



CHILLING & FREEZING



MEAT



POULTRY



DAIRY



SEAFOOD



FRESH PRODUCE

**milmeq**  
engineering for the future

# Plate Freezers

Milmeq pioneered the introduction of large scale plate freezing technology to the meat industry in the 1990s, and today we produce the world's largest horizontal plate freezers.

MILMEQ® Plate Freezers feature refrigerant-filled plates which make direct contact with product to provide a rapid, energy efficient freeze.

More than 180 plate freezers have been installed in Australia to date, and we now have the capability to export these to all markets.

## APPLICATIONS

Plate freezers are suitable for freezing a range of products, including red meat, pork, poultry and liquid cream, where there is:

- > High volume throughput
- > Uniformity of carton size

## BENEFITS

Advantages delivered by Milmeq plate freezers include:

- > Fast freezing – the typical 48 hour freezing cycle of air blast freezers is reduced to 24 hours in plate freezers – improving the refrigeration index, and reducing stock inventory and time to market
- > Energy efficient – typically 25-30% electrical energy saving over blast freezing
- > Product output with uniformly flat surfaces to improve product presentation and deliver space efficiencies in palletising, container loading and distribution – delivering a freight saving of 15% in 20 foot containers
- > Hands-free operation with integrated materials handling system providing automated loading and unloading
- > Reliable and low maintenance

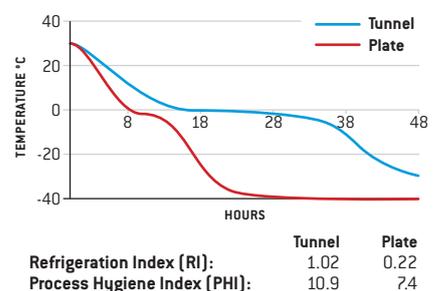


## ENERGY EFFICIENCY

Figure 1: Freezing energy comparison between air blast freezing and plate freezing

Freezing Energy Comparison	48 hr Air Blast	24 hr Plate Freezer
Electrical energy used over freeze cycle	17,345 kWh	6,592 kWh
Electrical energy per 1000 cartons frozen	2,891 kWh	2,197 kWh
kWh per tonne frozen [7 day production]	<b>106</b> kWh/t	<b>81</b> kWh/t
<b>Energy saving: 24%</b>		
kWh per tonne frozen [5 day production]	<b>126</b> kWh/t	<b>89</b> kWh/t
<b>Energy saving: 30%</b>		

Figure 2: Cooling rate comparison between a plate freezer and air blast tunnel



## CONFIGURATION OPTIONS

Each plate freezer installation is custom designed to meet the client's processing requirements. Consideration is given at the design stage to allow flexibility for future additions, extensions and upgrades as product throughput requirements grow.

Plate freezers are available in automatic, semi-automatic or manual configurations. They can be supplied with range of refrigerants including ammonia (NH<sub>3</sub>) and carbon dioxide (CO<sub>2</sub>). Capacity options typically range from 500 to 3,000 standard meat cartons, or 10 to 80 tonnes of product.

In conjunction with DSI Plate Freezers of Denmark we are also able to supply smaller vertical and horizontal plate freezers down to 1 tonne capacity, with options for naked block freezing in manual or automatic loading configurations.

## CASE STUDIES

### > Teys Australia

*Beenleigh, QLD, Australia*

Four half stack closing, elevating conveyor plate freezers with capacity to freeze a total of 7,200 cartons of beef in a 24 hour cycle.



### > Fletcher International Exports

*Dubbo, NSW, Australia*

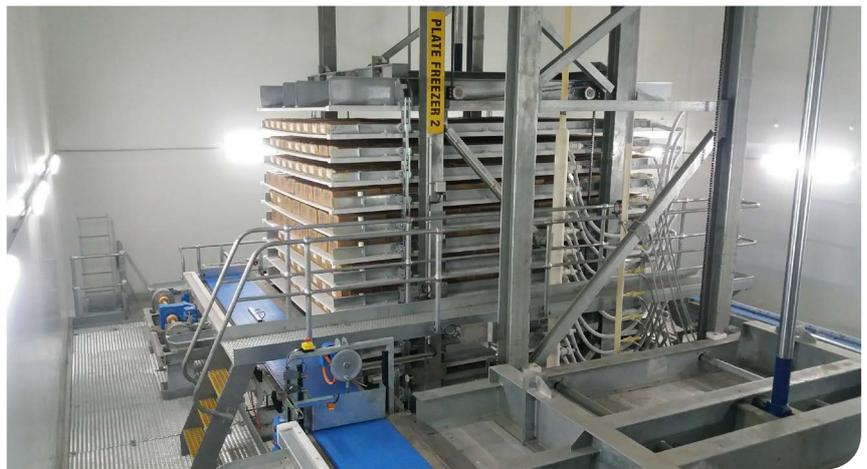
Three plate freezers, each with the capacity to freeze 2,300 cartons of lamb in a 24 hour cycle. Two are full stack closing, elevating conveyor and one is single station opening, elevating conveyor.



### > Linley Valley Pork

*Woorloo, WA, Australia*

Two plate freezers, each with the capacity to freeze at least 952 cartons of pork (or more if cartons are smaller sizes) in a 24 hour cycle. These plate freezers have the unique feature of being able to store three different carton sizes over the various levels. The infeed system automatically detects the carton size and assigns it to the appropriate level.



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Read more about these installations and others, and watch videos of plate freezers in action on our website at [www.milmeq.com/projects](http://www.milmeq.com/projects)

