High-voltage and charging cables for electric vehicles

Keeping you connected.
Technology leader for smart cable solutions worldwide.

Experience and innovation from one single source.

Based in Germany, Coroplast is a medium-sized, family-owned company operating on an international scale and among the technology leaders worldwide in its core fields of Wires & Cables, Technical Adhesive Tapes and Cable Assemblies. We guarantee customer proximity on a global level, employing some 5,700 trained people at 11 production locations in Germany, Poland, China, Tunisia, the USA, Mexico and Moldova as well as numerous representations worldwide.

Customers around the world appreciate Coroplast as a technically leading manufacturer of wires and cables of outstanding quality. We work with confidence and great ambition to provide closely tailored solutions, react swiftly to changing situations, and are always right there where our customers need us most. Coroplast’s distinguishing features are its agility and entrepreneurial attitude – consistently combined with the highest standards in terms of quality, production and operational processes.
Our innovative strength enables our customers to grow and implement the ideas that are driving the future of mobility.

Based on our innovative product developments, we offer technologically first-class quality that shows in our production processes and products, our logistical workflows and our constant ability to provide customers with on-the-spot support. We meet the requirements of the automotive industry’s international quality management system. All our locations are certified in accordance with ISO/TS 16949 and ISO 14001, guaranteeing globally accepted standards.

In short, Coroplast is a leader in creating technically sophisticated solutions for demanding niches. We are much more than just a manufacturer. Customers often come straight to Coroplast with an initial idea – and our engineers provide them with individually designed products, tailor-made to suit their requirements.
Optimised dimensioning of conductor sizes
With their ability to permanently withstand temperatures of more than 180 °C Coroplast HV cables make it possible to optimise conductor sizes, in contrast to other inferior insulation materials. The specified current load can result in higher conductor temperatures. We can meet this challenge with our silicone insulation. Our simulation technologies enable us to calculate conductor temperatures depending on current loads and ambient temperatures. We can recommend to you optimised conductor cross-sections based on these results. Derating simulations help find the optimal cross-section, reducing costs, weight and packaging space.

Copper and aluminium
Apart from the electric conductor material, Coroplast aluminium high-voltage cables do not differ from copper high-voltage cables. You can find the silicone insulation and sheathed materials – tried-and-tested in practice for many years – with unchanged qualities in Coroplast aluminium high-voltage cables. Existing connector housing and contacting geometries can also be adopted for Coroplast aluminium high-voltage cables.

Conductor sizes from 2.5 mm² to 120 mm²
Coroplast HV cables are available in conductor sizes ranging from 2.5 mm² to 120 mm² (copper and aluminium).

High-voltage cables – single core
Shielded and unshielded

Cable conductor sizes can be optimised by using our Coroplast silicone high-voltage cables, which perform at voltages of up to 600 volts AC and 1,000 volts DC and are able to permanently withstand temperatures of more than 180 °C.

Sonic welding test at the Coroplast laboratory
Various OEM rely on Coroplast multicore high-voltage cables and their optimised performance.

Applications for Coroplast multicore HV cables
- Air conditioning compressors
- PTC auxiliary heaters
- Vehicle internal connection of the conductive charge coupler to the electric vehicle battery

Easy processing
HV product family cables are all characterised by a well defined/tight-toleranced roundness, which makes wiring assembly manufacturing processing easier. The latest generation of multicore shielded or unshielded sheathed cables provide a filling layer on the core stranding for a circular design. The cable shielding can therefore be separated with rotative cutting systems in a safe process without the danger of damaging the actual core insulation. Furthermore, the time-consuming process of removing the filling elements and the separation can be avoided.

Highly flexible
Coroplast multicore high-voltage cables can be used in the smallest of design spaces. Even with extremely small bending radii, the required electrical safety functionality is retained within the vehicle entire lifespan.

Conductor sizes from 2.5 mm² to 6.0 mm²
If required and upon proof of EMC suitability, unshielded high-voltage cables can be used as single-core cables in the powertrain or as multicore connection cables for vehicle-internal 230-volt plugs or other applications. Coroplast multicore copper HV cables are available in the cross-section range from 2 x 2.5 mm² to 7 x 6.0 mm².
Coroplast charging cables are designed and optimised for all markets in terms of charging modes and meet a variety of global cable standards and requirements in terms of mechanical stability and electrical safety.

**US market type EVE and EVJE charging cables**
- TPE sheathed cables
- Approved in accordance with UL62 and CSA C22.2 No. 49
- Pilot cores for communication between road vehicle and charging electronics
- Flame-retardant
- Maximum permanent temperature of 105 °C
- EVJE cables: maximum operating voltage of up to 300 volts AC
- EVE cables: maximum operating voltage of up to 600 volts AC

**EU market type H07BZ5-F charging cables**
- TPU sheathed cables
- Approved in accordance with European standard EN 50620
- Pilot cores for communication between road vehicle and charging electronics
- Maximum permanent temperature of 90 °C
- Extremely flexible
- Flame-retardant
- Good resistance to microbes and chemicals

**CN market type EV and EYU charging cables**
- TPU sheathed cables
- CQC approvals in accordance with GB/T 33594 (comparable to the European H07BZ5-F standard)
- Pilot cores for communication between road vehicle and charging electronics
- Maximum permanent temperature of 90 °C
- Extremely flexible
- Flame-retardant
- Highly resistant to microbes and chemicals
Whether lightweight design, automation, or any other requirement, we continuously develop improved high-voltage cable that meet the increasing needs of the electric vehicles of the future.

Automated processing of high-voltage cables
Coroplast HV cables are ideally designed for the requirements of automated processing in wiring assembly manufacturing. The constant support of our development engineers during processing ensure our product family of HV cables is continuously developed.

We offer a variety of cable solutions, including lasermarkable HV cables that enable our customers to print QR codes on their cables, optimised stripping behaviour that increases our customers’ production output, or jointly develop ultra sonic welding parameter that reduce development time, increase process capability and result in higher quality welds.

Actively coolable high-voltage cables
Coroplast’s actively cooled high-voltage cables are the latest innovation in terms of lightweight technology. A liquid medium flows through the cable and cools down the current-heated conductor. Test results point to a high potential for integrating this Coroplast innovation in serial applications.

The derating behaviour of a cooled 35 mm² HV cable is comparable to a non-cooled 120 mm² HV cable. This next generation of cables offers our customers significant weight-saving potential.

Our support can help you achieve success – contact us to find out how we can help you meet the technology requirements of the future.