

Addendum No. 2 to Guidelines on Energy Efficiency of Electrical Installations

Following the Review in end 2004/05, there is the following amendment:

Add as the last sentence to the first paragraph of sub-item 6.1 the following:

Should any harmonic filter be used to reduce the harmonic content, the designer should pay attention to the energy consumption of the filter itself.

Addendum No. 1 to Guidelines on Energy Efficiency of Electrical Installations

Following the Review in end 2002, there are the following amendments:

Addition as the last sentence to 1st paragraph of clause **4.6 Sub-main Circuits** (words in light black italics are direct extract from original clause, and words in dark black are the addition) as follows:

*A sub-main circuit can be defined as a circuit connected directly from the main LV switchboard to a sub-main distribution panel or a rising main for final connection of the minor current-using equipment. The Code requires that the maximum copper loss in every sub-main circuit should not exceed 1.5% of the total active power transmitted along the circuit conductors at rated circuit current. **However for Domestic buildings, the maximum allowable copper loss is relaxed to 2.5% to cater for the actual trade practice of minimizing the cable sizes for purpose of fitting in conduit for a lateral circuit branching-off from riser.***

Amendment to 1st paragraph of sub-clauses of **clause 5. REQUIREMENTS FOR EFFICIENT UTILISATION OF POWER** (words in light black italics are direct extract from original clause, and words in dark black are the addition) as follows:

5.1 *Lamps and Luminaires*

*The Code requires that all lamps and luminaires forming part of an electrical installation in a building should **preferably** comply with the Code of Practice for Energy Efficiency of Lighting Installations. The booklet “Guidelines on Energy Efficiency of Lighting Installations” published by EMSD is also available for designers to obtain more information and guidance on efficient lighting design and operation.*

5.2 *Air Conditioning Installations*

*The Code requires that all air conditioning units and plants drawing electrical power from the power distribution system should **preferably** comply with the latest edition of the Code of Practice for Energy Efficiency of Air Conditioning Installations. Any motor control centre (MCC) or motor for air conditioning installations, having an output power of 5kW or greater, with or without variable speed drives, should also be equipped, if necessary, with appropriate power factor correction or harmonic filtering devices to improve the power factor to a minimum*

of 0.85 and restrict the total harmonic distortion (THD) of current to the value as shown in Table 6.1.

5.3 Vertical Transportation

*The Code requires that all electrically driven equipment and motors forming part of a vertical transportation system shall **preferably** comply with the Code of Practice for Energy Efficiency of Lift and Escalator Installations. Modern lift driving systems (e.g. ACVV, VVVF etc.) should be designed and manufactured not simply efficient on its own but with more concern for the possible impact on polluting the power quality of the building power supply system.*

Addition as the last sentence to 1st paragraph of **clause 6.1 Sub-main Circuits** (*words in light black italics are direct extract from original clause, and words in dark black are the addition*) as follows:

*The total harmonic distortion (THD) of current for any circuit should not exceed the appropriate figures in Table 6.1. According to the quantity and nature of the known non-linear equipment to be installed in the building, design calculations are required to demonstrate sufficient provision of appropriate harmonic reduction devices to restrict harmonic currents of the non-linear loads at the harmonic sources, such that the maximum THD of circuit currents, at rated load conditions, shall be limited to those figures as shown in Table 6.1 below. **However, for lift & escalator installations complying with the Code of Practice for Energy Efficiency of Lift and Escalator Installations, the THD requirements of Table 6.1 is relaxed.***

Addition as the **last paragraph to clause 6.2** as follows:

For Domestic buildings, the final circuit configuration may not be in multiples of 3. Balancing on the riser could be achieved by “rotating” the RYB phases floor-by-floor continuously.