



## **OPGW Technology**



**Redinet CJSC (Yerevan, Armenia).** Established in 2001.

Address: 24/7-24/8 Azatutyan Ave., Yerevan 0014, Armenia,  
Tel.: +374 10 249106; Fax: +374 10 200540; [www.redinet.am](http://www.redinet.am)

**Redinet Ltd. (Tbilisi, Georgia).** Established in 2008.

Address: 7 Bambis Rigi str. , Tbilisi, Georgia, tel: +995(0)322746803

**Redinet Holdings Limited (Cyprus).** Established in 2011.

Address: 195, Arch. Makarios III Ave., NEOCLEOUS HOUSE 3030  
Limassol, Cyprus, TIN: 12262864T, Tel: +37410249106,  
Fax: +37410247436

**Redinet International SAL (Lebanon).** Established in 2012.

Address: 2-nd floor, Wehbe Center, Rizkallah Semaan Street, Ain El  
Remmaneh, Chayah, Lebanon, Tel./Fax: +9611280991  
[www.redinetinternational.com](http://www.redinetinternational.com)

**Redinet International SAL (Erbil, Kurdistan).** Established in 2012.

Address: Sultan Muzaffar Street, Erbil, Kurdistan, Iraq  
[www.redinetinternational.com](http://www.redinetinternational.com)



Turn-key solutions

Telecom implementation

OPGW technology

Civil work

AC/DC Powering



## Customized solutions for your business

## Activities

## Services

- ✓ Site acquisition including permissions
- ✓ Site design (including project documentation and permissions) for:
  - General construction
  - Power line
- ✓ Towers, masts and poles manufacturing, supply and installation
- ✓ Mobile stations manufacturing and supply
- ✓ Shelters manufacturing, supply and installation
- ✓ Site construction (civil works, grounding and lightning)
- ✓ Power supply, including
  - Acquisition of technical conditions and permissions
  - CTS, poles , cables supply and installations

- ✓ Telecom equipment supply and system integration, including
  - Wired/wireless solutions
  - MSC implementation
  - Networking devices: routers, servers
  - Network performance monitoring and analysis
  - Network adaptation and optimization
  - Network audit
  - Mobile network drive tests
- ✓ OPGW implementation
- ✓ Fiber optic
  - FO infrastructure supply and construction
  - Design, project documentation & installations
- ✓ Electro magnetic calculations



The company has solid experience in “turn key” implementation of OPGW deployment projects.

Main competitive advantage of the Redinet CJSC is its highly qualified and experienced human resources comprised of teams of certified professionals.

## The Company-owned specialized machines and automation



**Mobile Operators**

- Korek Telecom Limited
- K-Telecom CJSC (VivaCell-MTS)
- Orange Armenia CJSC
- Beeline CJSC
- Mobitel LLC (Beeline Georgia)
- Karabakh Telecom CJSC

**ISPs**

- GNC-Alfa CJCS
- Ucom LLC
- ADC CJSC
- FiberNet Communications LLC
- WEB LLC
- AATVC CJSC

**Banks**

- Central Bank of Armenia
- HSBC Bank Armenia CJSC
- Converse Bank CJSC
- Areximbank – Gazprombank Group CJSC
- Armenian Card CJSC
- Araratbank OJSC
- Armeconombank OJSC

**Major Companies & Utilities**

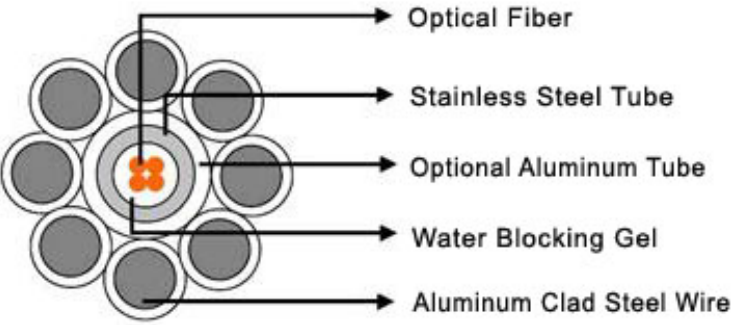
- Ericsson
- South Caucasus Railway CJSC
- Electric Networks of Armenia CJSC
- ArmRosGazprom CJSC



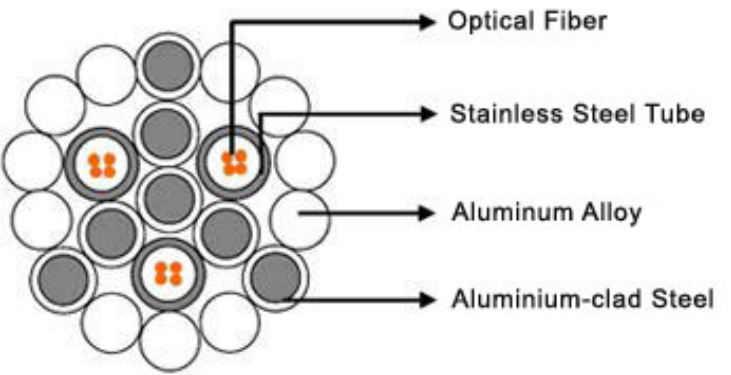


OPGW is a type of cable used in construction of electric power transmission and distribution lines. Such cable combines the functions of grounding and communications.





