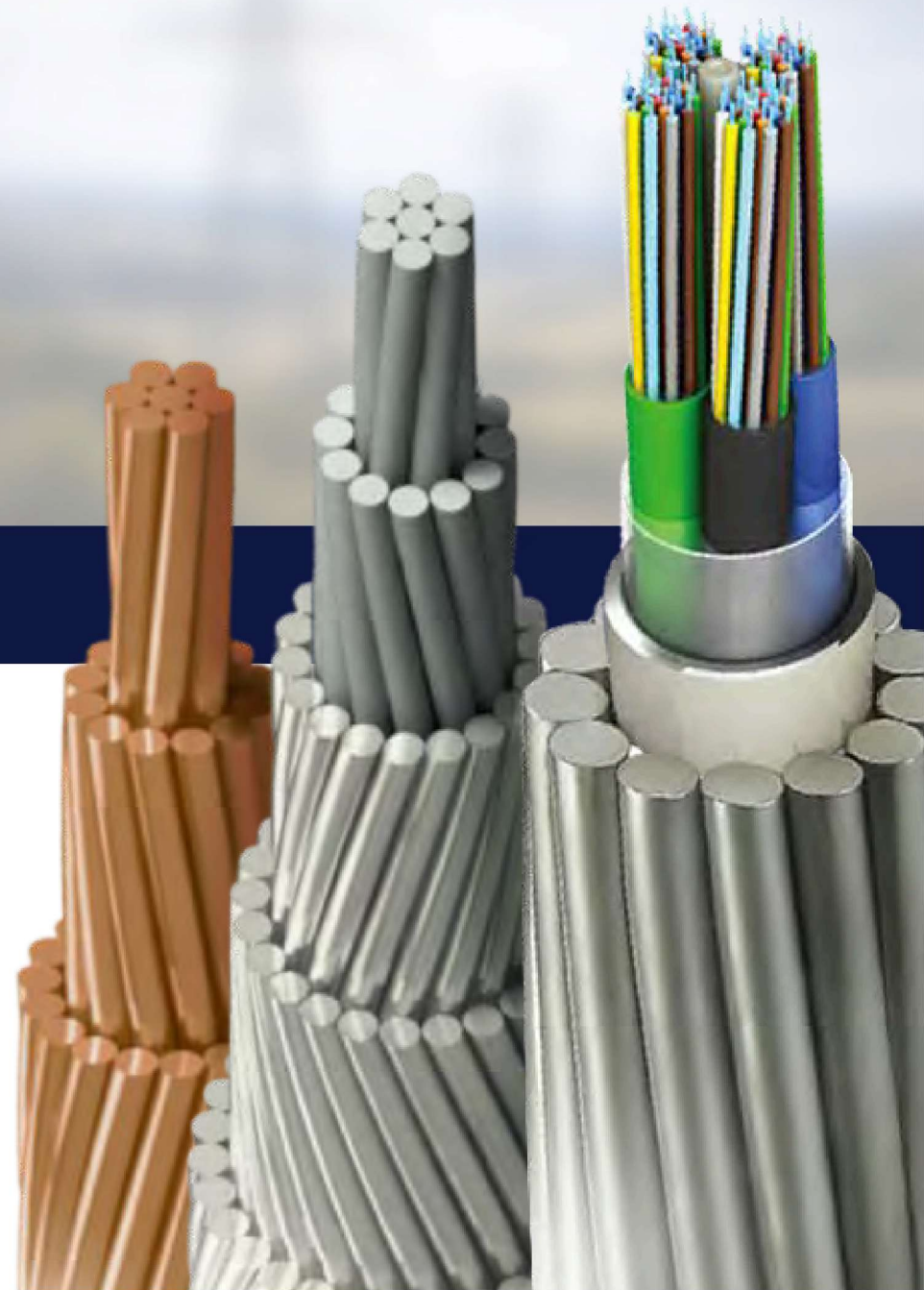




POWER & OPTICAL SYSTEMS

**CATALOG
2026**



SkyLink OPGW



Applications

OPGW is an engineered conductor designed for dual-purpose utility infrastructure, where both physical shielding and data capacity are required. It serves as the high-speed "nervous system" for modern utility grids. By integrating fiber optics directly into the transmission infrastructure, OPGW provides a secure, EMI-immune physical layer for SCADA communications.

General Construction

The construction of OPGW is a precise engineering exercise in balancing structural strength with electrical conductivity. By utilizing a hybrid stranding of various metallic wires around a protected optical core, the cable provides a robust shield for the power line while maintaining the integrity of the internal fiber optics.

Protective Functions The multi-layer construction serves three critical roles:

Lightning Interception:



The outer metallic layer acts as a sacrificial surface, intercepting direct strikes and dissipating the energy safely.

Strain Decoupling:



The "loose tube" design ensures that when the cable stretches under wind or ice loads, the fibers inside remain unstressed: Safe Fiber Strain (Zero Fiber Strain upon request).

