

COMPARATIVE STUDY OF WHEEL LOAD STRESS AND WARPING STRESS ON CONCRETE PAVEMENTS

ARUN W. DHAWALE¹ & VISHWANATH. M²

¹ Associate Professor & PG Coordinator, Department of Civil Engineering, JSPM's Imperial
College of Engineering & Research, Pune, Maharashtra, India

² Post Graduate Student, JSPM's Imperial College of Engineering & Research, Pune, Maharashtra, India

ABSTRACT

The stresses in rigid concrete slabs result from wheel load and from slab movement induced by moisture loss and temperature changes across the depth of the slab. This paper presents comparative study of thickness design of concrete pavements considering the action of wheel loads and linear temperature distribution by using westergaard method. Warping stress caused by difference in moisture content between the top and bottom of the slab. The stresses arising from temperature difference are equal in importance those caused by heaviest loads. An important conclusion of this study is that warping stress responses were more significant than wheel-load stress.

KEYWORDS: Concrete Pavement, Temperature, Wheel Load Stress, Warping Stress