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Design and Analysis of Steel Wire Rope of 2 Ton Overhead Crane

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Abstract

Multi-strand wire rope designs and analyses for crane use have been reported. The major goal of this study is to determine the safest methods for handling wire ropes while extending their lifespan through bending and fatigue tests that are carried out on rope specimens until they fail. This is a suggestion for measuring the stress level of the inner and outer strand of wire. To construct a model for axial force and bending moment, various methods are employed. In order to make a critical comparison of the analyzed and tested methodologies, the analytical results of wire rope have been compared with experimental data acquired on the rope (modulus of elasticity, wire fatigue tests, rope bending fatigue tests).

Keywords

Steel wire rope, life cycle, fatigue failure

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