Hazardous Area HEATING

custom engineered heating solutions

Hazardous Area Heating

Hazardous Areas

Many industries, ranging from off shore oil platforms, on site heavy fuel oil tank farms, food and beverage, pharmaceutical, through to paint and chemical works have locations designated as hazardous areas where explosive atmospheres may exist.

Grimwood design and manufacture heating systems that meet highest available standards for these hazardous areas and are certified to the most stringent requirements in the world: The IECEx Scheme.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx SIM 05.0009X Issue No.: 0

Status: Current

Date of Issue: 2005-06-03 Page 1 of 4

Applicant: Grimwood Heating Pty Ltd
74-76 Rawson Street
VILLAWOOD NSW 2163
Australia

Electrical Apparatus: Type 1750-8 Flameproof Enclosure
Optional accessory:

Type of Protection: d

Marking: Ex d IIB T3 IP55

Approved for issue on behalf of the IECEx Certification Body: Ashraf Chowdhury

Position: Principal Engineer - Certification

Signature (for printed version)

Date: 2005-06-03

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3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
Safety in Mines Testing and

The IECEX Scheme

The International Electrotechnical Commission (IEC) has established a scheme to facilitate international trade in electrical equipment intended for use in explosive atmospheres. This is known as the IECEx Scheme, and forms the basis of the current Australian and New Zealand Standards for hazardous area electrical equipment.

Grimwood Heating Pty Ltd is the first company in the world to be certified to manufacture electric heaters for hazardous areas in accordance with the IECEx scheme.

IEC Ex SIM 001

The Grimwood Heating Solution

Feel safe knowing Grimwood certified IECEx heaters provide the highest possible level of protection against a heater related accident in your hazardous area.

Grimwood certified IECEx heaters provide strict compliance with regulations.

Discover the advantages of dealing with a local Australian owned company who can engineer and manufacture the product to meet your particular requirements.

Our professionally qualified engineers can visit your site and review the operational, control interface and other requirements to ensure you get the solution specified to your process or environmental conditions

IEC Ex SIM 001

AUSTRALIAN MADE

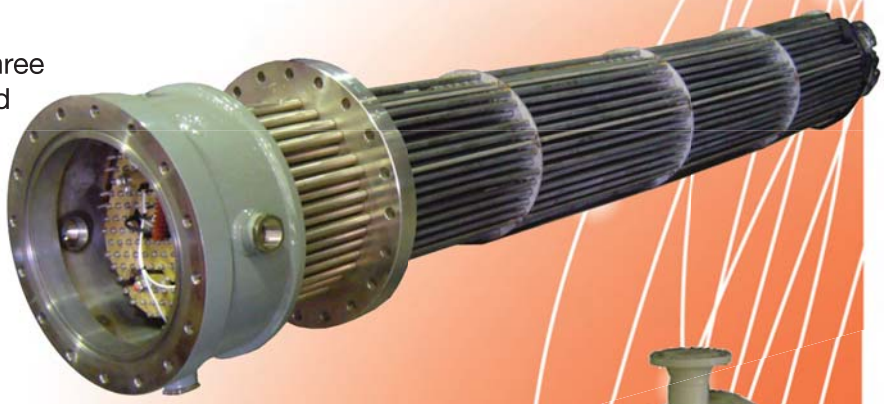
Certified System ™
Quality
ISO 9001

Hazardous Area Heater Functions and Applications

- Fuel gas preheating for pressure reduction stations and gas turbine inlet heating
- Oil heaters to maintain process temperature and viscosity
- Oil outflow heaters
- Water treatment plants for CIP and caustic anti crystalisation heating
- Heating ellution fluids in gold mines
- Solvent reboilers
- Ammonia vaporizer heaters
- Supplementing or replacing water bath heaters
- MEG and TEG reboilers and vapourisers of all kinds

Heating System Components

Heating systems typically consist of three componets. Grimwood can design and provide all three componets for a complete heating system solution.



Heater Bundles

The heater comprises a main element flange, that enables the heater to be fitted to a tank or vessel. The element flange is fitted with the appropriate number and design of elements for the application. The elements are terminated inside a flame proof terminal enclosure.

Vessels

Pressure Vessels are used to house the heater and are quality manufactured to ASME Section VIII Div 1 with ASME U code Stamp or AS1210. A full Manufacturing Data Report (MDR) will be provided to our customers.

Control Panels

A well designed control panel is critical in heater control. Grimwood design and manufacture control panels to the specific demand of each of our customers, which could range from a simple on/off switch to the more demanding types using Thyristor stacks.

