

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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