



IEC 60079-0

Edition 8.0 2026-06

# INTERNATIONAL STANDARD

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**Explosive atmospheres -  
Part 0: Equipment - General requirements**

Sample Document

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **Explosive atmospheres - Part 0: Equipment - General requirements**

#### FOREWORD

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This eighth edition cancels and replaces the seventh edition, published in 2017. This edition constitutes a technical revision.

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The significance of the changes between IEC 60079-0:2017 (Edition 7) and IEC 60079-0:— (Edition 8) are as listed below:

| Explanation of the significance of the changes   | Clause  | Type                        |           |                         |
|--|---------|-----------------------------|-----------|-------------------------|
|  |         | Minor and editorial changes | Extension | Major technical changes |
| <i>Equipment</i> replaced by <i>Ex Equipment</i> where appropriate   | General | X                           |           |                         |
| <i>Electrical equipment</i> replaced by <i>equipment</i> where appropriate   | General | X                           |           |                         |
| Use of term <i>degree of protection (IP Code)</i> reviewed throughout the document for consistency   | General | X                           |           |                         |
| Clarify the use of <i>volume fraction</i> terms  | General | X                           |           |                         |
| Clarified the <i>documentation</i> is more clearly specified as <i>schedule drawings</i> .   | General | X                           |           |                         |
| Added NOTE 4 to address short-term thermal excursions  | 1       | X                           |           |                         |
| IEC TS 60079-46 added  | 1       | X                           |           |                         |
| IEC TS 60079-47 is added   | 1       | X                           |           |                         |
| IEC 62784 is added   | 1       | X                           |           |                         |
| ISO 80079-37 is added  | 1       | X                           |           |                         |
| IEC 60079-20-1 is replaced by ISO/IEC 80079-20-1   | 2       | X                           |           |                         |
| IEC 60243-2 is added   | 2       | X                           |           |                         |
| Admitted term <i>minimum ignition temperature of an explosive gas atmosphere</i> added. Standard number corrected  | 3.6     | X                           |           |                         |
| Definition for <i>reverse charging</i> clarified   | 3.7.10  | X                           |           |                         |
| Figure added to typical <i>battery compartment</i>   | 3.7.14  |                             |           |                         |
| Definition for <i>brush discharge</i> added  | 3.8     | X                           |           |                         |
| Definition for <i>bushing</i> clarified to be an insulating device   | 3.10    | X                           |           |                         |
| Note 1 to entry for <i>certificate</i> revised to use declaration, acceptance, and certification terms in accordance with ISO/IEC 17000                                      | 3.13    | X                           |           |                         |
| Note 1 to entry for <i>coating</i> added to clarify application in standards for explosive atmospheres   | 3.14    | X                           |           |                         |
| Definition for <i>continuous operating temperature</i> revised to show that it is a manufacturer defined property. Added admitted term <i>continuous service temperature</i> | 3.21    | X                           |           |                         |
| Term <i>comparable converter</i> added along with domain <for use with electric machines> added  | 3.22.2  | X                           |           |                         |
| Definition for dust clarified along with Note 1 to entry   | 3.25    | X                           |           |                         |
| Note 2 to entry for <i>conductive dust</i> added to clarify how metal dust is considered   | 3.25.2  | X                           |           |                         |
| Term <i>electrostatic bonding</i> along with admitted terms <i>electrostatic bonded</i> and <i>electrostatically bonded</i> added  | 3.30    | X                           |           |                         |
| Note 1 to entry for <i>portable equipment</i> clarified to include equipment that is carried, but intended to be hand-held when in use                                       | 3.33.5  | X                           |           |                         |
| Term <i>EPL G-</i> added   | 3.35.7  | X                           |           |                         |
| Term <i>EPL D-</i> added   | 3.35.11 | X                           |           |                         |
| Term and definition for <i>explosion-protected</i> added   | 3.36    | X                           |           |                         |
| Definition for <i>Ex Component</i> clarified   | 3.39    | X                           |           |                         |

