

Spacer-Damper



Four spiral armor rods hold the end of the arms to the conductors, around which they wrap over a length of more than 1 m, ensuring a reliable grip. Conductor fatigue tests have demonstrated that the attachment mechanism has twice the vibration resistance of bolted cable clamps, while creating significantly less local stress and avoiding friction at the points of attachment.

The articulation consists of cylinders that bend as the arms shift in angle. This bending gives the articulation its elastic and damping properties.

Spacer-dampers are used to counter wind-induced oscillations and vibrations —phenomena that may cause major damage to overhead lines. Finding that existing systems failed to dampen vibrations sufficiently, tended to age prematurely, and damaged conductors at the points of attachment, Hydro-Québec launched an R&D program. A new design of spacer-damper was developed in 1979 under that program.

The design features a novel articulated structure giving the spacer-dampers unequalled strength, and a flexible mechanism for attaching them to conductors using spiral armor rods. Recognized as effective, robust and providing protective conductor attachment, the new spacer-dampers have been installed on all new Hydro-Québec lines built since 1980. They have also been used to replace older models on the grid.

The system has helped the company make its lines more reliable and improve electrical service. Manufactured under licence by a number of companies both in Québec and abroad, the spacer-damper is marketed around the world and is now an international emblem of technical achievement for Hydro-Québec. More than 800,000 of these spacer-dampers have been installed on Hydro-Québec lines and elsewhere in the world.

Advantages and specifications

- > Spacer-damper system
 - Recognized effectiveness, robustness and protective conductor attachment
 - Maintenance-free so lower costs
- > Novel articulated design providing unequalled strength
- > Flexible attachment
- > Optimal distribution along lines

Performance through innovation

- > Fatigue-proof articulated arms
- > Highly reliable attachment mechanism
- > Proven effectiveness in conductor vibration control
- > Maintenance-free

Spacer-damper models

The spacer-dampers illustrated are also available with a conventional attachment mechanism (bolted cable clamp), which is suitable for regions with a temperate climate.

Spiral armor rod and bolted attachment

- > Standard model for quad bundles, designed for heavy ice loading
- > Lighter model for twin bundles, making end-of-span vibration dampers unnecessary
- > Bolted model designed for harsh weather conditions

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March 2010

2010G08-35A