Distribution Code Consultation Response Proforma

DCRP/21/04/PC: Engineering Recommendation (EREC) G12 Issue 4 Amendment 2

Requirements for the Application of Protective Multiple Earthing to Low Voltage Networks

Stakeholders are invited to respond to this consultation, expressing their views or providing any further evidence on any of the matters contained within the consultation document. Stakeholders are invited to supply the rationale for their responses to the set questions.

Please send your responses and comments by **17:00 on 7 May 2021** to dcode@energynetworks.org and please title your email:

'**Consultation Response DCRP/21/04/PC EREC G12 Issue 4 Amendment 2**'.

Please note that any responses received after the deadline may not receive due consideration by the Working Group.

Any queries on the content of the consultation pro-forma should be addressed to DCode Administrator on 020 7706 5100, or to dcode@energynetworks.org

Respondent	*Dr Tony Sung*
Company Name	*Chartered Institution of Building Services Engineers*
No. of DCode Stakeholders Represented	25,000 CIBSE members
Stakeholders represented	*for CIBSE members (Electrical consultants and contractors)*
Role of Respondent	*Chairman of CIBSE Electrical Services Group Committee*
We intend to publish the consultation responses on the DCode website. Do you agree to this response being published on the DCode website? [Y/N]	Yes

Distribution Code Consultation Response Proforma

	Question	Response
Q1	Do you agree that the proposed amendments to EREC G12 Issue 4 achieve the Distribution Code Objectives?	Yes
Q2	Do you agree with the proposed text contained in EREC G12 Issue 4, or do you have any alternatives to propose?	Most of the proposed text are fine. But, please see below alternatives we proposed.

Please provide comments relating to the specific technical content of the EREC[1]

Page / line No	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
Page 7/ Row 25			General	BS 7671:2008 (2011) is being stated. Should it be referring to BS 7671:2008 (2018 as amended) or (2020 as amended)?	Amend the reference to "BS 7671:2008 (2018 as amended) or (2020 as amended) where appropriate."	
Page 7 Row 22	List of BS and BS EN Standards		General	Apart from BS 7671, the listed standards do not have the year of publications. This could cause confusion if there have been changes in a particular standard that the information or clauses been updated.	Add the year of publication to the BS and BS EN standards that G12 has referred to.	
Page 7 Row 28	List of ENA Standards		General	Same as above	Add the year of publication to the ENA standards that G12 has referred to.	
Page 8 Row 17			Editorial	BS 7671:2008 (2011) is being stated. As it would have indicated that BS 7671:2008 (2018 as amended) is the one G12 uses, only need to refer to BS 7671 from this point onward.	Page 7 already stated that G12 makes specific reference to either the 2018 or 2020 amended edition of BS7671. Amend the reference to "BS 7671",	

[1] Add more rows if required.

Distribution Code Consultation Response Proforma

Page / line No	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
Page 9 Row 28	3.11		Technical	Is there any difference between PME and TN-C-S? Is it possible for TN-C-S distribution being installed without multiple earths?	Suggest for this clause, add " the PEN conductor will be earthed at every 40m or less."	
Page 9 Row 32	3.12		Technical	The sentence "PNB refers to the situation where there is only one point in a network at which consumers' installations are connected to a single source of voltage." is technically confusing.	Suggest amend to read "PNB can be found in TN-C systems where the neutral and earth are always combine." The remainder of the clause stays.	
Page 9 Row 39	3.13		editorial	Typo	Current	
Page 11 Row 9	4.2		Ed / technical	"the earthing systems shall be segregated" lacks clarity in its functional requirements.	Suggest amend to read "the earthing systems shall be electrically segregated". The next sentence stays and gives the method to achieve the functional requirements is by adequate physical segregation distance.	
Page 11 Row 13	4.3		Ed/technical	"No protective device shall be included in the supply neutral conductor or any earthing connection of a low voltage network."	Can this be relaxed if the phase line of the supply will also be open (e.g., a linked MCCB) at the same time?	
Page 13		4.4	technical	An end of main neutral earth electrode is shown at the end of the distributing mains. Since neutral and earth are connected throughout the length, for any SNE cable the separate earth will carry a portion of the neutral return current under normal operating conditions.	Does it mean that all the customers on this supply will only be either PME or TT? Normally for TN-S systems, the CPC or earthing return will only see earth fault currents not neutral currents under normal operating conditions. Here, the earth return of the TN-S will carry neutral current. TN-S can no longer apply to any of these customers, can it?	
Page 17 Row 4			technical	Why a value of 40 Ohms is stated here and not 20 Ohms as stated in previous clauses?	Please clarify the inconsistency. Suggest replace 40 Ohms with 20 Ohms.	

Distribution Code Consultation Response Proforma

Page / line No	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
Page 24 Row 41-45	6.2.5		Technical	The sentences here mention "Competence person" and "electrician". How can it be ascertain the "electrician" has got the necessary qualifications and experience to make the decision on the criteria for electric shock avoidance for a wet body which needs a good understanding of BS EN/IEC 60479 series of standards?	Suggest the term electrician to be replace by "an competent and experienced engineer"	
Page 27 Rows 24 and 25	6.12		Technical	How will the unbalance of 40% for 3-phase supply and 20-Ohms resistance to earth prevent the electric shock risk danger from Open-PEN conductor fault upstream of the supply intake point?	Please clarify. Suggest after these clauses, add "Suitable additional resistance should (or could) be provided to ensure the effective touch voltage of the user of the EVCP will not be exceeded."	
Page 32 Row 26	6.2.16.2		Technical	This version of G12 now states that "As EVCPs will be used in all weather conditions, the contact scenario should be assumed to be in wet conditions." It should be noted that the bare skin body resistance of a person in wet conditions is much lower than under dry conditions. However, BS 7671's O-PEN protection device has a safety operation threshold set at 70V which IEC 60479-1 considers the value unsafe for a person under wet conditions.	The wet conditions stipulated in G12 invalidates the current edition BS 7671 safety limit for the O-PEN protection device. For prudence and the need to exercise "duty of due care", suggest remove the BS7671 reference only for this version of G12 and, amend to read "the design and construction of an open neutral detection and earth disconnection device must ensure that under wet conditions, the resulting touch voltage under O-PEN fault conditions shall not exceed the calculated safety limit based on BS EN/IEC 60479-1 for a duration that is hazardous to the person." ENA may wish to specify the worst case to be considered - e.g., under both hands to feet or under left hand to feet, with or without shoes. It can also refer the readers to consult BS EN 50522 and TS41-24 for the method of calculating the safety limit.	