



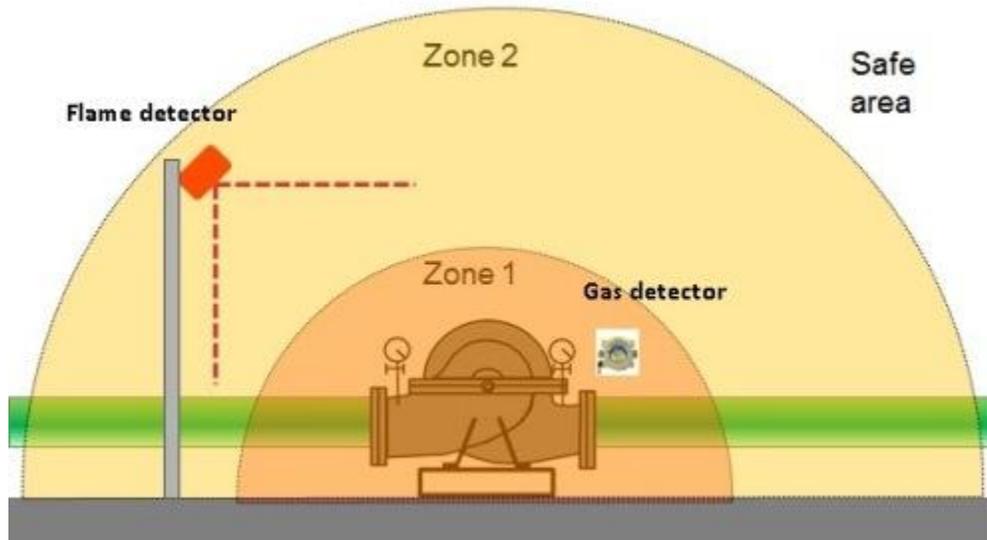
## Flame Detectors Zone 1 vs Zone 2

In flame detection, an ATEX category 2 G certified product which is suitable for ATEX zone 1 is not a "better" product per definition than a category 3 G certified product which is suitable for ATEX zone 2. Just different.

There is a difference in approach of a flame detector as compared to a gas detector:

A Gas Detector is mounted close to a possible leak source such as a valve or pump as a typical ATEX zone 1 application. That is why a Gas Detector most logically has an EEx d or EEx ia construction.

A Flame Detector however is a line-of-sight device that is mounted at a certain distance from the hazard. At this distance the zone classification is normally zone 2 or Safe Area.



**This is one of the reasons why more than 85% of the Flame Detectors with EEx d housings, which are suitable for zone 1, are actually mounted in zone 2.**

Engineers design plants and installations with smaller ATEX zones 1 due to the high cost of operation of such hazardous areas. That is why zones 2 in the Industry are getting larger. More reasons to install ATEX category 3 G(D) equipment:

### Pro's and Con's of EEx d housings for zone 1:

- + Rugged, Impact tested: 4 Joule (window) 7 Joule (housing)
- + Suitable for both zone 1 as well as zone 2
- - Heavy Aluminum or Stainless Steel
- - Has to be grounded

- - Corrosion sensitive

**Pro's and Con's of non-Sparking (nonincendive) equipment for zone 2:**

- + Rugged, Impact tested: 4 Joule (window) 7 Joule (housing)
- + Light weight GRP (Glass Reinforced Polyester)
- + No grounding required
- + Not sensitive to corrosion
- + Pressure Compensating Element ("breather") to avoid moisture build-up
- - Only suitable for zone 2

Zone explanation:

**ATEX category 1 G equipment for zone 0:**

-This equipment is suitable for an ATEX zone 1 application such as inside a storage tank. Flame detectors are not installed in these tanks generally due to e.g. contamination issues or limited line of sight. Gas detectors are not installed inside a tank since they will be alarming virtually all the time due to always present gas or vapor.

**ATEX category 2 G equipment for zone 1:**

-This equipment is suitable for an ATEX zone 1 application such as a Hydrocarbon pump (outside). Gas detectors are installed close to the possible leak. Flame detectors are not installed in close proximity to these objects generally.

**ATEX category 3 G equipment for zone 2:**

-This equipment is suitable for an ATEX zone 2 application such as around a Hydrocarbon pump (outside).