

ASHGHAL

Interim Advice Note No. 022

Technical Approval of Highway Structures

Revision No. A1

EXW-GENL-0000-PE-KBR-IP-00022

Summary

This Interim Advice Note (IAN) provides the requirements for the Technical Approval of highway structures. This IAN takes immediate effect and is applicable to highway structures only.

This document supersedes IAN 022 Rev 0 dated November 2012. Third parties not working on Ashghal projects make use of this document at their own risk. Paper copies of this document are uncontrolled. Refer to Ashghal's website for the most recent version.



Rev	Date	Reason For Issue	Auth	Chk	App
A1	Sept 2013	Issued for All Relevant Infrastructure Projects	DL	AM	AA
0	Nov. 2012	Issued for Expressway Projects	IF	EDF	MG

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INTERIM ADVICE FOR PWA PROJECTS ONLY

1. Foreword

- 1.1 Interim Advice Notes (IAN) may be issued by Ashghal from time to time. They define specific requirements for works on Ashghal projects only, subject to any specific implementation instructions contained within each IAN.
- 1.2 Whilst IANs shall be read in conjunction with the Qatar Highway Design Manual (QHDM), the Qatar Traffic Manual (QTM) and the Qatar Construction Specifications (QCS), and may incorporate amendments or additions to these documents, they are not official updates to the QHDM, QTM, QCS or any other standards.
- 1.3 Ashghal directs which IANs shall be applied to its projects on a case by case basis. Where it is agreed that the guidance contained within a particular IAN is not to be incorporated on a particular project (e.g. physical constraints make implementation prohibitive in terms of land use, cost impact or time delay), a departure from standard shall be applied for by the relevant Consultant / Contractor.
- 1.4 IANs are generally based on international standards and industry best practice and may include modifications to such standards in order to suit Qatar conditions. Their purpose is to fill gaps in existing Qatar standards where relevant guidance is missing and/or provide higher standards in line with current, international best practice.
- 1.5 The IANs specify Ashghal's requirements in the interim until such time as the current Qatar standards (such as QHDM, QTM, etc.) are updated. These requirements may be incorporated into future updates of the QHDM, QTM or QCS, however this cannot be guaranteed. Therefore, third parties who are not engaged on Ashghal projects make use of Ashghal IANs at their own risk.
- 1.6 All IANs are owned, controlled and updated as necessary by Ashghal. All technical queries relating to IANs should be directed to Ashghal's Manager of the Design Department, Infrastructure Affairs.

Signed on behalf of Design Department:

Abdulla Ahin A A Mohd

Acting Manager of Roads & Drainage Networks Design

Design Management (Roads Section)
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2. Ashghal Interim Advice Note (IAN) – Feedback Form

Ashghal IANs represent the product of consideration of international standards and best practice against what would work most appropriately for Qatar. However, it is possible that not all issues have been considered, or that there are errors or inconsistencies in an IAN.

If you identify any such issues, it would be appreciated if you could let us know so that amendments can be incorporated into the next revision. Similarly, we would be pleased to receive any general comments you may wish to make. Please use the form below for noting any items that you wish to raise.

Please complete all fields necessary to identify the relevant item			
IAN title:			
IAN number:		Appendix letter:	
Page number:		Table number:	
Paragraph number:		Figure number:	
Description comment:			
Please continue on a separate sheet if required:			
Your name and contact details (optional):			
Name:		Telephone:	
Organisation:		Email:	
Position:		Address:	

Please email the completed form to:

<p>Abdulla Ahin AA Mohd</p> <p>Acting Manager of Roads and Drainage Networks Design Design Management (Roads Section) Public Works Authority</p> <p>aahin@ashghal.gov.qa</p>
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We cannot acknowledge every response, but we thank you for contributions. Those contributions which bring new issues to our attention will ensure that the IANs will continue to assist in improving quality on Ashghal's infrastructure projects.

