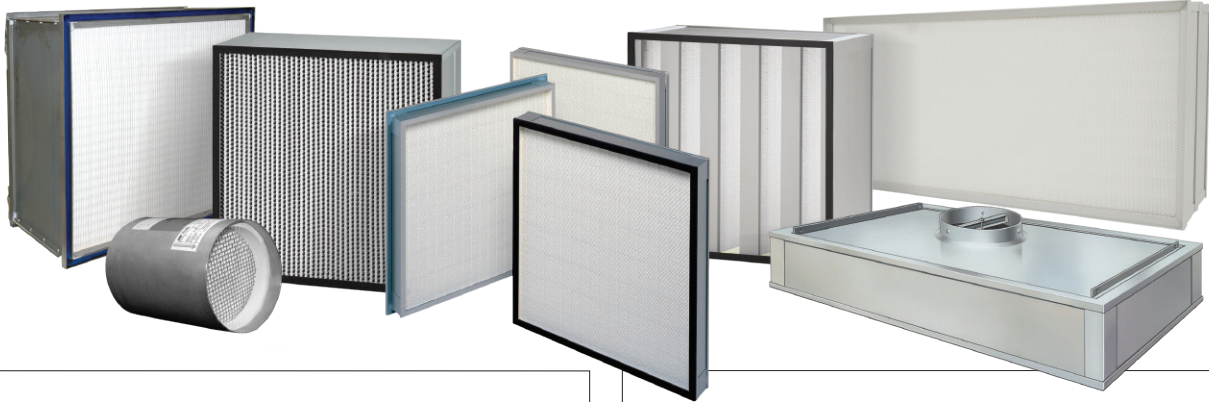


# HEPA & ULPA Filter User Guide

## HANDLING / UNPACKING, STORAGE, OPERATING CONDITIONS



### Background

AAF HEPA (High Efficiency Particulate Air) and ULPA (Ultra-Low Penetration Air) filters are sensitive high purity elements and should be handled and installed using proper and attentive techniques. Special care must be taken in the selection of a carrier for transport, and in the training of installation and facilities personnel.

AAF recommends the use of faceguards for your HEPA and ULPA glass media filter selections when possible. Faceguards are an inexpensive way to significantly reduce the risk of damage during transport, handling, and installation.

### Receiving/Handling Procedures

1. Carefully check each pallet of filters before accepting shipment from the carrier. Pallets of filters that have been damaged or broken down should not be accepted without a thorough inspection and appropriate comments noted on the shipping documentation.
2. Pallets of filters or individual filters should never be subjected to excessive shock, vibration, or extreme temperatures. The shock caused by dropping a filter can cause serious damage.
3. Pallets of filters should not be stacked.

***It is recommended that filter handling be carried out by two people.***

**To remove the filter(s) from the carton(s), follow these steps:**

#### Individually Packaged

1. Carefully open top of box.
2. If the filters come packaged with suitcase-style cardboard sleeves, simply reach into the box and grab the handles

pre-punched within the insert. If the filter is in a cardboard liner, the filter must be oriented so the open ends of the liner are facing outward (i.e., to your left and right rather than upward). Carefully cut the packing tape that holds the filter in the liner. Always check for torn or deflected liner edges. If any are found, straighten or flatten such edges prior to liner removal to prevent media damage. One person should carefully hold the plastic bag(s) while the other person carefully pulls the liner, sliding it away from the filter. Panel and ducted filters will be single- or double-bagged (depending on customer requirements) with snug-fitting cardboard liners.

3. Remove box-style filters and filters without liners or sleeves by carefully inverting the carton 180° with the carton flaps flush against a clean floor. Slowly pull up on the carton until the carton has cleared the filter.
4. The filter should now be handled with extreme care to avoid contact with the media and/or face screen. While the bag is still present, carry the filter by grabbing the bag. Be careful to keep the filter away from your body and any objects in your path. If the bag is not present, always handle filter from the frame, avoiding contact with the media and/or the face screen. Filters should always be transported vertically (face perpendicular to the floor), never horizontally.
5. Additional precautions for gel seal filters: Care is taken at the factory to prevent the bag from contacting the gel. Be very careful when unpacking gel seal filters by removing the bag slowly and carefully. If the bag comes into contact with the gel, pull the bag off the gel slowly. Quick removal of the bag may cause damage to the gel and possible separation of gel from the gel channel.

