

AUSTRALIAN HAZARDOUS AREA SELECTION CHART

CLASS I ← AREA CLASSIFICATION → CLASS II

| GASES | |
|--------|--|
| ZONE 0 | Flammable atmosphere continuously present, or present for long periods (more than 1,000 hours per year) |
| ZONE 1 | Flammable atmosphere likely to occur in normal operation (more than 10 hours per year, but less than 1,000 hours per year) |
| ZONE 2 | Flammable atmosphere not likely to occur and if it occurs will exist only for a short time (less than 10 hours per year) |

| SELECTION OF APPARATUS | |
|------------------------|--|
| ZONE 0 | |
| Ex ia | Intrinsic safety |
| Ex s | Special protection (approved for Zone 0) |
| ZONE 1 | Zone 0 protection techniques |
| Ex d | Flameproof |
| Ex ib | Intrinsic safety |
| Ex p | Pressurisation for Zone 1 |
| Ex p1 | Purging for Zone 1 |
| Ex m | Encapsulation |
| Ex e | Increased safety |
| Ex v | Ventilation for Zone 1 |
| Ex s | Special protection for Zone 1 |
| ZONE 2 | Zone 0 and Zone 1 protection techniques |
| Ex n | Non incandive |
| Ex p | Pressurisation for Zone 2 |
| Ex p1 | Purging for Zone 2 |
| Ex v | Ventilation for Zone 2 |
| Ex s | Special protection for Zone 2 |

| GAS CLASSIFICATION | |
|--------------------|-----------|
| HYDROGEN | Group IIC |
| ETHYLENE | Group IIB |
| PROPANE | Group IIA |
| METHANE (MINING) | Group I |

| TEMPERATURE CLASSIFICATION | |
|----------------------------|-----------------------------|
| T CLASS | Maximum Surface Temperature |
| T1 | 450°C |
| T2 | 300°C |
| T3 | 200°C |
| T4 | 135°C |
| T5 | 100°C |
| T6 | 85°C |

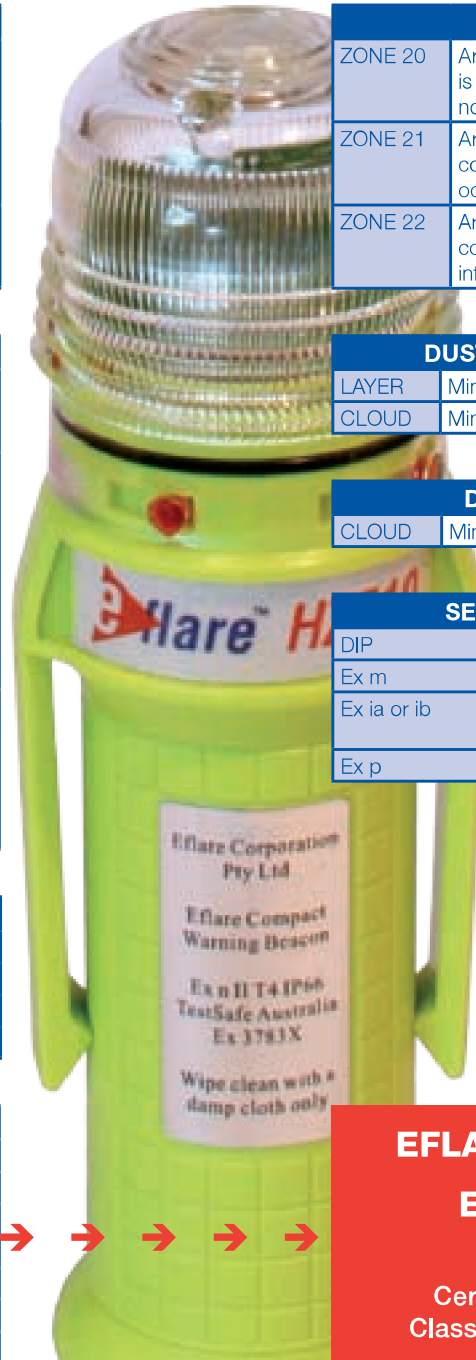
| DUSTS | |
|---------|---|
| ZONE 20 | Area in which combustible dust, as a cloud, is present continuously or frequently, during normal operation |
| ZONE 21 | Area not classified as Zone 20 in which combustible dust, as a cloud, is likely to occur during normal operation |
| ZONE 22 | Area not classified as Zone 21 in which combustible dust clouds may occur infrequently, and persist for only a short period |

