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BSI Standards Publication

# Explosive atmospheres

## Part 40: Requirements for process sealing between flammable process fluids and electrical systems

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## National foreword

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The UK participation in its preparation was entrusted to Technical Committee EXL/31, Equipment for explosive atmospheres.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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# TECHNICAL SPECIFICATION

## Explosive atmospheres – Part 40: Requirements for process sealing between flammable process fluids and electrical systems

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# EXPLOSIVE ATMOSPHERES –

# Part 40: Requirements for process sealing between flammable process fluids and electrical systems

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 60079-40, which is a technical specification, has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

The text of this technical specification is based on the following documents:

| Enquiry draft | Report on voting |
|---|---|
| 31/1134/DTS | 31/1170/RVC |

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60079 series, published under the general title *Explosive atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

# EXPLOSIVE ATMOSPHERES –

# Part 40: Requirements for process sealing between flammable process fluids and electrical systems

## 1 Scope

This document provides specific requirements for process sealing between a flammable process fluid and an electrical system where a failure could allow the migration of the process fluid directly into the premises wiring system.

NOTE Some definitions differentiate the terms “flammable” and “combustible” liquids on the basis of their flashpoints. Combustible liquids under conditions of elevated pressure and/or temperature can lead to the formation of flammable mists and aerosols which are within the scope of this technical specification.

This document contains requirements for evaluation, construction and testing of single process seal equipment, dual process seal equipment, and add-on secondary process seals.

The requirements of this document do not apply to conduit sealing devices, cable glands and other wiring sealing methods addressed in the IEC 60079 series or other standards.

Requirements for basic electrical safety and explosion protection are not addressed by this document, but may apply to the equipment under investigation. The effects of leakage to the environment are not addressed by this document.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*

IEC 60079-2, *Explosive atmospheres – Part 2: Equipment protection by pressurized enclosure "p"*

## 3 Terms and definitions

For the purposes of this document the following terms and definitions apply.

NOTE See Figure 1 for a graphical representation of the various process seal components.

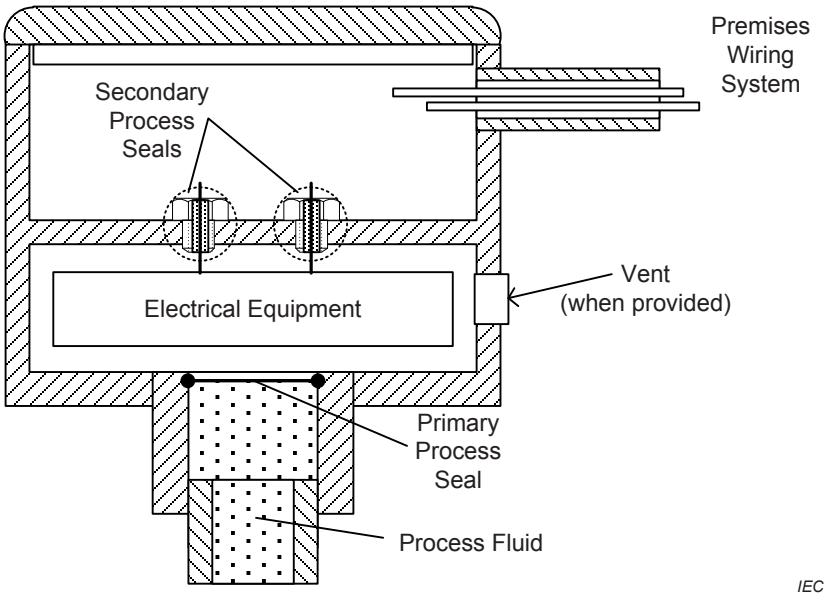


**Figure 1 – Equipment process sealing components**

**3.1**
**dual process seal equipment**
equipment which incorporates, along any single potential leakage path, a primary process seal and one or more secondary process seals such that the failure of two or more independent process seals is required to allow migration of process fluids from their designed containment into the premises wiring system

**3.2**
**process connected equipment**
electrical equipment that contains a process seal and is intended for connection to an external system that contains the process fluid

**3.3**
**process fluid**
gas, liquid or vapour that is used in or is a by-product of an industrial process

Note 1 to entry: For the purposes of this technical specification, use of the term process fluid refers to a flammable process fluid. For further information, refer to IEC 60079-0, IEC 60079-10-1, and IEC 60079-20-1.

