

## Structural Design of Cooling Towers

**VGB Guideline  
on the Structural Design, Calculation, Engineering  
and Construction of Cooling Towers**

**VGB-R 610 e**

2010 edition

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## Preface to the 2010 edition

This Guideline, “Structural Design of Cooling Towers” continues to constitute the joint basis – together with VGB-R 135 e, “Planning of Cooling Towers” [1], and VGB-R 612 e, “Protection Measures on Reinforced Concrete Cooling Towers and Chimneys against Operational and Environmental Impacts“ [2] – for the civil engineering-related planning including design, construction and approval as well as the construction of cooling tower facilities built from reinforced concrete. It is based on around forty-five years of experience in the construction of cooling towers gained by plant and structural design engineers, by construction companies, check-up engineers and operators. In addition, Guideline VGB-R 613 e, “Code of practice for life cycle management of reinforced concrete cooling towers at power plants” [3] presents notes on in-process inspection and maintenance.

In anticipation of the impending introduction of the DIN EN 1991 and DIN EN 1992 series of standards and other applicable European regulations, adaptation of the 2005 edition of this Guideline was seen to be necessary; it is replaced by this 2010 edition. New findings from continued engineering studies and feedback from practice have also necessitated modifications. In particular, updated partial safety factors and combination factors for wind and temperature actions and enhanced aspects of concrete technology have been incorporated in this 2010 edition.

This Guideline does not cover contractual arrangements with responsibilities for organizational workflows. These are to be defined separately by the contractual parties. Users are requested to inform the VGB Office of their experience with the application of this Guideline and any sources of possible misinterpretation or shortfalls in presentation, and to make suggestions for improvements. These may be taken as a basis for future additions or amendments.

This 2010 edition has been compiled and edited by the following members of a Project Group on “Civil Engineering for Cooling Towers” constituted by the VGB Working Panel on “Stacks, Cooling Towers and other Special Constructions” within the VGB Technical Committee on “Civil Engineering”:

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