

9. Applicable standards

CE Marking

■ EU Directive and CE Marking

When any manufacturer or importer desires to market a product in Europe, the manufacture or importer, if qualified to use CE Marking for the product, represents it as complying with the relevant EU's EU Directive, which can guarantee its free distribution within the EU territory.

There are many different EU Directives that call for CE Marking, among which are Machinery Directive, EMC Directive and Low Voltage Directive.

There is no independent EU Directive intended for cables, which, however are subject to the Low Voltage Directive and RoHS Directive. For RoHS Directive, please refer to "RoHS Directive" on page 170.

■ Low Voltage Directive

The Low Voltage Directive (2014/35/EU) applies to electrical appliances designed for use with a voltage rating between AC50 and 1000V and between DC75 and 1500V, which fact means that almost all electrical appliances including ones for household and office use are subject to the Low Voltage Directive.

The Low Voltage Directive specifies fundamental safety requirements, but not any specific engineering standards to follow to meet these safety requirements. Therefore, to certify that any electrical appliance complies with the Low Voltage Directive, it is the best way to represent it as complying with the EU unified standards, EN standards, HD standards or internationally recognized standards, IEC standards, or if it is not covered by any of these standards, to use any of the EU member countries' relevant standards to certify its compliance with the Directive.

■ Countries where CE Marking is valid

CE marking is valid in the following EU member countries and EFTA member countries.

- EU member countries (27 countries)
Ireland, Italy, Estonia, Austria, Holland, Cyprus, Greece, Croatia, Sweden, Spain, Slovakia, Slovenia, Czech, Denmark, Germany, Hungary, Finland, France, Bulgaria, Belgium, Poland, Portuguese, Malta, Latvia, Lithuania, Rumania, Luxemburg
- EFTA member countries (4 countries)
Iceland, Norway, Liechtenstein, Switzerland
(As of February 1, 2020)



※About England

As a result of the England withdrawal from the EU, the UKCA marking will be required for products placed on the market in the Great Britain (England, Wales, Scotland) from January 1, 2021, instead of the previous CE marking.

From January 1, 2021, the UKCA marking system must be followed, but the CE marking will be valid for a grace period until December 31, 2022.

Features of KURAMO's CE Marked Cable Products

Any product certified to comply with the relevant EU Directive is qualified for CE marking under the responsibility of the manufacturer of the product. The one way to certify compliance of any product with the relevant EU Directive is to contract with an appropriate Notified Body to test the product for conformity to the EN standards, IEC standards and/or Low Voltage Directive as appropriate. We have contracted with DEMKO and VDE to test our cable products and certify their compliance with EN standards, IEC standards and/or Low Voltage Directive, allowing us to mark them with CE mark and DEMKO or VDE on their surfaces.

■ Multi standard cable

The KURAMO's cables are certified not only to qualify for CE Marking, but also to meet the UL / cUL, CCC, TR-CU and other standards, allowing them to be used in any other region of the world than the EU. We propose a wide variety of cables of various types and sizes, fixed applications to moving parts applications.

■ Uses IEC / EN 60228 compliant conductors

Uses conductors that comply with Class 5 or Class 6 specified in IEC / EN 60228.

※Rope-lay stranded of annealed copper (containing reinforcement cord at its center) for moving parts is not applicable.

■ EMC Directive and EMC protection

The EMC Directive (2014/30/EU) specifies the requirements for electrical appliances, ensuring that they will generate no more than a given amount of electromagnetic interference that may adversely affect any other appliances and that they will have a capability of withstanding a certain amount of electromagnetic fields (immunity) while operating as intended within their specifications.

The EN 50525-2-51 (HD21.13) requires any cable to have such a shielding effect as to meet its specifications for low transfer impedance ($250\text{m}\Omega / \text{m}$ or less at 30MHz). The KURAMO's shielded cables (CE-362SB, CE-531XXSB) are certified to comply with the EN's specified transfer impedance requirements.

