



Exploring the Key Components of EV Charging Cables Structure, Materials, and Certification

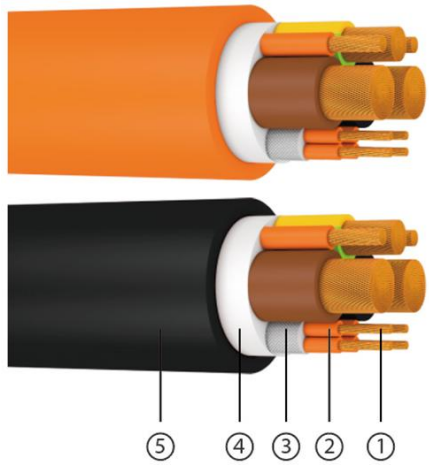
This presentation breaks down the structure and materials of our EV charging cables, highlighting how each component ensures safety, durability, and compliance with global standards.

Designed to meet the needs of a wide range of projects, we offer flexible solutions with low minimum order quantities (MOQ) to suit your business, no matter the scale.



AC EV charging cable Product Materials

No	Name	Material	Function Description	Selection Reason & Cost Impact
①	Conductor	Bare soft copper or tinned soft copper stranded wire	Delivers electrical current efficiently. Bare copper minimizes resistance, ensuring consistent power flow. Tinned copper adds corrosion resistance, ideal for outdoor conditions.	High conductivity supports fast charging. Tinned copper improves durability, reducing maintenance in harsh environments.
②	Insulation Layer	TPE / Halogen-free cross-linked / TPE	Provides thermal insulation to prevent electrical leakage, while maintaining flexibility at low temperatures (-25 ° C to 70 ° C). The halogen-free design ensures safer fire behavior.	Enhanced safety and compliance: Meets flame-retardant requirements, ensuring cable reliability under load and long-term use.
③	Shielding	Braided Tinned Copper Wire	Reduces electromagnetic interference (EMI) by 80%, ensuring stable charging communication. The tinned braid offers corrosion resistance, extending cable life.	Optional but valuable: Recommended for areas with high EMI. Adds cost but improves reliability for urban or commercial applications.
④	Sheath	TPE or TPU	Protects the cable from abrasion, oils, acids, and environmental exposure. TPU operates from -40°C to 90°C for harsh outdoor conditions, while TPE provides lightweight flexibility for general use.	Durable and adaptable: TPU ensures longevity in extreme environments. TPE is more economical, suitable for less demanding settings.







