MEMO

BIFMA

To: Whom It May Concern

From: Dave Panning

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Subject: **Loss of Serviceability Guideline**

BIFMA offers the following guidance as an acknowledgement of the subjective nature of evaluating **loss of serviceability.**

> **Note:** If specific requirements are given in a test's acceptance level, those requirements take precedence over these general guidelines

1. Definitions

1.1. **Loss of Serviceability**: The failure of any product to carry its intended load or to perform its normal function or adjustments. Cracked or broken glass is considered a loss of serviceability unless specifically allowed by the standard. This pertains to the product's ability to provide the "service" for which it was designed; it does not refer to the products ability to be serviced/repaired after testing.

> Clarification: In previous versions of BIFMA standards, prior to 2012, the loss of serviceability definition included the phrase "or component". BIFMA standards released after 2012 omit the phrase "or component" to align with the intent of this guideline. BIFMA engineering committees intend to harmonize with the definition provided in section 1.1 of this guideline in future revisions.

1.2. **Normal Function**: Ability to fulfill the intended use and perform adjustments of the product as designed.

2. Interpretation of Results

2.1 Generally, after functional and cyclic (not proof) testing, there should be no objectionable visual difference from the pre-test state. The determination of 'visually objectionable' should be based on reasonable customer expectations. The general guidance for "visual difference" in relation to "loss of serviceability" is understood to be subjective. The overall expectation at the endpoint of any test is that the product is not expected to look "brand new". Wear that is typical of that caused by the test itself (wear due to test fixtures, etc.) is acceptable. Permanent deflection ("set"), wobble, stress marking, aesthetic cracks, etc., are not *necessarily* considered loss of serviceability – further assessment is necessary. In general, the structure and function of the product should not be compromised at the end of the test.

2.2. Post-test evaluation of cyclic tests may show the product to be worn, but as long as the product functions normally, supports the intended load[‡], and does not introduce a new hazard[†] it is acceptable.

2.3. The following guidance is offered to address typical observations during and after testing. Some interpretations require the observer to perform a secondary evaluation provided in 3.3.

	Condition Observed	Secondary Evaluation	Interpretation Guidance
1	Squeaks, rattles, other sounds	None	Not a loss of serviceability
2	Stress whitening	None	Not a loss of serviceability
3	Cracking (of plastics, metal, wood)	Supports intended load No new hazard present†	Not a loss of serviceability
4	Cracked or broken glass	None	Loss of serviceability
5	Broken caster	Product is stable	Not a loss of serviceability
6	Disengagement†	Not physically separated Supports intended load	Not a loss of serviceability
7	Spot weld breakage, fastener breakage, spring breakage, joint cracking/separation	Supports intended load No new hazard present†	Not a loss of serviceability
8	Discoloration, fading, color change	None	Not a loss of serviceability
9	Excessive adjustment force†	Moderately beyond normal Adjusts through intended means (i.e. no new tool or special techniques required)	Not a loss of serviceability
10	Loosening of fastener	Supports intended load	Not a loss of serviceability
11	Torn fabric	None	Not a loss of serviceability
12	Wobble†	None	Not a loss of serviceability
13	Deflection†	Moderate permanent deflection ("set")	Not a loss of serviceability

Note(s):

† Refer to section 3 for additional clarification.

‡ Refer to section 4 for additional clarification.

3. Additional Clarification of Secondary Evaluations

3.1 Disengagement

If physically separated, then yes it is a loss of serviceability. If it is unclear if disengagement has occurred, apply the intended functional load. If the product supports the load, then there is not a loss of serviceability.

3.2. Excessive adjustment force

Significantly beyond normal is loss of serviceability. For example, if an adjustment knob is meant to be adjusted by hand and a tool is required to make the adjustment after testing, this would be a loss of serviceability.

3.3. Deflection

It may be a loss of serviceability if the deflection is permanent and excessive. Note: deflection during testing is not a loss of serviceability.

3.4. Wobble

Not a loss of serviceability unless severe and product performance is compromised.

3.5. New hazards

Occasionally, an observed condition such as a broken spring or fastener may result in a new hazard present to the end user of the product. Emphasis should be focused on the likelihood that the end user would be directly exposed to the new hazard under normal or foreseeable use scenarios. Examples of hazards may include, exposed sharp edges, pinch points, or changes in product stability.

4. Determining Intended Functional Load

4.2. Depending upon the test and test result consider applying the appropriate functional static evaluation to determine serviceability:

4.1.1 For non-seating products the functional load (either distributed or concentrated based on the judgment of the evaluator) should be used to determine serviceability if the product is in question after durability testing. Evaluation loads should be applied slowly, then may be removed once the load is achieved (no minimum time limit).

4.1.2 For seating units, the functional static load that applies to the item tested should be used for the secondary evaluation. For seat surfaces, where no functional static load test is given, the load stated in the scope of the standard (eg, 253 lbs. for ANSI/BIFMA X5.1-2011) OR the manufacturer's stated load capacity whichever is GREATER should be applied. Evaluation loads should be applied with evenly distributed loads. Evaluation loads should be applied slowly, then may be removed once the load is achieved (no minimum time limit).

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