

Biobased Content of Office Furniture as Complex Assembly Products: A BIFMA Perspective

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BIFMA e3-2008 Furniture Sustainability Standard

□ Purpose

“The purpose of this voluntary Standard is to provide measurable market-based definitions of progressively more sustainable furniture by establishing performance criteria that address environmental and social aspects throughout the supply chain.”

□ Scope

Applicable to:

- ❖ ALL business and institutional furniture, *inter alia* moveable walls, systems , furniture, desking systems, casegoods, tables, seating, and accessories.
- ❖ Materials and components manufactured by suppliers to furniture manufacturers.
- ❖ Business and institutional furniture manufactured in one facility or multiple facilities, one country or multiple countries.

It addresses product-based characteristics in the general areas of :

- ❖ materials
- ❖ use of energy
- ❖ human and ecosystem health
- ❖ social responsibility

❑ Structure & Organization

- ❖ Pre-requisites and points-based credits
 - Organized into elements: Materials, Energy & Atmosphere, Human & Ecosystem Health, Social responsibility
 - Applied at the level of: product, process, facility, corporate

❑ Levels of Conformance

- 1 (Silver): 32 to 44 total points; at least 5 of which are product related points
- 2 (Gold): 45 to 62 total points; at least 11 of which are product related points
- 3 (Platinum) 63 to 90 total points; at least 18 of which are product related points

- ❖ First-, second- or third-party certification
- ❖ BIFMA LEVEL™: third-party certified



How does BIFMA e3-2008 address biobased content?

- Definitions
- Credits that specifically address renewable materials
- A prerequisite for a Design for the Environment program
- Credits that could be impacted by material selection decisions

§ 3 Definitions

3.39 renewable material: A material that is replenishable and replenished on some reasonable time scale. Renewable material sources include, but are not limited to wood, grass fibers, plant-based plastics, and bio-based fuels.



§ 5: Materials

5.5 Rapidly Renewable Materials

Intent: Increase the use of rapidly renewable materials that are obtained from bio-based sources and decrease dependency on petroleum-based materials. Rapidly renewable materials reach commercial maturity in 10 years or less.

Threshold: The product must contain at least 1 percent rapidly renewable material by weight or volume.

5.5.1 Select rapidly renewable materials for use as an element of a new or existing product.

5.5.2 Ensures that rapidly renewable material production waste is not destined for disposal.

□ Note:

- Related to biobased content of products and not packaging, process chemicals or maintenance/operations chemicals
- No restriction is placed on the (1) geographic sourcing or (2) nature of the biobased feedstock
- A methodology for determining biobased content is not specified
- The content is calculated as % of total weight/volume of final product (aggregate)



5.6 Bio-based Renewable Materials - Sustainable Wood

Intent: Encourage environmentally responsible forest management and not specify species listed in CITES Appendices I or II.

Threshold: Product must contain at least 5 percent wood by weight.

5.6.1 Basic Level

5.6.2 Advanced Level

- Percentage of total wood weight that must come from certified sustainably managed forests
- Qualifying certification programs



5.1 Prerequisite

Intent: Implement a design for environment (DFE) program that, at a minimum, consists of the following elements.

- renewable materials
- recycled materials
- recyclable and biodegradable materials
- end of life management
- water management
- energy efficiency

5.3 Life Cycle Assessment (LCA)

Intent. Encourage use of LCA to inform product design and development, and to optimize materials choices. The organization may complete an LCA for the furniture product being assessed.

5.3.1 Apply the first two of the four LCA components in ISO 14040 and ISO 14044 (Goal & Scope Definition and Life Cycle Inventory). The LCA boundary must encompass extraction of raw materials through end of product life.

5.3.2 Complete an LCA utilizing all four components in ISO 14040 and ISO 14044. At a minimum, the impact categories must include Global Warming Potential.

5.3.3 Complete an independent third-party review of its LCA (per 5.3.2).



5.8 Recyclable and Biodegradable Materials

Intent: Increase the use of recyclable and biodegradable materials in the product.

Threshold: None

- ❑ Identify and quantify the amount by weight of recyclable and biodegradable materials in the product
- ❑ All qualifying recyclable and biodegradable materials shall be clearly labeled or otherwise identified in a manner that facilitates easy identification of materials during disassembly
- ❑ Verify availability of recycling/biodegradation facilities (excluding waste to energy) for recyclable and biodegradable materials in product in at least six of the ten U. S. EPA Regions

❑ Some other credits where the specification of biobased content may have an impact:

§ 5: Materials

5.2 Climate Neutral Materials

5.4 Efficient Use of Materials

5.7 Recycled Content

5.9 Extended Product Responsibility

5.9.1 Design for Durability/Upgradeability

5.9.2 Design for Remanufacturing

5.9.3 Design for Recycling

5.10 Solid Waste Management

§ 6: Energy and Atmosphere

6.5 Embodied Energy

§ 7: Human and Ecosystem Health

7.4 Effects of Product, Manufacturing Process, and Maintenance Chemicals

7.4.1 Product Level (Material Specification)

7.5 Reduction/Elimination of Chemicals of Concern

7.5.1 Elimination from Products

7.6 Low Emitting Furniture



Considerations for Designating Office Furniture as Complex Assembly Products with respect to USDA BioPreferredSM Program

- ❑ Office furniture covers a diverse range of product categories
- ❑ The nature and relative proportion of materials ranges within and between these product categories
- ❑ There are limited commercial opportunities to specify biobased materials (e.g. fabric, foam, and composite boards) and varies from category to category.
- ❑ Specific materials and/or components should first be individually designated under the BioPreferredSM program (with the required minimum biobased content and preferred measurement method)
- ❑ For complex assembly products, then could:
 - Contain one or more of these designated materials/components (each of which meets its own minimum biobased content)
 - Meet a minimum aggregated biobased content (based on total product weight) that is appropriate for each product category of furniture
- ❑ Testing of biobased content is then done at the level of each individual material/component and not at the level of the complex assembly product

Concluding Remarks

- ❑ Rather than focusing on a single attribute, BIFMA promotes and encourages a whole-systems and continuous improvement model whereby biobased content is considered in the larger context of the sustainability of complex assembly product such as office furniture .
- ❑ BIFMA welcomes stakeholder participation to further develop the biobased-related credits of the BIFMA e3-2008 Standard

Contact Information

For more information on BIFMA LEVEL, please visit the link below or contact the persons below:

<http://levelcertified.org/>



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