**3.4**
**process seal**
seal between the electrical system and a flammable process fluid where a failure could allow the migration of the process fluid into the premises wiring system

Note 1 to entry: Although an entire containment system may constitute a potential source of release under unusual conditions, this technical specification recognizes the concept of infallible containment as defined in IEC 60079-2.

**3.5**
**single process seal equipment**
equipment that incorporates, along any single potential leakage path, a single sealing structure such that a failure of the seal would result in the migration of the process fluid from the designed containment into the premises wiring system

Note 1 to entry: Single process seal equipment in compliance with this document is considered to have a negligible probability of failure when used in accordance with the manufacturer's specification.

**3.6**
**primary process seal**
process seal that is directly in contact with process fluids under conditions of normal operation

**3.7**
**secondary process seal**
process seal that comes into contact with process fluids only in the case of a primary process seal failure

**3.8**
**process seal with moving parts**
process seal containing mechanical parts that, under conditions of normal operation, are capable of motion relative to other parts of the seal

Note 1 to entry: Examples include seals of shafts and rods that transmit rotary or linear motion into the sealed area. Process seals incorporating the following are not considered to be process seals with moving parts:

a) Thin diaphragms and other structures that may deflect when pressurized;

b) Vibrating structures such as tuning forks, coriolis tubes, and vortex sensors.

**3.9**
**unspecified process connected equipment**
equipment not assessed in accordance with this document but designed in accordance with applicable standards for the specific type of equipment

**3.10**
**add-on secondary process seal**
secondary process seal intended to be installed between unspecified process connected equipment and the premises wiring system (see Figure 2)

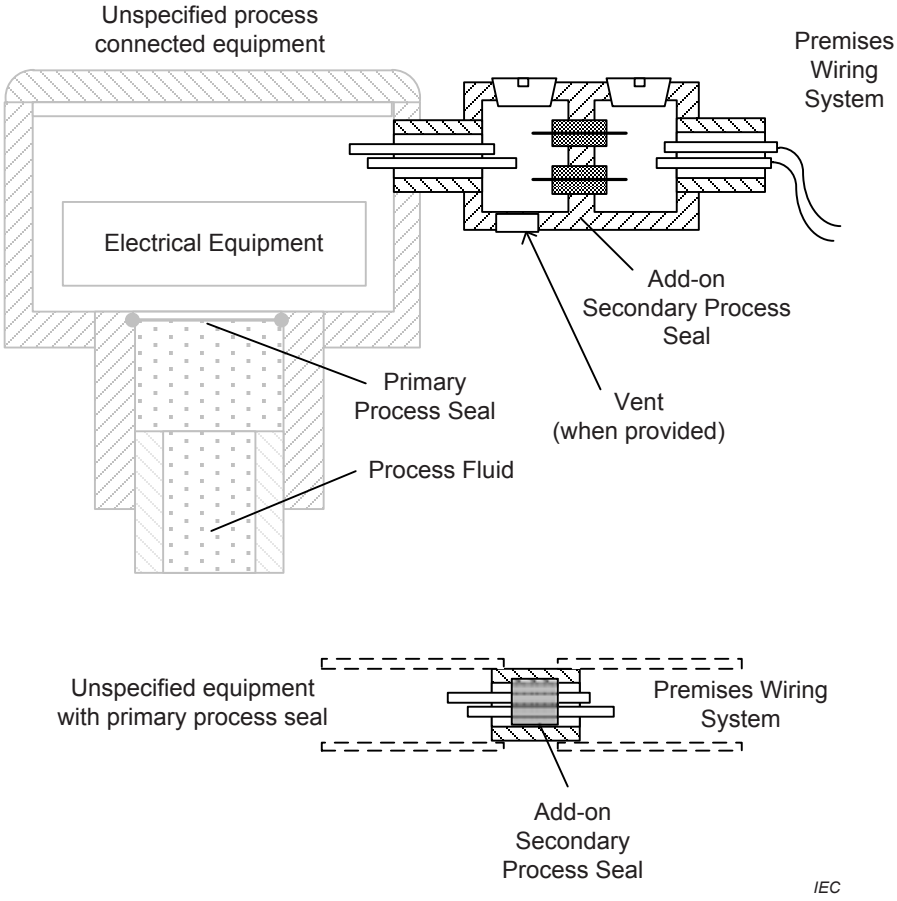


**Figure 2 – Examples of add-on secondary process seals**

**3.11**
**equipment with limited pressure at the electrical connections**
process connected equipment that is rated for a maximum process pressure of 1,5 kPa gauge or is provided with a drain, vent or other means sufficient to prevent pressurizing the premises wiring connection above 1,5 kPa in the event of a failure of the primary process seal

**3.12**
**premises wiring (system)**
interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all their associated hardware, fittings, and wiring devices, both permanently and temporarily installed including (a) wiring from the service point or power source to the outlets or (b) wiring from and including the power source to the outlets where there is no service point

Note 1 to entry: Such wiring does not include wiring internal to appliances, luminaires, motors, controllers, motor control centres, and similar equipment.

