

vgbe-Standard

Design and operation of cooling towers

VGBE-S-135-00-2024-05-EN
(formerly VGB-R 135e and VGB-R 129)



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Preface

This new vgbe standard “Design and Operation of Cooling Towers” is intended to replace the old guidelines VGB-R 135e* “Planning of Cooling Towers” and VGB-R 129* “Recommendations for Winter Operation of Power Plant Wet Cooling Towers” (German version only, “VGB-Empfehlung über den Winterbetrieb von Kraftwerks-Naßkühltürmen”). Its purpose is to summarise existing information on essential aspects of this subject area for planners and operators. The focus is no longer solely on natural draught cooling towers: the new standard also deals with cooling towers and cell cooling systems with induced or forced draught fans in all construction and operating modes of power plant technology. These are described in the extended introductory chapter “Cooling modes and cooling methods”.

The chapters on installation, calculation methods, components and protective measures for cooling towers have been completely revised and expanded, also taking into account special cases such as hybrid cooling towers and waste gas injection.

The chapters on “Energy efficiency in the design and operation of recooling systems” and “Hygienic aspects”, which are of particular importance in view of the need to save energy and the legionella problem, have been newly compiled.

The chapter on recommendations for winter operation now also takes account of the special features of cooling towers with fans and cell coolers.

In conjunction with the VGB/VGBE standards VGB-S-610 “Structural Design of Cooling Towers” and VGBE-S-455 “Cooling Water Systems and Cooling Water Treatment”, this standard contributes to a better understanding of the planning, design and operation of evaporative cooling systems. Specific operating conditions and requirements, and technical information, are described in a coordinated form – with the agreement of manufacturers and operators – in order to achieve uniform technical, and economic conditions which promote but do not distort competition, leading to the submission of comparable bids and facilitating cooperation between the parties involved in the planning of cooling tower systems.

The full or partial application of the standard is not mandatory, and therefore must be agreed between the purchaser and the supplier. No liability is incurred for the factual correctness of the information presented. The user is responsible for clarifying patent rights and other industrial property rights.

Relevant standards and regulations must be complied with in all cases.

Essen, January 2024

vgbe energy e.V.

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