



Delivering the renewable power of
Wind Energy

Fiber Optic Cables · Signal Cables · Control Cables
Power Cables · Application-Specific Cables · Submarine Cables
Transmission & Distribution Cables · Cable Assemblies





Harnessing the Renewable Power of *Wind*

With more than 11,000 associates operating in 25 countries and 47 manufacturing facilities, General Cable is a global leader in the development, manufacture and distribution of wire and cable needed for the generation, transmission and distribution of electricity from emerging wind energy technology.

With a broad range of wind generation, transmission and distribution cables that link turbine sources to the grid and beyond, General Cable is your renewable energy cable partner. For more than three decades, General Cable has developed the most reliable and technologically advanced cable solutions through experience, innovation and an extensive R&D program, allowing us to respond to the world's changing energy needs. We offer the power and stability of a longstanding global company with local support to service a variety of wind energy partners throughout the world.

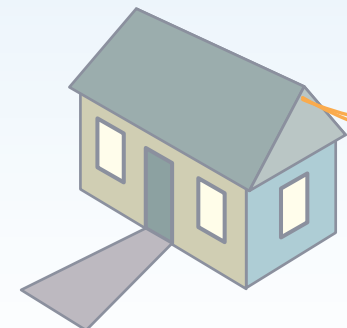
From the Wind to the Outlet

From the nacelle and tower of the wind turbine where electricity is created to the step-up transformer where electricity is transferred to the collection system, and from the substation to the power grid, General Cable provides a broad range of renewable energy products for the terrestrial and offshore wind markets. Besides developing next-generation wind products, General Cable has the offering to comprise a complete cable solution for wind power applications. From optical fiber and grounding wires for SCADA systems, low-voltage DC and AC connections and medium-voltage distribution, to high-voltage overhead, underground and submarine transmission lines, only General Cable has the range of products engineered to withstand the demands of *entire* wind power generation, transmission and distribution systems — from the wind to the outlet.

The WindGen™ Difference

As a company committed to environmental stewardship and renewable energy, General Cable has specifically designed its WindGen™ suite of products to effectively and efficiently connect wind turbines to tower control boxes and collection system transformers while being able to withstand the harsh operating environments of terrestrial and offshore wind power applications.