3. Introduction

- 3.1 This Interim Advice Note (IAN), which takes immediate effect, provides the requirements for the Technical Approval of highway structures.
- 3.2 Technical Approval of highway structures shall be in accordance with BD 02 'Technical Approval of Highway Structures' of the Design Manual for Roads and Bridges (DMRB) produced by the Highways Agency (UK) as amended and/or supplemented by this document.
- 3.3 Terms and expressions in this document shall have the same meaning as in BD 02. Structures shall be categorised as shown in Appendix A.
- 3.4 Approval in Principle (AIP) documents are required for Category 1, 2 and 3 structures. AIP documents are not required for Category 0 structures. AIP documents shall be prepared in accordance with Ashghal IAN 007.

4. Withdrawn / Amended Standard

- 4.1 Not applicable.

5. Implementation

- 5.1 This IAN is to be used with immediate effect on projects as follows:
 - All Ashghal projects in Design Stage
- 5.2 The only exceptions are:
 - Projects where the technical approval process for highway structures has commenced.
- 5.3 If in doubt, Consultants / Contractors should seek guidance from the respective Ashghal Project Manager or designated Programme Management Consultant (PMC) on a scheme specific basis.

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Appendix A – Technical Approval of Highway Structures

INTERIM ADVICE FOR PWA PROJECTS ONLY

Interim Advice Note 022: Technical Approval of Highway Structures - Category of Proposals

These criteria replace the criteria given in BD 02 of the United Kingdom Design Manual for Roads and Bridges.

Where Designers are unsure of the appropriate category for a structure, they should consult the respective Ashghal Project Manager or designated Programme Management Consultant (PMC) on a scheme specific basis.

Category	Structure Type	Criteria
Structures not Requiring Technical Approval	Traffic Sign/Signal Posts	Posts of less than 7m in height, i.e. the vertical distance from top of post to bottom of flange plate or top of foundation whichever is the lesser.
	Earth Retaining Structures	Effective Retained Height < 1.5m; (Effective Retained Height is the level of the fill at the back of the structure above the finished ground level in front of the structure).
Category 0	Lighting Columns	For steel, aluminium, FRPC and concrete columns: (i) post top columns < 20 m nominal height (ii) columns with brackets < 18 m nominal height (iii) bracket projections - not exceeding the lesser of 0.25 x nominal height or 3 metres
	CCTV Masts	Nominal height of steel CCTV masts ≤ 25m. The nominal height is taken as the vertical distance between the underside of the flange plate and the top of the mast. NOTE: The nominal height excludes the height of camera, mounting etc (refer to Figure 1). The design height of a CCTV mast shall be taken as the vertical distance between the underside of the flange plate and the top of the CCTV mast or camera in its operating position, or other attachments, whichever is greater. NOTE: The "design height" is different to the "nominal height" and is required for wind loading calculations (refer to Figure 1).
	Cantilever Masts	For cantilever masts, as shown in Figure 1: (i) Nominal Height ≤ 8.5m, where nominal height is taken as the distance between the underside of the flange plate and the highest point on the mast. (See Figure 1.) (ii) Cantilever Projection ≤ 8.5m. (iii) The horizontal projected area of any signs, traffic signals, speed cameras and associated equipment, suspended above the carriageway shall not exceed 1.2m ² and the vertical projected area shall not exceed 0.3m ² .
	Traffic Sign/Signal Posts	7.0m ≤ Nominal height ≤ 9m.
	Earth Retaining Structures	1.5m ≤ Effective Retained Height < 2.0m; (Effective Retained Height is the level of the fill at the back of the structure above the finished ground level in front of the structure).
	Bridges and Tunnels	(i) Single span simply supported structures with span of less than 5m. (ii) Buried concrete boxes, buried rigid pipes and corrugated steel buried structures of less than 3m clear span/diameter and having more than 1m cover. (iii) Multi-cell buried structures, where the cumulative span is less than 5m, and having more than 1m cover.

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Category	Structure Type	Criteria
Category 1	Lighting Columns, CCTV Masts, Cantilever Masts, Traffic Sign/Signal Posts	Structures not included in Category 0.
Category 2	Sign or signal gantries above Carriageways (portal and cantilever)	Cantilever: All Portal: Clear span \leq 50m
Category 3	Sign or signal gantries above Carriageways (portal)	Structures not included in Category 2.
	Earth Retaining Structures	Structures not included in Category 0.
	Bridges and Tunnels	Structures not included in Category 0.

