

'Periodic Verification' of Electrical Installations in Dwellings

by Roger Lovegrove - AIE

International Forum on Electrical
Safety

27 October 2006

Madrid

Recommendation to EU
Commission on the need for
periodic verification of electrical
installation of dwellings

2006-10-27

'Periodic Verification' of Electrical Installations in Dwellings

Recommendation by AIE
supported by ECI, EUROPACABLE,
FISUEL and UIE.

Recommendation to EU
Commission on the need for
periodic verification of electrical
installation of dwellings

2006-10-27

Background and facts

- ~200 million dwellings in Europe
- The European harmonisation document HD 60364-6 requires all new electrical installations to be verified initially by inspection and testing before connection and putting into service
- This document also provides requirements for the periodic verification by inspection and testing, in order to identify defects, damage and deterioration of equipment that may cause danger
- ~60% of electrical installations are older than 25 years
 - Majority have never been inspected and tested, or upgraded!!

What is a dwelling?

- A place of residence
- Dwellings are considered to cover all kinds of residences: houses, apartments etc.
- Communal areas are those areas of residential buildings allowing access by all residents

What is 'Periodic Verification' ?

- Inspection of the condition of the equipment and the correct ratings of cables and protective devices
- Testing circuits for:
 - adequate earthing
 - sound insulation
 - proper connections
 - correct operation of safety devices

Why is 'Periodic Verification' needed?

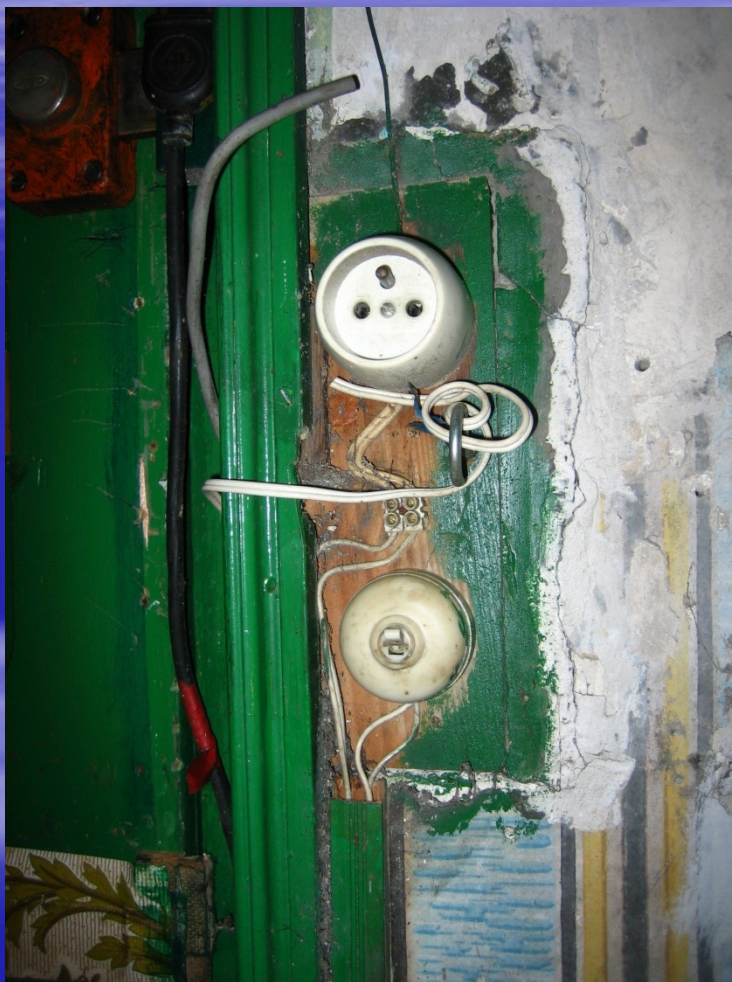
- The modern family's lifestyle and the increasing presence of all kinds of electrical appliances throughout the home means that the electrical installation is not always structured and dimensioned to meet those increasing and diversifying requirements.
- Consequently usage of electricity in homes has increased considerably in recent years and will continue to do so, leading to 'do-it-yourself' activities and overloading of circuits.

