

# RECORD OF CONTINUITY AND INSULATION RESISTANCE TEST FOR RING FINAL CIRCUIT

| CKE.ITP.01.30.(00).2012 |   |                               |  |  |  |  |  |  |
|-------------------------|---|-------------------------------|--|--|--|--|--|--|
| Date Issued             | : | 2 <sup>nd</sup> February 2012 |  |  |  |  |  |  |
| Revision                | : | -                             |  |  |  |  |  |  |
| Revision Date           | : | -                             |  |  |  |  |  |  |
| Page                    | : | 1 / 2                         |  |  |  |  |  |  |

This *Record Of Continuity* and *Insulation Resistance Test* form shall be used for the reporting on the condition of *Ring Final Circuit Wiring* only for *New Installation* before final connection of the switches, sockets, electrical accessories, fittings and DB.

| A. PARTICULARS OF THE IN  | STALLATION [Pl          | ease tio | ck()                | the re        | elevant   | boxe       | s and   | enter d         | details | as a             | pprop | riate] |  |
|---|-------------------------|----------|---------------------|---------------|-----------|------------|---------|-----------------|---------|------------------|-------|--------|--|
| Project Name  |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Drawing No./Installation<br>Address                                     |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Block No./Floor   |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| DB Designation  |                         |          | Single phase, Phase |               |           |            | R       | Y B Three phase |         |                  | hase  |        |  |
| B. TEST INSTRUMENT USER   | )                       |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Instrument Brand  |                         |          | Model No.           |               |           | Serial No. |         |                 |         | Calibration Date |       |        |  |
| Insulation & Continuity Tester  |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Insulation Tester   |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
|   |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| C. TEST RESULTS (Please A w   | nere noi applicable.    | Piease   | e rejer             | 10 Pa         | ge 2 joi  | r noie     | es ana  | iesi pi         | roceai  | ires)            |       | 1      |  |
| Type of Wiring <i>Isaa nota</i> 21                                      |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Circuit Peference [see note 2]  |                         |          | -                   |               |           |            |         |                 |         |                  |       |        |  |
| Number of Points  |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
|   | Phase (mm <sup>2</sup>  | <u> </u> |                     |               |           |            |         |                 |         |                  |       |        |  |
| Cable Size  | CPC (mm <sup>2</sup>    | ,<br>)   |                     |               |           |            |         |                 |         |                  |       |        |  |
| C1. CONTINUITY TEST (See T  | est Procedure 1.0)      | ,        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Phase   | (ohms                   | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Neutral (ohms)  |                         |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| СРС   | (ohms                   | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Confirmation of Ring Final<br>Circuit is wired in a Ring                | Phase & (ohms           | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| (Mark <b>Y</b> for YES and <b>N</b> for NO)<br>(See Test Procedure 2.0) | Phase & (ohms CPC       | )        |                     | _             |           |            |         |                 |         |                  |       |        |  |
| C2. INSULATION RESISTANC  | E TEST                  |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| Phase to Neutral (L - N)  | (Mohms                  | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Phase to CPC (L-E)  | (Mohms                  | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Neutral to CPC (N-E)  | (Mohms                  | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| Phase & Neutral to G.I Conduit/Tr                                       | runking (Mohms          | )        |                     |               |           |            |         |                 |         |                  |       |        |  |
| D1 INCLUATION TEST VOLT   | ·c)                     |          |                     | FI            | DEM       | ADK        | S (If A | (m)             |         |                  |       |        |  |
| D2 INSULATION TEST DESISTANCE (Mohms)                                   |                         |          | E. REMARKS (IJ ANY) |               |           |            |         |                 |         |                  |       |        |  |
| D2.INSOLATION TEST RESIS  | TAILE (Monin            |          |                     |               |           |            |         |                 |         |                  |       |        |  |
| F. PENGAKUAN ORANG KO<br>(BAGI PIHAK KONTRAKT                           | MPETEN<br>FOR ELEKTRIK) |          | G.                  | PENG          | GESAH     | HAN        | JABA    | ATAN            |         |                  |       |        |  |
| Diuji Oleh :  |                         |          | Disaksi Oleh :      |               |           |            |         |                 |         |                  |       |        |  |
| (Nama Pendawai)   |                         |          | (Nama)              |               |           |            |         |                 |         |                  |       |        |  |
| Tandatangan :   |                         |          |                     | Tandatangan : |           |            |         |                 |         |                  |       |        |  |
| No. Kekompetenan :  | No. Kekompetenan :      |          |                     |               | Jawatan : |            |         |                 |         |                  |       |        |  |
| Tarikh Ujian :  |                         |          | Taril               | ch            |           |            | :       |                 |         |                  |       |        |  |
| Nama & Cop :<br>Kontraktor  |                         |          |                     |               |           |            |         |                 |         | -                | -     | -      |  |