**3.13**
**aerosol**
suspension in air or gas of solid or liquid particles

## 4 General requirements

### 4.1 Basis for requirements

The manufacturer’s process seal specifications shall include the following:

a) Process temperature range (the process seal temperature may be different than the published process temperature range for the equipment);

b) Working pressure range;

c) Process wetted materials of construction.

NOTE 1 It is assumed for the purposes of this document that installers will follow standard engineering practice and adhere to industry standards for the selection, installation, and operation of equipment that contains process seals.

Under normal operating conditions, flammable process fluids shall not be released to the atmosphere.

NOTE 2 It is not a requirement of this technical specification that prevention of process fluid leakage to the atmosphere be verified.

### 4.2 Single process seal equipment

Single process seal equipment shall be subjected to the conditioning and acceptance tests specified in 5.2. Single process seal equipment shall not depend upon Bourdon tubes or process seals with moving parts as the primary process seal.

### 4.3 Dual process seal equipment

Dual process seal equipment shall be tested in accordance with 5.3.

Dual process seal equipment incorporating a purge or pressurization of the space between the primary and secondary process seals shall comply with the requirements of IEC 60079-2 relevant to the purging and pressurization apparatus.

The design and manufacture of seals incorporated into equipment with no annunciation and no venting shall minimize the probability of common mode failure.

NOTE 1 For dual process seal equipment incorporating annunciation of a primary process seal failure, long term degradation of the primary and secondary process seals of dual process seal equipment is not considered.

NOTE 2 Local, national or end user regulations can mandate additional requirements.

### 4.4 Equipment with limited pressure at the electrical connections

Equipment that is rated for a maximum process pressure of 1,5 kPa gauge need not be subjected to the conditioning and testing requirements of this technical specification and is considered to meet the requirements of this technical specification.

Equipment rated above 1,5 kPa and provided with a drain, vent or other means sufficient to prevent pressurizing the premises wiring connection above 1,5 kPa in the event of a failure of the primary process seal shall be evaluated in accordance with 5.4.

### 4.5 Purged or pressurized equipment

Process connected equipment using continuous-flow purged enclosures or pressurized equipment with infallible containment that meets the requirements of IEC 60079-2 or similar techniques such that a leak of the containment cannot produce a flammable mixture in the enclosure need not be subject to the conditioning and testing of this technical specification, and is considered to meet the requirements of this technical specification.

NOTE This requirement is not meant to apply to purged or pressurized rooms which are addressed in IEC 60079-13 and IEC TR 60079-16.

### 4.6 Add-on secondary process seals

Add-on secondary process seals shall be subjected to the secondary process seal leakage test of 5.3.5 and shall be marked in accordance with Clause 6 item d).

### 4.7 Annunciators

Leakage annunciation may be achieved either through the inclusion of a vent or drain between the primary and secondary process seals or by electronic sensing or other suitable means. Annunciation methods include but are not limited to:

- audible “whistle";
- visible rupture or leakage;
- electronic detection; and
- detectable failure of the equipment to operate as intended.

## 5 Type verifications and tests

### 5.1 Test sample

Prior to conditioning and test, the sample shall be visually inspected to ensure that it is in compliance with design documents. A single representative test sample shall be subjected to the tests of either 5.2 or 5.3 depending on whether the sample is to be assessed as single or dual process seal equipment. In each test requiring the application of pressure to the process seal or parts of the process seal, a suitable fluid shall be used. Unless otherwise stated, all tests required by this document shall be conducted at a temperature of (20 ± 5) °C and at standard atmospheric pressure as defined by IEC 60079-0.

A flowchart of the conditioning and test process can be found in Annex A.

### 5.2 Single process seal equipment

#### 5.2.1 Order of conditioning

The test sample shall be subjected to the required conditioning in the following order:

a) Temperature cycling;

b) Pressure cycling.

After the prescribed conditioning is completed, the test sample shall be subjected to the leakage and burst pressure tests of 5.2.4 and 5.2.5.

