**1 ELECTRICAL AND NON-ELECTRICAL EQUIPMENT: GUIDANCE FOR MANUFACTURERS**

**FOR THE WORLD**

- ATEX and IECEx equipment components are certified.
- SGS Baseefa Certificate of Personnel Competence.
- IECEx Certificate of Personnel Competence.
- IEC 61508 certification.
- Quality system approval.
- Assurance with OSAC/ATEX user directive.

**FOR EUROPE**

- A common approach to lifting barriers to trade within the European Economic Area (EEA).
- The Directive becomes law on implementation in each Member country and compliance is mandatory within the EEA.
- Applicable to non-electrical equipment and protective systems as well as electrical equipment.
- Certification from a Notified Body in a Member State (and MI electrical and non-electrical equipment, protective systems and Category 3 and MI electrical equipment components). Otherwise self declaration of compliance is permitted.
- All IECEx Type Examination Certificate and Quality Assessment Notification (QANs) are issued by a Notified Body.

- The manufacturer alone is responsible for the Declaration of Conformity which must accompany every product which bears the European (CE) Marking.

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**IECEx PRODUCT CERTIFICATION**

**De-energised**

- Gas

**Dust**

- Powder filled

**Non-conductive dust**

- Non-sparking

- Increased safety

- Intrinsic safety

- Non-sparking

- Encapsulation

- Protection concept

The technical requirements of a manufacturing Q system are effectively the same, both are based on ISOIEC 80079-34 and IECEx QAN can support the issue of an ATEX QAN.

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**PRINCIPAL ELECTRICAL PROTECTION CONCEPTS**

**STANDARD/IECEN**

<table>
<thead>
<tr>
<th>CODE</th>
<th>PROTECTION CONCEPT</th>
<th>ZONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>00379-9</td>
<td>Gas Group</td>
<td>Dust Group</td>
</tr>
<tr>
<td>00379-14</td>
<td>Gas Group</td>
<td>Dust Group</td>
</tr>
</tbody>
</table>

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**INGRESS PROTECTION (IP)**

- **TYPE OF PROTECTION**
  - Dust Protected
  - Dust Tight
  - Water Protection
  - Water Protected
  - Pressure Protected
  - Intrinsic Safety
  - Protection concept

- **IP RATING**
  - IP65
  - IP67

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**NON-ELECTRICAL (MECHANICAL) PROTECTION CONCEPTS**

**STANDARDS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 60204-1</td>
<td>General requirement</td>
</tr>
<tr>
<td>EN 60079-14-1</td>
<td>Equipment protection concept</td>
</tr>
</tbody>
</table>

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**TEMPERATURE CLASS**

- **MAXIMUM SURFACE TEMPERATURE**
  - T1: 450°C
  - T4: 150°C
  - T6: 100°C
  - T13: 200°C
  - T15: 200°C

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**DUST GROUPS**

- **Dust Group**
  - Combustible dust
  - Non-combustible dust

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**GAS GROUPS**

<table>
<thead>
<tr>
<th>GAS GROUP</th>
<th>REPRESENTATIVE TEST GAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Methane (t)</td>
</tr>
<tr>
<td>II</td>
<td>Propane</td>
</tr>
<tr>
<td>IE</td>
<td>Ethylene</td>
</tr>
<tr>
<td>IC</td>
<td>Hydrogen</td>
</tr>
</tbody>
</table>

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**GASES**

- **Gases**
  - T1 – Very high protection (t) 20
  - T2 – High protection (t) 20
  - T3 – Normal protection (t) 22

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**AWARD**

- **ATEX Coding**
  - EU Explosive atmosphere symbol

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**WHEN YOU NEED TO BE SURE**

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