

Electrical Safety

Amol Kalsekar



-
- The International Copper Association India (ICA India) is a member of the Copper Alliance™ and the Indian arm of the International Copper Association Limited (ICA), the leading not for profit organization for promotion of copper worldwide set up in 1959, with its presence in more than 60 countries.
 - ICA India was formed in 1998 to actively associate with the growing number of copper users in India. With a mission to “Bring together the global copper industry to develop and defend markets for copper and to make a positive contribution to society’s sustainable-development goals”.
 - ICA India is a knowledge-based organization that has the expertise and ability to implement market transformation projects. It provides a platform that represents a ‘non-commercial’ voice by a group of independent and credible experts.
 - ICA India conducts programs in the interest of Electrical Safety, Energy Efficiency and Sustainability. Employing a mix of market development and regulation advocacy approach to encourage the use of copper.

-
- **Our current initiatives:**
 - **Encourage safe house wiring practices in the Building Construction sector**
 - **Increase awareness of Power Quality through Asia Power Quality Initiative (APQI) Platform**
 - **Promote 5 mm Microgroove Copper tube heat exchangers technology to OEMs**
 - **Propagate the use of High Energy Efficient Motors and Copper Motor Rotors to Industries**
 - **Reduce distribution losses by promotion of low loss Distribution Transformers to Power Sector**
 - **Encourage Renewable Energy Technologies like solar water heaters**
 - **ICA India drives its program through interactive workshops across India in collaboration with like-minded organizations, institutions and trade bodies. It also publishes technical handbooks, training manuals and brochures aimed at spreading awareness and in-depth knowledge on the many benefits of copper and its use in technology.**

India Public safety

Cu

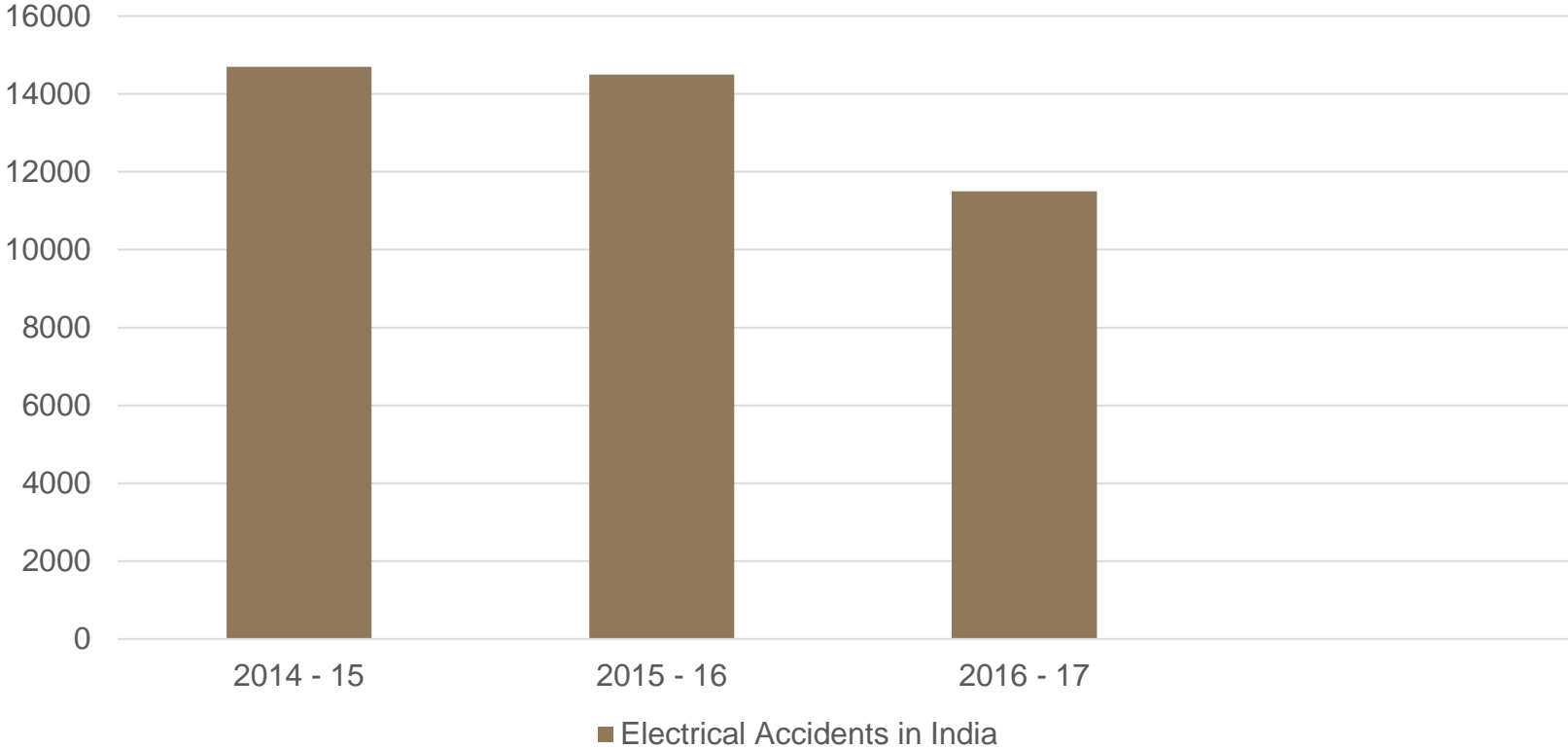
- 5000 people died in 2016-17 due to electrocution and fire due to Electrical Short Circuits i.e. 13 people die every day
42 % of fires occur due to electrical system faults / defects / non standard products leading to Short Circuits and
- 8% of deaths that occur in factories are due to electricity.