#### 5.2.2 Temperature cycling

For equipment incorporating process seals with non-metallic parts excluding glass and ceramic, a representative sample of the process seal shall be subjected to temperature cycling conditioning as follows:

NOTE 1 Normally, the equipment or parts of the equipment containing the process seal under test is placed in an environmental chamber. This test is not intended to apply a thermal shock or thermal gradient to the process seal.

| | |
|---|---|
| Duration: | A minimum of 2 weeks or 150 cycles (whichever occurs first) |
| Maximum Temperature ($T_{max}$): | Manufacturer’s maximum rated process seal temperature increased by at least 10 K but at most 15 K |
| Minimum Temperature ($T_{min}$): | Manufacturer’s minimum rated process seal temperature reduced by at least 5 K but at most 10 K |
| Stabilization: | The final temperature is considered to have been reached when the rate of change of temperature does not exceed 2 K/h |

If, under normal operating conditions, the temperature of the process seal is maintained such that the maximum fluctuation is limited to 10 K, the temperature cycling may be waived.

See the profile in Figure 3 for a graphical representation of the temperature cycling conditioning.

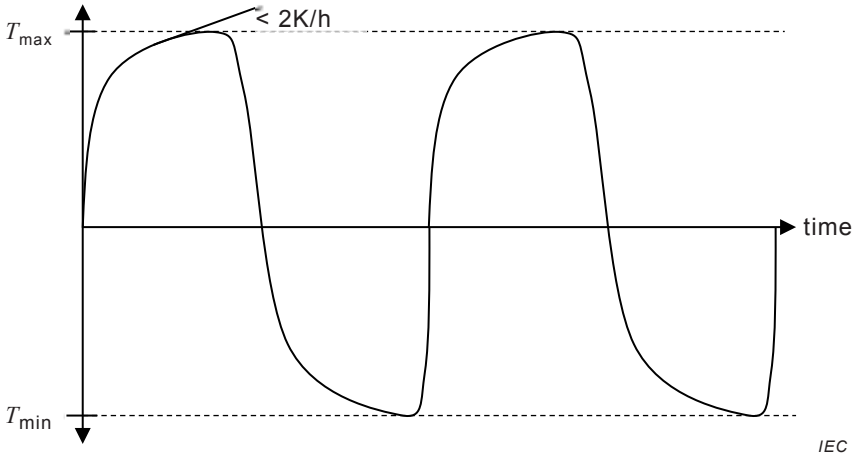


**Figure 3 – Temperature cycle conditioning profile**

As an alternative to the conditioning shown in Figure 3, the manufacturer may provide evidence in support of the ability of the process seal to withstand the effect of temperature variation.

NOTE 2 It is not a requirement of this technical specification that the accuracy of the manufacturer's temperature cycling or evaluation needs to be verified.

### 5.2.3 Pressure cycling

Process seals shall be conditioned by pressure cycling. A representative sample of the process seal shall be cyclically pressurized and depressurized as follows:

| | |
|---|---|
| Duration: | At least 100 000 cycles |
| Maximum Pressure ($P_{max}$): | Manufacturer's rated maximum working pressure |
| Minimum Pressure ($P_{min}$): | Manufacturer's rated minimum working pressure (vacuum applications) |
| Dwell Time: | First 10 000 Cycles: |
| | At least 1 minute at maximum pressure followed by at least 1 minute at minimum pressure |
| | Remaining 90 000 cycles: |
| | At least 5 seconds at maximum pressure followed by at least 5 seconds at minimum pressure |
| | For equipment not rated for vacuum applications, the dwell time at the minimum pressure may be reduced to 1 second |

Positive and negative pressure cycling may be done in separate cycles. Process seals need not be subjected to vacuum pressure conditioning if the vacuum pressure range is less than 5 % of the full working pressure range of the equipment.

If, under normal operating conditions, the pressure applied to the process seal is maintained such that the maximum fluctuation is limited to 34,5 kPa, the pressure cycling may be waived.

As an alternative to the above conditioning, the manufacturer may provide evidence in support of the ability of the process seal to withstand the effect of foreseeable pressure variation.

NOTE It is not a requirement of this technical specification that the accuracy of the manufacturer's pressure variation evaluation needs to be verified.

