Free Vibration of Orthotropic Plate with Four Clamped Edges

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Abstract : The explicit solutions for the natural frequencies and mode shapes of the orthotropic rectangular plate with four clamped edges are presented by the double finite cosine integral transform method. In the analysis procedure, the classical orthotropic rectangular thin plate is considered. Because only are the basic dynamic elasticity equations of the orthotropic thin plate adopted, it is not need prior to select the deformation function arbitrarily. Therefore, the solution developed by this paper is reasonable and theoretical. Finally, an illustrative example is given and the results are compared with those reported earlier. This method is found to be easier and effective. The results show reasonable agreement with other available results, but with a simpler and practical approach.