

## A SERIES OF STUDY ON SURFACE LAYER CONCRETE QUALITY

Noboru Yuasa

Professor, Nihon University

Inhomogeneity of structural concretes at the surface was studied in terms of pore structures and moisture distributions associated with drying immediately after demolding. Lowering of the moisture content started at the surface and decreased, at the age of 28 days, within 5 cm from the surface without regards to the difference in the water-cement ratio. The surface part has less bound water content than the interior part when drying started earlier and the water-cement ratio became smaller. When the specimen was closer to the surface and subjected to drying at earlier stages, total pore volume and partial pore volume larger than 18 to 32 nm increased, which can be attributed to an interruption of hydration reactions. These were made a base, and a series of study developed with decrease of surface layer strength, decrease of resistance for the deterioration of reinforced concrete structure and the troubles of the finish materials for concrete.