Zeitschrift:	IABSE reports = Rapports AIPC = IVBH Berichte	
Band:	83 (1999)	
Artikel:	Performance based seismic design for bridges	
Autor:	Murillo, Juan / Cooper, Thomas / Krimotat, Alex	
DOI:	https://doi.org/10.5169/seals-62882	

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. <u>Mehr erfahren</u>

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. <u>En savoir plus</u>

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. <u>Find out more</u>

Download PDF: 22.07.2025

ETH-Bibliothek Zürich, E-Periodica, https://www.e-periodica.ch

Performance Based Seismic Design for Bridges

Juan MURILLO	Thomas COOPER	Alex KRIMOTAT
Senior Vice President	Sr. Supervising Engineer	Vice President
Parsons Brinckerhoff	Parsons Brinckerhoff	SC Solutions, Inc.
San Francisco, CA, USA	Sacramento, CA, USA	Santa Clara, CA, USA
Born 1945, received his MSCE from Rensselaer Polytechnic Institute. He is currently a senior technical director for design of major structures.	Born 1960, received his civil engineering degree from California State University, Sacramento. He is currently the leader of a bridge design group in PB's Sacramento office.	Born 1953, received his civil engineering degree from University of Florida. He is currently the Vice President of SC Solutions' structural engineering division.

Abstract

Performance criteria have been implemented by public works owners that require bridges to remain standing, and to be without significant damage following severe ground shaking. Based on project experience in California and other parts of the U.S., this paper will discuss the resulting design philosophy often referred to as performance based design.

This design philosophy can be applied to three key types of seismic design:

- 1. Identification of level of damage and collapse mechanisms
- Designing for limited or no damage under the "design life" earthquake (250 300 year return 2. period).
- 3. Designing for no collapse, limited damage, or no damage under the maximum credible earthquake (2000 - 3000 year return period).

This design philosophy has been developed into design production tools intended to predict levels of damage and to establish behavioural envelope for structures where the expected performance was established as "no collapse" by the design criteria. Key areas of discussion related to both concrete and steel bridges include:

- 1. Design using displacement based analysis.
- Methodology for Performance Based Design 2.
- Design of new structures to meet serviceable performance criteria under design seismic 3. events.

Leere Seite Blank page Page vide