| Explanation of the significance of the changes   | Clause   | Type                        |           |                         |
|--|----------|-----------------------------|-----------|-------------------------|
|  |          | Minor and editorial changes | Extension | Major technical changes |
| Definition for <i>Ex Component Enclosure</i> added   | 3.40     | X                           |           |                         |
| Definition for <i>explosive atmosphere</i> revised to include mist in accordance with IEC 60079-10-1   | 3.42     | X                           |           |                         |
| Note 1 to entry for <i>free space</i> clarified to address space in components   | 3.48     | X                           |           |                         |
| Term and definition for <i>insulation coordination</i> added from IEC 60050-442-09-01  | 3.55     | X                           |           |                         |
| Term and definition for <i>isolated circuit</i> added  | 3.55.1   | X                           |           |                         |
| Term and definition for <i>macro-environment</i> added   | 3.55.2   | X                           |           |                         |
| Definition for <i>mains circuit</i> clarified  | 3.55.3   | X                           |           |                         |
| Note 2 to entry for <i>mains supply</i> clarified to address transients  | 3.55.4   | X                           |           |                         |
| Term and definition for <i>micro-environment</i> added   | 3.55.5   | X                           |           |                         |
| Term and definition for <i>overvoltage category</i> relocated to part of <i>insulation coordination</i>  | 3.55.6   | X                           |           |                         |
| Term and definition for <i>pollution</i> added   | 3.55.7   | X                           |           |                         |
| Term and definition for <i>pollution degree category</i> relocated to part of <i>insulation coordination</i>   | 3.55.8   | X                           |           |                         |
| Term and definition for <i>local temperature</i> relocated from Table 3  | 3.59     | X                           |           |                         |
| Definition for <i>propagating brush discharge</i> revised for clarity  | 3.67     | X                           |           |                         |
| Term and definition for <i>Schedule of Limitations</i> added   | 3.79     | X                           |           |                         |
| Definition for <i>special fasteners</i> revised to clarify they are used when a Type of Protection requires them   | 3.85     | X                           |           |                         |
| Term and definition for <i>Specific Conditions of Use</i> added  | 3.86     | X                           |           |                         |
| Term and definition for <i>supercapacitor</i> , including admitted term <i>electrochemical capacitor</i> added from IEC 60050-114-03-03  | 3.87     | X                           |           |                         |
| Term and definition for "X" clarified. Note 2 to entry added to show that these are in addition to requirements for the installation design, selection, erection, inspection, maintenance, repair, and overhaul requirements | 3.89     | X                           |           |                         |
| General term <i>wiring</i> added   | 3.99     | X                           |           |                         |
| Term and definition added for <i>field wiring</i>  | 3.99.1   | X                           |           |                         |
| Term and definition added for <i>factory wiring</i>  | 3.99.2   | X                           |           |                         |
| Term and definition added for <i>factory wiring within enclosures</i>  | 3.99.2.1 | X                           |           |                         |
| Term and definition added for <i>factory wiring between enclosures</i>   | 3.99.2.2 | X                           |           |                         |
| Term and definition for <i>worst-case</i> , including admitted terms <i>most unfavourable</i> and <i>most onerous</i> added  | 3.101    | X                           |           |                         |
| Clarified that Equipment Groups is the correct term in accordance with the TC31 Good Working Practice  | 4.1      | X                           |           |                         |
| Clarified the situation when equipment is evaluated for a particular gas atmosphere.   | 4.5      | X                           |           |                         |
| The ambient temperature range is now a required marking. Where there are multiple ambient temperature range, and it is impractical to include all  | 5.1.1    |                             |           | C1                      |