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## **Bulk Packaged (multiple filters in a single carton)**

1. Carefully lift and remove top of the carton
2. To remove filters from the carton:
  - a) Each person should carefully insert one hand into the top of the protective liner.
  - b) Gently lift the filter out of the carton by the liner.
  - c) Care must be taken during this process, since the remaining filters in the carton will have a tendency to tip within the carton. Position the remaining filters to prevent tipping.
3. After the filter has been removed from the carton, the filter must be oriented so the open ends of the liner are pointing upward. Carefully cut the packing tape that holds the filter in the liner. Always check for torn or dented liner edges. If any are found, straighten or flatten such edges prior to liner removal to prevent media damage. One person should carefully hold the plastic bag(s) while the other person carefully pulls the liner, sliding it away from the filter.
4. The filter should now be handled with extreme care to avoid contact with the media and/or face screen. While the bag is still present, carry the filter by grabbing the bag. Be careful to keep the filter away from your body and any objects in your path. If the bag is not present, always handle filter from the frame, avoiding contact with the media and/or face screen. Filters should always be transported vertically (face perpendicular to the floor), never horizontally.
5. Remove the bag carefully. Avoid hand and finger contact with the filter media.
6. Additional precautions for gel seal filters: Care is taken at the factory to prevent the bag from contacting the gel. Be very careful when unpacking gel seal filters by removing the bag slowly and carefully. If the bag comes into contact with the gel, pull the bag off the gel slowly. Quick removal of the bag may cause damage to the gel and possible separation of gel from the gel channel.

## **Guidelines for Storing, Operating and Installing AAF HEPA & ULPA Filters**

### **1. Storage**

- a) Location: Filters should be stored in their original cartons in a climate-controlled environment, protected from inclement weather.

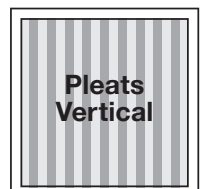
- b) Temperature Limits: Maximum temperatures of 110°F (43.3°C). Minimum temperature is 40°F (4.4°C).
- c) Filters should be oriented with their pleats vertical and stacked no more than three cartons (or over 6 ft.) high unless intermediate bracing or flooring is provided to prevent the weight of the upper tier from bearing on the lower tier.
- d) Unless there is obvious damage to the cartons, filters should not be opened prior to use, nor removed from shipping pallets or skids until immediately prior to installation.
- e) Filters should not be exposed to ultraviolet (UV) rays or ozone-depleting sources.
- f) If the above storage requirements are met, filters should have a shelf life of seven (7) years from manufacturing date.

### **2. Operating Conditions**

- a) Temperature: The maximum operating temperature is determined by the filter configuration. Consult the filter submittal drawing for the specific maximum operating temperature.
- b) Humidity: 100% relative humidity is acceptable. However, condensation must be avoided to prevent degradation of performance and potential filter failure.
- c) Filters should not be operated in caustic or acidic environments.
- d) Filters should not be operated in excess of the rated flow rate and not operated in excess of twice the rated initial pressure drop. In case of elevated airflows, contact the factory.

### **3. Installation**

- a) Filters should be installed with the pleats aligned with the vertical axis when the airflow is horizontal.
- b) Vertical alignment prevents sagging and potential tearing of the media as the filter becomes loaded with dust while in service.
- c) Do not allow any solid object (e.g., hands, tools, etc.) to come into contact with the media during or after installation. Failure to prevent contact can damage the filter. Be sure to handle the filter only by its frame and avoid touching the filter element.



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