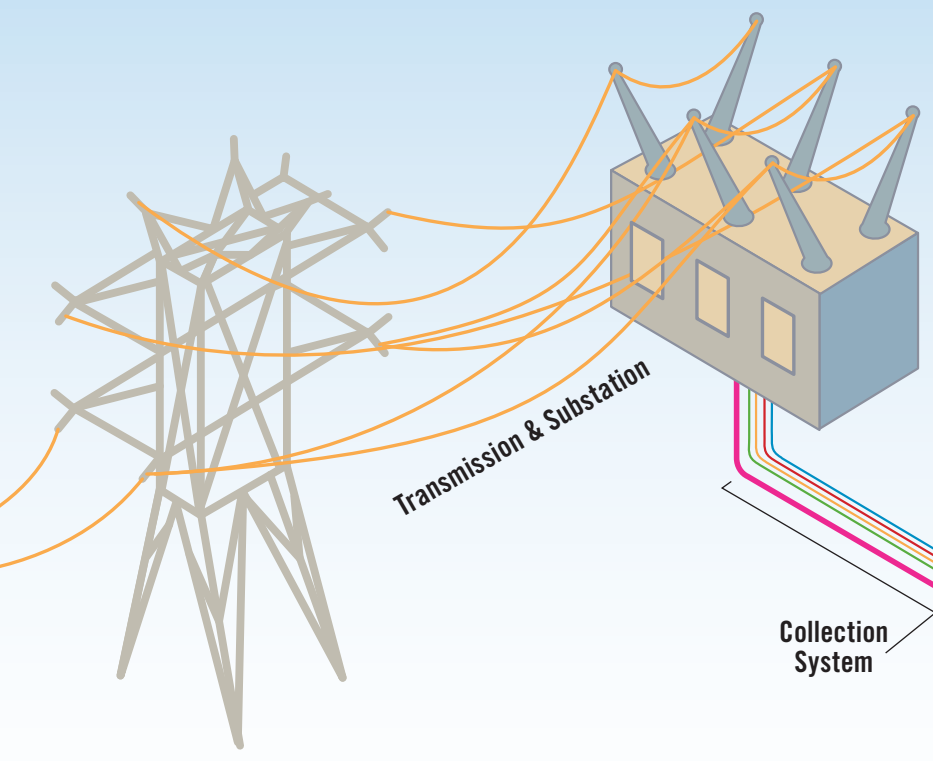
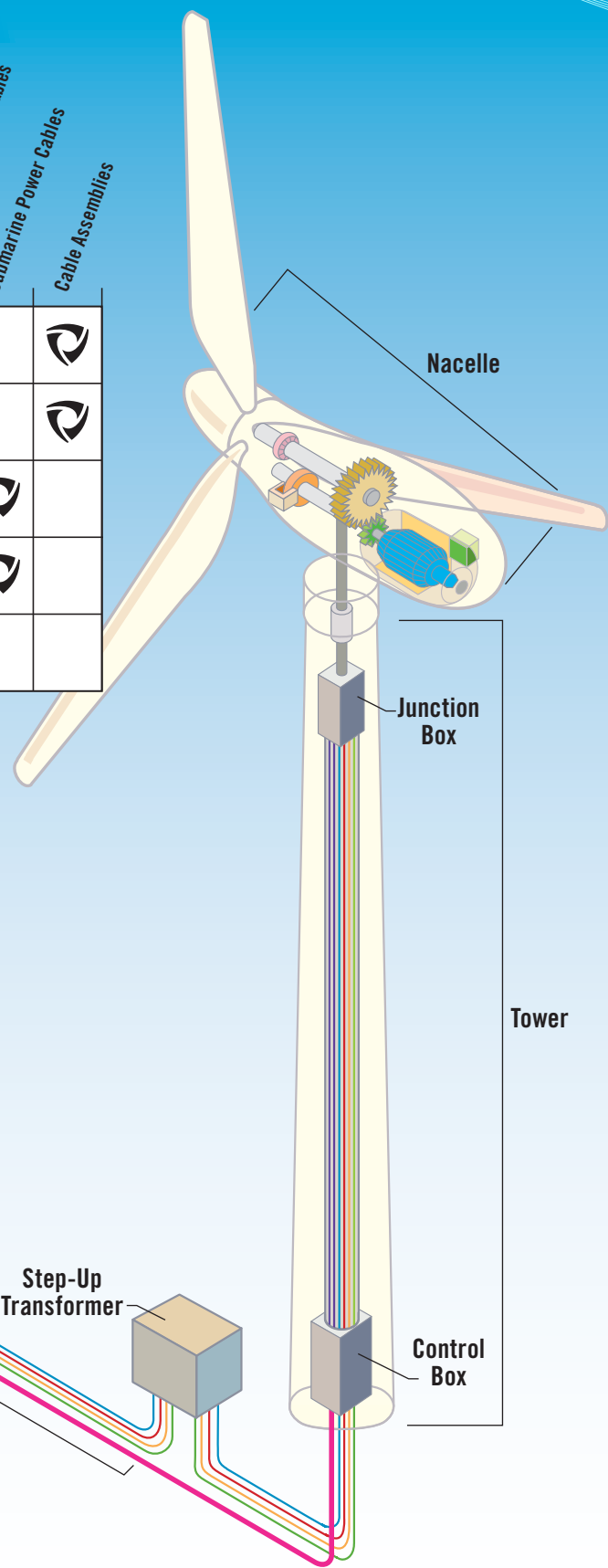
- Stable electrical properties over a broad temperature range (-40°C to 90°C)
- Superior UV/sunlight, oil and ozone resistance for use in a wind turbine generator and tower
- Excellent flexibility and resistance to high-torsion stress, even in sub-zero conditions
- Flame-retardant for maximum safety
- 20-year service life
- Complete offering of low-voltage signal, control and power cables, and medium-voltage cables up to 35 kV



