

NRA ADDENDUM TO

HD 24/96

PAVEMENT DESIGN AND MAINTENANCE TRAFFIC ASSESSMENT

Standard HD 24/96 – Pavement Design and Maintenance: Traffic Assessment – is applicable in Ireland with the following amendments:

1. For the purposes of the design of new roads, the “Standard Method” (HD 24/96, Chapter 2) shall not be used. The Design Traffic for new road construction shall instead be determined using the “Structural Assessment and Maintenance Method” (HD 24/96, Chapter 3), in conjunction with growth rates to be agreed with the National Roads Authority.
2. At several locations:

For: “Overseeing Organisation”
Read: “National Roads Authority”.
3. Page 1/1, Paragraphs 1.1a and b:
Delete Paragraphs 1.1a and b and replace with:
“a) The **Standard Method**. This method shall not to be used for the design of new roads in Ireland, except as directed by Chapter 3.

b) The **Structural Assessment and Maintenance Method** is primarily used in structural assessment and in maintenance design. In Ireland, it shall also be used for all new roads.”
4. Page 1/1, Paragraph 1.2:
Delete Paragraph 1.2 and replace with:
“1.2 This Standard should be used forthwith for all schemes for the construction and/or improvement of national roads. The Standard should be applied to the design of schemes already being prepared unless, in the opinion of the National Roads Authority, application would result in significant additional expense or delay progress. In such cases, Design Organisations should confirm the application of this Standard to particular schemes with the National Roads Authority.”

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5. Page 2/1, Paragraphs 2.1 and 2.2:
Delete Paragraphs 2.1 and 2.2 and replace with:

“2.1 This method shall not be used in the design of new roads in Ireland, except as directed by Chapter 3. However, it provides useful background information.

2.2 This Standard incorporates research on wear and a traffic growth estimation based on the UK National Road Traffic Forecast (NRTF, 1989). For use in Ireland, the relevant traffic growth parameters shall be agreed with the National Roads Authority.”

6. Page 2/1, Paragraph 2.3, line 6:
Delete the final two sentences “The following . . . refer to STEAM.” and replace with:
“The following are the commercial vehicle classifications used in the UK Highways Agency’s cost-benefit analysis program COBA 9 (1981), which is used as an example throughout this Standard. These classifications should normally be used in Ireland with an alternative cost-benefit analysis program; details are to be agreed with the National Roads Authority.”
7. Page 2/1, Paragraph 2.4, Note:
Delete text and replace with:
“Note: The classification shown is the same as that in COBA 9 (1981) and is used throughout this Standard. The reclassification of OGV2 in COBA 10 (1997), to include 3-axled articulated vehicles, is not used.”
8. Page 2/1, Paragraph 2.5, line 2:
Delete “using the principles described in the Traffic Appraisal Manual (TAM, 1984)”
9. Page 2/2, Paragraph 2.11, line 1:
For: “NRTF”
Read: “the UK NRTF”.
10. Page 3/1, Paragraph 3.1, line 3:
Delete second sentence and replace with:
“In Ireland, this method shall also be used for all new roads.”
11. Page 3/1, Paragraph 3.2, line 7:
Delete third and fourth sentences “The msa values . . . comparative msa value.”

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12. Page 3/1, Paragraph 3.5:
Delete text and replace with:
“3.5 This Standard refers to the UK National Road Traffic Forecast (NRTF, 1989) by means of an example. That document predicts future trends, giving both upper and lower estimates but, for conservative design, the upper estimate can reasonably be taken. In Ireland, the traffic growth predictions shall be agreed with the National Roads Authority.”

13. Page 3/1, Paragraphs 3.8 and 3.9:
Delete text and replace with:

“3.8 Figure 3.1 shows how to derive the Growth Factor (G) using the Growth Rate and Design Period. The bold lines in Figure 3.1 are UK NRTF growth lines for PSV+OGV1 and for OGV2. In Ireland, the actual growth rates for specific groups of vehicles shall be agreed with the National Roads Authority and used in Figure 3.1.

3.9 If past traffic is being calculated, the growth factor applicable is given in Figure 3.2. As in Figure 3.1, UK NRTF growth lines are shown for PSV+OGV1 and OGV2. In Ireland, the actual growth rates shall be agreed with the National Roads Authority and used in Figure 3.2.”

14. Page 3/5, Paragraph 3.11, line 3:
For: “NRTF”
Read: “UK NRTF”.
15. Page 3/5, Paragraph 3.14, line 1:
For: “national”
Read: “UK national”.
16. Page 3/5, Paragraph 3.14, line 12:
Add the following:
“These factors are adopted for use in Ireland.”
17. Page 3/5, Paragraph 3.16, line 4:
For: “national”
Read: “UK national”.

18. Page 3/5, Paragraph 3.17:
After Paragraph 3.17 insert additional Paragraph 3.17A:

“3.17A To ensure that the msa value derived from the above equation does not lead to a pavement design that is thinner than has proved historically acceptable, a minimum msa value shall also be determined by using the Standard Method from Chapter 2 and interrogating the appropriate chart (Figures 2.1 to 2.4). Each of these figures includes a cut-off line which, for a given traffic flow at opening, produces a minimum msa value.

The greater of the two msa values derived using the Structural Assessment and Maintenance Method (Chapter 3) and the Standard Method (Chapter 2) shall be used in the design of the road.”

19. Page 5/1, References:
Delete reference for 1984 and replace with:
“**1997**

DMRB Volume 12: Traffic Appraisal of Road Schemes:
Section 1: Traffic Appraisal Manual (TAM).

DMRB Volume 13: Economic Appraisal of Road Schemes:
Section 1: The COBA Manual (COBA10).”

20. Page 6/1, Chapter 6:
Delete text and replace with:
“6.1 All technical enquiries or comments on this Standard should be sent in writing to:

Head of Project Management and Engineering
National Roads Authority
St Martin’s House
Waterloo Road
Dublin 4”.



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E O’CONNOR
Head of Project Management and
Engineering