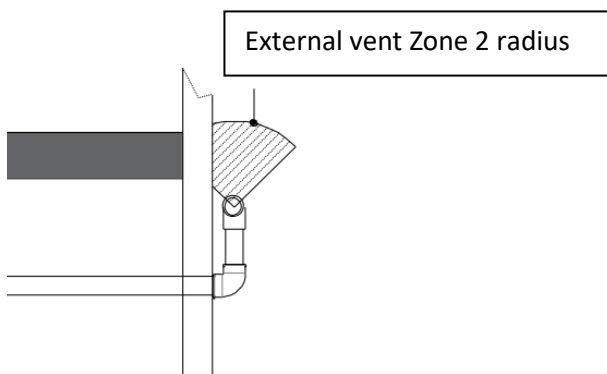


Hydrogen Safety

The Hyprolyser has been designed in accordance with UK DSEAR regulations (incorporating ATEX) to provide a safe working environment for personnel working in the vicinity or coming into direct contact with Hyprolyser equipment. All Hyprolyser 280 – 8500 models are equipped with a forced ventilation system to prevent a build-up of hydrogen gas anywhere in the system at concentrations of greater than 1% hydrogen by volume in air. The Lower Explosive Limit (LEL) for Hydrogen is 4% by volume in air.

The forced ventilation system uses a centrifugal fan to extract air from a naturally ventilated electrolyser room. The centrifugal fan delivers a lightly pressurised air flow which passes through a sealed cabinet containing the electrolyser, product degassing tank and associated pipe connections, before finally passing through the void inside the product degassing tank and exiting the Hyprolyser via the ventilation duct connection. The ventilation duct is routed to and terminated in an outdoor location. The termination point (Zone 2) must be located out of reach and at a minimum distance (prescribed below for each model variant) away from sources of ignition, building ventilation intakes, extended roof overhangs or opening windows. The room where the Hyprolyser system is located should be provided with natural ventilation at high low and high level.



Hyprolyser 180-8500: Ventilation Zone 2 Radius	
Model	Radius in metres
280	1
560	1
1100	1
2200	1
4250	1
8500	1

To ensure fail-safe operation, all Hyprolyser models 280 – 8500 are equipped with the following safety and hydrogen management features incorporated as standard:

- Sealed electrolyser compartment with continuous forced air ventilation.
- Volumetric air flow monitoring of the electrolyser compartment and ventilation system (low and high airflow shutdown).
- Intrinsically safe door switch for automatic shutdown when the sealed electrolyser compartment is opened or breached.
- Product degassing tank with high level shutdown.
- Electrolyser cell leakage detection (liquid).
- Hydrogen gas sensor for monitoring of the installation space, provided as standard, with automatic shutdown at $\geq 1,000\text{ppm}$ or 2.5% of LEL.
- With the exception of the external vent position (Zone 2), the Hyprolyser system does not create any hazardous zones within the installation area.

Control Safety Features

- Automatic constant DC current regulation with high & low voltage shutdown
- DC power-pack high temperature shutdown
- Control panel high temperature shutdown
- High product temperature shutdown (independent of control software)
- Low water flow shutdown
- Product tank high & low level monitoring
- Bund flood alarm
- Connections provided for optional remote alarm, emergency stop and remote inhibit functions.