Selecting Glands for Hazardous Areas

ZONE CLASSIFICATION

Zone 0 (Division 0)
Explosive gas/air mixture is continuously present or for long periods. No equipment should be terminated in this zone.

Zone 1 (Division 1)
Explosive gas/air mixture is likely to occur in normal operation.

Zone 2 (Division 2)
Explosive gas/air mixture is not likely to occur and if so, only for a short period of time.

Increased Safety Glands(E.Exe)
For use in hazardous environments and comply with EN50014 and EN 50019 (BS5501 Part 1 and Part 6). These glands can only be used where no parts of the electrical equipment can produce sparks/arcing or exceeds the gas ignition temperature. E.Exe glands are normally recommended for Zone 2 applications but can be used in Zone 1, i.e. indirect entry situations.

Flameproof (E.Exd) Glands
For use in hazardous environments and comply with EN50014 and EN50018 (BS5501 Part 1 and Part 5). These glands are approved for direct entry applications in Zone 1 areas, IIA, IIB or IIC gas groups with the exception of A2F glands which are for IIA and IIB groupings - may also be used in Zone 2 areas.

Explosion Proof Barrier Glands
For use in hazardous environments and comply with EN50014 and EN 50018 (BS5501 Part 1 and Part 5). These glands are approved for direct entry applications in Zone 1 areas, IIA, IIB, or more commonly IIC gas groups.

Selecting Barrier Glands as opposed to Conventional Flameproof Glands
The main applications for the specification of barrier glands in accordance with the relevant codes of practice, can be summarised as follows:

- with enclosures containing an ignition source and installed in Group IIC gas areas
- with an enclosure containing an ignition source and in a Zone 1 area where the volume of the enclosure exceeds 2 litres
- with cables other than those specified in BS5308, BS5467, BS6116, BS6346, BS6724, 6883 and BS7917.
- where 'cold flow' of cable installation is considered a possibility
- to prevent gas migration from one area to another
- to prevent moisture migration in cables
- where the user assessment considers a barrier gland essential for safety