The Power Behind Wind Energy

PRODUCTS USED:	Fiber Optic Cables	Signal Cables	Control Cables	Low-Voltage Power Cables	Medium-Voltage Power Cables	Grounding Wires	Bare Overhead Conductors	Underground Transmission Cables	Submarine Power Cables	Cable Assemblies
Nacelle	☑	☑	☑	☑	☑	☑				☑
Tower	☑	☑	☑	☑	☑	☑				☑
Collection Systems	☑			☑	☑	☑			☑	
Substation & Transmission	☑		☑	☑	☑		☑	☑	☑	
Grounding & SCADA* Systems	☑					☑				

*SCADA = Supervisory Control And Data Acquisition



Wind Power Application and Product Cross-Reference

Nacelle Cables

Engineered cables withstand the torsion and vibrations typically experienced in this rigorous environment. Custom cable assemblies that meet customer specifications offer ease of installation.

Category	Product Line	Insulation/Jacket	Code Types	Voltage & Temperature Ratings
Signal	UL CM, CMR, CMP, PLTC	Application-Specific	UL/CSA - CM, CMR, CMP, PLTC, AWM	300 V, -40°C to +90°C
Low-Voltage Control & Power	WindGen™	Application-Specific	UL/CSA - WTTTC, AWM	600 V & 1000 V, -40°C to +90°C
			UL Type RHH/RHW-2	600 V or 2000 V, -40°C to +90°C
	ExZhellent® WindGen™	Application-Specific	CSA RW90 and RWU90	600 V or 1000 V, -40°C to +90°C
			H07RN-F, H07V-K, H07Z-K	450/750 V, -40°C to +90°C
Fiber Optic	Singlemode and Multimode Fiber Optic Cables and Assemblies — All Dielectric or Armored	MDPE	UL/CSA - AWM (Global)	1000 V, -40°C to +90°C
			RUS, GR-20	-40°C to +70°C
Cable Assemblies	Custom-Designed, Application-Specific Cable Assemblies — Stripping, Kitting or Custom Connectors as Required			

Tower Cables

Copper and aluminum cable constructions provide cabling solutions for flexible and static vertical applications within the tower.

Signal	UL CM, CMR, CMP, PLTC	Application-Specific	UL/CSA - CM, CMR, CMP, PLTC	300 V, -40°C to +90°C
Low-Voltage Control & Power	WindGen™	Application-Specific	UL/CSA - WTTTC, AWM	600 V or 1000 V, -40°C to +90°C
	DuraSheath®	EPR/CPE	UL Type RHH/RHW-2	600 V or 2000 V, -40°C to +90°C
			CSA RW90	600 V or 1000 V, -40°C to +90°C
	Super Vu-Tron® DLO Cable	EPR/CPE	UL Type RHH/RHW-2	2000 V, +90°C
	ExZhellent® WindGen™	Application-Specific	CSA RW90	1000 V, +90°C
H07RN-F, H07V-K, H07Z-K			450/750 V, -40°C to +90°C	
Medium-Voltage Power	WindGen™	Application-Specific	UL/CSA - AWM (Global)	1000 V, -40°C to +90°C
			UL Type MV-90	2.4 kV - 35 kV, -40°C to +90°C, -40°C to +105°C
Grounding	Insulated Copper and Aluminum Conductors	XLPE or EPR	UL Type MV-105	2.4 kV - 35 kV, -40°C to +90°C, -40°C to +105°C
			UL Type RHH/RHW-2	600 V or 2000 V, 90°C
Cable Assemblies	Custom-Designed, Application-Specific Cable Assemblies — Stripping, Kitting or Custom Connectors as Required		CSA RW90 or RWU90	600 V or 1000 V, 90°C

Collection System Cables

High dielectric strength, low dielectric loss, underground cables provide efficient transmission of power to the substation for distribution.