| Explanation of the significance of the changes   | Clause    | Type                        |           |                         |
|--|-----------|-----------------------------|-----------|-------------------------|
|  |           | Minor and editorial changes | Extension | Major technical changes |
| the ranges in the marking, a Specific Condition Use is used to provide the information.  |           |                             |           |                         |
| Clarified that the dust thickness is considered a layer  | 5.2       | X                           |           |                         |
| Clarified the marking for Da uses the temperature marking prefix T <sub>200</sub>  | 5.3.2.3.1 | X                           |           |                         |
| Clarified the marking for Db   | 5.3.2.3.2 | X                           |           |                         |
| Clarified the small component temperature requirements for where the electrical connection leads or thermal heat transfer connections are integrated into the body of part | 5.3.3     |                             | X         |                         |
| Clarified the application of the safety margin   | 5.3.4     | X                           |           |                         |
| Added NOTE 3 to caution about cyber security risk  | 6.1       | X                           |           |                         |
| Clarified the requirement for general fasteners in accordance with 9.1   | 6.2       | X                           |           |                         |
| Clarified that the limit could be a temperature class or a maximum surface temperature   | 6.3       | X                           |           |                         |
| Clarified that this sub-clause applies to large electric machines  | 6.4       | X                           |           |                         |
| Clarified the requirements for a gasket adhesive   | 6.5       | X                           |           |                         |
| Added NOTES 2 and 3, and deleted 6.6.3 to clarify the applicability for the standard to optical radiation  | 6.6.1     | X                           |           |                         |
| Clarified applicability of user-controlled limit settings  | 6.6.1     | X                           |           |                         |
| Included material specifications for other than plastics, elastomers, and cements  | 7.1.2.5   |                             | X         |                         |
| Clarified in a NOTE why there are no requirements for minimum COT specification  | 7.2.2     | X                           |           |                         |
| Introduced a reduced margin for TI or RTI of battery powered portable or personal equipment.   | 7.2.2     |                             | X         |                         |
| Clarified protection from UV damage  | 7.3       | X                           |           |                         |
| Clarified applicability of electrostatic charges on external non-metallic materials  | 7.4.1     | X                           |           |                         |
| Clarified options available to avoid electrostatic charges   | 7.4.2     | X                           |           |                         |
| Clarified and expanded the techniques that can be used to avoid electrostatic charges  | 7.4.2.2   |                             | B1        |                         |
| Clarified and expanded the techniques that can be used to avoid brush discharges for Group I or Group II equipment   | 7.4.2.3   |                             | B2        |                         |
| Clarified and expanded the techniques that can be used to avoid electrostatic charges for Group III equipment  | 7.4.2.4   |                             | B3        |                         |
| Clarified and expanded the techniques that can be used to avoid brush discharges for Group III equipment   | 7.4.2.4   |                             | B4        |                         |
| Clarified the requirements for external conductive parts   | 7.5       |                             |           | C2                      |
| Clarified the title of 9.1 to facilitate a clear reference to these requirements from other Type of Protection standards. Relocated the hex set screw requirements         | 9.1       | X                           |           |                         |
| Combined all of the requirements for special fasteners into 9.2  | 9.2       | X                           |           |                         |
| Changed the former NOTE 1 to a requirement to include the temperature range as part of the Schedule of Limitations   | 13.5      |                             |           | C3                      |

| Explanation of the significance of the changes  | Clause         | Type                        |           |                         |
|---|----------------|-----------------------------|-----------|-------------------------|
|   |                | Minor and editorial changes | Extension | Major technical changes |
| Added new sub-clause on electrostatic bonding   | 15.1.3<br>15.2 |                             |           | C4                      |
| Clarified text to remove "for example" as metric and NPT are the only two permitted entry threads   | 16.2           | X                           |           |                         |
| Added text to clarify the determination of branching point and entry point temperature for electric machines. This is consistent With IECEx DS/2018/002   | 16.6           | X                           |           |                         |
| Clarified that "this standard" meant IEC 60079-34 as stated in the first paragraph  | 17.1           | X                           |           |                         |
| Sub-clause 17.2 was reorganized to apply to ventilation and cooling. With the exception of 17.2.3, there was no intent to change requirements, only to better define for consistent application                         | 17.2           | X                           |           |                         |
| Requirements for thermal protection were added  | 17.2.3         |                             |           | C5                      |
| New clarifications for factory-wiring between enclosures  | 19             |                             |           | C6                      |
| Additional options for securing Gc or Dc connectors   | 20.1 c)        |                             | X         |                         |
| Additional requirements for maintaining the degree of protection (IP Code) on an enclosure where an appliance inlet or socket-outlet is mounted. This is consistent with IECEx DS/2015/003                              | 20.1           |                             |           | C7                      |
| Added reference to IEC 60079-17 and IEC 60079-19 for the use of replacement lamps.  | 21.5           | X                           |           |                         |
| Added clarification that specific Type of Protection standards permit the connection of cells in parallel. This was previously a NOTE.  | 23.2           | X                           |           |                         |
| Minor corrections to nominal voltage and maximum open-circuit voltage in accordance with latest cell standards  | 23.3           | X                           |           |                         |
| Added Sodium Nickel Chloride cells  | Table 13       |                             | X         |                         |
| Added requirements for temperature considerations when using Sodium Nickel Chloride cells   | 23.5           |                             | X         |                         |
| Clarified requirements for replacement cells or batteries   | 23.11          | X                           |           |                         |
| Split Clause 24 into 24.1 schedule drawings and 24.2 related drawings   | 24             | X                           |           |                         |
| Add 24.2 for related drawings   | 24.2           | X                           |           |                         |
| Added clarification that, at the request of the manufacturer, more onerous tests than those specified may be performed.   | 26.1           |                             | X         |                         |
| Clarified NOTE 2 to explain the logic of testing cemented joint windows   | 26.4.1         | X                           |           |                         |
| Revise text to ensure that when the equipment is to be protected from impact or only has a low risk of mechanical danger, that the necessary information is provided to the end user via clearly worded "X" conditions. | 26.4.2         | X                           |           |                         |
| Clarify Table applicability to ensure consistent application  | Table 14       | X                           |           |                         |
| Specifically exclude non-metallic materials of glass and ceramic  | 26.4.3         |                             | X         |                         |
| Clarify marking of degree of protection (IP Code)   | 26.4.5.2       | A1                          |           |                         |
| Specifically exclude enclosures with no free internal volume.   | 26.4.5.1       |                             | X         |                         |

