

Primary Barrier Equipment Certification and Services

National Institutes of Health (NIH) • Office of Research Services (ORS) • Division of Safety (DS)

The [Primary Barrier Program](#), as part of the Division of Safety (DS), covers the certification, repair, and decontamination of [biosafety cabinets](#) (BSCs), the certification of [chemical fume hoods](#) (CFHs) and local exhaust ventilation units (LEVs). Primary barrier equipment is a type of engineering control designed to mitigate hazards at the source of the work process. BSCs provide protection for personnel, products, and the environment. CFHs safeguard users from exposure to chemical vapors, fumes, and dust, while LEVs—such as downdraft tables and sinks—protect personnel by capturing airborne contaminants at the point of generation. Although the program includes additional equipment, BSCs, CFHs, and LEVs are the most used primary barrier systems at NIH.

Laboratory, Animal Facilities and Clinical Center areas must adhere to all applicable regulatory requirements and guidelines for equipment certification, use, and cleanliness. If any required activity (e.g., annual recertification) has not been performed and the department or IC has not notified DS, the equipment must be **placed ‘Out of Service’ and must not to be used** until the issue is corrected.

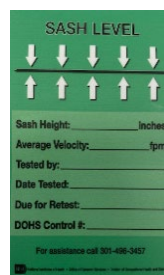
Other types of Primary Barrier Equipment Requiring Annual Certification

Additional types of primary barrier equipment that undergo annual certification include exhaust and supply air plenum high efficiency particulate air (HEPA) filters, breathing air/carbon dioxide/oxygen HEPA filters, Biobubbles, Magnehelic HEPA filters, HEPA filtered vacuum cleaners, HEPA filtered powered exhaust units (asbestos barrier filters), laminar flow clean benches, laminar flow patient isolator HEPA filters, HEPA filtered animal care modules, animal changing/transfer stations, and Microisolator cage systems.

Note: Equipment like polymerase chain reaction (PCR) enclosures (HEPA filtered sterile environment for PCR experiments), powder containment enclosures (approved with HEPA filters for weighing of toxic compounds etc.) **are not** covered by the Primary Barrier Program services. Any service for these units must be completed according to the manufacturers’ recommendations by a laboratory procured contractor/vendor.

Recertification

Primary barrier equipment is required to be **recertified annually**, more frequently for some specialized equipment, accredited labs, and pharmacy areas as determined by applicable industry and NIH requirements. Biosafety cabinet and chemical fume hood annual re-certifications occur on schedule and are coordinated by a DS’s third-party certifier. The recertification date for a chemical fume hood can be found on the green sticker placed adjacent to the sash (Left). Recertification is also required after repairs, including ventilation corrections and after a biosafety cabinet is moved to another location.



All newly purchased primary barrier equipment must be certified upon installation. Movable LEV exhaust hoods (e.g., “elephant trunks” and “snorkels”) can be certified if the lab provides manufacturer’s specifications and design information. Although manufacturer specifications are preferred, their absence **does not** eliminate the requirement for testing and certification.

If recertification of primary barrier equipment is **due within the next 10 days** and a certifying technician has not yet contacted you to schedule a visit, **DS recommends you place a [service request ticket](#) in the CERTS database for annual re-certification. Follow the same protocol if re-certification is overdue (past the posted certification due date).**

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Problem Resolution

Do not use primary barrier equipment that has failed certification, is past due for recertification, or is malfunctioning (alarm, sash issue, etc.).

Biosafety cabinets can fail annual re-certification for several reasons including, but not limited to, HEPA filter(s) failure, broken sash, and low airflow. If the BSC fails recertification, the problem will be communicated to staff verbally, via email, and/or by posting a sticker (Image 2) on the failed BSC's sash.

