**Comment/Explanation\*:***Include your justification for your proposed change to the draft standard below.*
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Only including Stages A1-A3 in this standard would mean that disposal/end of life would not be included, and the approach may a significant carbon emission stage depending on the building product. Additionally, the non-inclusion of stage C4 will leave biogenic claims hanging with negative carbon claims that are not accounted for on the backend at disposal. This is against all recommended literature on the calculation of biogenic carbon. The re-release of biogenic carbon is inevitable, and interpretation of the ISO-21930 standard that outlines how to calculate biogenic carbon all note that if you are claiming a negative value in Modules A1-A3, you must account for the positive values during Stage C.

*“The advantage of the -1/+1 approach over the 0/0 approach is that it provides an overview of biogenic carbon flows but there could be misleading results with only the impact of the material life cycle stages of production and construction with uptake of biogenic carbon is taken into account and not release at the end-of-life cycle.*” Source; <https://blog.2050-materials.com/biogenic-carbon-what-is-is-a-67391f254357>

The durability of biogenic carbon is important. The lifespan of a building products varies and when a building is decommissioned, some materials may be recycled, but most are invariably landfilled. A recent study outlined in the Journal Nature examined what length of sequestration of biogenic carbon would yield climate benefits: *“Our findings suggest that a CO2 storage period of less than 1000 years is insufficient for neutralizing remaining fossil CO2 emissions under net zero emissions.”* Source: <https://www.nature.com/articles/s43247-024-01808-7>

It is clear that nearly all buildings are not designed to last 1000 years. As such, either biogenic carbon should not be considered or for more transparency, LCA Module C4 must be included and emissions associated with end of life shall be included.

This was brought up during the working group discussion on this topic. NAIMA noted that it was important to at least include C2 and C4 (transportation and disposal stages) as this data is easy to come by- this suggestion was ignored. Estimates for these values should be included as many building products are inert when landfilled, there are some that may have significant emissions when landfilled, and following best practices any biogenic carbon claimed in Modules A1-A3 would be released in Module C4.

**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.*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## 5.2 Scope of Life Cycle Stages

The *system boundary* shall address the following tier of life-cycle stages[[1]](#footnote-1):

Table 5.2.1 Scope of Life Cycle Stages

|  |  |
| --- | --- |
| **Tier** | **Life-Cycle Stages Included** |
| I | Modules A1-A3, C4 |

The *system boundary* shall not include any of the following:

1. Quantification of on-site *biogenic carbon* sequestration where carbon flows occur outside of life cycle stages A1-A3 and C4[[2]](#footnote-2),
2. avoided GHG emissions,
3. on-site carbon capture activities,
4. carbon offsets,
5. carbon credits,
6. renewable energy credits, or
7. other environmental attribute crediting mechanisms.
1. (Informative Note) Subsequent tiers incorporating additional life cycle stages are intended to be added in future versions of this Standard. [↑](#footnote-ref-1)
2. (Informative Note) Examples of this include the carbon sequestered by trees planted on site and other landscaping. [↑](#footnote-ref-2)