



Chalmit
A Division of Hubbell Ltd.

PO Box 5575
Glasgow G52 9AP
Scotland

T +44 (0) 141 882 5555
F +44 (0) 141 883 3704

E info@chalmit.com
W www.chalmit.com

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To Whom It May Concern:

USE OF ALUMINIUM IN HAZARDOUS AREAS

Chalmit has been using cast aluminium products for use in both Zone 1 and Zone 2 hazardous areas for over 35 years, during which time we have never experienced any problems of ignition hazards from dissimilar metal coming into contact with each other.

The current edition of the general requirements for electrical apparatus for use in explosive gas atmospheres (EN 60079-0: 2004) quotes the following:

Gas Group II (which all of the Chalmit products are certified to)

Materials used in the construction of enclosures of Group II electrical apparatus for the different zones shall not contain, by mass, more than:

- for Zone 1
7.5% magnesium
- for Zone 2
no requirements

The magnesium content the LM6 marine grade aluminium used in all of our castings is 0.10% max, which is way below the figure quoted in the standard.

For installations where customers seek the added benefit of additional coatings onto the bare aluminium surface, we can offer a PTFE coating.

The PTFE coating is normally used on our floodlights to prevent surface pitting (corrosion) of the aluminium.

The PTFE coating is also used as a suitable safeguard for aluminium enclosures to prevent any possible incentive frictional sparking caused by impact between the floodlight and other materials (no matter how small the risk), particularly when the other material is an oxygen carrier such as rust.

In zone 1 areas where the risk of impact is low or in zone 2 areas the frictional sparking risk may be disregarded.



Registered Office: Mitre House
160 Aldersgate Street
London, EC1A 4DD
Registered Number: 669157



Additional Information on the Characteristics & Benefits of PTFE:

The extraordinary characteristics of PTFE make it the ideal choice in a wide range of products and applications. PTFE has a coefficient of friction that is one of the lowest of any material. PTFE is extremely abrasion resistant, making it adaptable to the harshest environments. In addition, PTFE can withstand a wide range of temperatures, from 260 Degrees Centigrade down to -270 Degrees Centigrade, and can even handle brief exposures at higher temperatures. PTFE also has excellent flame resistance due to its extremely high melting point, along with a very low rate of smoke generation and heat release. Another advantage of PTFE is that it is chemically inert and pure, and has no additional stabilizers, lubricants or plasticizers that would taint process fluids.

PTFE products have an extremely long service life, primarily due to PTFE retaining its original properties over a long period of time, even at extreme temperatures, in ultraviolet (UV) light, and when exposed to oils, oxidizing agents and solvents.

PTFE also is extremely corrosion resistant, especially to acids, and harsh inorganic and organic chemicals. Additionally, the original properties PTFE remain the same even after extended time periods in water. Furthermore, PTFE is resistant to atmospheric aging in the form of discoloration, oxidation, and, as previously noted, is not affected by ultraviolet light

Chalmit have been providing our cast aluminium products with PTFE coatings to customers for over 25 years.

A handwritten signature in blue ink that reads "Ian MacLeod".

Ian MacLeod
Technical Manager
31.03.11