

State of art of structural requirements on Chilean Bridge during 20th Century.

Matias A. Valenzuela*, Enrique Calderon[†] and Marcelo Marquez[†]

* Escuela de Ingeniería en Construcción
Pontificia Universidad Católica de Valparaíso (PUCV)
Brasil 2147, Valparaíso, Chile
e-mail: matias.valenzuela@pucv.cl, web page: <http://www.pucv.cl>

[†] Dirección de Vialidad (MOP)
Ministerio de Obras Públicas de Chile
Morandé 59, Santiago, Chile
Email: marcelo.marquez@mop.gov.cl - Web page: <http://www.mop.cl>

Proposed topic (optional): Historical and old bridges.

Special Session: [SS08] Rehabilitation and Heritage on Iberoamerican Road Structures

ABSTRACT

Currently, the main typology of bridges in Chile are simple supported system with multi-support spans considering a superstructure with prestress girder and concrete slab.

This typology achieve requirements of the Chilean code on design, construction and maintenance (Manual de Carreteras), which is under the framework of the AASHTO Standard code and LRFD recommendations. On the other hand, in the begging of the 20th century the main typology in Chile was a continuous girder of reinforcement concrete with a short main span and design criteria by national and international bridge engineers experience. After several extreme events (earthquake, among others), the learnt lessons have allowed at the beginning of 80 decade, it provided to Chile a comprehensive Design Code with international standards.

Despite of, the management programs and maintenance activities are not just apply on the current typology, for that reason an historical review of the main structural requirement is mandatory in order to take an adequate decision for intervention on old bridges.

This paper provides the state of arts of the historical technical review of the Chilean bridges from the decade 20 to 90, with special focus on seismic provisions and heritage and structural superstructure details. The analysis provide a specific approach of the design and construction issues, as well as the use of material and impact of that decision on the performance of Chilean bridges.

REFERENCES

[1] MOP. *Manual de Carreteras, Volumen N°3, Instrucciones y Criterios de Diseño, Capítulo 3.1000*, Dirección de Vialidad, Ministerio de Obras Públicas, Chile. (2010).

[2] MOP. (n/d) *Bridges Drawings*, Departamento de Puentes, Dirección de Vialidad. Santiago, Chile.