Central Loose Tube Type



Multi Loose Tube Type

An OPGW cable contains a tubular structure with one or more optical fibers in it, surrounded by layers of steel and aluminum wire. The OPGW cable is run between the tops of high-voltage electricity pylons. The conductive part of the cable serves to bond adjacent towers to earth ground, and shields the high-voltage conductors from lightning strikes.





- ✓ 40+ year life expectancy when installed & maintained properly.
- ✓ Less susceptible to outages relative to other cable types such as ADSS on T-Line, Distribution poles or underground construction.
- ✓ Eliminates clearance and Right-Of-Way issues since it occupies the static wire position on a Transmission Line.
- ✓ Low installation cost on new T-Line construction.
- ✓ The optical fiber itself is an insulator and protects against power transmission line and lightning induction, external noise and cross-talk.
- ✓ Owned fiber systems are a critical component in the mix of technologies to provide highly reliable and secure communications systems. Other systems include microwave and leased circuits.
- ✓ The inclusion of OPGW fiber cable on new and modified lines will continue to add route diversity as the transmission system grows.



Several different styles of OPGW are made. In one type, between 8 and 48 glass optical fibers are placed in a plastic tube. The tube is inserted into a stainless steel, aluminum, or aluminum-coated steel tube, with some slack length of fiber allowed to prevent strain on the glass fibers. The buffer tubes are filled with grease to protect the fiber unit from water and to protect the steel tube from corrosion, the interstices of the cable are filled with grease. The tube is stranded into the cable with aluminum, aluminium alloy or steel strands, similar to an ACSR cable. The steel strands provide strength, and the aluminum strands provide electrical conductivity. For very large fiber counts, up to 144 fibers in one cable, multiple tubes are used.





A utility may install many more fibers than it needs for its internal communications both to allow for future needs and also to lease or sell to telecommunications companies. Rental fees for these "dark fibers" (spares) can provide a valuable source of revenue for the electrical utility.

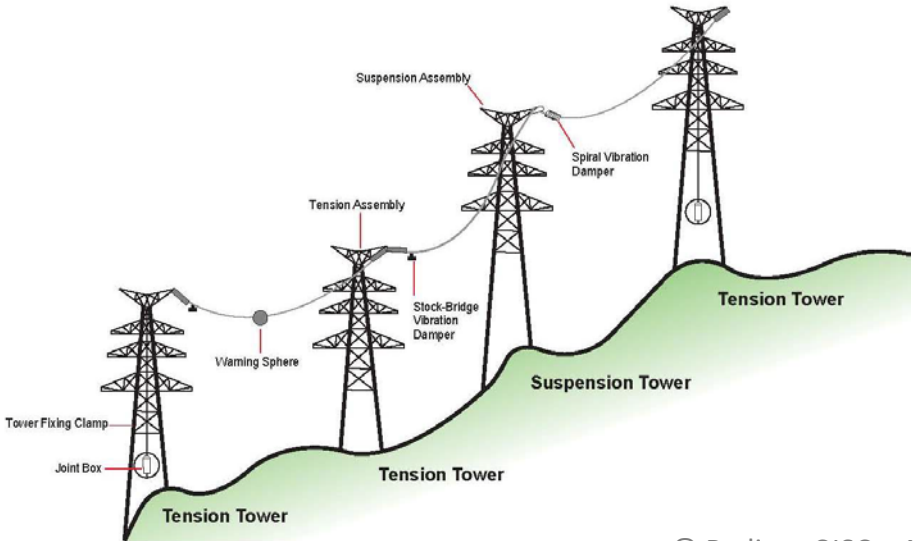




Installation of OPGW requires some additional planning, because it is impractical to splice an OPGW cable in mid-span, the lengths of cable purchased must be coordinated with the spans between towers to prevent waste.



Optical fibers are used by utilities as an alternative to private point-to-point microwave systems, power line carrier or communication circuits on metallic cables. OPGW as a communication medium has some advantages over buried optical fiber cable. Installation cost per kilometre is lower than for buried cable.







Where fibers must be joined between lengths, a weatherproof splice box is installed on a tower; a similar box is used to transition from the OPGW to an outside plant fiber-only cable to connect the fibers to terminal equipment.



Suspension assembly



Down lead clamp



Tension assembly





**REDINET**

Customized solutions for your business

**Thank You**

[www.redinet.am](http://www.redinet.am)