
**Environmental management for
concrete and concrete structures —**

**Part 4:
Environmental design of concrete
structures**

*Management environnemental du béton et des structures en béton —
Partie 4: Conception environnementale des structures en béton*

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Foreword

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The committee responsible for this document is Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 8, *Environmental management for concrete and concrete structures*.

A list of all the parts in the ISO 13315 series can be found on the ISO website.

Introduction

Environmental management is essential for properly estimating the negative and positive environmental impacts brought about by a construction project in order to reduce the environmental burden and create environmental benefits. Environmental considerations for a structure, in particular, are to be carried out at the design stage and be integrated with conventional structural design and durability design. To this end, standardization of the design procedure for environmental design becomes a necessity.

ISO 14040 stipulates the principles and framework of lifecycle assessment (LCA) for the environmental management of products and services. However, it is somewhat difficult to apply this to structures with extremely long lifecycles, such as infrastructures and building structures.

The use of concrete, a key construction material, accounts for a particularly large part of the environmental impacts related to construction projects. If the environmental impacts related to a concrete structure are accurately dealt with to achieve environmental design, this can enable a dramatic reduction in the environmental burden for the construction project as a whole and increase the environmental benefits. Therefore, a method of environmental design specifically for concrete structures is essential and led to the development of this document.

In the environmental design of a concrete structure, appropriate specifications for materials and structural details are established based on LCA. ISO 13315-1 stipulates the principles of environmental consideration for concrete and concrete structures while ISO 13315-2 stipulates the system boundaries necessary for carrying out LCA and the inventory data to be acquired.

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