

# Section 5

## Refrigeration System Preventative Maintenance Checklists

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## Part 1

### System Maintenance

Planned Preventative Maintenance (PPM) is the systematic inspection and testing of refrigeration systems. Carrying out PPM will (i) optimise the performance, reliability, and efficiency of the system's operation and (ii) prevent the need for any emergency service call out events or system failures. Performing PPM will help reduce the energy consumed by the refrigeration system components and extend the lifetime of the system equipment. In particular, the longevity of components like the condenser, compressor, evaporator and fan motor will likely be extended. Overall, this will

reduce the operational costs and environmental impact of refrigeration systems used on site.

Refrigeration system maintenance can be split into two main aspects: (1) maintaining the thermal envelope in temperature-controlled rooms such as freezer and chiller rooms, and (2) optimising the energy efficiency and operation of various components of the refrigeration system. This should be planned in advance and occur on a regular basis. Simple checklists and follow up action can be carried out by the facilities manager or maintenance team.



## Part 2

### Preventative Maintenance Checklists

The section below outlines a number of fundamental preventative maintenance steps that should be carried out on refrigeration systems on a daily, weekly, monthly and annual basis.

#### 1. Daily Checklist

1	Check for any unusual sounds or vibrations.	
2	Check the system's temperatures, pressures, and defrost frequency settings.	
3	Check room temperature logs.	
4	Ensure that there are no fluid leaks or excessive condensation in any part of the equipment or the system's piping.	
5	Organise, stock, and clear the freezer or chill room areas to maximise air flow (this includes clearing and organizing products, or any other items stored in these areas).	

#### 2. Weekly Checklist

1	Inspect all room door hinges, closers and gaskets. Ensure that all are functioning correctly.	
2	Look for an abnormal accumulation of ice patterns around the freezer or chill rooms doors (from both the inside and outside).	
3	Inspect the door and insulation seals and fix any obvious damage.	
4	Check the refrigerant levels.	
5	Check the oil levels.	
6	Check that all the evaporators are clear of ice.	
7	Clean the condensate drain pan and pipes. Ensure that there is no ice or water drips.	
8	Check that the evaporator defrost cycle and controls are operating correctly.	
9	Check the suction pressure and temperature in the suction line.	
10	Check that the condenser fans are operating correctly.	
11	Check that the condenser coil is clear of debris (e.g., rubbish, leaves etc.)	
12	Check the ice machine temperature controls and wiring.	
13	Check if the freezer door heaters are working correctly.	

### 3. Monthly Checklist



1	Check the overall operation of the equipment.	
2	Inspect and clean the condensers and evaporators coils.	
3	Clean the fan blades.	
4	Check the suction line pipe insulation.	
5	Pressure wash the drain lines.	
6	Check for any refrigerant leaks.	
7	Check for any refrigerant contamination.	
8	Check the control wiring and electrical connections.	
9	Check if there are any obstructions or dirt around the pressure relief valve for the freezer room.	
10	Check the water filter in the ice machine for blockages and replace if necessary.	
11	Clean the ice machine evaporator from build-up of any materials (e.g., lime scale or dirt).	
12	Examine all the components for wear and tear and carry out maintenance where required.	
13	Check for any damage to insulated walls or ceilings.	

### 4. Six Monthly Checklist



1	Test the thermometers and recalibrate if necessary.	
2	Lubricate the motors.	
3	Check that each fan rotates freely and quietly.	
4	Check the power factor value.	
5	Replace the water filter on the ice machines.	
6	Deep clean and sanitize all the ice machine parts.	
7	Check the electrical connections.	
8	Visually inspect all the wiring for wear or discolouration. Identify the cause and replace any damaged wiring.	

5. Annual Checklist		✓
1	Inspect the operation and control wiring of the condenser, compressor, and evaporators.	
2	Each system should be re-commissioned and settings recorded and compared with the previous year to understand the performance of the system over time.	
3	Recurring issues and changes should be checked, corrected, and recorded as required.	
4	Check the pressure and safety control settings and verify correct operation.	
5	Treat the condenser coils to prevent any corrosion.	
6	Check that the compressor area is well ventilated.	
7	Check the interior airflow in all chiller or freezer rooms.	

