Laboratory Co-op Work at Preformed Line Products

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INTRODUCTION

I spent the summer of 2022 working in the vibration area of the laboratory of Preformed Line Products. The majority of my time there was spent performing damper efficiency testing on Vortx Dampers, a PLP product.

OBJECTIVES

The objective of testing the Vortx Damper through efficiency testing is to determine the length of cable in meters that the damper will protect from wind-induced aeolian vibration. Doing this ensures that clients will be able to purchase the correct dampers to protect their power lines.

METHODS

- Testing is performed on a 98.5 foot length of cable.
- An electromagnetic shaker will shake the span at various tuned resonant frequencies determined by the lab technician.
- Accelerometers at nodes, antinodes and dampers are used to determine protected length.
- Recorded data is sent to the engineer.
- Engineer determines whether the damper is performing up to specification.

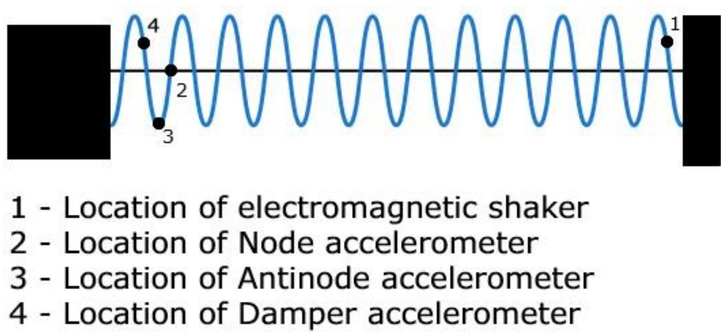

Figure 1. Image of span with locations of shaker and accelerometers.

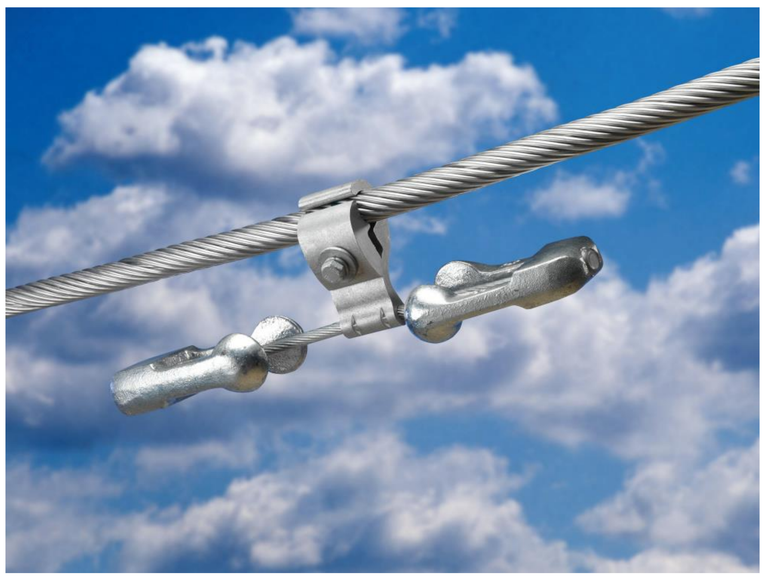

Figure 2. Image of a Vortx Damper.

RESULTS

- I tested many dampers during my summer
- Several of the dampers I tested did not pass, and as such were able to be redesigned before being released to consumers.
- I returned to the lab at PLP for 3 weeks during Christmas break, and in the last week I trained the next co-op to run the damper efficiency testing.

Figure 3. Support tower with various PLP products attached.

CONCLUSIONS

My time testing dampers in the lab gave me an excellent understanding of how testing at PLP works, and how several different PLP products are manufactured. It set me up very well for my current part-time position as a Technical Support Engineer with PLP.

Figure 4. PLP Logo.

FUTURE WORK

As I transition from part time to full time as a Technical Support Engineer at PLP, I will be given more large-scale projects and engineer more solutions to challenges I am presented with. My time in the lab set me up for great success as an engineer at PLP and wherever I may end up later in life, ingraining excellent habits of maintaining thorough and complete documentation of everything I do on the job.

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