufficiency in terms of safety, serviceability, structural integrity, durability and performance - The levels of retained sufficiency and/or adequacy following corrective action shall be determined solely by the Contracting Authority. In cases of insufficiency the price reductions shall not be applicable. The Overseeing Organisation shall decide – following the report of the structural engineer – to apply any action necessary to safeguard its interests.

6 All costs shall be borne by the Contractor.

157 Price Reduction – ANNEX 1

1 Where applied by the Overseeing Organisation price reduction/s shall be as follow:



IM Price Reduction Guidance Document – Pavement Asphalt

Infrastructure Malta Guidance Document

Price Reductions

for

Pavement Asphalt (Series 700 and Series 900)

A. This IM Guidance Document is based on the original *FGSV (German Roads and Transportation Research Association) Specification "Additional Technical Terms of Contract and Guidelines for the Construction of Road Surfacings in Asphalt"*.

Source: FGSV Working Group on Asphalt Constructions

ZTV Asphalt StB 07 (2007)

B. The English translation is from the original in German and is the same used for the EU notification procedure of Technical Regulations

C. This IM document comprises only an extract of the German original and includes revisions by the IM QA Unit within the Projects and Implementation Section.

D. This document is complemented by worked examples and an MS Excel spreadsheet.


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Figure 2 Price Reduction for Pavement Asphalt

IM Price Reduction Guidance Document – Pavement Concrete



Infrastructure Malta Guidance Document
Price Reductions
for
Pavement Concrete (Series 1000)

A. This IM Guidance Document is based on the original *FGSV (German Roads and Transportation Research Association) Specification "Additional Technical Terms of Contract and Guidelines for Building Roadbases with Hydraulic Binders and Concrete Road Surfaces"*.

Source: FGSV Working Group on Concrete Roads

Additional Technical Terms of Contract
Concrete StB 06 (2006)
(Original) ZTV Beton StB 06 (2006)

B. The English translation is from the original in German and is the same used by Germany for the EU notification procedure of Technical Regulations (TRIS).

C. This IM document comprises only an extract of the German original and includes revisions by the IM QA Unit within the Projects and Implementation Section.

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Figure 3 Price Reduction for Pavement Concrete