The EMC Directive requires any electrical appliance to be tested for EMC while operating, which fact means that the appliance's EMC protection cannot be guaranteed by the cables connected to it. Notwithstanding this however, the use of the KURAMO's shielded cables for connection to any electrical appliance provides for effective protection of the appliance against EMC.

■ Voltage rating representation

The EN and IEC standards specify the voltage rating of an electrical appliance to be represented as two voltage values – U_0/U like 300/500V and 450/750V as described below.

U_0 : The r.m.s. voltage between any insulated conductor and ground, "earth"

U : The r.m.s. voltage between any two-phase conductors

The above is due to the difference between the European and Japanese voltage supply systems.

■ DEMKO

DEMKO is the abbreviation for Danish Electrical Material Control Organization, an organization that certify every type of electrical appliances and part in Denmark.

■ VDE

VDE is the abbreviation for Verband Deutscher Elektrotechniker e.V, which has developed and established standards referred to as "VDE Standards" mainly intended to regulate the safety of electrical appliances. VDE also tests and certify any electrical appliance for safety according to the VDE standards, qualifying the product for use of VDE mark if it complies with the standards.



Applicable standards

■ Electrical Appliance and Material Safety Law

The Electrical Appliance and Material Safety Law is intended to regulate the manufacture, sale and marketing of any electrical appliance in Japan and promote voluntary activities of private businesses to secure the safety of their electrical appliances, thereby preventing hazards and injuries that may otherwise occur due to imperfection in the safety of such appliances.

To achieve the above goal, the nation has established engineering standards to check products for compliance with the standards to qualify the products for use of such marks as listed at right if they are certified to have complied with the standards, while prohibiting the sale or use of any product marked with any such mark.



Specified Electrical Appliances and Materials



Other Electrical Appliances and Materials

■ China Compulsory Certification system (CCC)

CCC is the abbreviation for the “China Compulsory Certification” system, which is intended to protect consumers and secure their safety.

Since August 2003 when the full-scale implementation of the CCC system was commenced, China has prohibited any product subject to the CCC system from being shipped or sold in China or being imported from overseas if the product is not CCC certified.

The initial list of products subject to the CCC system includes 19 product categories and 132 product items with subsequent addition of product items to the list, among which are cables, which, if categorized as PVC insulated cables, are required to meet the GB/T 5023 standards based on the IEC 60227 standards.



CCC Mark

■ TR-CU

TR-CU is a commonly used designation for Customs Union Technical Regulations.

The constituent member of the Customs Union is Russia, Kazakhstan and Belarus. Many products for export to the Customs Union are required to acquire TR-CU certification, which must be presented upon customs clearance of the product. The applicable products are shown TR-CU conformity mark (EAC mark) on the label because our product proves that the TR-CU certification is acquired.



EAC Mark

■ UL

UL is the abbreviation for Underwriters Laboratories Inc. and is the most well-known certification body for product testing and certification in the United States.

UL allows products that have been certified as conforming to UL standards to use the UL mark.

Insurance companies, federal, state, and municipal governments often require products to bear the UL mark as a condition of approval or procurement, which is advantageous for use in the United States.



UL Listing mark



UL Recognized mark

■ CSA

CSA is the abbreviation for "Canadian Standard Association", which is the world's most authoritative inspection organization in Canada, and allows products certified as conforming to CSA standards to use the CSA mark.

Any electrical product or oil burning appliance to be marketed in any province of Canada requires acquisition CSA certification, without which the product or appliance is legally prohibited for sale in the Canadian market due to safety reason.



CSA Mark

■ cUL

UL has received certification from CSA to allow it to serve as a testing/certifying organization (cUL) to test and certify any product for export to Canada according to the CSA standards, as well as offer follow-up services for the product.

Any product certified to meet the cUL requirements is qualified to receive "cUL" marking, which allows the product to be recognized as having acquired CSA certification.



cUL (CSA) Listing mark



cUL (CSA) Recognized mark