DC EV charging cable Product Materials

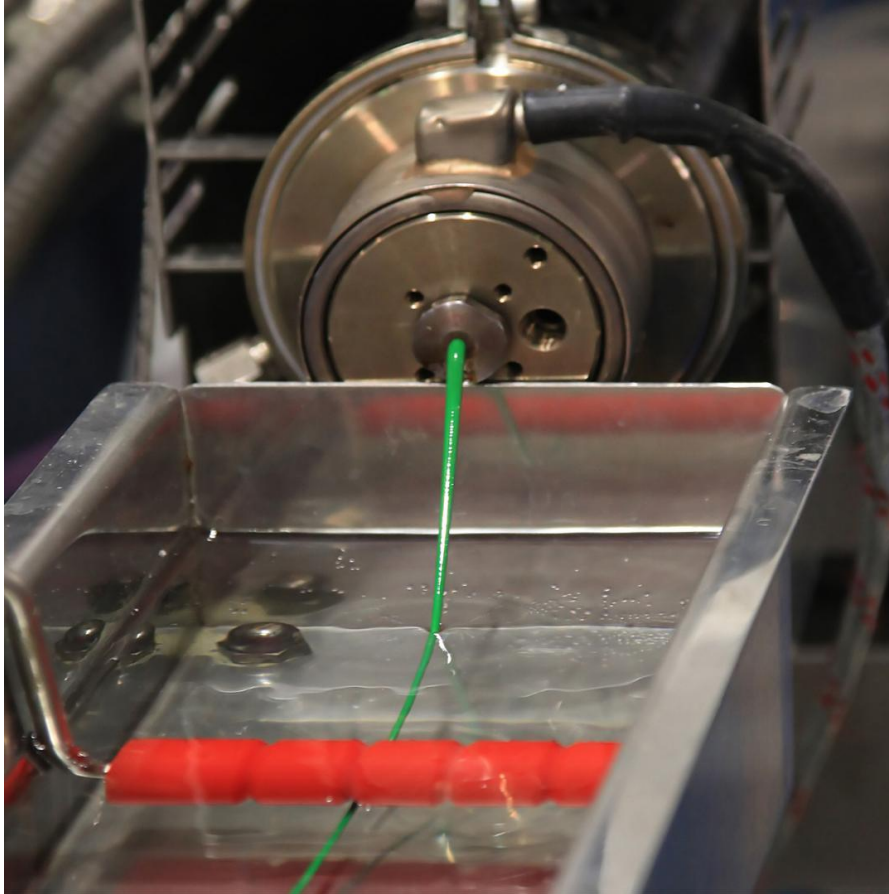
No	Name	Material	Function Description	Selection Reason & Cost Impact
①	Conductor	Bare soft copper or tinned soft copper stranded wire	Delivers electrical current efficiently. Bare copper minimizes resistance, ensuring consistent power flow. Tinned copper adds corrosion resistance, ideal for outdoor conditions.	High conductivity supports fast charging. Tinned copper improves durability, reducing maintenance in harsh environments.
②	Insulation Layer	TPE / Halogen-free cross-linked / TPE	Provides thermal insulation to prevent electrical leakage, while maintaining flexibility at low temperatures (-25 ° C to 70 ° C). The halogen-free design ensures safer fire behavior.	Enhanced safety and compliance: Meets flame-retardant requirements, ensuring cable reliability under load and long-term use.
③	Shielding (optional)	Braided Tinned Copper Wire	Reduces electromagnetic interference (EMI) by 80%, ensuring stable charging communication. The tinned braid offers corrosion resistance, extending cable life.	Optional but valuable: Recommended for areas with high EMI. Adds cost but improves reliability for urban or commercial applications.
④	Filler	Flame-retardant PP	Ensures the cable maintains its round shape by distributing mechanical stress evenly. The flame-retardant filler adds another layer of safety in case of fire, in line with IEC 62893-1 standards.	Reduces deformation during installation or use. Flame retardancy enhances safety in public and residential infrastructure projects.
⑤	Sheath (护套)	TPE or TPU	Protects the cable from abrasion, oils, acids, and environmental exposure. TPU operates from -40°C to 90°C for harsh outdoor conditions, while TPE provides lightweight flexibility for general use.	Durable and adaptable: TPU ensures longevity in extreme environments. TPE is more economical, suitable for less demanding settings.

Global Standards and Certifications for EV Charging Cables 1/2

NO	Region / Organization	logo	Certification / Standard	Scope / Purpose
1	IEC (International)		IEC 62893-1/2/3	Covers performance, mechanical strength, and environmental safety for both AC and DC EV cables.
2	Europe		EN 50620	Regulates EV cables for insulation, flame resistance, and durability in charging stations.
3	China		GB/T 33594-2017	Specifies flame retardancy and mechanical robustness for domestic charging cables.
4	USA / Canada		UL 62 / UL 2263 / CSA C22.2 No. 332	Addresses flexibility, electrical safety, and wear resistance for cables used in high-voltage EV applications.
5	UK		UKCA	Ensures compliance with UK product safety and environmental standards, replacing CE marking post-Brexit.

Global Standards and Certifications for EV Charging Cables 2/2

NO	Region / Organization	logo	Certification / Standard	Scope / Purpose
6	Japan		PSE (Product Safety Electrical Appliance & Material)PSE	Certifies electrical safety for products, including charging cables used in Japan. Compliance with PSE ensures the product meets local safety regulations.
7	South Korea		KC 61851-1 (Aligned with IEC 61851-1)	Regulates conductive EV charging systems, with standards aligned to IEC norms. Certification ensures product safety and electrical compatibility for the Korean market.
8	Middle East		SASO	Covers safety and quality standards required in GCC countries, ensuring compliance for public and private use.
9	South America (Brazil)		INMETRO	Ensures compliance with safety, performance, and environmental requirements for cables used in infrastructure projects.



Ensuring Precision

The extrusion process ensures the highest level of accuracy and consistency during cable production.

This step is crucial for maintaining the structural integrity and performance of the cable, especially in demanding environments.