Why is 'Periodic Verification' needed?

Because society is heavily dependant on a safe electricity supply, it is necessary to comply with the requirements of HD 60364-6 clause 62 and:

- Verify that the electrical installation has not deteriorated and become unsafe (ageing, obsolescence, damage, etc.)
- Verify that electrical installations continue to be safe to use

Examples



Recommendation to EU Commission on the need for periodic verification of electrical installation of dwellings

2006-10-27

8

What are the dangers?

- Death or injury to persons
- Damage to property
- From :
 - Electric shock
 - Fire and burns

Statistics available in the FEEDS report

Requirements for a safe electrical installation

- Correct earthing system and conductors
- Correct earth leakage protection
- Correct over-current protection
- Correct type and size of cables
- Correct over-voltage protection
- Correct enclosure and insulation of live parts
- Etc.....

QUESTIONS ?

Knowing these facts :

- How do we identify the « old » electrical installation stock in the market?
- How can we increase Member States' awareness of the Harmonisation documents ?
- And thereafter, how can the Member states be encouraged to implement them ?

ANSWERS

- By influencing the national law-makers in the electrical safety field
- By better promotion to the public of electrical safety issues generally and of the advantages of 'Periodic Verification'
- By assisting the electrical installation industry to convey this message

How can the EU help?

- By issuing a Recommendation to Member States that they should take all necessary actions to improve the electrical safety of dwellings and the associated communal areas of buildings by requiring 'Periodic Verification' of the electrical installations

Benefits

- Improved safety
 - Reduced deaths and injuries due to electric shock and burns
 - Reduced fire damage to property
- Improved installations
 - Meeting today's needs
 - Improved feeling of security
 - Improved electrical comfort and quality of life
- Reduced energy costs
- Increased property values
- Reduced insurance costs

Recommendation

- Electrical installations of dwellings should be inspected and tested:
 - Regularly, at least once every 10 years
 - when the ownership or occupancy is transferred from one party to another.
- Inspection and Testing should be performed in compliance with HD 60364-6 clause 62 and national rules, following the recommendations of the CLC/ES 59009

Economic issues

- SAVINGS:
- €14 billion/year due to reduced property damage, injuries etc.
- €3 billion/year due to reduced energy costs

- COSTS:
- €9.6 billion/year in verification and upgrading costs

Figures taken from the FEEDS report

Best Practices in the EU

- Belgium: 25 years 'Periodic Inspection' + mandatory inspection of electrical installations in dwellings at change of ownership from 01.01.07
- Switzerland: mandatory inspection every 20 years of electrical installations in dwellings by law
- France: mandatory inspection at change of ownership of electrical installations older than 15 years by law

Best Practices in the EU

- Spain: PRIE - Platform For Periodic Inspection of Electrical Installations – Draft guide for periodic inspections of electrical installations
- UK: recommendation for periodic inspection at change of ownership or tenancy and every 10 years, with particular requirements for special situations

Reference documents

- HD 60364-6
 - Electrical installations in buildings – Part 6 Verification
 - Issued 2006
- CLC ES 59009
 - Inspection and testing of electrical installations in domestic properties
 - Issued 2000
- Forum for European Electrical Domestic safety (FEEDS)
 - Towards improved electrical installations in European homes
 - Issued 2004

Conclusions

- 'Periodic Verification' – inspection & testing of electrical installations in dwellings is necessary in order to reduce the risks of death or injury to persons and damage to property
- In Europe, approximately 120 million installations in dwellings are more than 25 years old and possibly unsafe.
- Many installations are inadequate for today's use.
- Benefits to people and countries, in saving lives and saving costs, are considerable.

Proposal

We, AIE with the support of ECI, EUROPACABLE, FISUEL and UIE, recommend that the European Commission :

- raises national and public awareness on electrical safety matters
- issues a Recommendation for 'Periodic Verification' of electrical installations, to Member States