| Explanation of the significance of the changes   | Clause   | Type                        |           |                         |
|--|----------|-----------------------------|-----------|-------------------------|
|  |          | Minor and editorial changes | Extension | Major technical changes |
| Clarify the reasons for specifying permitted positions of equipment with respect to temperature rise, and providing that information to the end user via an "X" condition.   | 26.5.1.1 | X                           |           |                         |
| Clarify the need to consider both maximum and minimum service temperature  | 26.5.1.2 | X                           |           |                         |
| Add permission to consider load diversity with respect to temperature.   | 26.5.1.2 |                             | X         |                         |
| Clarify test voltages with respect to rated voltages   | 26.5.1.3 | X                           |           |                         |
| Add clear permission for linear correction of temperature test results from different ambient temperatures. It is recognized that this has been common practice for many years.  | 26.5.1.3 |                             | X         |                         |
| Clarify the requirements for test dust based on material rather than thermal conductivity.   | 26.5.1.3 | X                           |           |                         |
| Clarification of test procedure to ensure consistent results.  | 26.5.3.2 | X                           |           |                         |
| Added NOTE to refer back to 26.1 for permission to test at more onerous test temperatures.   | 26.7.2   | X                           |           |                         |
| Added NOTE to refer back to 26.1 for permission to test at more onerous test temperatures.   | 26.8     | X                           |           |                         |
| Clarified Table heading to be maximum service temperature  | Table 16 | X                           |           |                         |
| Added new Table 17 for thermal endurance tests specific to personal and portable equipment   | Table 17 |                             | X         |                         |
| Surface resistance test<br>Clarify test procedure to ensure consistent results. Any prior test results from the procedure in Edition 7 and earlier are considered equivalent to the test procedure as revised in Edition 8.    | 26.13    | X                           |           |                         |
| Measurement of capacitance<br>Clarify test procedure to ensure consistent results. Any prior test results from the procedure in Edition 7 and earlier are considered equivalent to the test procedure as revised in Edition 8. | 26.14    | X                           |           |                         |
| Transferred charge test<br>Clarify test procedure to ensure consistent results. Any prior test results from the procedure in Edition 7 and earlier are considered equivalent to the test procedure as revised in Edition 8.    | 26.17    |                             | X         |                         |
| Removal of the permission to use an advisory marking in place of an "X" condition.   | 29.3e)   |                             |           | C8                      |
| Clarification of marking when Ex associated equipment or associated apparatus when combined for both gas and dust atmospheres.   | 29.3f)   | X                           |           |                         |
| Added "h", "qb", "60079-30-1", and "60079-46" to align with the markings in those IEC 60079 and ISO/IEC 80079 series standards.  | 29.4b)   |                             | X         |                         |
| Clarification of 29.4 on how to provide temperature information when multiple ambient temperature and external source of heating and cooling are present   | 29.4d)   | X                           |           |                         |
| Removal of the option to use an "X" condition for ambient temperature rating. It is now a required marking per Clause 5.   | 29.4f)   |                             | X         |                         |