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Failure analysis and design of wire rope with protection system to argon rinsing station

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Maintenance and overhaul of Mechanical Machinery in industries like steel, automotive is an inevitable task. Situations sometimes demand not just repair of components but sometimes modifications of existing components could be the need for continuous production. Factor of Safety is the most important characteristic of a material used in designing component like Wire rope. The key factors which control Factor of safety are impact strength of material (Wire rope case) and ultimate stress or load encountered in working conditions. If the Factor of safety is not properly chosen for design of various components like load bearing material of a crane or for material used in construction of bridges: it can lead to serious and fatal damage to Human life and property. Successful operation therefore requires careful design. The design of equipment, however, is not limited to the dynamic aspects, since it is a truly interdisciplinary task. Standard design procedures suggest splitting complex systems into manageable sub-components. This method is shown to neglect interactions between individual components and as a consequence leads to suboptimal solutions. In this aspect the project is undertaken with prime purpose to design a wire rope capable of handling impact loads (usually two times of static load) encountered in Lifting stations which are primarily used for transportation of heavy materials which are in certain cases needed to be lifted vertically where high impact loads are visible.

Biography

V Shiva Prasad has completed his Bachelors of engineering in Mechanical at the age of 23 years from Andhra University (Visakhapatnam, India). He is a Design Engineer focusing on Design Of Automotive components and Goodyear Tire and Molds Design working for Tech Mahindra Limited (Fifth largest provider of IT solutions in the world).

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