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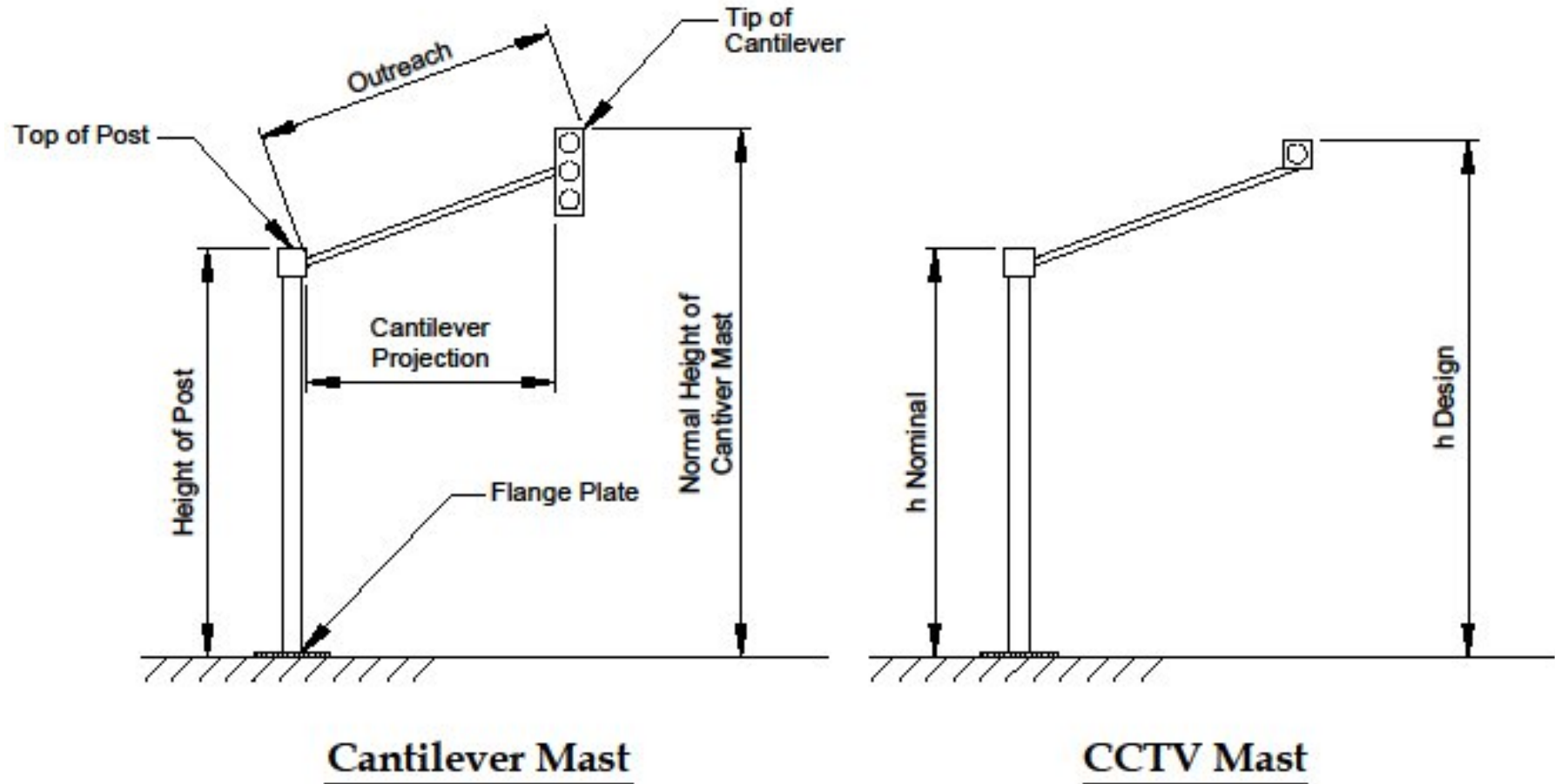


Figure 1 General Arrangement of Cantilever Mast and CCTV Mast