SM7S_12287

XXI International Congress of Theoretical and Applied Mechanics
Warsaw, Poland, August 15–21, 2004

Non-Gap Design Method and Test for Post-Tensioned Prestressed R.C. Structure

Li Lijuan, Liu Feng, Fu Ganqing, Lu Weiwen

Guangdong University of Technology, China

A non-gap design method is introduced, which includes using post-poured concrete strips, cold-rolled ribbed welded steel grids and post-tensioned pre-stressed concrete beams. The purpose of the method is to resist cracking of the slabs.The method was used despite the general requirement for setting gaps in slabs exceeding 40 m long in the Chinese code of practice. The purposes of the test are to confirm that the concrete strain is within the desired limits and the stress can be transferred to slabs evenly from beams as expected. The test was carried out before the pre-stress was applied and lasted for one year after pre-stress construction finished. The stresses and their variations on different slabs and at different locations were measured. Test results showed that the strains met the requirements of the code of practice and the new design tech-nique used in this new building is effective and can be extended to the design of similar structures.

View the extended summary