





Modification	At what stage is this document in the process?
<h1>DCRP/17/03</h1> <h2>Revision of Engineering Recommendation (EREC) P25</h2> <p>The short-circuit characteristics of single-phase and three-phase low voltage distribution networks.</p>	<div> <div>01 Modification</div> <div>02 DCRP report</div> <div>03 Public Consultation</div> <div>04 Final Modification Report</div> </div>
<p>The purpose of this document is to assist the Authority in its decision to implement the proposed modifications to Engineering Recommendation P25 and the Distribution Code. The proposed modifications were subject to industry consultation in March 2017. Responses from this consultation show that the industry is in favour of these modifications.</p> <p>Date of publication: 8 January 2018</p>	
<p>Recommendation</p> <p>The Distribution Code Review Panel (DCRP) recommend that the proposed modifications are made to the Engineering Recommendation (EREC) P25 and the Distribution Code.</p> <p>ER P26 is to be archived and reference to it as an annex 1 qualifying standard is to be removed from the Distribution Code.</p>	
	<p>The Proposer recommends that this modification should be:</p> <p>Submitted to the Authority for approval</p>
	<p>High Impact:</p> <p>None</p>
	<p>Medium Impact:</p> <p>None</p>
	<p>Low Impact:</p> <p>All Users of the Distribution System, ie all Connectees at LV</p>

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Timetable		
Workgroup Report presented to Panel	9 March 2017	
Draft Modification Report issued for consultation	17 March 2017	
Consultation Closed	14 April 2017	
Final Modification Report available for Panel	4 January 2018	
Final Modification Report submitted to Authority	8 January 2018	

1. Purpose of the Modification

Guidance relating to short circuit characteristics for 230 V single-phase supplies and 400 V three-phase supplies is currently provided in ER P25 Issue 1 (1996) and ER P26 Issue 1 (1985). The contents of both documents have been subject to a technical revision under the auspices of an ENA Working Group. As a result of this work, both documents have been merged into one modified Engineering Recommendation (EREC) P25 Issue 2 (2018). This document, shall continue to be referenced as an Annex 1 Qualifying Standard in the GB Distribution Code (DCode).

2. EREC P25 Revision Summary

Revision of ER P25 Issue 1 (1996) and ER P26 Issue 1 (1985) commenced early 2016, under the auspices of an ENA Working Group, which consisted of representatives from all UK Distribution Network Operators (DNOs). Terms of Reference for the working group can be found in appendix 12.1.

The revision work addressed a number of essential editorial and technical amendments -

- Current topics in both ER P25 and P26 were retained but the documents were amalgamated owing to duplication and commonality between the two.
- The calculations in the document were reviewed and the underlying assumptions were clarified in the final text. It was necessary to marginally increase the values for short-circuit levels in the revised document to reflect the latest calculations.
- Included guidance on assessing the impact of LV connection generation on short-circuit levels.

A comprehensive list of changes can be found in appendix 12.2 – *Document amendment summary* and they are also recorded in the amendments since publication section of EREC P25 (2018).

The guidance in ENA EREC P25 (2018) is applicable to designers of customer LV installations and it is expected that such persons are conversant with the requirements of BS 7671 (IET Wiring Regulations).

Following agreement of a revised EREC P25 draft by the ENA Working Group, the document was subject to a DCode public consultation in Spring 2017 (www.dcode.org.uk/consultations, DCRP/17/03). This consultation captured circulation to industry stakeholder and included circulation to the BSI Committee, JPEL/64 (Electrical Installations of Buildings) who govern British Standard (BS) 7671.

In general, there were no major comments raised during the consultation. All comments submitted during the public consultation were addressed (Refer to appendix 12.3 - *DCode Consultation response ER P25 Consolidated TCL v3_Approved*) and a final draft of EREC P25 was agreed for approval by DCRP at the meeting of the Panel on 4 January 2018.

The revised EREC P25 now reflects the latest terminology, short-circuit calculation assumptions and LV generation considerations as agreed by the Working Group and those involved in the public consultation.

Given that EREC P25 is an Annex 1 DCode Qualifying Standard, it has been necessary to make changes to the references in the DCode prior to publishing the revised version of EREC P25 (2018).

3. Where is P25 referenced in the DCode?

The DCode refers to ER P25 and ER P26 in a number of instances. These instances require updating as described below.

DCode Annex 1 list of Qualifying Standards includes the following documents:

Engineering Recommendation P25/1. *The short circuit characteristics of electricity boards low voltage distribution networks and the co-ordination of overcurrent protective devices on 230V single phase supplies up to 100A.*

Engineering Recommendation P26. *The estimation of the maximum prospective short circuit current for three phase 415V supplies.*

It is proposed that reference to the above documents are replaced with:

Engineering Recommendation P25. *The short-circuit characteristics of single-phase and three-phase low voltage distribution networks.*

DPC4.3.2 references P25 and P26 as follows:

Guidance on the short circuit characteristics of the Low Voltage System and associated supplies is provided in Electricity Supply Industry engineering publications, including Items 7 and 8 in Annex 1 Engineering Recommendation P25, “The short circuit characteristics of electricity board’s low voltage distribution networks and the co-ordination of overcurrent protective devices on 230V Single Phase supplies up to 100 Amps”, and Engineering Recommendation P26/1, “The estimation of the maximum prospective short circuit current for three phase 415V supplies”.

