

# DIN CEN/TS 14826:2004-10 (E)

Postal services - Automatic identification of items - Two dimensional bar code symbol print quality specification for machine readable Digital Postage Marks; English version CEN/TS 14826:2004

---

| Inhalt   | Seite |
|--|-------|
| Foreword .....   | 4     |
| Introduction.....  | 5     |
| 1 Scope.....   | 7     |
| 2 Normative references.....  | 7     |
| 3 Terms and definitions .....  | 7     |
| 4 Symbols and abbreviations.....   | 8     |
| 5 Requirements.....  | 9     |
| 6 Basic measurement methodology .....  | 10    |
| 7 Verification requirements for Digital Postage Marks.....   | 11    |
| 7.1 Verification equipment.....  | 11    |
| 7.2 Optical geometry .....   | 11    |
| 7.3 Light source .....   | 11    |
| 7.4 Measuring aperture .....   | 12    |
| 7.4.1 Measuring aperture for two-dimensional multi-row symbologies .....   | 12    |
| 7.4.2 Measuring aperture for two-dimensional matrix symbologies.....   | 13    |
| 7.5 Mail format .....  | 13    |
| 8 Grading implications for individual symbol attributes.....   | 13    |
| 9 Additional grading parameters - Quiet zone .....   | 15    |
| 10 Qualification of printing systems for Digital Postage Marks.....  | 15    |
| Annex A (normative) Test procedure for printing systems for Digital Postage Marks .....  | 16    |
| A.1 Environmental conditions for test.....   | 16    |
| A.2 Test materials .....   | 16    |
| A.3 Test procedure.....  | 17    |
| Annex B (informative) Light sources and spectral response characteristics for verification of Digital Postage Marks .....      | 18    |
| B.1 Narrow-band illumination .....   | 18    |
| B.2 Broad-band illumination (white light).....   | 18    |
| B.2.1 General .....  | 18    |
| B.2.2 Halogen lamps.....   | 19    |
| B.2.3 Light emitting diode .....   | 19    |
| B.2.4 Gas discharge lamp .....   | 19    |
| B.2.5 Fluorescent lamps.....   | 20    |
| Annex C (informative) Symbol parameters measured in accordance with ISO/IEC 15415 .....  | 21    |
| C.1 Parameters for two-dimensional multi-row symbols.....  | 21    |
| C.2 Parameters for two-dimensional matrix symbologies.....   | 22    |
| Annex D (informative) Characteristics of Digital Postage Mark printing and reading environments that affect print quality..... | 23    |
| D.1 Printing of Digital Postage Marks .....  | 23    |
| D.1.1 Ink-jet printing.....  | 23    |
| D.1.2 Laser printing.....  | 23    |
| D.1.3 Thermal transfer printing.....   | 24    |
| D.1.4 Direct thermal printing.....   | 24    |

|       |  |    |
|-------|--|----|
| D.1.5 | Matching X dimension to printer resolution ..... | 24 |
| D.2   | Reading environment .....                        | 25 |

**Annex E (informative) Possible causes of low parameter grades in the Digital Postage Mark**

|        |                                     |    |
|--------|-------------------------------------|----|
|        | environment .....                   | 26 |
| E.1    | Multi-row symbologies .....         | 26 |
| E.1.1  | Symbol Contrast .....               | 26 |
| E.1.2  | Minimum reflectance .....           | 26 |
| E.1.3  | Minimum edge contrast .....         | 26 |
| E.1.4  | Modulation .....                    | 26 |
| E.1.5  | Decode .....                        | 27 |
| E.1.6  | Defects .....                       | 27 |
| E.1.7  | Decodability .....                  | 27 |
| E.1.8  | Codeword yield .....                | 27 |
| E.1.9  | Unused error correction (UEC) ..... | 27 |
| E.1.10 | Quiet zone .....                    | 27 |
| E.1.11 | Print growth .....                  | 28 |
| E.1.12 | Codeword quality .....              | 28 |
| E.2    | Matrix symbologies .....            | 28 |
| E.2.1  | Symbol Contrast .....               | 28 |
| E.2.2  | Fixed pattern damage .....          | 28 |
| E.2.3  | Modulation .....                    | 28 |
| E.2.4  | Axial non-uniformity .....          | 29 |
| E.2.5  | Grid non-uniformity .....           | 29 |
| E.2.6  | Unused error correction .....       | 29 |
| E.2.7  | Quiet zone .....                    | 29 |
| E.2.8  | Print growth .....                  | 29 |
|        | Bibliography .....                  | 30 |