



Joint Committee on Biosafety Cabinetry

June 5, 2024

Proposed revision to NSF/ANSI: 49 – Biosafety Cabinetry: Design, Construction, Performance and Field Certification (49i180r1)

Revision 1 of NSF/ANSI 49, issue 180 is being forwarded to the Joint Committee on Biosafety Cabinetry for consideration. Please review the proposal and **submit your ballot by June 26, 2024** via the [NSF Online Workspace](#).

Please review all ballot materials. When adding comments, please include the section number for your comment and add all comments under one comment number whenever possible. If additional space is needed, you may upload a MS Word or .PDF version of your comments directly to the NSF Online Workspace.

Purpose

The purpose of this ballot is to approve revised language related to motor blower performance procedure in Normative Annex 1 of Standard 49.

Background

Issue paper **BSC-2023-06** highlighted the need to update language related to the motor blower performance procedure in Normative Annex 1.

The issue proponent suggests there is an inconsistency between the official procedural language and that in the corresponding figure (26). Specifically stated in the Standard:

Figure 26 states the maximum distance between the tip of the probe and the blower inlet is $\frac{1}{2}$ of the blower inlet diameter. The text in section N-1.12.3 c) states: The manufacturer shall locate the negative pressure tap not less than one-half equivalent diameter from the blower inlet.

This issue was presented and discussed during the 2023 JC in-person meeting whereby the group agreed this needed clarification adding that the figure is the correct way to measure this test performance, ultimately motioning this directly to JC Approval Ballot once drafted by the issue proponent.

This Revision 1 approval ballot reflects the language drafted and is presented here for your consideration.

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If you have any questions about the technical content of the ballot, you may contact me in care of:

A handwritten signature in black ink, appearing to read "R. Powitz", is positioned above the contact information for Robert W. Powitz.

Robert W. Powitz, PhD, MPH, RS, DLAAS
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[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by **grey highlighting**. Rationale Statements are in *red italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI International Standard for Biosafety Cabinetry —

Normative Annex 1 (formerly Annex A)

Performance tests

N-1.12.3 Method

- a) Set the cabinet at the manufacturer's recommended nominal set points ± 2 ft/min (0.01 m/s).
- b) Measure the total airflow volume rate, ft³/min (m³/s), and determine that the cabinet blower is delivering at the nominal set point (see Sections N-1.8 and N-1.9). The cabinet supply air volume shall be determined as in Section N-1.9.3.4.4.d.
- c) Locate the testing organization approved¹ positive and negative pressure taps. The manufacturer shall locate the positive pressure tap (see Figure 25) directly above the downflow HEPA/ULPA filter to allow conversion of velocity pressure to static pressure. The positive pressure tap shall not be located in the face of the blower outlet (see Figure 25). If more than one pressure tap is used, as in a piezometer ring, pressure taps may be connected together for an average reading. The manufacturer shall locate the negative pressure tap not ~~less~~ **more** than one-half equivalent diameter from the blower inlet. In the case of double inlet blowers, static measurements shall be made in both blower inlets and connected together for an average static pressure (see Figure 26). If it is not possible to mount both static pressure taps due to cabinet design, one tap will be sufficient. For negative pressure tap, use a series pressure tap (see Figure 27). Attach manometers to each pressure tap and record result. The positive pressure reading is the initial static pressure reference point. The sum of the positive and negative readings without reference sign is the total cabinet static pressure.

***Rationale:** This language clarifies, the makes consistent, normative language within this section and the figure used to illustrate the procedure.*

¹ Manufacturer to supply positive and negative pressure taps (see Figure 27) on units submitted for laboratory cabinet design certification.