ANALYSIS OF THE DYNAMIC LOAD APPLIED TO A CELLULAR COMMUNICATION MAST AND A CEILING PANEL ON WHICH IT RESTS

Installation of antenna masts and towers that have cellular signal transmission equipment mounted represents a relevant problem in the urban development. Given its density, as well as the multiplicity of multistory residential and office buildings, masts can be mounted onto existing buildings and structures. For this purpose, the analysis of a metal mast itself and a ceiling panel on which it is to rest should be performed in respect of different types of loading. This task is of utmost importance, since original designs of buildings fail to take account of any supplementary static or dynamic loads. Numerical and analytical methods are used for the purpose of the analysis. The analysis of cellular signal transmission masts is performed numerically with the help of a software programme, while the calculation of the ceiling panel is performed on the basis of a combined scheme. As a result, the authors demonstrate the safety of installation of high-altitude masts onto existing structures exposed to varying loads, including wind and ice loads.

**Key words**: metal mast, dynamic load, vibrations of buildings and their elements, numerical and analytical methods, dynamic characteristics.

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About the authors: Bakhtin Vadim Fedorovich — Director, Civil Engineering Department, Expert Open Joint Stock Company, 82 Konstruktorov St., Voronezh, 394038, Russian Federation, +7 (473) 278-89-91;

Chernikov Igor’ Yur’evich — Specialist in Examination of Buildings and Structures, Civil Engineering Department, Expert Open Joint Stock Company, 82 Konstruktorov St., Voronezh, 394038, Russian Federation, +7 (473) 278-89-91;

Loktev Alexey Alexeevich — Candidate of Physical and Mathematical Sciences, Associated Professor, Department of Theoretical Mechanics and Aerodynamics, Moscow State University of Civil Engineering (MGSU), 26 Yaroslavskoe shosse, Moscow, 129337, Russian Federation, aaloktev@yandex.ru; +7 (499) 183-24-01.