BASIC DESIGN DATA & ROOM SPECIFICATIONS

1- Basic design date:
   Ambient temperature (Max.) : 45 C°
   Electrical supply : 3 x 400 / 50 Hz
   Heat exchange : air cooled condensers

2- Room specifications:
A- Freezing Room QTY. (2).
   Dimensions Inside view (approx.) : 5x10x6 m
   Application : Freezing store
   required room temperature : - 35 C°
   Evaporating temperature : - 42 C°

2-B cooling Rooms QTY. (2).
   Dimensions Inside view (approx.) : 5x10x6 m
   Application : cooling store
   required room temperature : + 2 C°
   Evaporating temperature : - 5 C°

2-C Duel Rooms QTY. (1).
   Dimensions Inside view (approx.) : 5x10x6 m
   Application : cooling + freezing store
   Required room temperature ( on cooling ) : + 2 C°
   Evaporating temperature ( on cooling ) : - 5 C°
   Required room temperature ( on freezing ) : - 20 C°
   Evaporating temperature ( on freezing ) : - 25 C°

Refrigeration system, heat load and required capacity is to be calculated depending on the room volume
**Technical Description**

1-Supply and install of walls and ceilings with all accessories sandwich panel with the following specifications:

i. Ready to install Sheets of sandwich panels

ii. Insulation Material : Polyurethane foam

iii. Insulation density : 38 - 42 Kg/m³

iv. Insulation thickness : 15 cm

v. Galvanized steel sheets (both sides)

All specifications are comply to both sides of the sandwich panel

All sharped angles inside the rooms are cover with white Plated thermally galvanized steel

The Sandwich panels are connected together as Male – Female

All sandwich panels connected and all the required filling up between panels and angles are filled with anti-mould, anti-toxic silicon

All the gaps between the angles and hinges are filled up with liquid Polyurethane foam.

The sandwich panels are installed above a ground U channel complying with the thickness of the sandwich panels.

The roof sandwich panel has been consider to be hinged with a hinging Profile with the building not over the sandwich panels walls

The roof panel has been considered to be walk-able in order of being one person in average weight on the one meter square

2-Supply and install floor with all accessories with the following specifications:

i. Install heating system by heating cables in the floor of the freezing room and one of the cooling rooms

ii. Install three layers of polystyrene sheets each one with thickness of (5 cm) to Have the total thickness of (15 cm) in the floor

iii. Install a red nylon sheets above the polystyrene sheets to prepare the ground for the final layer of concrete

3-Supply and install cooling door with all accessories with the following specifications

- Sliding door

  i. Industrial doors produced specially for cold and freezing stores

  ii. Injected with polyurethane foam.

  iii. The door thickness for the freezer store (120 mm)

  iv. The door thickness for the cold store (100 mm)

  v. Dimensions : 2 x 2.4 m

  vi. Quantity are: two freezer door and three cooler doors (one for each of the three rooms)

  vii. Aluminum Frame with breaks.

  viii. Upper and lower rail and handles in stainless steel
vii. The operation power of each unit is ( 2 × 36 ) W

1- Supply and install and operate the refrigeration system as follows:

semi hermetic Reciprocating compressor , Rigid mounted on steel supported frame
on with lifting lugs , high efficiency evaporator , high efficiency condenser complying
to the refrigeration system and Ambient temperature

for freezing room ( QTY = 2 )
  TWO compressors , two stage compressor
  TWO evaporator for the room

for cooling rooms ( QTY = 2 )
  FOUR compressors , (Two for each room )
  With electrical defrost system
  With suitable expansion valve
  TWO condensers for each room

The required components shall be added to the outside unit complying with the
requirement of each unit such as :

i. liquid receiver
ii. Accumulator
iii. oil separator

Electrical power & control panels including the following :

i. IP 55 Electrical power board
ii. Control board
iii. Main and branches circuit breakers for each unit
iv. Electronic controller for stand-alone refrigeration unit
v. Digital display for temperature for each room
vi. Door ON / OFF switch for the refrigeration unit
vii. Compressor Phase failure and relays
viii. Contractors & overloads for all refrigeration components
ix. Evaporator electrical defrost system
x. expansion valve on each evaporator
xi. Signal Bulbs for all parts of the refrigeration system

Supply and install copper Pipes for both lines suction and liquid lines, insulated with arm-flex insulation complete with copper accessories

Supply and install cables and wiring set connecting the cooling system from the outdoor unit into the indoor unit & so to the control panel

Warranty
Three year from operation