

# Labelling of Ex-Proof Equipment

| Classification and labelling of explosion proof areas |   |   |                        |                  |
|---|---|---|------------------------|------------------|
| Flammable Medium                                      | Hazardous locations Probability of a potential explosive atmosphere occurring | Classification of explosion proof areas | Product Classification |                  |
|   |   |   | Product Group          | Product Category |
| Gases, vapours, mists                                 | Always, temporarily or often present  | Zone 0                                  | II                     |                  |
|   | Occasionally present  | Zone 1                                  | II                     | IG 2G            |
|   | Very seldom or only present for a short period                                | Zone 2                                  | II                     |                  |
| Dusts   | Always, temporarily or often present  | Zone 20                                 | II                     |                  |
|   | Occasionally present  | Zone 21                                 | II                     | ID 2D            |
|   | Does not occur or only seldom for a short period                              | Zone 22                                 | II                     |                  |
| Methane   |   | Mining                                  | I                      | M1               |
|   |   | Mining                                  | I                      | M2               |








| Classification of areas, which are hazardous due to flammable gases, vapours or mists  |   |      |                 |             |                 |                   |
|--|---|------|-----------------|-------------|-----------------|-------------------|
| Explosion Group  | Examples depending on -explosion group -temperature class |      |                 |             |                 |                   |
|  | II A  | II B | II C            | Ammonia     | Ethylalcohol    | Petrol            |
| Methane  |   |      |                 | Cyclohexene | Diesel fuel     |                   |
| Ethane   |   |      |                 | n-Butane    | Fuel oil        |                   |
|  |   |      | Propane         | n-Hexane    |                 |                   |
|  |   |      | City gas        | Ethylene    | Ethylglycol     | Ethylether        |
|  |   |      | Acrylic nitrile | Ethylenoxyd | Carbon hydrogen |                   |
|  |   |      | Hydrogen        | Acetylene   |                 | Carbon disulphide |
| T1 < 450°C<br>T2 < 300°C<br>T3 < 200°C<br>T4 < 135°C<br>T5 < 100°C<br>T6 < 85°C<br>Product use depending on temperature class (T1 - T6). The temperature class indicates the max. temperature of exposed surface of the product. |   |      |                 |             |                 |                   |
| Temperature Class  |   |      |                 |             |                 |                   |

Example:


**0158**

**II 2G EExd IIC T6 PTB 99 ATEX1103 -**

| Country     | Code | Institute                          |
|-------------|------|------------------------------------|
| Germany     | 0032 | TÜV Hannover / Sachsen-Anhalt e.V. |
| Germany     | 0102 | PTB                                |
| Germany     | 0158 | DMT                                |
| Germany     | 0297 | DOS                                |
| Germany     | 0588 | PSA                                |
| Germany     | 0589 | BAM                                |
| Germany     | 0837 | IBEXU                              |
| France      | 0080 | INERIS                             |
| France      | 0081 | LCIE                               |
| Netherlands | 0344 | KEMA                               |
| Sweden      | 0402 | SP                                 |
| UK          | 0800 | EECS (BASEEFA)                     |
| UK          | 0618 | SCS                                |

| Protection principle                                       | Type of protection    | Code  | Symbol  | To use in zone | CENELEC regulations |
|--|-----------------------|-------|---|----------------|---------------------|
| Prevents transmission of the explosion outside             | flameproof enclosure  | EEx d |    | 1 or 2         | EN50018             |
| Prevents high temperatures and sparks                      | increased safety      | EEx e |  | 1 or 2         | EN50019             |
| Low current / voltage supply                               | intrinsic safety      | EEx i |  | 0,1 or 2       | EN50020<br>EN50039  |
| Positive pressure device                                   | pressurised apparatus | EEx p |  | 1 or 2         | EN50016             |
| Encapsulated   | moulding              | EEx m |  | 1 or 2         | EN50028             |
| Parts immersed in oil to isolate from explosive atmosphere | oil immersion         | EEx o |  | 1 or 2         | EN50015             |
| Prevents transmission of the explosion outside             | powder filling        | EEx q |  | 1 or 2         | EN50017             |
| As above, but for use in zone 2                            | protection "n"        | EEx n |   | 2              | EN50021             |

| Application  | Code |
|--|------|
| For common use   | -    |
| For use under special circumstances                                  | X    |
| This product is an Ex-certified component for use in a whole system. | U    |

Official Institutes

Protection principle - Type of protection - CENELEC regulations, Basic rule EN 50014

Further information