Electrical accidents Trend



Electrical Accidents in India



Why does this Happen ?

Cu



Electrical Safety Core issues

Cu

Old Installations

1. Addition of loads – Modification
2. Degradation of insulation & Components Ageing
3. Poor Maintenance practices
4. Technology up gradation

Workmanship

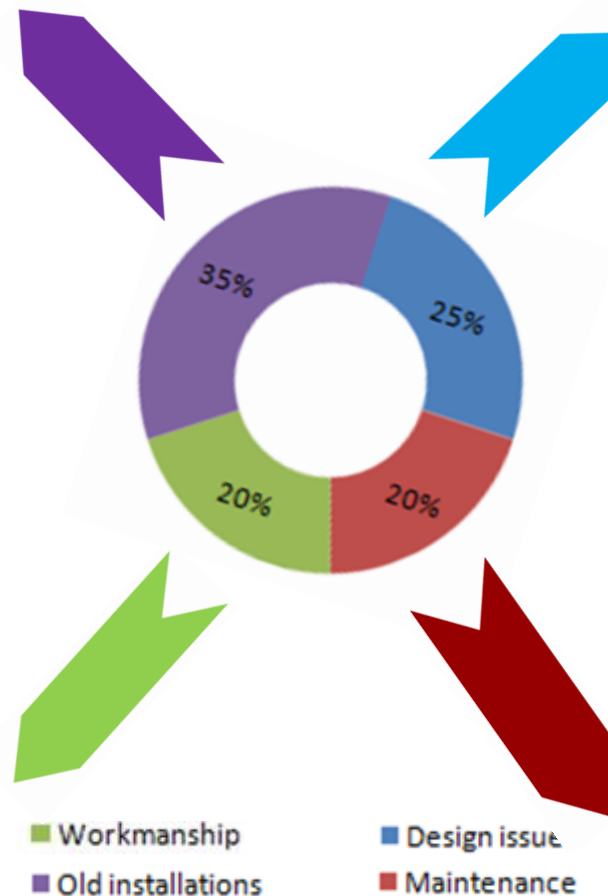
1. Training & Skill level
2. Non competence person
3. Outsourcing
4. Maintenance Man Power Vs Cost reduction

Design Issues

1. Code violations
2. Competent designer
3. Adequate wire sizing
4. Selection of reputed make cost reduction
5. Active & Passive fire systems
6. Protective device coordination

Maintenance Issues

1. Work force Availability
2. Outage based maintenance practices
3. Predictive maintenance (thermographic Survey)
4. Obsolescence of components



-
- **Electricity Act 2003**
 - **Central Electricity Authority (Measures related to Safety and Electric Supply) Regulations 2010 and further amendments 2015 and 2018**

Electrical Safety: Related Standards, Codes and Guidelines

BIS publications

- National Electrical Code 2011
- National Building Code 2016

Other International references

- International Electro-technical Commission (IEC)
- National Fire Protection Association (NFPA 70, 70A, 70B, 70E)
- Institution of Electric and Electronics Engineers (IEEE)
- Occupational Safety and Health Administration (OSHA)

Where are the missing links??

-
- Need of qualified Electrical Designers / Consultants?
 - Lack of awareness with the consumer?
 - Lack of knowledge level / experience of the persons carrying out job
 - for adhering electrical safety regulations? Poor implementation of standards and codes
 - Collective efforts by electrical safety advocates and stakeholders?
 - Legal Enforcement



SAFE WIRINGS | SAFER BUILDINGS

ELECTRICAL SAFETY IN HOMES & WORKPLACES

A campaign will highlight all aspects of safe wiring and the measures that should be adopted at residential & commercial buildings in order to make sure we as a country reduce accidents and educate the next generation about corrective techniques

Government

- 1) Ministry of Home Affairs
- 2) Central Electricity Authority
- 3) Bureau of Indian Standards
- 4) State Chief Electrical Inspector
- 5) State Public Works Dept

Industry Associations

- 1) IEEMA

Industry

- 1) Wires & Cable Manufacturers
 - a. Anchor by Panasonic
 - b. Finolex
 - c. KEI
 - d. Polycab
 - e. R R Kabel
 - f. V-Guard
- 2) Schneider Electric
- 3) OBO Bettermann
- 4) Fluke India

Thank you

For more information please contact