**SECTION 23 91 00**

**REFRIGERATION TESTING FORMS**

(Edited from DeCA June 2022 Design Criteria)

**REFRIGERATION PIPING TEST/EVACUATION VERIFICATION**

Store Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ City / State:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ System:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Refrigeration | Holding Pressure and | Microns | Initials of |
| Circuit # | Duration (min 24hrs) | (final) | Certifier |
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I certify that all data on this form is accurate and in agreement with the refrigeration installation.

Person providing reporting and verifications (print name):

Signed:

State License or Registration Number:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Installing Company Name: | | | |  |  | Phone number: | |  |
| Street Address: | |  | |  | City */* State: | |  | |
| Date: |  | |  |  |  |  |  |  |

**NOTE:** **THIS FORM MUST BE COMPLETED IN FULL FOR EACH SYSTEM AND BE ATTACHED TO THE COMPLETED REFRIGERATION EQUIPMENT SET-UP VERIFICATION FORM AND REFRIGERATION START-UP CHECKLIST. ALL FORMS ARE TO BE PROVIDED TO ENGINEER AND OWNER.**

**REFRIGERATION START-UP CHECKLIST**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Store: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Address /City / State:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | |  |  |
| System:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | Refrig. |  | Case/ Coil | Circ. Temp. | Super- | Fluid | Defrost | Defrost Time |  |
|  | Circuit # |  | Discharge | Set-point | Heat | Flow | Termin. | (min.) & |  |
|  |  |  | Air Temp. |  | Degrees | (gpm) | Checked | Frequency |  |
|  |  |  | (F) |  | (F) |  |  |  |  |
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I certify that all data on this form is accurate and in agreement with the refrigeration installation.

Person providing reporting and verifications (print name):

Signed:

State License or Registration Number:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Installing Company Name: | | | |  |  | Phone number: | |  |
| Street Address: | |  | |  | City */* State: | |  | |
| Date: |  | |  |  |  |  |  |  |

**NOTE: THIS FORM MUST BE COMPLETED IN FULL FOR EACH SYSTEM AND BE ATTACHED TO THE COMPLETED REFRIGERATION EQUIPMENT SET-UP VERIFICATION FORM AND REFRIGERATION PIPING TEST/EVACUATION VERIFICATION FORM. ALL FORMS ARE TO BE PROVIDED TO ENGINEER AND OWNER.**

\* ACCEPTABLE ALTERNATE METHOD OF DATA SUBMISSION IS TO DOWNLOAD DATA FROM DANFOSS SOFTWARE IN LIEU OF THIS SPECIFIC FORM.

**REFRIGERATION DEFROST SCHEDULE**

ALL DATA TO BE TYPED WITH UPPER CASE CHARACTERS.

Owner Store:\_\_\_\_\_\_\_\_\_\_\_\_\_ City / State:\_\_\_\_\_\_\_\_\_\_\_\_ System #\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Refrig. | Description of Case model | Defrost | Discharge Air Temperature Setpoint | Quantity of | Failsafe time |
| Circuit # | or Walk-in box | type: HG, | defrosts per | (min.) setting |
| (I.e. : A-1) |  | EL, OT, WF | day | per defrost |
|  |  |  |  | occurrence |
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I certify that all data on this form is accurate and in agreement with the refrigeration installation.

Person providing reporting and verifications (print name):

Signed:

State License or Registration Number:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Installing Company Name: | | | |  |  | Phone number: | |  |
| Street Address: | |  | |  | City */* State: | |  | |
| Date: |  | |  |  |  |  |  |  |

**NOTE: THIS FORM MUST BE ELECTIONICALLY FILLED OUT BY THE REFRIGERATION INSTALLER. REFER TO THE MASTER DOCUMENT CENTER IN USGN FOR FORM. THE G.C IS TO PROVIDE (12) LAMINATED COPIES TO THE STORE AT OPS TURNOVER. ADDITONALLY, ALL FORMS ARE TO BE POSTED AT THE COMPRESSOR UNIT.\***

ACCEPTABLE ALTERNATE METHOD OF DATA SUBMISSION IS TO DOWNLOAD DATA FROM DANFOSS SOFTWARE IN LIEU OF THIS SPECIFIC FORM

**REFRIGERANT LEAK DETECTION**

Controller ID #\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Controller model:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All control boards, controllers and enclosures properly labeled: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All filters tested and verified: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All sensing, purge and exhaust tubing installed: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All control boards set points, setup and programming complete: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All controllers, bds. and accessory equipment installed per Controller Manufacturer’s specifications: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All remote communications verified, including fire alarm connection: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All leak detection alarms properly reporting to auto dial, remote alarm panel and properly performing emergency shut down?: Y / N

Exceptions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I certify that all test and procedures for the EMS equipment installation were performed and that all EMS equipment is operating, controlling and monitoring as specified:

Person providing reporting and verifications (print name):

Signed:

State License or Registration Number:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Installing Company Name: | | | |  |  | Phone number: | |  |
| Street Address: | |  | |  | City */* State: | |  | |
| Date: |  | |  |  |  |  |  |  |

**NOTE: THIS FORM MUST BE COMPLETED IN FULL AND PROVIDED TO THE ENGINEER AND OWNER**

**Exhibit 'A'**

**Refrigeration Policy**

The basis of this policy is "to reduce our negative impact on the environment" as part of our commitment to our local and global communities. Refrigerants are necessary for us to maintain the highest product quality possible. However, refrigerants can present environmental consequences if they are not maintained properly.