| DUST IGNITION TEMPERATURE | |
|---------------------------|------------------------------------|
| LAYER | Minimum ignition temperature in °C |
| CLOUD | Minimum ignition temperature in °C |

| DUST IGNITION ENERGY | |
|----------------------|----------------------|
| CLOUD | Minimum energy in mJ |

| SELECTION OF APPARATUS | |
|------------------------|--|
| DIP | Dust-excluding ignition proof |
| Ex m | Encapsulation |
| Ex ia or ib | Intrinsic safety* IIA, IIB or IIC At least IP5X |
| Ex p | Pressurisation |

* The minimum dust cloud ignition energy to which the equipment will be exposed is higher than 1mJ



EFLARE CERTIFICATION

**Ex n IIC T4 IP66
AUS EX 3783X**

Certified to operate safely in
Class I Zone 2 Hazardous Areas

AUSTRALIAN STANDARDS REFERENCE

| Type of Protection | Certification Standard | Installation Standard |
|-----------------------|------------------------|---|
| SAA Wiring Rules | - | AS 3000-2000 |
| Area Classification | - | AS 2430.1-1987 (Gases) AS/NZS 61241.3-1999 (Dust) AS 2430.3-1991 (Specific Occupancies) |
| General Requirements | AS 2380.1-1989 | AS 2381.1-1989 |
| Ex d Flameproof | AS 2380.2-1991 | AS 2381.2-1993 |
| Ex e Increased Safety | AS 2380.6-1988 | AS 2381.6-1993 |
| Ex i Intrinsic Safety | AS 2380.7-1987 | AS 2381.7-1989 |
| Ex m Encapsulation | AS 2431-1981 | No Standard |

| Type of Protection | Certification Standard | Installation Standard |
|--------------------------|------------------------|-----------------------|
| Ex n Non Incandive | AS 2380.9-1991 | AS 1076.7-1977 |
| Ex o Oil immersion | No Standard | No Standard |
| Ex p Pressurisation | AS 2380.4-1994 | No Standard |
| Ex q Powder/Sand Filling | No Standard | No Standard |
| Ex s Special Protection | AS 1826-1983 | AS 1076.8-1977 |
| Ex v Ventilation | AS 1482-1985 | No Standard |
| Instrumentation | No Standard | AS 1076.13-1977 |
| DIP Dust Ignition Proof | AS/NZS 61241.1.1-1999 | AS/NZS 61241.1.2-2000 |
| Cable Glands | AS 1828-1984 | No Standard |



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Comparison of Zone 2 and Division 2

TABLE 1 - AREA CLASSIFICATIONS

| | |
|---|---|
| Division 1: Where ignitable concentrations can exist all of the time or some of the time under normal operating conditions. | Zone 0: Where ignitable concentrations exist all of the time or for long periods of time under normal operating conditions. |
| | Zone 1: Where ignitable concentrations exist some of the time under normal operating conditions. |
| Division 2: Where ignitable concentrations are not likely to exist under normal operating conditions. | Zone 2: Where ignitable concentrations are not likely to exist under normal operating conditions. |

Comparison of Group IIC and Groups A

TABLE 2 - GAS GROUPS

| | |
|------------------|----------------------------|
| Division 1 and 2 | Zone 0, 1 and 2 |
| A (acetylene) | IIC (acetylene & hydrogen) |
| B (hydrogen) | |
| C (ethylene) | IIB (ethylene) |
| D (propane) | IIA (propane) |

Comparison of Temperature Class T6 and Temperature Class T6

TABLE 3 - TEMPERATURE CODES

| | |
|---|-----------------|
| Division 1 and 2 | Zone 0, 1 and 2 |
| T1 (<450°C) | T1 (<450°C) |
| T2 (<300°C) | T2 (<300°C) |
| T2A, B, C, D (<280°C, <260°C, <230°C, <215°C) | ---- |
| T3 (<200°C) | T3 (<200°C) |
| T3A, B, C (<180°C, <165°C, <160°C) | ---- |
| T4 (<135°C) | T4 (<135°C) |
| T4A (<120°C) | ---- |
| T5 (<100°C) | T5 (<100°C) |
| T6 (<85°C) | T6 (<85°C) |



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