

Supporting communication cables

Stainless steel lashing wire plays an important part in telecommunication. It keeps aerial cables firmly in place and reduces the risk of cable breaks and service interruptions. Molybdenum-containing stainless steel lashing wire is used particularly in coastal areas to avoid premature corrosion failure of this essential support structure.

Aerial cables are an essential part of our communications systems where underground cabling is not feasible. These cables carry phone, internet and fiber-optic lines that do not have sufficient strength to support themselves. Installers, therefore, first string a robust, galvanized steel messenger cable, and then run the telecommunication cables alongside it. To secure them firmly in place the cables are lashed together with a thin lashing wire. Fiber-optic cables are filled with many individual micron-sized optical-glass transmission strands and need particularly careful handling and stable support. Otherwise the extremely pure and brittle glass could break due to loads imposed during installation and repair, or due to stresses from severe weather.

Lashing wire is almost always made of stainless steel, usually Types 430, 302, or 304. Type 316 stainless steel, containing

2% molybdenum, is typically used for its improved resistance to corrosion in coastal regions that have air-carried sea salt in their atmosphere.

Installing cables and their supporting lashing wire seems straightforward: simply wrap the lashing wire around the cable and messenger wire. However, this requires some sophisticated machinery to manage the wires without creating a tangled mess of cables. The task is made more difficult because it must be carried out high above ground and sometimes over rough terrain without compromising the safety of the installation crew.

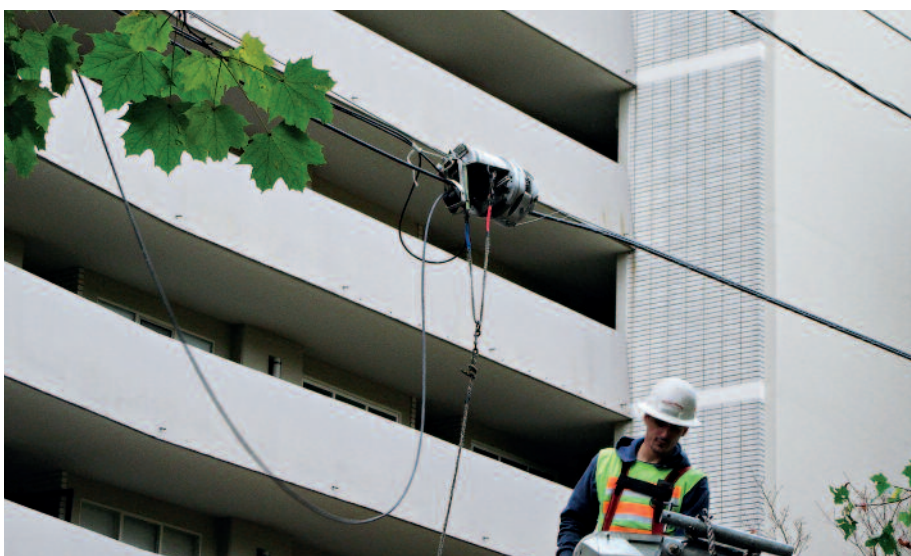
Installers use a cable-lashing machine designed to wind the lashing wire around the messenger wire and communication cables as the cable is being strung between two poles. An entire industry exists to develop and manufacture



Communication cables firmly lashed to messenger wires strung along the side of a building.

various kinds of cable-lashing machines. They are designed to be used on the ground or raised in the air; some stay stable as they ride along the line, while others spiral around the cables. They are available in a range of sizes to accommodate different weights and gages of cable. Machine manufacturers also supply the lashing wire and a variety of auxiliary fasteners and other components necessary to complete the installation. Although the basic method is similar throughout the industry, there is competition among machine manufacturers to supply the most trouble-free and long-lasting machine, and a wire that flows freely without kinking or breaking.

Lashing wire is one of those little-known but essential molybdenum applications that is hiding in plain sight. It ensures that above-ground, high-speed internet and telephone services reach the consumer at a high quality, with a minimum of interruption, even in severe weather conditions. (Curtis Kovach)



Lashing wire being installed with a machine suspended high above the ground on the messenger wire.