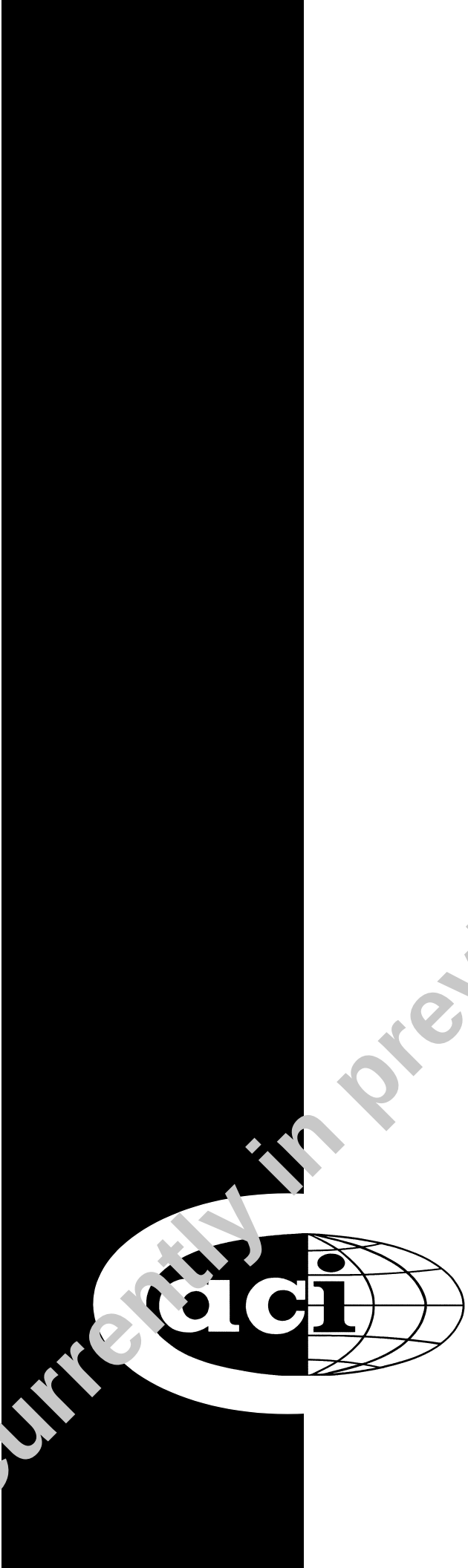
ACI 207.4R-05

(Reapproved 2012)

Cooling and Insulating Systems for Mass Concrete

Reported by ACI Committee 207



American Concrete Institute®

First printing
October 2005

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Cooling and Insulating Systems for Mass Concrete

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ISBN 0-087031-191-3

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The need to control volume change induced primarily by temperature change in mass concrete often requires cooling and insulating systems. This report reviews precooling, postcooling, and insulating systems. A simplified method for computing the temperature of freshly mixed concrete cooled by various systems is also presented.

Keywords: cement content; coarse aggregate; creep; formwork; heat of hydration; mass concrete; modulus of elasticity; precooling; postcooling; pozzolan; restraint; specific heat; strain; stress; temperature rise; tensile strength; thermal conductivity; thermal diffusivity; thermal expansion; thermal gradient; thermal shock.

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ACI 207.4R-05 supersedes 207.4R-93 (Reapproved 1998) and became effective August 15, 2005.