

11. Effectiveness of Curing for Lining Concrete

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For curing lining concrete in mountain tunnels, concrete is coated with membrane curing agents or sealed curing platforms are used (a balloon is used for curing). Performance was assessed for the two curing methods by measuring in the field the strain and stress of lining concrete, and the temperature and relative humidity in the tunnel. As a result, it was found that keeping the relative humidity on concrete surface at 85% or higher was effective for controlling cracking and that the heat-retention effect of balloon curing reduced the thermal gradient in and out of concrete and controlled cracking. Also identified by field measurement were the heat- and humidity-retention effects of the draft prevention system installed for preventing concrete surface from drying owing to the draft after the tunnel broke through.

Key words : lining concrete, curing, measurement