Fiber Optic	Singlemode and Multimode, Rodent-Resistant, Loose Tube Cables in HDPE Conduit — All Dielectric or Armored	MDPE	RUS, GR-20	-40°C to +70°C
Low-Voltage Power	Unicon®	XLPE or EPR	UL Type RHH/RHW-2	600 V & 2000 V, 90°C
	RW90 and RWU90	XLPE	CSA RW90 and RWU90	600 V or 1000 V, 90°C
	Super Vu-Tron® DLO Cables	EPR/CPE	UL Type RHH/RHW-2	2000 V, +90°C
CSA RW90			1000 V, +90°C	
Medium-Voltage Power	EmPowr® Link URD Cables	TR-XLPE/XLPE or TR-XLPE/LLDPE	UL 1072 CSA	15 kV - 46 kV, 90°C
Grounding	Soft Annealed Copper Clad Steel (CCS) or Bare Copper Grounding Conductor	—	ASTM	—

Substation and Transmission Cables and Conductors

Overhead and underground transmission conductors and cables deliver power from the substation to the power grid.

Fiber Optic	Singlemode and Multimode, Rodent-Resistant, Loose Tube Cables — All Dielectric or Armored	MDPE	RUS, GR-20	-40°C to +70°C
Control and Low-Voltage Power	CHTC®, FREP®	Application-Specific	UL Type TC-ER	600 V, 90°C wet or dry
			UL Type TC-ER-LS	
	DuraSheath®	UL Type RHH/RHW-2/USE-2		
Medium-Voltage Power	Uniblend®, UniShield®	EPR/PVC, EPR/CPE	UL Type MV-105	5 kV - 46 kV, 105°C
	EmPowr® Link URD	TR-XLPE/XLPE or TR-XLPE/LLDPE	UL 1072 CSA	15 kV to 46 kV
Bare Overhead	Aluminum Conductors — ACSR; ACSS; Options: T-2® and TW	—	ASTM or CSA	Up to 765 kV
Underground Transmission	Silec® High- and Extra-High-Voltage Cables	Solid-Dielectric XLPE/HDPE; XLPE/LDPE; XLPE/PVC	AEIC	69 kV-500 kV
Submarine Power	Infield Power Cables and Export Power Cables for Offshore Wind Farms, Tidal Power Plants and Wave-Energy Converter Farms			

Grounding and SCADA* System Cables

Full range of fiber optic products offers monitoring and operational networks for wind farms. Insulated and bare grounding products meet tower and system grounding requirements.

Fiber Optic	Singlemode and Multimode, Rodent-Resistant, Loose Tube Cables in HDPE Conduit — All Dielectric or Armored	MDPE	RUS, GR-20	-40°C to +70°C
Grounding	Soft Annealed Copper Clad Steel (CCS) or Bare Copper Grounding Conductor	—	ASTM	—
	Insulated Copper and Aluminum Conductors	XLPE or EPR	UL Type RHH/RHW-2 CSA RW90 or RWU90	600 V or 2000 V, 90°C 600 V or 1000 V, 90°C

*SCADA = Supervisory Control And Data Acquisition



A commitment to achieving industry-leading standards and responding proactively to environmental global issues.

Global Reach



General Cable serves customers through a global network of 47 manufacturing facilities in 25 countries and sales representatives and distribution centers worldwide. The Company is solely dedicated to the production of high-quality energy, industrial, specialty and communications wire and cable products. In addition to its breadth of product line and strong brand recognition, the Company offers competitive strengths in such areas as technology, manufacturing, distribution and logistics, and sales and customer service. This combination enables General Cable to better serve its customers as they expand into new geographic markets.



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