

USING AIRE GUARDIAN® MOBILE DUST CONTAINMENT MODULES TO EFFECTIVELY MEET CDC ICRA CONSTRUCTION GUIDELINES

The Joint Commission-enforced Centers for Disease Control and Prevention *Guidelines for Infection Control in Health-Care Facilities* require completion of an Infection Control Risk Assessment (ICRA) for all construction, renovation, repair, and maintenance activities. The ICRA provides a structured method for evaluating the risks of exposing sensitive patients to *Aspergillus* and other infectious microbes common in indoor environments that can attach to dust and dirt and other particles released into the air during the work, and determining suitable protective measures.

What Is Negative Pressure Particle Containment?

The ICRA may indicate that protecting patients from exposure to airborne particles requires implementation of full negative pressure containment, which requires:

- (1) Placing physical barriers around a work area that may generate airborne contaminants to separate or “segment” that area from the facility environment
- (2) Continuously operating portable HEPA filtration devices known as portable air scrubbers to significantly reduce airborne particle counts within that area, and
- (3) Exhausting a sufficient amount of HEPA-filtered air from the enclosure to create and maintain negative (lower) pressure compared to adjacent spaces

The objective is to find a way to effectively implement these protective measures in the most time-efficient and cost effective manner possible.

Unique Containment Issues for Wall & Ceiling Work

Infectious particles can thrive in ceiling and wall cavities thanks to near-optimal environmental conditions and an abundant supply of dirt, dust, and cellulose-based building material particles as food sources. Hospital construction and renovation activities in hospitals frequently require access into these spaces. Some typical examples of these types of activities include:

- Installing or removing wiring, network cabling, conduit or pneumatic systems above drop ceilings or in wall cavities

- Testing smoke detectors and other equipment
- Removing ceiling tiles or sheet rock to access plumbing and cabling networks or fluorescent lighting fixtures
- Installing, removing, replacing or servicing ceiling or wall mounted equipment or fixtures

The time and labor cost required to erect, dismantle and relocate a fixed barrier every time a ladder is moved from one ceiling grid opening to another make them an impractical particle containment solution for these types of jobs.

Introduction of Mobile Containment Barriers

Prefabricated mobile construction containment modules sometimes referred to as 'dust cubes' or 'dust carts' have proven to be a more efficient alternative solution for this type of work. These portable devices can be rolled from one location in a facility to another and adjusted to accommodate various ceiling heights. There are two types of mobile containment products available today.

Fabric-and-frame style mobile containment cubes featuring a flame-retardant fabric enclosure supported by an adjustable metal frame that's mounted onto a cart or casters are by far the most popular. User advantages include moderate pricing (\$3,500 to \$5,000), light weight and ease of mobility. However, users of some products have also experienced ongoing problems such as frames that damage easily or malfunction, height adjustment difficulties, fabric tearing, sewn seam failures, and fabric sagging when the enclosure is at lower height settings.

Hard shell enclosures with rigid steel or aluminum sheet-metal enclosures can offer more durability, but these products have some inherent drawbacks: they are more costly (\$5,000 to \$10,000); their weight (hundreds of pounds) and bulk make them much more difficult to transport and move; and, most models have open tops and can potentially allow particles to escape when the cube is lowered from the ceiling. As a result hard shell units are used by relatively few companies.

The AIRE GUARDIAN 3000 Mobile Containment Module

In 2009 the Abatement Technologies product design team introduced the AIRE GUARDIAN Model AG3000 fabric and frame containment cube. Since then this economically priced system has set new standards for quality, mobility and reliability. Today the AG3000 is the product-of-choice for health care contractors throughout North America, with features that include:

- A 900 pound load capacity rating
- A rugged cover made from a puncture and tear resistant scrim-reinforced PVC material originally developed for military tents that's easy to clean and decontaminate, and meets or exceeds all applicable hospital fire safety codes.

- Ultrasonically welded seams that are far stronger and more reliable than sewn or heat sealed seams.
- Color-coded fabric on the enclosure floor to make it easier to properly align the cover over the frame during assembly.
- Custom extruded-aluminum uprights that are precision machined to prevent binding, and have numbered height-setting slots for easier adjustments.
- Spring loaded upright poles within the uprights for fine adjustment to the exact ceiling-height setting needed.
- A foam gasket on the top frame for dust-tight sealing against the ceiling.
- Multiple access doors with ultra heavy duty, non-binding zippers.
- Large clear windows to allow in light and provide worker visibility.
- A large, zippered top opening that provides full access into 2-ft. x 4-ft. drop ceiling grids.
- A unique hook and tab system that gathers excess fabric near the top of the enclosure at lower height settings to ensure that fabric does not sag and block access doors or view windows.
- Large 4-in. diameter, non-marking casters that roll easily, and can be locked securely in place when using the AIRE GUARDIAN 3000 without removing the enclosure from the cart.
- Easy removal of the module from the cart so the module can be placed directly on the floor during use if required or preferred.
- Separate access ports for intakes for a portable air scrubber & HEPA vacuum.
- Velcroed pass-through openings for tools & small objects
- A work order pouch with a clear cover.
- An optional caddy (cart on wheels) that allows the portable air scrubber to remain attached to the AIRE GUARDIAN while the module is repositioned.

Contact Us

Abatement Technologies offers a full spectrum of indoor air quality products for hospital construction, patient isolation and emergency preparedness. For more information on the AIRE GUARDIAN Mobile Containment Module and our other products call one of our health care product specialists at 800.634.9091, visit our website (<http://www.abatement.com>), or email us at iaqinfo@abatement.com.