

COMMENT ON INTERNATIONAL STANDARDIZATION FOR CABLES - CHINESE VIEW

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1. China has adopted IEC standards as a basis for its electrotechnical standards.

China has explicitly recognized that IEC standards play a critical role in improving industrial efficiency and developing world trade because IEC is of the following excellent mission, standards and conformity assessment:

- 1.1 Mission: The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies. These serve as a basis for national standardization and as references when drafting international tenders and contracts. Through its members, the IEC promotes international cooperation on all questions of electro technical standardization and related matters, such as the assessment of conformity to standards, in the fields of electricity, electronics and related technologies.
- 1.2 Standards: IEC international standards facilitate world trade by removing technical barriers to trade, leading to new markets and economic growth. IEC standards are vital since they also represent the core of the World Trade Organization's Agreement on Technical Barriers to Trade (TBT). The number of standardization bodies which have accepted the Code of Good Practice for the Preparation, Adoption and Application of Standards presented in Annex 3 to the WTO's TBT Agreement underlines the global importance and reach of this accord. IEC standards provide industry and users with the framework for economies of design, greater product and service quality, more interoperability, and better production and delivery efficiency. At the same time, IEC standards also encourage an improved quality of life by contributing to safety, human health and the protection of the environment.
- 1.3 Conformity assessment: The IEC multilateral conformity assessment schemes, based on its international standards, are truly global in concept and practice, reducing trade barriers caused by different certification criteria in various countries and helping industry to open up new markets. Removing the significant delays and costs of multiple testing and approval allows industry to be faster and cheaper to market with its products. As technology becomes more complex, users and consumers are becoming more aware of their dependence on products whose design and construction they may not understand. In this situation, reassurance is needed that the product is reliable and will meet

expectations in terms of performance, safety, durability and other criteria. How can the industrial user and the final consumer be sure that the product they buy conforms to the criteria of an IEC standard? The IEC conformity assessment and product certification schemes exist to provide just this reassurance. Using IEC standards for certification at the national level ensures that a certified product has been manufactured and type-tested to well established international standards. The end user can be sure that the product meets minimum (usually high) quality standards, and need not be concerned with further testing or evaluation of the product.

2. China emphasizes and strengthens international standardization work after entering into WTO.

2.1 Establishing new organization - China State Administration Commission for Standardization (State Administration of the People's Republic of China for Standardization).

It was established in October 2001 just before China officially entered WTO on 11th November 2001, in order to meet WTO's requirement, especially the requirement of WTO's Agreement on Technical Barriers to Trade (TBT). It is directly subordinated to State General Administration of the People's Republic of China for Quality Supervision and Inspection and Quarantine (AQSIQ) and is authorized by China State Council, to administrate the standardization in China and on behalf of China to join IEC and ISO.

2.2 Present situation on China adoption of international standards

- At the end of 2001 there were 16,745 current effective IEC, ISO standards, among which about 6,300 international standards have been adopted as China national standards with 38% international standard adoption rate. Among the rest of more than 10,000 international standards more than 1,700 international standards are not suitable to Chinese conditions. The adoption rate in China shipbuilding industry already reaches more than 90%.
- At the end of 2001 there were 127 current effective IEC standards in the field of wire and cable industry, among which 80 IEC standards have been adopted as China national standards with about 63% international standard adoption rate.

2.3 Standardization Target during the 10th 5 years plan (2001-2005)

- Try to adopt 1500 - 2000 IEC, ISO standards as Chinese National standards every year and to reach 70% International standard adoption rate in 2005 based on 2005 current effective IEC, ISO standards.
- According to Code of Good Practice for the Preparation, Adoption and Application of Standards presented in Annex 3 to the WTO's

TBT Agreement China standardizing body shall at least once every 6 months publish a work program containing name and address, the standard it is currently preparing and the standard which it has adopted in the preceding period.

- Actively attend international standardization activities of IEC and ISO.
3. China greatly demands international standards for electric cables as its economics grows rapidly
- 3.1 Development of Chinese electrical power and telecommunication industries demands electric cables and IEC standards.

There are more than 100 coal electrical power plants, nuclear power plants and hydroelectric power plants with greater than 1,000 MW in China now. Three Gorges hydroelectric power plant is the largest one in the world with installed generators capacity of 18,200 MW, which began to be built in December 1994 and will connect with network for operation in 2003. At the end of 2001 China with the total installed generators capacity of 338 GW and the total output of 1,478 TWh was No. 2 behind USA in the world. The total installed generators capacity is expected up to 1,750 TW. At the end of 2000 China with a total of 750,000 km length of electrical network of voltage not less than 35 kV was No. 3 behind USA and Russia and the network covered 95.6 % total area of China. From 2001 to 2005 China will increase about 250,000 km AC transmission lines of voltage not less than 330 kV (including 750 kV) and more than 3,000 km DC transmission lines. A unified network in whole China will be completed by 2015. Total invested capital for the network construction in the period of 2001 to 2005 will be larger than about 43.53 billion US\$, which is 40 % of total invested capital (96.74 billion US\$) of electrical power projects during the same period of 2001 to 2005. The domestic demand of optical fibers and cables per year was 7 million km and 0.25 million km in 2000 respectively and will increase to 28 million km and 0.65 million km respectively in 2010. All these developments will offer a great business and standardization opportunity to the wire & cable industry, in which there are 4,800 enterprises and production output per year is about 1% of China's GDP and is No.2 behind the automobile in machinery industry. The required standards mainly include:

- Overhead conductors: To increase aluminium conductor's conductivity from 61% IACS to 63% IACS in order to reduce line losses. 800,000 tons to 1000,000 tons ACSR conductors will be needed every year until the end of 2005.
- 500 kV overhead conductors with extra span of 2,303 m in order to cross rivers.
- Superconductivity cable should be researched.
- Wire and cable for nuclear power plant.
- Accessories for 220 kV XLPE cables.
- 500 kV cross-linked cables and accessories including outdoor terminals and GIC (gas-insulated cable or GITL: gas-insulated transmission line).

- 750 kV cross-linked cables and accessories including thermal characteristics.
- PVC insulated nylon sheathed wire for building.
- Prefabricated branch cable for building.
- More than 5,000 km OPGW per year will be needed, mainly for 500 kV transmission lines till 2005.
- All dielectric self supporting (ADSS) optic cables, mainly for 35 kV to 110 kV transmission lines, will increase to 10,000 km ADSS cable lines every year till 2005.
- Self-regulated heating cable.
- Concentric conductor low voltage power cable with neutral line and screen functions.
- Fire resistant power cable.
- Magnetic suspension cable for magnetic suspension train.
- Bus cable for automatic control systems.
- New type car wire etc.

3.2 Development of China shipbuilding industry demands shipboard cable and IEC standard:

Now China shipbuilding capability is 4,500,000 DWT per year. In 1999 China got new shipbuilding order of 8,700,000 DWT, which is 18% of global orders and is No.3 in the world behind South Korea and Japan. In recent years the China ship export value is about 1,700 Million USD per year. China shipbuilding industry demands shipboard cables and IEC standards mainly as follows:

- Halogen-free low-smoke low-toxic flame retardant cables.
- Umbilical cord cables for fixed and mobile offshore units and oil tankers.
- Shipboard optical fibers and cables.

3.3 China also demands other IEC publications about cables in a short time: such as:

- Technical Specifications (TS)、 Technical Reports (TR)
- Publicly Available Specifications (PAS)
- Industry Technical Agreement (ITA)
- Technology Trend Assessment (TTA)