

A COST EFFECTIVE SOLUTION FOR MECHANICAL SPRING BUFFERS IN ELEVATORS IN COMPLIANCE WITH IS 17900

Aadiv Shah, Nilesh Shah**
Modern Engineering and Spring Company, India

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ABSTRACT

IS 17900 issued by the Bureau of Indian Standards comes with changes in requirements for mechanical spring buffers and introduces stricter requirements for elevator safety and performance. As elevator manufacturers adapt to these changes, ensuring compliance while maintaining cost efficiency is crucial. This paper examines the updated standard and demonstrates how the advanced manufacturing processes at Modern Engineering and Spring Company (MESCO Springs) enable full compliance without increasing costs.

As per IS 17900 (5.8.2), mechanical spring buffers must achieve a total stroke (minimum 65mm) of at least $0.135 v^2$ (in meters) for 115% of the rated speed, while withstanding a static load of 2.5 times the combined mass of the car and its rated load. Our spring buffers with a minimum stroke of 67 mm with load capacities up to 8200 kgs meet these requirements for elevators carrying 26 passengers and 1.0 m/s. Through optimized material usage and precision engineering, we ensure compliance with these critical safety benchmarks while maintaining cost-effective production.

By aligning with the new standard, our springs provide a seamless transition for industry stakeholders, ensuring enhanced durability, safety, and operational efficiency. This paper highlights the role of process innovation in delivering a market-ready solution that meets evolving industry demands. This paper also explores the rigorous load vs deflection testing procedures carried out for each batch of the springs.