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Fiber-Optic Aerial Cables & Systems

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Fiber-Optic Aerial Cable Systems

Founded in 1899, NSW is one of the leading suppliers of fiber-optic overhead optical ground wires for terrestrial backbone telecommunications lines. In addition, NSW produces fiber-optic submarine cable systems, energy cables and customized underwater cables for the offshore industry.

NSW provides its customers from the power utility sector with options ranging from aerial cables and accessories – either directly or through cable installation partners – to basic services such as line survey and installation, or installation supervision. In addition, NSW offers network engineering and complete turnkey project management services to meet the specific needs of the job at hand.

Since May 2007, NSW has been part of the General Cable Group – a global leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber-optic wire and cable products for the energy, industrial, specialty and communications markets.

Quality and quality assurance have always been and will continue to be key elements of NSW's activities. NSW maintains an integrated management system in accordance with ISO 9001, ISO 14001 and OHSAS 18001, each of which has been certified by LRQA and is reviewed regularly for effectiveness by LRQA auditors.

NSW's R&D and product line management teams work closely with General Cable's experts and specialists from leading suppliers of electronic



telecommunications transmission equipment to create state-of-the-art solutions for many of the world's leading network operators. In-house staff monitor and test components as required at both preselected and random stages of the manufacturing process.



Product Overview

NSW's aerial cable family includes a solution for every customer:

Optical Ground Wire Cable (OPGW)

OPGWs serve as a ground wire and a telecommunications link at the same time. The basic design of NSW's OPGWs includes optical fibers placed inside a central aluminum buffer tube, which is armored by one or more layers of wires to provide tensile strength and additional conductivity. The main technical figures of basic designs are listed on the following pages.

Optical Phase Conductors (OPPC)

As an alternative to OPGWs for telecommunication applications, the optical fibers of an OPPC are incorporated in a power line's phase conductor. If the customer needs an OPPC solution, NSW can offer individualized cable designs to meet his specific requirements.

All-Dielectric Self-Supporting Cables (ADSS)

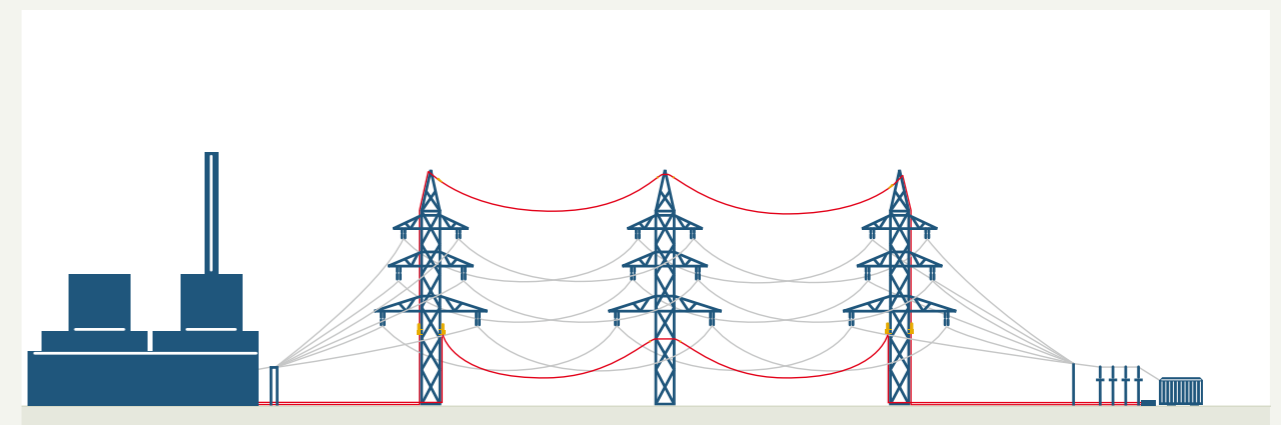
When fiber-optic cables are installed in addition to the conductors on an existing overhead power line without replacement of an earthwire or a phase conductor, the ADSS cables are frequently the solution of choice.

The standard design is based on a central polymer tube containing optical fibers surrounded by aramid yarns acting as the strength member. A tracking-resistant jacket protects these cables from tracking erosion. ADSS cables are available with various aramid yarn cross-section designs to meet specific technical requirements and customer needs.

Metal-Armored Self-Supporting Cable (MASS)

MASS cables are an alternative to the ADSS cables. They are similar to OPGWs, but are not designed to bear any electric load. Whenever MASSs are required, NSW can offer a central tube design cable based on OPGW technology.