#### 5.2.4 Leakage test

The process seal shall withstand for at least 1 minute without visible leakage the following overpressure test:

**Table 1 – Leakage test pressures**

| Maximum working pressure | Minimum leakage test pressure |
|---|---|
| $P_{max} \leq 14$ MPa | $2 \times P_{max}$ |
| 14 Mpa $< P_{max} \leq 70$ MPa | $1{,}75 \times P_{max} + 3{,}5$ MPa |
| 70 Mpa $< P_{max}$ | $1{,}3 \times P_{max} + 35$ MPa |

#### 5.2.5 Burst pressure test

The process seal shall withstand for at least 1 minute without rupture the following overpressure test:

**Table 2 – Burst test pressures**

| Maximum working pressure | Minimum burst test pressure |
|---|---|
| $P_{max} \leq 14$ MPa | $3 \times P_{max}$ |
| 14 Mpa $< P_{max} \leq 70$ MPa | $2{,}5 \times P_{max} + 7$ MPa |
| 70 Mpa $< P_{max}$ | $2 \times P_{max} + 42$ MPa |

### 5.3 Dual process seal equipment

#### 5.3.1 Primary process seal leakage test

Test the primary process seal in accordance with 5.2.4.

#### 5.3.2 Primary process seal burst pressure test

Test the primary process seal in accordance with 5.2.5.

#### 5.3.3 Venting pressure determination

Where a vent or drain is provided between the primary and secondary process seals, the secondary process seal and vent shall be shown by test to be compatible with the conditions that would be present upon failure of the primary process seal. An evaluation or test shall be conducted to determine the worst case venting pressure in case of a primary process seal failure. This will be the pressure applied to the secondary process seal for a short period until the annunciation method has revealed the primary process seal failure.

This test shall take into account the pressure and flow capacity of the worst case primary process seal failure as specified by the manufacturer and the pressure and flow capacity of the venting mechanism. The venting pressure may be arrived at through theoretical means. In cases where rupture of an external wall of the equipment enclosure is relied upon for venting, this test shall verify the burst pressure of the enclosure.

NOTE 1 For add-on secondary process seals, it is not possible to determine a reduced vent pressure due to the unknown characteristics of the unspecified process connected equipment.

NOTE 2 In most cases, primary process seal failure is assumed to be a slow leak and the venting pressure is the same as the pressure at which the vent opens.

#### 5.3.4 Verification of annunciation effectiveness

The effectiveness of the primary process seal failure annunciation method(s) shall be verified by inducing a failure of the primary process seal and applying pressure to the equipment. The verification shall be carried out under conditions deemed to be worst case (least detectable) within the manufacturer's rating of the equipment.

#### 5.3.5 Secondary process seal leakage test

##### 5.3.5.1 Equipment incorporating venting

The secondary process seal shall withstand for at least 1 minute, without visible leakage, the application of a minimum test pressure of 150 % of the maximum venting pressure as determined in 5.3.3 but not greater than the value shown in Table 1.

##### 5.3.5.2 Equipment not incorporating venting

The secondary process seal shall withstand for at least 1 minute, without visible leakage, the application of a minimum test pressure of 150 % of the rated maximum working pressure of the equipment but not greater than the value shown in Table 1.

### 5.4 Verification of limited pressure effectiveness

Equipment in accordance with 4.4 shall be evaluated or tested to determine that the worst case pressure at the premises wiring connection will not exceed 1,5 kPa in the case of a primary process seal failure.

This evaluation or test shall take into account the pressure and flow capacity of the worst case primary process seal failure and the pressure and flow capacity of the vent, drain or other means.

## 6 Marking

In addition to the marking required by other applicable standards, the equipment shall be legibly marked with the following information:

a) Process temperature range;

b) Working pressure range;

c) For electrical equipment incorporating process sealing: "Process Sealed";

d) For add-on secondary process seals: "Secondary Process Seal";

e) Reference to instructions.

Alternatively, items a) and b) above may be included in the instructions.

## 7 Instructions

The following information shall be included in the instructions:

- all information required in Clause 6;
- seal Type: Single Process Seal, Dual Process Seal, Dual Process Seal – No Annunciation, or Dual Process Seal with Purging/Pressurization;
- reference to this document;
- Information necessary for the determination of chemical compatibility of process wetted materials that form part of a primary process seal;

- instructions for installation and use of primary process seal failure annunciation (if applicable);
- instructions necessary for proper maintenance of seals, vents, drains, and annunciators;
- instructions for design, installation, and use of purging or pressurization systems connected to Dual Process Seal with Purging/Pressurization equipment;
- for add-on secondary process seals, information necessary to determine the suitability of the add-on secondary process seal and the interconnecting conduit or cable, fittings, boxes, etc. between the process connected equipment and the add-on secondary process seal.

# Annex A
(informative)

## Conditioning and test flowchart

Figure A.1 shows a conditioning and test flowchart.