Thermal Management:



The high-conductivity wires act as a heat sink during short-circuit events, preventing the core temperature from reaching the melting point of the fiber coating.

Specifications (Standards)

IEEE 1138

Standard for testing and performance for Optical Ground Wire (OPGW) used on electric utility power lines.

ASTM B415

Standard specification for hard-drawn aluminum-clad steel wire.

ASTM B398

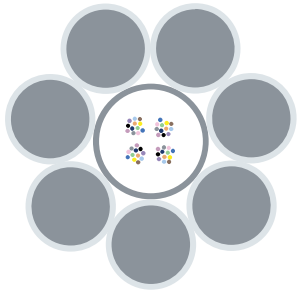
Standard specification for aluminum-alloy 6201-T81 and 6201-T83 wire for electrical purposes.

ITU TG650.1

Definition & Test methods for the relevant parameters of single-mode fibers.

ITU T G652D / G567

Characteristics of a single-mode optical fiber and cable.



Applications

Ideally suited for grid modernization projects where minimizing tower stress is a priority. This configuration provides a streamlined, lightweight profile designed to match the mechanical footprint of legacy **3/8"** HS/EHS galvanized steel shield wires, allowing for fiber integration without the need for structural tower reinforcement.

Cable Design

- ① Optical fiber
- ② Stainless steel tube filled with water-blocking gel
- ③ Stranded wires (aluminum-clad steel wires and/or aluminum alloy wires)

Parameters



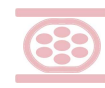
Up to
96 fibers



Rated breaking
strength up to
44,962 lb (200 kN)



Maximum rated design
tension up to
25,853 lb (115 kN)



Crush
857 lb/in (1.5 kN/cm)




Applications

Thermal and Electrical Optimization: By encasing the stainless steel unit in a high-conductivity aluminum layer, the cable minimizes the thermal impact of fault currents on the optical fibers. This construction provides a lower-resistance path for short-circuit events, dissipating heat more efficiently across the cable's cross-section and protecting the internal fiber coatings from degradation.


Cable Design

- ① Optical fiber
- ② Aluminum clad stainless steel tube filled with water-blocking gel
- ③ Stranded wires (aluminum-clad steel wires and/or aluminum alloy wires)

Parameters



Up to
96 fibers



Rated breaking
strength up to
44,962 lb (200 kN)

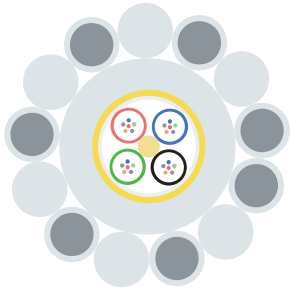


Maximum rated design
tension up to
26,752 lb (119 kN)



Crush
857 lb/in (1.5 kN/cm)





Applications

The Aluminum Pipe – PBT Loose Tube OPGW is a high-capacity, dual-barrier conductor designed for extra-high voltage (EHV) transmission corridors. It is the premier choice for utility engineers who require the highest levels of electrical conductivity and maximum environmental isolation for the optical core. Preferred by splicers technicians.

Cable Design

- ① Central strength member (FRP)
- ② Optical fiber
- ③ PBT loose tubes filled with water-blocking gel
- ④ Water-swappable tape
- ⑤ Thermal barrier
- ⑥ Aluminum pipe
- ⑦ Aluminum-clad steel wire and/or aluminum alloy wires

Parameters



Up to
96 fibers



Rated breaking
strength up to
44,962 lb (200 kN)



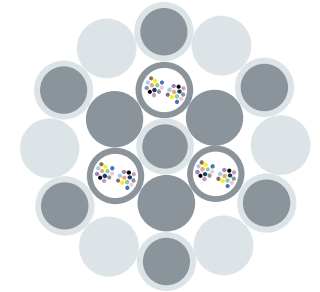
Maximum rated design
tension up to
26,752 lb (119 kN)



Crush
857 lb/in (1.5 kN/cm)

Applications

The **Stranded Stainless Steel Tube OPGW** is engineered for high-fiber-count requirements and high-voltage transmission lines that demand maximum mechanical flexibility. By stranding multiple fiber-filled stainless steel tubes around a central strength member, this design provides an unparalleled "spare capacity" for future network expansion. The helical stranding of the tubes around a central core provides a higher margin of safety for the fibers. When the cable stretches under extreme ice or wind loads, the fibers move freely within the stranded tubes, ensuring **Safe Fiber Strain*** even in high-tension spans.



Cable Design

- ① Central strength member (aluminum-clad steel or aluminum alloy wire)
- ② Optical fiber
- ③ Stainless steel tube filled with water-blocking gel
- ④ Stranded wires (aluminum-clad steel wires and/or aluminum alloy wires)

Parameters



Up to

288 fibers



Rated breaking strength up to

59,574 lb (265 kN)



Maximum rated design tension up to

35,744 lb (159 kN)



Crush

571 lb/in (1 kN/cm)



* Upon request, the OPGW can also be specifically engineered to operate under **Zero Fiber Strain** conditions.



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