

# Pressure Swing Adsorption Plant Storage Guidance

**Date published:** 13 May 2023

*This document was developed by [Build Health International](https://www.bhioxygen.org) to support global medical oxygen infrastructure planning, site preparation, operation, maintenance, and sustainability. Additional technical resources are available at [www.bhioxygen.org](https://www.bhioxygen.org).*

## Summary

This document details key considerations regarding where to store pressure swing adsorption (PSA) plants that have arrived in the country prior to the sites being ready to install and commission the equipment.

Ideally the respective site should be ready prior to the PSA plant arriving in the country. However, there are ways to mitigate the risks associated with storing the plants while this work is completed. All PSA plant equipment must be kept in a secure location that restricts access and ensures all equipment is kept together. The locations should be clean and easily accessible to ensure the necessary equipment is able to move to their final location. The equipment should also be stored in a location that is protected from weather conditions and exposure to moisture or extreme temperatures. As with all aspects of the PSA plant design and installation process, the individual supplier should be consulted for any additional specific considerations when storing their equipment for a given duration of time.

## Containerized PSA Plants

- **Store the plant in a location with truck and crane access to allow the container to be reloaded on a truck when it is time to be delivered to the final site.**
- **Store the container in a secured/fenced location that prevents unauthorized access to the interior or exterior of the equipment.**
  - If a secure facility cannot be provided, at a minimum the container doors must be locked and entry into the container must be prohibited.
- **Ensure a detailed inventory of the parts that have been delivered within the container, as well as any secondary parts not within the container, is recorded prior to storing the plant.**
  - This inventory list should be stored in a secure location and checked against the supplier's packing list and purchase order at the time of storage to ensure all materials are accounted for when the plant is stored and when the plant is removed from storage for commissioning.
- **Securely store the container elevated from direct contact with the ground, utilizing either wood blocking or concrete blocks at the bearing points of the container.**
  - If raising the container is not feasible, ensure that the container is located in an area not prone to flooding, and not susceptible to pooling water (i.e. store on well-draining gravel or pitched concrete/paved surface)

- If the container is being stored indoors, the container does not need to be elevated off of the interior concrete slab.
- **If possible, store the container in an indoor warehouse or under protection of an overhead canopy to limit direct exposure to weather for extended periods of time.**
  - Direct exposure to weather will shorten the life of the container and will accelerate deterioration and corrosion of the steel shell and timber floor framing.
- **Consult with the supplier regarding any additional considerations regarding containerized plant storage and any additional maintenance or consumable parts service required at start-up for plants that are dormant for extended periods of time.**

## **Skid Mounted or Loose Parts PSA Plants**

- **Store the plant at a location with truck, crane and/or forklift access.**
  - This allows the equipment to be moved within the warehouse location and reloaded on a truck when it is time to be delivered to the final site location.
- **Store all equipment in a secured indoor weather protected location that prevents unauthorized access.**
  - If multiple plants are delivered together and are to be stored at the same location, each piece of equipment should be logged and tagged to easily identify which items belong to each site.
  - No equipment, boxes or crates should be opened, dismantled, unwrapped or separated while in storage, unless directed otherwise by the supplier.
  - All equipment should be stored in a lockable, secure location within the storage facility to ensure there is no unauthorized access and parts are not accidentally or intentionally used for other sites, projects or scopes of work.
  - Storage locations should avoid high traffic areas to prevent accidental damage to the stored plant equipment.
- **Ensure a detailed inventory of the parts and equipment delivered by the supplier is recorded prior to storing the plant.**
  - This inventory list should be stored in a secure location and checked against the supplier's packing list and purchase order at the time of storage to ensure all materials are accounted for when the plant is stored and when the plant is removed from storage for commissioning.
- **Consult with the supplier regarding any additional considerations regarding the skid mounted or loose equipment plant storage and any additional maintenance or consumable parts service required at start-up for plants that are dormant for extended periods of time.**