GUIDELINE

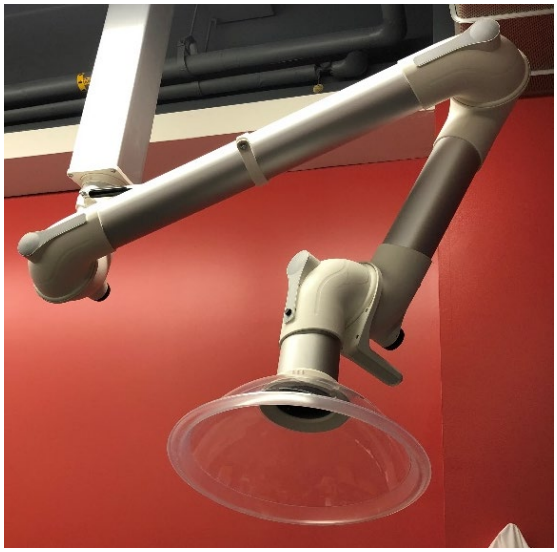
Rowan University
ENVIRONMENTAL HEALTH & SAFETY

Local Exhaust Ventilation Safety

Multiple laboratories across the Rowan University campus are equipped with local exhaust ventilation systems known as snorkels or elephant trunks. These devices are one of the most common forms of local exhaust ventilation and consist of a flexible duct or articulated arm with a funnel shaped air inlet at the end that allows for easy positioning over the work area. While a very useful laboratory engineering control, it is important to note that these devices have difficulty capturing all airborne emissions. Local exhaust devices are therefore best suited for work requiring the capture of nuisance odors, irritants, and other low hazard emissions. Always consult with Laboratory Safety before utilizing a local exhaust device in a new application to ensure that it will provide the protection required for the work being performed.

Using an Exhaust Snorkel:

Before using a snorkel, or any other form of exhaust ventilation, verify that the system is operating properly. A properly operating snorkel will have a face velocity set between 150 and 200 feet per minute[1]. Many snorkels feature an exhaust damper that must be opened before use to allow airflow. A quick flow check can be performed by placing the back of your hand at the inlet to feel for airflow or by holding a Kimwipe near the inlet.



The inlet of a Snorkel must be positioned close to the source of the emissions that require exhaust ventilation. As a rule, a snorkel inlet should be positioned at a distance within one half of the diameter of the inlet funnel. Distances further away can result in inadequate emissions capture. As an example, if you are working with a snorkel that has a 10-inch diameter inlet funnel, you would need to position the inlet 5 inches or less from the source of the emissions.

Exhaust Snorkel Limitations:

Snorkels and other forms of local exhaust are not as efficient at removing airborne emissions as chemical fume hoods or equipment with directly connected exhaust ducting. There are many factors that can adversely affect a snorkel's ability to properly capture emissions, but the most significant is improper positioning of the inlet funnel. Other common factors that can negatively affect a local exhaust device may include:

- Lab equipment placed too close around the local exhaust altering airflow characteristics.
- Sudden changes in room pressure, such as an entry door or hood sash being opened.
- A person walking or moving too fast in the vicinity of the local exhaust.

Please contact Laboratory Safety at 856-256-5105 or LabSafety@Rowan.edu with any questions related to local exhaust ventilation.

[1] National Research Council 2011, *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Version.*