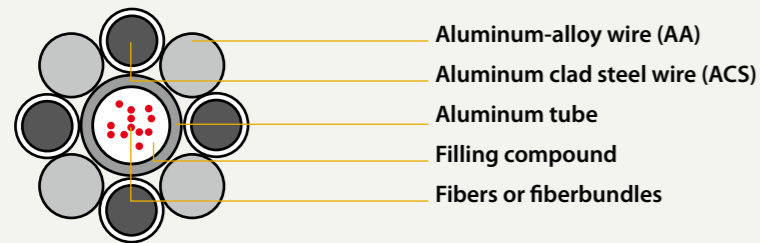
The optimal solution for every aerial cable requirement



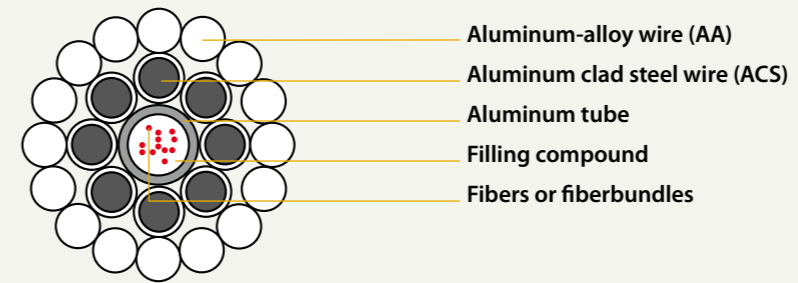
Optical Ground Wires – Typical Cable Designs

For single and double layer OPGWs, the following technical details are valid.

Single Layer Design (DAB)



Double Layer Design (DABB)



NSW Type	Short Circuit Capacity [kA ² s]	Max. Fiber Count	Diameter [mm]	Weight [kg/km]	CBL (Cable Breaking Load) [kN]
DAB AA/ACS 0/44	27	24	10,0	340	60
DAB AA/ACS 0/49	30	48	10,8	385	66
DAB AA/ACS 0/57	36	24	11,0	425	76
DAB AA/ACS 29/20	35	48	10,8	265	36
DAB AA/ACS 28/28	42	24	11,0	310	47
DAB AA/ACS 0/64	48	48	12,0	485	86
DAB AA/ACS 0/68	49	36	12,1	510	90
DAB AA/ACS 34/34	58	36	12,1	375	56
DAB AA/ACS 49/25	108	144	13,9	405	47
DAB AA/ACS 0/77	66	48	13,1	590	102
DAB AA/ACS 26/51	72	48	13,1	490	76
DAB AA/ACS 51/26	96	48	13,1	385	50
DAB AA/ACS 44/44	100	48	13,8	490	70
DAB AA/ACS 48/48	126	48	14,3	525	75
DAB AA/ACS 36/72	127	96	15,5	675	100
DAB AA/ACS 55/44	138	84	14,9	535	72
DAB AA/ACS 72/36	171	96	15,5	530	66

NSW Type	Short Circuit Capacity [kA ² s]	Max. Fiber Count	Diameter [mm]	Weight [kg/km]	CBL (Cable Breaking Load) [kN]
DABB AA/ACS 74/44	128	24	15,0	545	82
DABB AA/ACS 98/29	190	48	15,8	525	70
DABB AA/ACS 0/118	42	24	15,0	840	155
DABB AA/ACS 0/136	81	24	16,0	965	176
DABB AA/ACS 99/49	220	48	16,8	660	97
DABB AA/ACS 106/64	264	48	18,0	780	120
DABB AA/ACS 148/21	348	48	18,0	610	75
DABB AA/ACS 0/170	110	48	18,0	1205	222
DABB AA/ACS 180/26	534	48	19,7	740	90

The listed designs are only a short selection of our various OPGW types. Please contact us for a customized design according to your specifications.

Turnkey Installation

End-to-End Solutions

Deregulation and growing competition in the utilities industry have generated pressure to reduce costs, overheads and resources devoted to non-core operations.

To help cope with these pressures, NSW provides a wide range of products and services designed to address the individual elements of a power utility's telecommunications infrastructure design, installation and maintenance value chain. NSW can even supply complete A-to-Z turnkey system installation services. At the start of any task, NSW analyzes the customer's telecommunications needs and existing or planned infrastructure, and proposes a solution. The customer can then contract out the entire project to NSW, who will handle all aspects of the project from planning, procurement and manufacturing to installation, final commissioning and documentation, and handover to the customer.

Full Service for Added Value

A highly experienced team of field engineers is adding value to projects worldwide for turnkey and single service solutions:

- › Project Management
- › Survey
- › Rights-of-Way Clarification
- › Network and Material Planning
- › Logistics Management
- › Supervision
- › Quality Management
- › Installation
- › Splicing
- › Testing and Measurement
- › Acceptance Tests
- › Documentation
- › Maintenance
- › Training

Premium Quality Accessories

Accessories / Fittings

NSW's turnkey solutions include a wide range of accessories. In order to provide the best quality available on the market, NSW has approved several well-known high-performance suppliers of fittings, closures and other accessories to carry out installation of the NSW aerial cable product portfolio. These suppliers are certified on the basis of the quality requirements laid down in the ISO 9001 quality standard.

- › Closures
- › Suspension Assembly
- › Tension Assembly
- › Vibration Damper (Damper Studies)
- › Tower Fixing and Grounding
- › Warning Spheres
- › Splice and Measurement Equipment
- › Installation Tools

Duct Cables

With over 100 years of history in the world of telecommunications, NSW is one of the most experienced suppliers of cost-effective solutions for the end-to-end connection. If a customer requires optical cables for direct buried installation or for placement in cable ducts, NSW has the answer to the high-performance optical network.

Ancillary Equipment

NSW's various cable solutions for virtually every application are complemented by termination and distribution elements such as closures, fiber-optic connection systems and fiber-optic hardware. The distribution components are used for organizing outgoing and incoming fiber-optic cables and hardware so that subsequent reconfiguration or expansion jobs can be incorporated in a fast and cost-effective manner.