It is proposed to replace the above text with:

Guidance on the short circuit characteristics of the Low Voltage System and associated supplies is provided in Electricity Supply Industry engineering publications, including Items 7 in Annex 1 - Engineering Recommendation P25, “The short-circuit characteristics of single-phase and three-phase low voltage distribution networks”.

DPC4.4.1 Item (b) references P26 as follows:

In appropriate circumstances, details of the System to which connection is to be made will be provided by the DNO. Guidance on the short circuit characteristics of the three phase Low Voltage system and associated supplies is provided in Electricity Supply Industry engineering publications, including Item 8 in DGD Annex 1 Engineering Recommendation P26/1, "The estimation of the maximum prospective short circuit current for three phase 415V supplies".

It is proposed to replace the above text with:

In appropriate circumstances, details of the System to which connection is to be made will be provided by the DNO. Guidance on the short circuit characteristics of the three phase Low Voltage system and associated supplies is provided in Electricity Supply Industry engineering publications, including Item 7 in DGD Annex 1 Engineering Recommendation P25 "The short-circuit characteristics of single-phase and three-phase low voltage distribution networks".

DPC6.5.1 references P25 and P26 as follows:

The short circuit rating of User's Equipment at the Connection Point should be not less than the design Fault Level of the DNO's Distribution System to which it is connected. The choice of Equipment for connection at Low Voltage may take into account attenuation in the service lines as specified in DGD Annex 1, Item 7, Engineering Recommendation P25, "The short-circuit characteristics of single-phase low voltage distribution networks" and item 8 Engineering Recommendation P26, "The short-circuit characteristics of three-phase low voltage distribution networks". The DNO in the design of its System will take into account the contribution to Fault Level of the User's connected System and Apparatus.

It is proposed to replace the above text with:

The short circuit rating of User's Equipment at the Connection Point should be not less than the design Fault Level of the DNO's Distribution System to which it is connected. The choice of Equipment for connection at Low Voltage may take into account attenuation in the service lines as specified in DGD Annex 1, Item 7, Engineering Recommendation P25, "The short-circuit characteristics of single-phase and three-phase low voltage distribution networks". The DNO in the design of its System will take into account the contribution to Fault Level of the User's connected System and Apparatus.

It will also be necessary to complete editorial amendments to all DGD Annex 1 Qualifying Standards Item numbers referred to throughout the DCode text, as a result of the deletion of Item 7 (P26).

A copy of the proposed DCode legal text can be found in appendix 12.4 of this report.

4. Impacts on Total System and the DNOs System Systems

There is no impact on the Total System, or the DNOs System as a result of the amendments to the content in ENA EREC P25.

5. Impacts on DNOs Systems' Users

Since ENA EREC P25 is written as a guidance document to assist DNOs Systems' Users with estimation of the maximum fault level at their supply point, there is no impact by way of the document being technically updated to reflect latest network characteristics.

6. Assessment against Distribution Code Objectives

The proposed amendments better facilitate the Distribution Code objectives:

(i) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the distribution of electricity;

The amalgamation of ER P25 and ER P26 into one comprehensive standard will ensure a progressive and efficient improvement in undertaking short circuit current calculations of maximum prospective short-circuit current (PSCC) on the DNO LV network and at the supply terminals.

(ii) To facilitate competition in the generation and supply of electricity

The proposal has a neutral impact on this objective.

(iii) Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators.

The proposal has a neutral impact on this objective.

(iv) Promote efficiency in the implementation and administration of the Distribution Code.

The proposal has a neutral impact on this objective.

7. Impact on other Industry documents

There are no impacts on other industry documents with the exception of reflective changes to the DCode.

8. Environmental Impact Assessment

There are no environmental impacts associated with this proposed modification.

9. Workgroup Recommendations

The workgroup recommends that the changes recorded in the Document Amendment Summary (see appendix 12.2) are implemented in the revised EREC P25 and the changes to the DCode as outlined in section 3 of this report should also be implemented.

10. Distribution Code Review Panel Recommendation

At the meeting of the Distribution Code Review Panel (the Panel) held on 4 January 2018, the Panel unanimously agreed to the submission of the Report to Authority and that the modification proposal better facilitated the objectives of the Distribution Code.

11. Recommendation

The Licenced Distribution Network Operators and the DCRP recommend that this modification report should;

- be submitted to the Authority for approval; and
- subject to the agreement of the Authority the modification should be implemented from the date the revised Distribution Code is published. This date is recommended as 1 March 2018

12. Appendices

12.1 – WG Terms of Reference.

12.2 – Document amendment summary.

12.3 – Distribution Code consultation responses.

12.4a – Final Distribution Code v30 Legal Text (Clean)

12.4b – Final Distribution Code v30 Legal Text (Tracked)

12.5 – Final v6 EREC P25 (2018) Legal Text.

