HENGSEN REFRIGERATION · TECHNICAL CENTER

Cold room selection and installation guide

Document No.	CX-TC-008	Revision	A/0
Issue date	2026-09-23	Category	Buying
Applies to	Cold room buyers and installers	Issued by	Engineering Department

1. What buyers should check first

- **Quality.** Is the refrigeration unit reliable? The mass of the panels, the control system, the condensing unit and the in-room evaporator decide whether the plant meets the cooling and storage demand — and whether it saves energy and breaks down rarely.
- **Price.** Is it reasonable? Compare three suppliers; look at quality, price, reputation, a real business premises and stock on the shelf.
- **Warranty.** Is a one-year warranty promised? After-sales service and running maintenance matter more than the discount on the quote.

2. Selection and installation notes

- **Panels.** Check the insulation material and its density. Panel skins come in stainless steel, colour-coated steel and glass-magnesium steel; cores in polyurethane (PU) or polystyrene (EPS) sandwich — offered so the buyer can choose.
- **Condensing unit.** Domestic or imported semi-hermetic unit — is the configuration reasonable and standard? Some vendors downsize the compressor and evaporator to cut the quote; a small unit on an oversized room is the most expensive way to save money.
- **Evaporator.** Pipe-coil or air-cooler type. Have the pipe coils been cleaned? Is the pipe bending process standard? Is the fan configuration sensible and standard?
- **Applications.** Cold rooms serve food, dairy, pharmaceutical, chemical and fruit-vegetable stores, poultry and egg warehouses, hotels, supermarkets, hospitals, blood stations, military units and laboratories — and constant-temperature storage for meat, aquatic products, poultry, fruit, tea, herbs, blood and electronic instruments.

3. Room volume and what it freezes

- Length × width × height = storage volume in m³.
- Fresh-keeping +5…−5 °C: apples, pears, potatoes, oranges, lychee, fresh eggs, Chinese cabbage, garlic, carrots, cabbage, peppers, beans, cucumbers, tomatoes, pineapples, mandarins.
- Cold store 0…−18 °C: meat, poultry, rabbit, vegetables, ice cream, fish, shrimp.

- Quick-freeze −18…−30 °C: meat, poultry, rabbit, vegetables, ice cream, fish, shrimp. State what the room will freeze, and its thickness: room dimensions (width × height), lock requirements and door opening direction follow from the product list.

4. Insulated panel selection

Panels are PU sandwich or EPS sandwich. PU panels use eccentric-hook and slot-groove steel skins with a concealed-joint method that joins panel to panel at a true right angle — the tightness and insulation performance cut cooling leakage sharply. Any scientific panel length can be made, installation is simple and construction cost drops. PU sandwich panels are stronger and insulate better, so they are the usual choice for quick-freeze and low-temperature rooms; EPS sandwich panels have good thermal performance at a moderate price and are mostly used for ordinary low-temp and high-temp stores and food-factory buildings.

5. Evaporator selection

Two types: pipe-coil (ceiling pipework) and air cooler (fan unit). High-temperature rooms generally choose fan evaporators — pull-down is fast, but moisture loss from chilled goods is higher. Mid- and low-temperature rooms generally choose seamless-steel pipe evaporative rows — temperature is stable and energy is saved.

6. Condensing unit selection

Compressor plus condenser and accessories assembled together is the condensing unit; water-cooled and air-cooled types exist. Small cold rooms are usually built with air-cooled units. The compressor is the heart of the room: domestic, imported semi-hermetic and fully hermetic types are the common choices.

7. Temperature control system

The cabinet front carries a prominent digital temperature controller — room temperature and unit status visible at any time, control range 0…+60 °C. The controller has power-phase-failure protection, compressor delay protection, protection for compressor and fan motors, automatic evaporator defrost and over-temperature protection. Construction should be carried out by professional cold-room engineers with a scientific, rational design and installation.