

Moscow Car Spares Warehouse Heating Project

Heating solution for a steel rounded-roof warehouse in extreme cold climate



Keywarm Case Study

Case Snapshot

Project	Moscow Car Spares Warehouse Heating Project
Location	Moscow Region, Russia
Building Type	Steel rounded-roof warehouse / steel structure warehouse
Dimensions	60 m × 20 m
Insulation	100 mm PU foam insulation
Application	Car spares warehouse
Climate Conditions	Lowest winter temperature -30°C
Equipment	2 units of WCB200-C outdoor indirect gas-fired air heaters stainless steel heat exchanger

Project Overview

Located in the Moscow Region of Russia, this project serves a car spares warehouse in a severe cold climate. Winters are long and the lowest outdoor temperature can reach -30°C , which places very high demands on heating performance and operational reliability. The building is a large-span steel rounded-roof warehouse with 100 mm PU foam insulation. Even with insulation, the combination of large span, steel structure and extreme low temperature means significant heat loss. To address the need for stable heating, clean supply air and long-term reliability in warehouse operation, Keywarm proposed an outdoor indirect gas-fired warm air solution centered on the WCB200-C series.

Challenges and Responses

Project Challenges	Keywarm Responses
The project is located in a severe cold region, with winter temperatures down to -30°C .	An outdoor indirect gas-fired warm air system was used to ensure reliable heating under severe climate conditions.
The large-span steel structure causes significant heat loss.	The system adopted a stainless steel heat exchanger and a centrifugal fan with 450 Pa static pressure for better system reliability.
Warehouse operation requires stable, clean and safe warm air supply.	Indirect heating provides clean and safe supply air, making it suitable for warehouse environments.

System Configuration & Installation

- Heaters installed outdoors, with insulated supply and return ducts.
- Outdoor combustion air and flue discharge to the outside.
- Indoor supply air ducts arranged along the wall, with each duct about 60 m long.
- Adjustable supply air grills for balanced air distribution.
- Temporary propane tank with a capacity of about 10 m^3 .

Performance & Customer Value

- Stable and uniform heating even at -30°C .
- Clean and safe supply air through indirect heating.
- Improved winter working conditions and supported reliable long-term operation.

Key Highlights: Proven performance in extreme cold climates (-30°C); suitable for large steel-structure warehouses; indirect heating with clean air supply; durable stainless steel heat exchanger; flexible propane fuel solution.

Project Photos



Close-up view of the heater unit



Close-up view of the heater unit

Recommended Applications

- Steel-structure warehouses
- Car spares warehouses
- High-bay industrial buildings
- Warehouses in severe cold climates
- Indirect warm air projects requiring clean supply air