



● Introduction

OPPC (Optical Phase Conductor) Cable is an innovative type of optical cable specifically designed for power transmission systems. This cable integrates optical fiber units within the phase conductor, combining the functions of electrical power transmission and fiber optic communication. OPPC cables are primarily used in voltage levels below 110kV, such as suburban distribution networks and rural power grids. They are especially useful in medium and low voltage power grids where traditional ground wires may not be feasible, making the installation of OPGW (Optical Ground Wire) impossible.

● Application

Mechanical and Electrical Performance:

OPPC cables are designed to match the mechanical and electrical performance of adjacent phase conductors. This ensures compatibility and reliability in power transmission lines.

High Temperature Resistance:

The cable is capable of withstanding high temperatures, as verified through rigorous testing such as Temperature Cycling and Short Circuit tests. This makes OPPC suitable for harsh environmental conditions.

Network Integration:

By replacing one of the three phase conductors with OPPC, a transmission line can be formed that includes one OPPC and two standard phase conductors. This configuration supports both power transmission and communication needs.

Telecommunications:

OPPC cables facilitate telecommunications for medium and high voltage power lines, enabling the construction of distribution automation stations in urban and rural areas.

● Key Feature

Dual Functionality: Combines phase conductor and fiber optic communication capabilities.

Voltage Levels: Suitable for voltage levels below 110kV, including 10kV, 35kV, 66kV, and others.

Adaptability: Ideal for suburban and rural power grids, particularly where ground wires are not used.

Technological Integration: Utilizes similar technology to OPGW by embedding optical fibers into the phase conductor structure.

● Construction

Aluminium Tube:

The core of the OPPC cable is an aluminum tube that houses the optical fiber units. This tube provides protection and a stable environment for the fibers.

Optical Fiber Units:

The optical fibers are contained within the aluminum tube, typically surrounded by a water-blocking gel to protect against moisture and mechanical damage.

Surrounding Layers:

The aluminum tube is reinforced by one or two layers of ACS (aluminum clad steel) wires or a mix of ACS and aluminum alloy wires. These layers provide mechanical strength and enhance the cable's electrical conductivity.

Additional Protective Layers:

Depending on the design, the cable may include additional protective layers to enhance durability and environmental resistance.

● Eastful Cable Lab



We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.

CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

● Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rhineland and CCS.



● National Green Factory



Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China. We are committed to the development of high-end, intelligent and green manufacturing industry.

*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

● Technical Parameters

Fiber Count	Diameter	Weight	RTS	Current Carrying Capacity		
				40-70°C	40-80°C	40-90°C
Max.	mm	kg/km	kN			
16	11.75	281	24.3	216	262	299
16	15.4	494	45.7	299	364	418
16	17.4	598	52.8	351	430	495
16	19	695	58.5	395	486	561
24	13.6	460	57.7	234	284	325
24	14	402	37	264	321	368
24	13.5	376	34.4	254	308	353
24	15.9	523	49	308	376	432
24	17.6	641	64.5	348	427	492
24	20.4	812	74.3	424	524	605
28	19.65	797	79.6	398	491	567
36	21.8	949	87.7	455	563	652
48	22.5	1037	102.5	467	580	672
48	16.1	651	82	281	344	395