**Comment/Explanation\*:***Include your justification for your proposed change to the draft standard below.*
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The proposed text edits below reflect a couple of important issues:

* In general this section this section is set up to not provide accurate carbon accounting. It prohibits important life cycle stages which should be allowed that may skew the results. Please make changes to avoid these dangerous pitfalls.
* Allow carbon savings during operational phases. This may only be applicable to a few products but it is critical that those products are recognized for their contribtions to carbon savings during the operation of the building for its often long service life.
* Refridgerant leakage should be included not optional.
* Threshold calculations should not be allowed. Especially without more guidance on selecting the representative unit.

**Proposed Change to the Draft Standard\***
*Use “strikethrough” and “underline” formatting to indicate all proposed changes. Changes must be shown with “hard-formatting” strikethrough and underline, not “track changes”.*

*Use a color other than red to indicate proposed changes to the draft.*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# 6 Embodied Carbon Emissions Calculations

*~~Projected Assessments~~* ~~and~~ *~~Confirmed~~ Assessments* shall ~~both~~ conform with the calculation requirements in Sections 6.1 through 6.5.

## Reference Units for Calculations

The *GWP* of all *Minimum Assessed Products* shall be calculated using kilograms of *carbon dioxide equivalent* (kg CO2e) as per “Unit for Results” column in Table 10.1.1.

Input dimensions used for calculations may be in imperial units but shall be converted to metric units for GWP calculations.

Results shall be reported in both metric and imperial units as per Section 8.2.

## Calculating Embodied Carbon Emissions ~~and Carbon Storage~~ for each Minimum Assessed Product

Each *Minimum Assessed Product* shall have calculated the gross *embodied carbon* emissions, gross carbon storage, carbon savings, and net *embodied carbon*.

### 6.2.3 Add Carbon Savings

### Net *embodied carbon* for products

Net *embodied carbon* emissions for each *Minimum Assessed Product* shall be calculated as follows: (add to the equation the subtraction of carbon savings associated with the use of the product)

…

**6.4 Calculating Embodied Carbon Emissions from Refrigerant Leakage** *(renumber sections as applicable)*

### GWP of refrigerant leakage from heat pumps

~~It is allowable to estimate the~~ GWP of refrigerant leakage from heat pumps and/or any HVAC system component connected to a field charged or pre-charged refrigerant line installed in assessed buildings shall be estimated using the following calculation[[1]](#footnote-1):

…

## 6.4 Total Embodied Carbon Emissions Results

Total emissions results shall include the gross *embodied carbon* emissions, gross carbon storage, carbon savings, and net *embodied carbon* for the *assessed home*.

For *assessed homes* with *attached dwelling units*, the total *embodied carbon* emissions results shall be calculated according to one of the methods below and stated explicitly in the report according to Section 8:

1. Whole Building Method: summation of the total gross *embodied carbon* emissions, total gross carbon storage, total carbon savings, and total net *embodied carbon* emissions for all *Minimum Assessed Products* for the entire *building* according to Section 5.4 and calculated according to Section 6.3
2. ~~Threshold Method: summation of the total gross~~ *~~embodied carbon~~* ~~emissions, total gross carbon storage, and total net~~ *~~embodied carbon~~* ~~emissions according to Section 6.3 according to the~~ *~~threshold specifications~~* ~~for each unique~~ *~~dwelling unit~~* ~~type resulting from the~~ *~~worst-case analysis~~* ~~for the~~ *~~Minimum Assessed Products~~* ~~according to Section 5.4 of that~~ *~~dwelling unit~~* ~~type and multiplied by the number of~~ *~~dwelling units~~* ~~per unique~~ *~~dwelling unit~~* ~~type.[[2]](#footnote-2) This result is summed with the total gross~~ *~~embodied carbon~~* ~~emissions, total gross carbon storage, and total net~~ *~~embodied carbon~~* ~~emissions according to Section 6.3 for the~~ *~~Minimum Assessed Products~~* ~~for the foundation system, roof system, and common areas for the total~~ *~~embodied carbon~~* ~~results representative of the~~ *~~assessed home~~*~~.~~
1. (Informative Note) This calculation assumes 0.017 kg (0.6 oz.) of refrigerant per 0.3m (1 ft) of 9.5 mm (3/8 in.) liquid refrigerant line. [↑](#footnote-ref-1)
2. (Normative Note) Dwelling Units with the same construction type, same envelope systems, same number of bedrooms, same number of stories within the unit, same window area (+ 10 percent), same conditioned floor area (+10 percent, not to exceed +100 square feet), and same ceiling height (+0.5 feet) are permitted to be the same unit type. [↑](#footnote-ref-2)