

CUSTOMER	AVL	Version:	ATEX_classifier_v1.5.5_EN.xlsm
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DATE:	04-03-20	TEST CELL:	Sala emisiones simple

INTRODUCTION

This document is a study of the zone classification of explosive atmosphere formation in the indicated cell. The following results certify the classification of the test cell referred to the ATEX regulations.

REGULATIONS

The performed analysis and the present document is compliant with the European Regulation 1999/92/EC relative to the minimum measures for the health protection and safety of the european workers referred to the risks of the formation of explosive atmospheres. The results are also compliant with the regulation NFPA-69 (USA) *Standard on explosion prevention systems 2014*.

In order to comply both regulations, all calculations are based on the international EN 60079

CALCULATION DATA

Test cell volume : 120 m³ Test cell temperature: 22 °C

Fuel(s) present in the test cell:

Calibration gases	Calibration gases with H ₂ /He
Ventilation availability:	Very good
Fuel leakage:	Following UNE 202007 IN and based on a test cell configuration
Available fresh air flow:	3213 m ³ /h Device: 111111

RESULTS

Test cell classification	ZONE 1
Minimum flow (m ³ /h) to declassify the test cell when active	3800
Minimum flow (m ³ /h) to declassify the test cell when inactive	0
Device certification required for normal operation	None

The considered flow rate with the active cell will be such provided by the equipment which operation is linked automatically to the fuel supply or operates continuously (24/7). For the case of an inactive room only the flow of the equipment that operates continuously (24/7) is considered.

ADDITIONAL INFO

Following the guidelines of the standards listed above, it is further recommended that the following equipment is available with ATEX certification CE EX II 3G or higher:

- HC detectors, one for each 25m² located no more than 0.2 m above the ground for heavier than air fuels, and 0.2 m from the ceiling for lighter than air fuels.

- In the case of lighter than air fuels, fire sensors and CO sensors.

- Purge fan with the minimum flow to declassify the test cell, except for chassis dyno test cells or where there isn't a fuel line..

- Emergency lights

A fuel vent line of the room creates a zone 1 to 0.5 m around the air outlet, so there can be no other element without CE certificate ATEX EX II 2G or higher in the proximities of extraction. In addition, there must be no outlet air near the said extraction to prevent recirculation of exhaust air.

It is further recommended:

- All fuel supply lines must be as short as possible, mechanically resistant, electrostatically conductive and must be connected to the ground line of the room.

- The fuel supply valves should be normally closed solenoid valves that close in case of power loss.

- Perform the maintenance / inspection of ventilation and control elements at least every 3 months.

As for the warning signs and maneuvers, it is necessary:

- Fire a first alarm signal when reaching 25% LEL (Lower Explosive Limit). With this alarm the fuel supply is cut and general ventilation is commanded to achieve the maximum possible fresh flow.

- Fire a second alarm signal to reach 50% LEL. With this alarm all power is shut except for ATEX equipment and fire systems. In this state it is not allowed for anyone to stay inside the room. In addition it must be ensured an optical / acoustic warning signal.

- In the case of detecting a sensor failure, measures should be taken to a level 2 alarm.