

MARKING OF EXPLOSION PROTECTED DEVICES

EXAMPLE

| | | | | |
|-------------------------------------------------------------|-----------------------------|-----------------|-------------------|----------------------------|
| EX | d | IIA | T4 | Gb |
| EXPLOSION PROTECTED (Suitable for explosive atmospheres) | TECHNIQUE USED (Ex Code) | EQUIPMENT GROUP | TEMPERATURE CLASS | EQUIPMENT PROTECTION LEVEL |

EQUIPMENT PROTECTION LEVEL (EPL)

| ENVIRONMENT CODE | | LEVEL CODE | | ZONE [TYPICAL] |
|--------------------|---|------------|----------------------|------------------|
| UNDERGROUND MINING | M | a | VERY HIGH PROTECTION | ZONE 0 / ZONE 20 |
| GASSES/VAPOURS | G | b | HIGH PROTECTION | ZONE 1 / ZONE 21 |
| SURFACE DUSTS | D | c | NORMAL PROTECTION | ZONE 2 / ZONE 22 |

LOCAL INSPECTION AUTHORITY NUMBERS (I.A. CERTIFICATE NUMBERS)

Example: MS - MTEEx / 17.0124 x (or U)

| | |
|--------|-----------------------------|
| MS - | • MINING OR SURFACE USE |
| MTEEx/ | • LABORATORY CODE |
| 17. | • YEAR OF CERTIFICATION |
| 01234 | • UNIQUE NUMBER |
| X | • SPECIFIC CONDITION OF USE |
| U | • CERTIFIED COMPONENT ONLY |

EXPLOSION PREVENTION TECHNIQUES

| TECHNIQUE | EX CODE |
|------------------------------------------------|---------|
| GASSES & VAPOURS | |
| Flame proofing | Ex d |
| Increased Safety | Ex e |
| Intrinsic Safety | Ex i |
| Encapsulation | Ex m |
| Oil filling | Ex o |
| Pressurisation | Ex p |
| Powder filling | Ex q |
| Special protection | Ex s |
| Non-Sparking* (Ex nA, Ex nC, Ex nL & Ex nR) | Ex n |

*Incorporated into other standards such as "Ex ic" & "Ex mc"

EXPLOSION PREVENTION TECHNIQUES

| TECHNIQUE | EX CODE |
|-------------------------|--------------------|
| DUSTS | |
| Protection by enclosure | Ex t (Ex tD & DIP) |
| Intrinsic Safety | Ex i (Ex iD) |
| Encapsulation | Ex m (Ex mD) |
| Pressurisation | Ex p |

NOTE

Other specific techniques exist such as pressurisation of control rooms or analyser shelters.

TEMPERATURE CLASS

UNDERGROUND COAL MINES [GROUP I]

=150°C (T4) where gas and dust occur or 450°C where dust is removed regularly (such as on some mobile machines)

GASSES / VAPOURS [GROUP II]

| CLASS | MAXIMUM EQUIPMENT TEMPERATURE |
|-------|-------------------------------|
| T6 | 85 |
| T5 | 100 |
| T4 | 135 |
| T3 | 200 |
| T2 | 300 |
| T1 | 450 |

DUSTS [GROUP III]

Equipment is marked with maximum temperatures



Ontploffing Beskermingsdienste
Explosion Prevention Services

REGULATION GUIDE

| CODE | DESCRIPTION |
|-----------------------------|-----------------------------------------------------------------------|
| ARP 0108 | Regulatory requirement for explosion protected apparatus. |
| SANS 10108 | Classification of hazardous areas and selection of equipment. |
| SANS 60079 SANS61241 | Series of Explosion Protection standards (electrical). |
| SANS 10086 | Installation, Inspection, maintenance and Repair series of standards. |
| ISO/IEC 80079 (EN 13463) | Non-electrical explosion protected device series |
| SANS 60529 | Ingress Protection (IP) |
| SANS 868 | Compression - ignition engine systems (Diesel Machines) |

MATERIAL GROUPS / SUB GROUPS

| ENVIRONMENT | GROUP CODE |
|---------------------------|--------------------|
| Underground Mines | I |
| Surface Gasses or Vapours | IIA / IIB / IIC |
| Surface Dust | IIIA / IIIB / IIIC |

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AREA CLASSIFICATION

TRAINING

PLANT EQUIPMENT AUDITS

TESTING & CLARIFICATION

ATEX & ANZEx ASSISTANCE

INSPECTION OF MINING MACHINES

