Bridge barriers in relation to the crash testing standards

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Summary

This document aims to review and compare the information on the function, level of service, design and specific types of bridge parapets used under the two most widely recognized and accepted crash-testing standards viz. American NCHRP Report 350 and European Union EN 1317.This document will help to promote discussion and raise issues on the use of traffic parapets associated with bridges or similar structure in developing countries around the world where such standards and testing facilities are not presently in place . Reference to research documents and codes is made within the text.

1. Introduction

Parapet is a safety barrier installed on the edge of a bridge or on a retaining wall or similar structure where there is a vertical drop and which may include additional protection and restraint for pedestrians and other road users.

Basically two types of barriers exist on bridges, these being:

- traffic barriers; and
- pedestrian barriers.

Pedestrian barriers are typically the post/baluster type. Traffic barriers however come in a variety of configurations to suit particular circumstances, including flexible, semi-rigid, rigid beam and post, and rigid concrete barriers. Concrete parapets are preferred in some places as they present a cleaner fascia and have improved noise attenuation characteristics. Post/baluster type traffic barriers improve the visibility options where such measures are endorsed.

2. Pedestrian Barriers

Pedestrian barriers on road bridges and footbridges are required to safeguard pedestrians and/or cyclists and are not a vehicle restraint system; i.e. they are not designed to resist the penetration of an errant vehicle. These are designed for applications where there is a likely hood of a fall from height.

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