(Notes & Test Procedure)

# A. <u>NOTES</u>

### 1.0 FORMS NUMBER FOR CONTINUITY AND INSULATION RESISTANCE TESTS

- 1.1 FORM NO: **CKE.ITP.01.29.(00).2012** is for *single phase* points in a single phase DB or single phase points in a three phase DB for ALL CIRCUITS except Ring Final Circuits
- 1.2 FORM NO: **CKE.ITP.01.30.(00).2012** is for *single phase* points in a single phase DB or single phase points in a three phase DB for RING FINAL CIRCUITS only
- 1.3 FORM NO: CKE.ITP.01.32.(00).2012 is for *three phase* points, submain cables, armoured underground cable and street lighting cables

2.0

| CODES FOR TYPE OF WIRING                  |  |   |  |                              |                   |                              |                             |  |  |  |  |
|---|--|---|--|------------------------------|-------------------|------------------------------|-----------------------------|--|--|--|--|
| Α   | В  | С   | D  | Ε                            | F                 | G                            | H<br>(Other - please state) |  |  |  |  |
| PVC<br>Cables in<br>surface GI<br>conduit | PVC<br>Cables in<br>surface<br>UPVC<br>conduit | PVC<br>Cables in<br>concealed<br>GI conduit | PVC<br>Cables in<br>concealed<br>UPVC<br>conduit | PVC<br>Cables in<br>trunking | PVC/PVC<br>Cables | Fire<br>Resistance<br>Cables |                             |  |  |  |  |

**3.0** For Ring Final Circuits, Regulations 612.2.2 of BS7671:2008 calls for the continuity of EACH live conductor (phase and neutral) and the protective conductor to be verified.

### B. TEST PROCEDURES

## 1.0 CONTINUITY OF RING FINAL CIRCUIT CONDUCTORS

- 1.1 The phase, neutral and CPC conductors are identified and the end-to-end resistance of each conductor is measured separately. Record the resistance readings. The readings should be compared with the "Resistance of copper conductors" table for a particular length and size.
- 1.2 A finite reading confirms that there is continuity on the ring conductors under test.

# 2.0 CONFIRMATION OF RING FINAL CIRCUIT IS WIRED IN A RING (4 ends joined method)

### 2.1 Phase and neutral conductors cross-connected.

- 2.1.1 Connect the outgoing phase (P1) conductor to the returning neutral (N2) conductor. (P1 to N2)
- 2.1.2 Connect the returning phase (P2) conductor to the outgoing neutral (N1) conductor. (P2 to N1)
- 2.1.3 Measure the resistance across (P1 to N2) and (P2 to N1) and record the reading.
- 2.1.4 Measure the resistance at each socket on the ring between phase & neutral.
- 2.1.5 If the readings obtained from those Sockets wired into the ring are all the same and equal to the resistance across (P1 to N2) and (P2 to N1) then the ring final circuit is confirmed.
- 2.1.6 If the readings are different, this will indicate the presence of a bridge or maybe due to incorrect connections of the ends of the ring.
- 2.1.7 If they are connected P1 to N1 and P2 to N2 then the readings will increase or decrease as successive measurements round the ring are taken.

## 2.2 Phase and CPC conductors cross-connected.

2.2.1 The above steps is then repeated but with the phase and CPC conductors cross-connected.