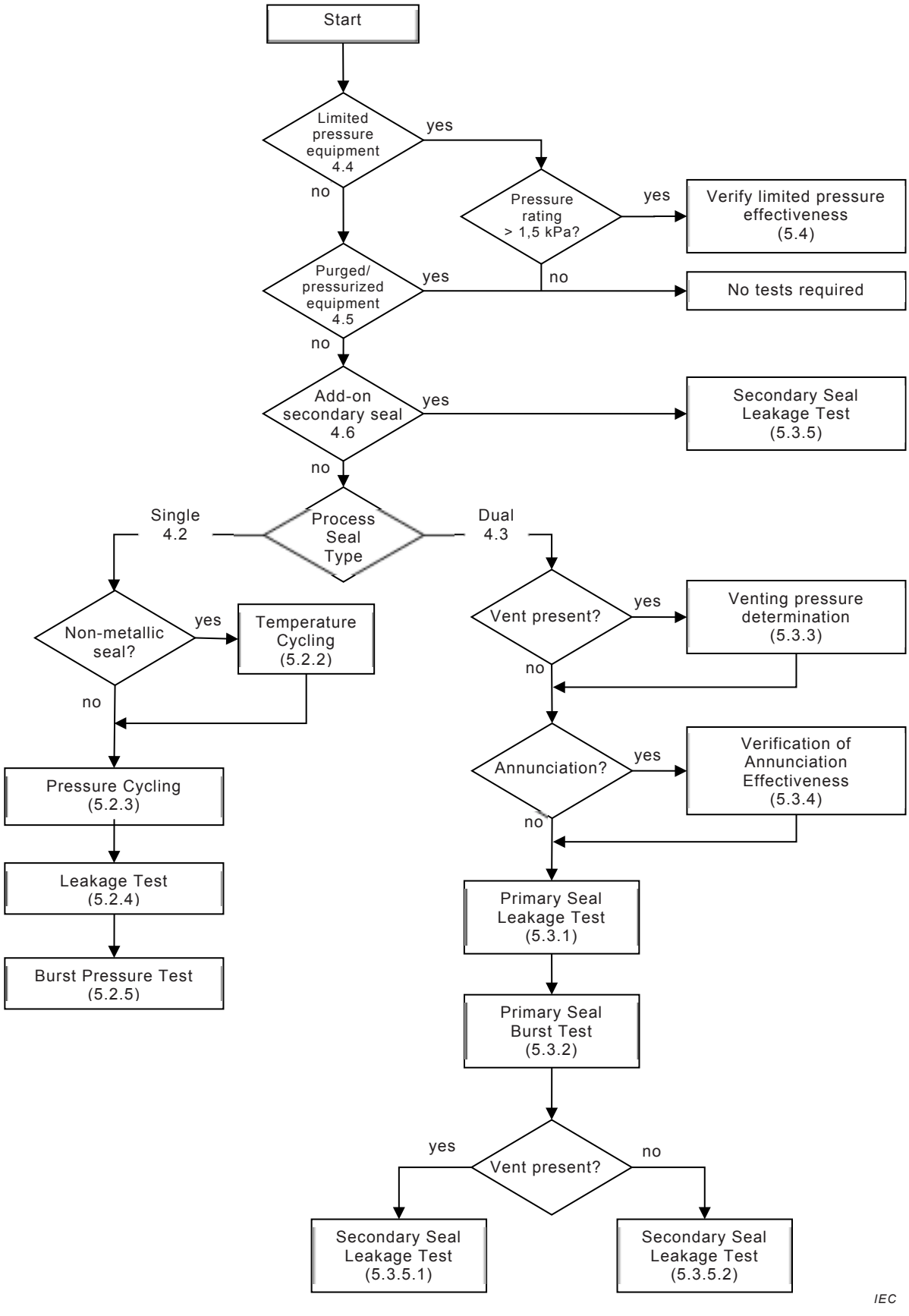


**Figure A.1 – Conditioning and test flowchart**

## Bibliography

IEC 60079-10-1, *Explosive atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres*

IEC 60079-20-1, *Explosive atmospheres – Part 20-1: Material characteristics for gas and vapour classification – Test methods and data*

IEC 60079-13, *Explosive atmospheres – Part 13: Equipment protection by pressurized room "p"*

IEC TR 60079-16, *Electrical apparatus for explosive gas atmospheres – Part 16: Artificial ventilation for the protection of analyser(s) houses*

IEC 61010-1, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*

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