**DO NOT USE BIOLOGICAL SAFETY CABINET (BSC)
FAILED CERTIFICATION - NEEDS REPAIR**

<input type="checkbox"/>	Motor Blower Failure: Contact DOHS for additional information.
<input type="checkbox"/>	HEPA Filter Failure: HEPA filter ordering form is provided.
<input type="checkbox"/>	Low/High Airflow in Ducted BSC: Please submit an ORF Maintenance Request to have airflow adjusted. Once airflow is adjusted, submit DOHS Service Request to recertify the BSC.
<input type="checkbox"/>	Other:
Technician: _____	Date: _____

If any ducted primary barrier equipment (i.e., Type B1 and B2 biosafety cabinets, chemical fume hoods, and some LEVs fails certification due to an airflow issue) is in alarm, has failed certification, or is malfunctioning, contact the Office of Research Facilities (ORF) for troubleshooting and repairs. Follow the steps below:

Image 2

1. Submit a [maintenance service request](#).
 - a) If you do not hear back from ORF within 3 days, use the maintenance service ticket number and **call the ORF service desk at 301-435-8000** to ask for a status update on your ticket.
 - b) For further escalation, **contact on-duty supervisor and/or ORF Facility Team Chief**. This information should be provided by ORF service desk.
2. Once ORF has adjusted the airflow, submit a new [service request](#) to DS (“**Recertification after ORF adjusted the airflow**”) and the contractor will verify the airflow to ensure it is safe for users to work.

For questions or additional information, contact: PrimaryBarrier@mail.nih.gov or 301-496-3457.

Note: In a combination sash chemical fume hood, it is possible for certification to fail in either the horizontal or vertical sash configuration. If this occurs, **do not work** with the sash in the position that failed certification. Submit a [maintenance service request](#) to ORF.

Repairs

Biosafety cabinet adjustments, HEPA filter installations, and most general repairs are covered by the Primary Barrier Program at no cost to you! Repairs requiring procurement of replacement parts by the laboratory/facility manager (e.g., HEPA filters) require a new [service request ticket](#) once the part is received and ready for installation.

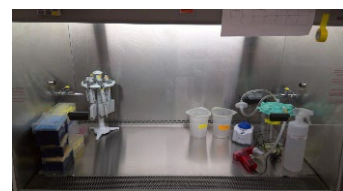


Image 3

Significant repairs such as filter and motor blower replacements in BSCs require decontamination of the BSC. Decontamination of BSC is done through submitting a [service request](#). The status of the decontamination process (in progress or completed) will be posted on the BSC sash (image 3). Repairs will not be made without the clear posting of this notice of decontamination.

Note: The Primary Barrier Program does **not cover** physical repairs to CFHs or LEV systems, airflow adjustments to CFHs and ducted BSCs, or airflow monitor calibrations. Airflow exhaust adjustments to ducted BSCs and CFHs are performed by ORF, followed by equipment recertifications by a certifying technician. ORF also performs minor repairs to CFHs (e.g., light bulb replacements). For physical CFH repairs (e.g., sash glass replacements, airflow monitor calibrations) or LEV repairs (e.g., inoperable damper), the laboratory/facility would need to procure services from a third-party vendor. Any

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requirements for decontamination of the CFH prior to repairs should be discussed with the vendor. Refer to [DS fact sheet](#) for guidance on properly cleaning CFH.

Disposal

The disposal or relocation of a piece of primary barrier equipment requires that the unit is certified free from hazards. Biosafety cabinets will undergo gaseous decontamination through DS while the [cleaning](#) of chemical fume hoods is the responsibility of the lab. After decontamination is completed tag the equipment with [NIH Form 2683](#) (Certified Free from Hazard).

To dispose of or surplus a BSC the lab must complete the following [NIH Policy 26101-25-2-04](#). Property Custodial Officers (PCOs)/ICs shall retain all records in accordance with [NIH Records Management](#) and Federal guidelines. If BSC is moved or relocated to another location, gaseous decontamination is required prior to moving and it will need to be recertified after the move is complete. Submit a request for recertification using the following [Service Request](#) link.

Contacts

If DS's third-party certifier has not scheduled a visit within one week of a submitted service request ticket, if you have questions about biosafety cabinets, chemical fume hoods, LEVs, other primary barrier equipment, or decontamination, please contact the Primary Barrier Team at PrimaryBarrier@mail.nih.gov, call 301-496-3457, or visit the [Primary Barrier Program website](#).