



GreenChill Store Certification Program Guidance

The following document provides guidance on meeting the GreenChill store certification requirements and completing either the “newly constructed store” or “operational store” application form.

Guidance on the Certification Program:

1. GreenChill certification is valid for one year from the date of the certification award.
2. GreenChill certification may be re-earned annually, as long as a store meets the certification criteria on an annual basis. A store that achieves certification for several years may receive “continued excellence” awards.
3. A store that is unable to achieve the certification criteria in a particular year will lose its certification for that year. If that store is able to meet the certification criteria in a subsequent year, it will be re-certified for that year and each of the following years that it is able to meet the criteria.
4. There is **no fee to apply** for GreenChill certification. The only cost associated with GreenChill certification is the cost to order the optional platinum-level, gold-level, or silver-level plaque award. Every store awarded certification automatically receives a GreenChill certificate.
5. GreenChill reserves the right to verify the information submitted by a store for certification, including, but not limited to, inspection of the store, requesting third party certification, and/or requesting copies of store records related to the certification criteria.

Guidance on the Certification Application Forms:

Two application forms are available for stores applying for GreenChill certification; **(1) the ‘Newly Constructed Store’ form, and (2) the ‘Operational Store’ form.** Stores must submit the form that is appropriate to the condition of the store at the time of application. For store *remodel* projects, please contact Keilly Witman at witman.keilly@epa.gov or 202-343-9742 to determine whether the “newly constructed store” form or the “operational store” form needs to be filled out.

Guidance on Meeting the Certification Requirements:

1. **Certification Criteria:** GreenChill’s decision to award a store with certification is based on several criteria, which are listed in Table 1 below. Each criterion applies to and is based on different types of refrigerant-containing equipment. For instance, the refrigerant emissions rate criteria applies to and is based solely on the store’s remote commercial refrigeration equipment, while the requirement that refrigerants be non-ozone-depleting applies to and is based on all three types of refrigerant-containing equipment in the store.

Table 1: Equipment Included in Each Certification Criterion

CERTIFICATION CRITERIA	INCLUDED EQUIPMENT		
	Self contained commercial refrigeration equipment	Remote commercial refrigeration equipment	HVAC Equipment
Refrigerant charge (lbs.)		✓	
Evaporator heat load (MBTU/Hr)		✓	
Refrigerant emissions rate (lbs.)		✓	
Non-ozone-depleting refrigerant	✓	✓	✓
SNAP-approved refrigerant	✓	✓	✓
GreenChill’s Installation leak Tightness standards (newly constructed stores only)		✓	

2. **Combined Systems:** If your store’s remote commercial refrigeration system is combined with your stores air conditioning system, it will not be possible to separate air conditioning emissions from commercial refrigeration emissions. It similarly will be difficult to separate air conditioning charge from commercial refrigeration charge. Please refer to the [GreenChill Store Certification Protocol for Combined Refrigeration and Air Conditioning Systems](#) for more information on reporting criteria for combined systems.
3. **Ozone Depletion:** As indicated in Table 1 above, all refrigerants used in the store, including the refrigerants in all types of self-contained equipment (soda machine in the break rooms, ice machines, deli refrigerators, etc.), must be non-ozone-depleting refrigerants. The most common ozone-depleting refrigerant used in supermarkets is HCFC-22. For a list of all Class I and Class II ozone-depleting refrigerants, see <http://www.epa.gov/ozone/science/ods/classone.html>
4. **Non-Ozone Depleting Alternatives:** For the list of substitute refrigerants that EPA’s SNAP Program has found to be acceptable alternatives to ozone-depleting refrigerants in commercial refrigeration, see <http://www.epa.gov/ozone/snap/refrigerants/lists/foodref.html>

5. **Refrigerant Charge/Evaporative Heat Load:** GreenChill uses the store’s refrigerant charge and the store’s remote commercial refrigeration evaporator heat load to calculate the pounds of refrigerant per MBTU/hr. Pounds of refrigerant per MBTU/hr. is calculated as follows:

$$\frac{\text{Refrigerant Charge (lbs.)}}{\text{Remote commercial refrigeration evaporator heat load (MBTU/hr.)}} = \text{lbs. of refrigerant per MBTU/hr.}$$

6. **Refrigerant Charge:** A store’s refrigerant charge is the total pounds of refrigerant that are charged into a store’s commercial refrigeration equipment.
7. **Evaporative Heat Load:** A store’s total remote commercial evaporator heat load **SHALL NOT** include sub-cooling, heat of rejection, or pump heat. It **ALSO SHALL NOT** include any BTUs associated with air conditioning loads. *Note: The evaporator heat load is not the rack rating or compressor capacity, which is typically larger than the evaporator heat load.*
8. **Prep Room Refrigeration:** Sometimes it can be unclear whether BTUs used for ‘prep room refrigeration’ should be considered air conditioning or refrigeration. For the purposes of GreenChill Certification, only BTUs that are used to cool a room below 60°F may be included in a store’s total remote commercial evaporator heat load. If the room temperature for these prep rooms is not provided on your systems refrigeration legend, you will need to provide other supporting documentation to show the room temperature is below 60°F.
9. **Annual Emissions:** Each store applying for GreenChill gold-level or silver-level certification must achieve an annual emissions rate of no more than 15% of the commercial refrigeration system’s refrigerant charge. For platinum-level certification, stores must achieve an annual emissions rate of no more than 5% of the commercial refrigeration system’s refrigerant charge. The amount of refrigerant emitted over the period of one year is equal to the amount of refrigerant lost from the store's commercial refrigeration equipment and systems. The emissions rate is calculated as follows:

$$\frac{\text{Amount of refrigerant emitted over the period of one year}}{\text{System Refrigerant Charge}} \times 100 = \text{Annual emissions rate (\%)}$$

10. **Leak Testing:** All newly constructed store certification applications must include verification that the commercial refrigeration system was tested for leaks according to GreenChill’s Installation Leak Tightness Testing Guidelines, which are available at:
<http://www.epa.gov/ozone/partnerships/greenchill/downloads/LeakGuidelines.pdf>