

2018 Structural Component Approvals and Built-In-Place Refuge Alternatives

MSHA Technical Support, Approval and Certification Center
Applied Engineering Division
Wesley Allen Shumaker

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Approved Refuge Alternative Components

- **Breathable Air** – approved in 2013
- **Air Monitoring** – approved in 2013
- **Harmful Gas Removal** – approved in 2013
- **Structural** – allowance for state approval expires after 12/31/2018
 - Applies to Pre-Fabricated Refuge Alternatives
 - Includes Steel Structure and Inflatable, if applicable

Refuge Alternative Structural Component Approvals

Approval Holder	Model
ChemBio Shelter, Inc.	Model 4042-EX
ChemBio Shelter, Inc.	Model 3236-EX
ChemBio Shelter, Inc.	Model 2428-EX
ChemBio Shelter, Inc.	Model 4042-EX-A
ChemBio Shelter, Inc.	Model 3236-EX-A
ChemBio Shelter, Inc.	Model 3236-UX
ChemBio Shelter, Inc.	Model 3236-UX-A
Eagle Shield	Model CF208A
Eagle Shield	Model CF208B
Eagle Shield	Model CF210A
Eagle Shield	Model CF204A
Eagle Shield, LLC	Model CF209A
Eagle Shield, LLC	Model CF207A
Eagle Shield, LLC	Model CF211A
MineARC Systems America, LLC	Model CS-12-77120-CB Structural Component
MineARC Systems America, LLC	Model CS-6-54119-CR Structural Component
Strata Safety Products	FAB Model S-M2624 and S-M2630
Strata Safety Products	FAB Model S-M3636, S-MC3635, S-M3630
Strata Safety Products	FAB Model S-M1618
Strata Safety Products	FAB Model S-M1020 and S-M1016
Strata Safety Products	Model XP-AC Explosion-proof air conditioning system (M36 models)
Strata Safety Products	Model XP-AC Explosion-proof air conditioning system (M26 models)
Strata Safety Products	S-SSC24-2018, S-SSC24-16.75-2018, S-SSC8-2018, S-SSC7-61.75-2018

Mine Operator Responsibilities

- Pre-fabricated refuge alternatives in service after December 31, 2018 must have MSHA part 7 approvals for structural components as well as breathable air, harmful gas removal and air monitoring components
- Pre-fabricated refuge alternative structures with only State approvals will no longer be accepted
- Emergency Response Plans (ERPs) may need to be updated to reflect the refuge alternative structural component approval
- Mine operators must provide training on the refuge alternative specified in the approved ERP

Scheduling and Coordination

Mine operators are encouraged to contact the manufacturers who supply refuge alternatives to their mines if they have further questions or need additional information.

Built-in-Place Refuge Approvals

- Require three part 7 component approvals
 - Breathable air
 - Air-monitoring
 - Harmful gas removal
- Structural components consist of 15 psi stoppings constructed prior to an event.
 - 2018 structural deadline does not apply
 - Approved by the District Manager

Current Built-in-Place Usage

- 19 installations in 5 mines
- Occupancies range from 20 to 40 miners
- Provide 12.5 cfm air per person
- Borehole from the surface
 - Portable trailer with fans/blowers and generators
 - Permanent installations (blower or compressor) with line power and generator





Applied Engineering Division

Wesley Shumaker, Chief	Shumaker.Wesley@dol.gov	(304) 547-2081
Ben Gandy, Team Leader	Gandy.Benjamin@dol.gov	(304) 547-2322
Mike Getto, Team Leader	Getto.Michael@dol.gov	(304) 547-2303

Staff:

Joseph McGinley

Gary Shemon

Andy Yanik

Brandon Boring

Matt Wharry

Nick Fallova

Mark Pompei

Brittany Wilson

QUESTIONS?