

Job Title:

**Equilibration Warehouse**

Company:

**TEVA**

Location:

**Waterford, Ireland**

Duration:

**2013 – 2015 (18 months)**

Objectives:

**High Temperature & RH  
Facility with Close  
Control**

**GMP Compliance**

**Energy Efficient Design**

### Get In Touch

Tel: [+353 56 77 90100](tel:+353567790100)

Fax: [+353 56 77 90101](tel:+353567790101)

Email: [info@prochem.ie](mailto:info@prochem.ie)

Mobile: [087 2648000](tel:0872648000)

Web: [www.prochem.ie](http://www.prochem.ie)

**This project has been shortlisted in the Innovation Category of The Pharma Industry Awards 2015.**

As part of their ongoing expansion, TEVA identified a requirement to scale up their Equilibration Warehousing facilities to include loading docks, circulation corridors, staging areas and plant space for utilities.

An equilibration warehouse is an area where product is stored for a specific period in closely controlled environmental conditions. In this case, the design conditions required were:

- Storage conditions at set points  $\pm 1^{\circ}\text{C}$  and  $\pm 3\% \text{RH}$
- 300 Equilibration Pallet Spaces
- 150 Intermediate Pallet spaces
- Set down area for up to 15 pallet spaces
- Dimensions 11.5m high, 9.5m wide and 14.2m deep

Key to the success of the project was determination of a robust energy efficient ventilation philosophy that avoided stratification over the 11.5m room height. A number of different philosophies was investigated. The robustness of the final ventilation design was confirmed at an early stage by completion of in-house Computational Fluid Dynamics simulation of the air distribution within the equilibration space.

The existing equilibration facilities on site have air change rates (ACR) of 120 per hour, whereas **Prochem's** innovative design has reduced the ACR to 15 per hour – achieving significant energy savings.

The end result is a facility which:

- was completed on time and within budget, and through innovative use of available products and technologies produced a cohesive end result.
- allows product stacking, thereby minimising footprint in a closely controlled high temperature, high RH environment.
- locates the majority of mechanical plant and equipment outside the GMP area, improving maintainability.
- is significantly quieter than comparable facilities and consequently more comfortable for operatives.
- has between 44% and 80% lower energy consumption requirements per pallet space than the existing facilities, reducing manufacturing cost of product.
- is an excellent example of achievement through cooperation and coordination between design team and client.