Types of Heaters

Circulation Heaters

The heater is installed in a thermally insulated heating vessel for efficient heating of the flowing liquid or gas. The liquid or gas is recirculated through the heater in a closed loop configuration.

Grimwood Heating has an extended range of circulation heaters from as small as 1kW in a DN25 pipe through to units over 600kW in DN400 pressure vessels. All circulation heaters are fully compliant with AS1210 and with the electrical aspects certified as meeting the requirements of the IECEx scheme for potentially explosive atmospheres.

Examples of typical applications:

- Heavy/Viscous fluids
- Materials sensitive to direct heat
- Corrosive materials
- Fuel oil heating
- Spraying systems
- Winter freeze protection
- Hydraulic and lubrication oil heating
- Industrial processing tanks or baths
- Booster heating systems

Flanged Immersion / Element Bundles

The heater is designed and constructed for direct contact heating large voumes of water, oil, viscious materials, solvents, process solutions and gases in many industrial heating applications.

100% energy efficiency is virtually achieved since the heater is in direct contact with the medium to be heated.

Flanged Immersion heaters may be installed either in a tank to heat static fluids or into a vessel so that fluids can be heating while flowing through a pipeline.

Examples of typical applications:

- Heavy/Viscous fluids
- Meduim oil heating
- Corrosive materials
- Electric steam superheaters
- Fuel oil heating
- Crude oil heating
- Seal gas
- Hydraulic and lubrication oil heating
- Industrial processing tanks or baths

Implementing A Grimwood Heating Solution

It is our experience that every application is different. The first step is determining how to protect your people, neighbours and assets is to accurately understand and specify the process parameters.

The end user must assess the location and environment where the heater is to be installed to determine the Zone, Apparatus Group, and Temperature Class which all influence the design and approval requirements of the heater.

The process parameters will influence the size of the heater, the internal heat transfer characteristics and materials of construction.

Grimwood can provide heaters up to 1000kW utilizing ANSI B16.5 flanges from DN150 up to class 2500.

Low temperature applications can be either carbon steel or stainless steel for marine, food and beverage industries and other corrosive atmospheres. Carbon steel heaters are abrasive blasted and finished with a solvent borne inorganic zinc silicate coating.

Higher operating temperatures require particular alloy steels to retain strength at elevated temperatures, and the terminal enclosure to be offset from the flange to minimize internal temperatures.

The heaters are supplied with a mandatory factory set and locked latching relay to prevent over temperature operation. If required, Grimwood can provide a full three phase thyristor power unit. These are available with three wire star or delta, four wire star with neutral and six wire open delta load configurations. These units easily interface with your plant PLC and SCADA systems.

Advantages of Grimwood Hazardous Area Heaters

Capital Costs

• Flanged immersion heaters are simple in design and compact in size

• They involve relatively few static components, typically the element bundle, the vessel and the control panel.

• They compare favourably with other heaters such as water bath heaters

Maintenance Costs

• Once a high quality designed and manufactured flanged immersion heater is installed it will be maintenance free for many years of service, however, annual inspections are recommended

• There is less need and therefore less cost outlay, for backup components to maintain critical processes

Running Costs

• Flanged immersion heaters are very efficient. They directly heat the product with the infinite thyristor control, to the exact temperature set point

• Therefore no energy is wasted by the heater

• Other heating methods are less efficient, as they heat indirectly and have greater losses

• Flanged Immersion Heaters are worth serious consideration in most applications!

Some of our Satisfied Customers

Alinta Energy
Alcan
APA Group
Apache Energy
Australian Defence Force
BHP Billiton
BOC Gases
Cleanteq
Clough
CSIRO
Country Energy
Enerflex
Epic Energy
ERA
ExxonMobil
Gasco
Hydrexia
Jemena
Qenos
OSD Pipelines
Petronas
Rio Tinto
ROC Oil
SEA Gas
Shell
Sino Iron
Sydney Water
Transfield Worley
TRUenergy
UhdeShedden
United Group
University of Newcastle
Westnet Energy
Woodside Energy
WorleyParson

Grimwood
HEATING PROFESSIONALS

Gasco Pty Ltd ABN: 55 869 575 588 ACN: 051 824 741
170 Colchester Road, Bayswater
Victoria 3153 Australia
Ph: +61 3 9237 7111
Fax: +61 3 9237 7171
24hr Service +61 3 9237 7177
Email: gasco@gasco.net.au
Internet: www.gasco.net.au