Quality at the Core

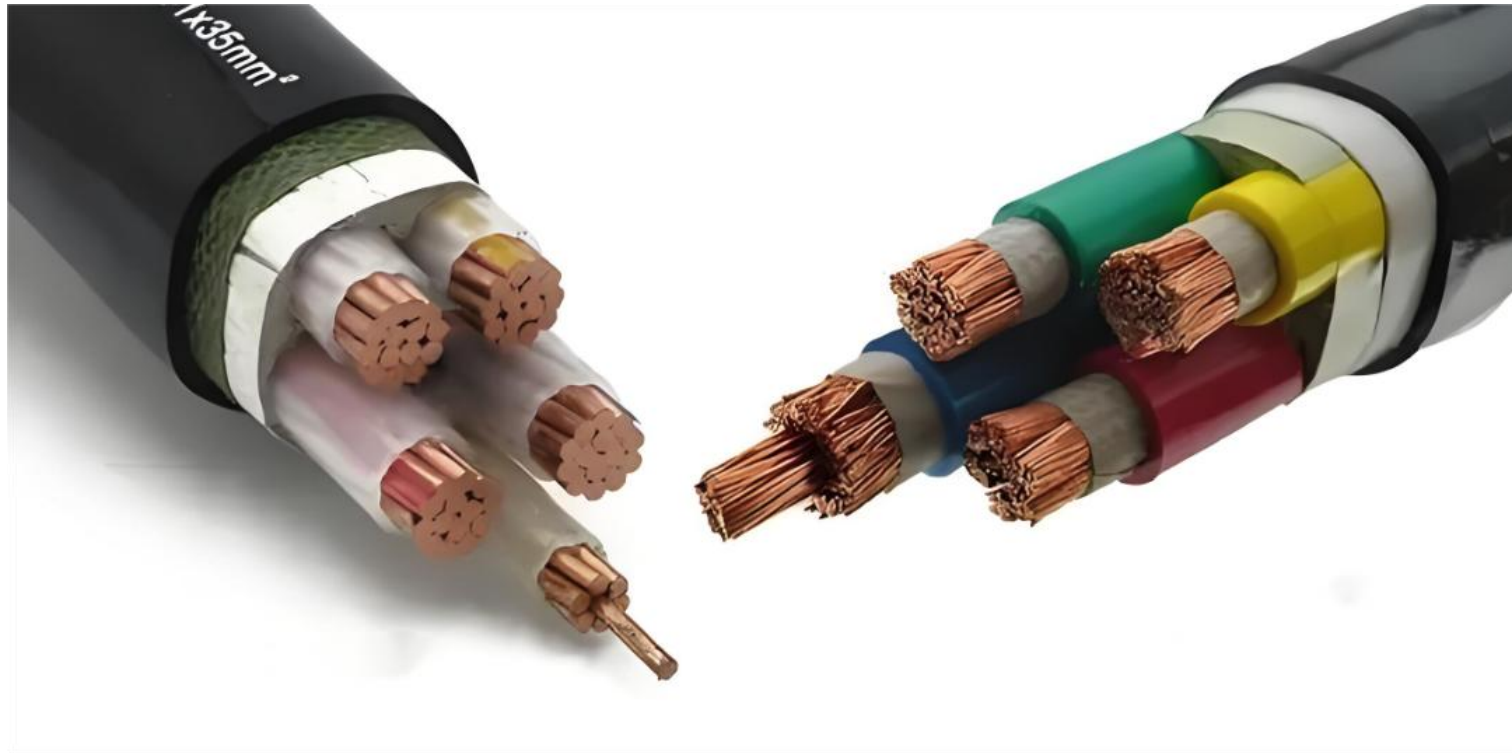
This detailed cross-section showcases the high-quality copper conductors, insulation, and shielding layers.

Each material is carefully selected to optimize performance, flexibility, and compliance with global standards.



Ready for Any Environment

Designed for reliable performance in outdoor conditions, our cables resist temperature extremes, UV radiation, and environmental wear. Perfect for public infrastructure, ensuring safe and continuous charging.



Throughout this presentation, we've explored the materials and construction of our EV charging cables, offering you a deeper understanding of how each component plays a critical role in ensuring safety, performance, and compliance with global standards.

This technical insight allows you to make informed decisions that directly impact the reliability and efficiency of your charging infrastructure.



By focusing on high-quality materials and proven manufacturing processes, we aim to help you minimize risks and optimize the long-term performance of your EV installations.

Our goal is to be a reliable resource that supports your growth with cables designed to meet the specific demands of your projects, regardless of size or complexity.



As you continue to navigate the expanding EV market, we are here to provide expert guidance and tailored solutions to ensure your infrastructure delivers consistent, reliable performance that stands the test of time.