There are three major categories of refrigerants in use today in Owner systems. Two, Chlorofluorocarbons (CFC) and Hydrochlorfluorocarbons (HCFC) are ozone depleters that have termination dates set by the US EPA (2010 for CFC and 2020 for HCFC). The third category is Hydro Fluorocarbons (HFC). Which in many cases are being used to replace the CFC and HCFC compounds. The HFC family of refrigerants are global warmers and they present their own set of issues. Despite their negative impact, it is important to note that none of the refrigerants have any detrimental effects, if they are contained in the system or collected for proper disposal or reclamation. This distinction is key to this policy as well as EPA regulations that have been set forth.

*General Policy*

A complete inventory of all company owned commercial refrigeration equipment is to be initiated and maintained identifying the key components and the type of refrigerant in the system. The size of the charge, other pertinent information and the service company charged with their care. (see attached form)

A maintenance log will be maintained tracking the use and losses of refrigerant for all systems. The repair of the leak must be completed within 30 days and the service record filed and maintained. If additional equipment or equipment replacement is required the thirty-day requirement can be extended (one year without EPA notification) but the emission cannot continue. The log and record of a repair is to be maintained for a period of three years. (see attached form)

Only authorized individuals (licensed by the EPA) are permitted to repair refrigeration equipment. (see license example)

All refrigerants, including that in equipment that is removed, disposed of or recycled, must be disposed of in the method prescribed by the EPA.

A copy of the above record of leaks and their repairs should be forwarded to Corporate Headquarters, attention to the Director of Maintenance and Energy.

Effective immediately equipment using CFC's (R-12 and R-502) will not be installed in any store without the approval of the Senior Director of Facilities and Construction.

As of January 1, 2009 all equipment still using CFC's will be scheduled for modification or replacement. The company must be CFC free no later than December 31, 2009. Based on the increasing price of R-12 and R-502, store directors may want to convert sooner, if the opportunity presents itself. A policy regarding HCFC equipment will be initiated at the appropriate time.

All new refrigeration equipment, not installed on an existing system will use an EPA approved HFC gas, including but not limited to R-410, R-448A, R-449A, R-744, R-134A or R- 507.

The attached Refrigeration Policy (Exhibit 'A') was written by Owner and remains their Company Policy.

Review its contents, making certain all direction is clear as pertaining to refrigerants.

**Exhibit 'B'**

**WORK AUTHORIZATION PROCEDURES FOR OEM WARRANTY**

1. All warranty work must be approved in advance, as long as the OEM can be reached (this refers to mainly emergency service that affects loss of product). If work is approved, you will be issued a work authorization number. All invoices submitted without a work authorization are subject to denial. The following information is required for the issuance of a work authorization:

Store name Store address Model Dumber Serial number

Complete description of problem and correction A "Not to exceed" estimate for repairs

1. In case of after hour's emergency, the OEM Technical Support Department shall provide *24/7* accessible phone number for approved repairs. Phone #
2. All invoices containing warranty parts not obtained from the OEM's Service Parts Department must be accompanied by the wholesaler's invoice for reimbursement or will be replaced through the OEM's Service Parts Department. All defective parts must be returned to the OEM if so requested.
3. Labor to change DOA compressors to be paid with a teardown report from the compressor manufacturer attached with the invoice. (Note: Compressor must be factory defective before labor will be paid).
4. All model and serial numbers must be included on your invoice, (for all deemed equipment serviced). For compressor Warranty, the model and serial number of the unit the compressor was located in, the model and serial number of the compressors - both old and new - must be included.
5. Payment will be made from original invoices only. Copies will not be considered. All invoices must be billed to the OEM. OEM will not pay a third party invoice.
6. If the Refrigeration Contractor receives a letter requesting more information, i.e. model, serial number, etc. he shall be required to respond immediately. If a response is not received immediately, the invoice will be considered denied.
7. Typically, all invoices without a work authorization will automatically be denied.
8. All invoices must be sent to OEM.
9. Labor to replace parts damaged in transit must be noted on the shipping bill before any labor charges will be considered for payment.

**END OF SECTION 239100**