



### **DUROROOM™**

Retractable Enclosures  
to Accommodate any Workpiece  
Sizes up to 50'H x 55'W x any linear length



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Product Data Sheet – DuroRoom™

### Applications

Dust Control, Welding, Painting and Coating, Cleanrooms (Positive Pressure and Negative Pressure), Anterooms, Non-Destructive Testing, Other

### DuroRoom™ Overview

DuroRoom™ retractable enclosure systems are a modular designed system, built in 5'-0" or 6'-0" increments depending upon the height and width of the enclosure. The enclosures retract to 20% of the extended length allowing for maximum use of existing floorspace during intermittent use and loading of the workspace with use of overhead crane. Systems are fabricated from cost competitive, fire resistant clear and solid vinyl and heavy walled steel framing. Custom sizes are available.

#### Standard DuroRoom™ Systems

- Modular Design in 5'-0" or 6'-0" increments
- Barn doors with intake filters, open face or mesh curtain
- Clear PVC vinyl 16 mil.
- All vinyl joints are heat welded
- Double polished, 95% light transfer
- Retracts to 20% of the extended length
- Build on casters to allow for extending and retracting

### Tapered Airflow Design

The Duroair product line is a cross draft design. Shop air enters the enclosure through the front filter doors. Clean air travels in a horizontal direction towards the back of the enclosure using Duroair's patented tapered airflow design. Airflow is drawn through multiple stages of filtration and is discharged upward.

The filter assembly creates a tapered airflow which directs air down the center of the enclosure maximizing control of overspray and keeping the sidewalls clean. During the dry cycle, airflow rates are increased which creates a wicking process that reduces dry times without the need for heaters or blowers. The cross-draft exhaust is attached to an enclosure with air intake filters, housing a work piece.

- Patented "Taper Draft air flow to maximize velocities around the products being worked on and minimize overspray on enclosure walls
- Cross draft airflow creates a wicking process that decreases dry times without dirt transfer
- Exhaust system creates a negative pressure vacuum seal creating a clean purified environment
- Duroair cleanrooms are positive or negative pressure depending on the requirements
- Positive pressure cleanrooms are created through a closed loop recirculating system with air exchanges of approximately 10%-20% exterior air with every pass through the filters before supplying it back into the enclosure
- Vinyl covering is affixed to the interior of the enclosure when an ISO level cleanroom is required
- Internal sacrificial layer is available

DuroRoom™ Sizes	Frame	Frame Material	Powder Coating	Room Pressure			Front Wall			Fabric Covering NFPA 701 Compliant		Rail with V Groove Wheel	Quick Seal Fabric Penetration	Lighting Options		
				+	-	Neutral	Folding Barn Doors	Mesh Curtain	Open Face	Clear	Opaque or Blackout			C1 D1	C1 D2	STD LED
Up to 20'H x 20'W	0.083 wall 2" steel tube	Galvanized Steel	Optional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20'H x 30'W	0.083 wall Ladder Truss 2" steel tube	Galvanized Steel	Optional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Greater than 20'H x 30'W	Tri-Truss	Powder Coated Black Steel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Greater than 24'H x 40'W	Quad-Truss	Powder Coated Black Steel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multi-Chamber Custom	0.083 wall 2" steel tube	Galvanized Steel	Optional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### Enclosure Frame

The enclosure frame is galvanized heavy wall, 0.083 wall tube steel frame with welded construction and comes in 2" square steel tube, ladder truss, tri-truss or quad truss design depending on width and height. Industrial grade 4" and 6" casters are used. Options are available, such as "V" groove wheels with inverted angle and track for enclosures greater than 40' long.

### Vinyl Covering

All Duroair vinyl is heat welded and affixed to the enclosure frame using a poly-lock system which creates an airtight seal. Vinyl is available in double polished clear with 95% light transfer, opaque for enclosures where security might be a requirement or

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black-out for non-destructive testing applications. Anti-static vinyl is available if required. The vinyl and PVC scrim is flame retardant, rot, mildew and ultra-violet resistant and suitable for indoor and some outdoor applications. All are NFPA 701 compliant.

### Lighting

Extra lighting is usually not required because the vinyl used to cover the enclosure is double polished clear with 95% light transfer. Optional lighting is available; C1D1, C1D2 and standard LED.

### Quick Seals

Quick seals are used to penetrate the vinyl covering and allow mechanicals to enter the enclosure, for example, air and electrical requirements.

### Fire Suppression

The fire suppression system used on Duroair equipment is designed by Kidde Badger and protects both exhaust systems and the enclosure. The system is designed using their Pre-Engineer Extinguishing Manual and therefore meets the requirements of NFPA 17 “Standard for Dry Chemical Extinguishing Systems” and is UL listed under filing number EX 4864. The system also uses the recommendations by FEMA in their paper “Protection of Curtain Walled Workstations”, which is found in NFPA33. The essence of the FEMA report is to double the amount of suppression within the enclosure to ensure a fire is completely extinguished, not just suppressed. Customers are responsible for permitting with local Authority Having Jurisdiction (AHJ). Duroair will provide compliance documentation if required.

To limit the possibility of a fire occurring in the enclosure during the coatings process, the following steps have been implemented:

- No electrical devices are utilized in the enclosure, unless properly rated.
- Air flows at paint stage has been designed to surpass the minimum 100 FPM at the intake filters. This keeps the conditions well below the 25% lower explosion limit.
- No heaters or baking devices are permitted inside the work area. Additional airflow is used to advance the drying process.
- Air interlocks are in place, meaning that no spray air is available unless the exhaust fan is operational.

Duroair provides fire suppression quotes that include the enclosure and exhaust unit and where applicable assumes a straight duct run no greater than 28’. All other configurations are extra.

Duroair works with locally licensed providers to install systems globally.

A dry chemical fire suppression system must be wired to shut off the exhaust fan and send a signal to the base building fire alarm system upon discharge. For a building without a fire alarm a local bell must be wired to ring when the system is activated.

At least 12” of clearance must be available above enclosure to install a fire suppression system.

