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APPROVAL REPORT

ARGONITE 200 BAR ENGINEERED, UNBALANCED CLEAN AGENT FIRE EXTINGUISHING SYSTEM

Prepared for:

**Chemetron Fire Systems
4801 Southwick Drive, Third Floor
Matteson II 60443**

Project: 3011911

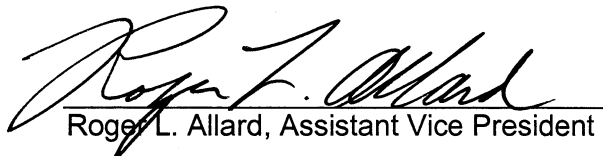
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Supercedes

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Authorized by:


Roger L. Allard, Assistant Vice President

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Appendix 1

Chemetron Argonite Engineered Systems. Unbalanced-engineered systems for total flooding using Argonite inert gas extinguishing agent at a 2900 psi (200 bar) storage pressure at 70°F (21°C). Automatic or manual (local and remote) operation. Suitable for use where the ambient storage temperature is between -20 and 130°F (-29 and 54°C). Reference the Design, Installation, and Maintenance Manual for restrictions based upon the application. 360° nozzles are available.

Systems must be designed per Chemetron Argonite Flow Version 1.0.3 Software and its User's Manual, part number 30000054, Revision C. Systems must be installed per Chemetron's Design, Installation, and Maintenance Manual, part number 30000052, Revision C.

Notes:

1. FM Approvals validation of the flow calculation software for unbalanced configurations with multiple hazards is based upon agent storage temperatures between 60 and 80°F (15 and 27°C). Therefore, the environment where the Argonite cylinders/valves are located shall be controlled to maintain temperatures consistently within this range to ensure proper delivery of extinguishing concentrations to all protected spaces. When agent storage temperatures are between -20 and 130°F (-29 to 54°C), a single nozzle or a balanced piping configuration may be used to protect a single hazard, only. All other piping configurations require the agent storage temperature to be at 70°F \pm 10°F (21.1°C \pm 5.5°C). For all systems, the hazard temperature can range between -40 and 200°F (-40 and 49°C), in compliance with NFPA 2001, with the mass of the agent required for hazard protection increased or decreased relative to the temperature difference from 70F (21°C).
2. FM Approval is based upon factory-filled Argonite storage containers.
3. The Argonite extinguishing agent is a 50-50 mixture of Argon and Nitrogen gases. This agent is an inert gas and suppresses fire by reducing the oxygen content of the air in the protected space to a level which will not support combustion. The agent is identified as IG-55 in NFPA 2001.

Description	Part Number
Cylinder & Valve Assembly, 15.9 L, filled	10980000
Cylinder & Valve Assembly, 80.0L, filled	10980002
Cylinder & Valve Assembly, 66.7L, filled	10980001
Cylinder Manifold Assemblies	10980022 through 10980026, 10980043, 10980044, 10980055 through 10980088
Completer Kit, Primary Cylinders	20980002
Completer Kit, Secondary Cylinders	20980003
Cylinder Rack with Manifold Mounting Hardware	20980009 through 20980060
Cylinder Rack, Wall Mount	20980075 & 20980079 through 20980090
Fill Adapter Assembly, ¼ in. NPT	20980091
Fill Adapter Assembly, CGA 580	20980092
Pressure Regulator with Gauge & Solenoid Valve for Selector Valve Actuation	20980095
Selector Valve Assembly, ½ in.	20980096
Selector Valve Assembly, ¾ in.	20980097
Selector Valve Assembly, 1 in.	20980098
Selector Valve Assembly, 1-1/4 in.	20980099
Selector Valve Assembly, 1-1/2 in.	20980100
Selector Valve Assembly, 2 in.	20980101
Manifold Mounting Bracket	30980000 through 30980003
Flanged Restrictor, 2-1/2 in., CFS	30980007-135 through -350
Flanged Restrictor, 3 in., CFS	30980008-180 through -430
Flanged Restrictor, 4 in., CFS	30980009-250 through -550

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Description	Part Number
Argonite Agent	70700014
Pilot Line Cross Connector	70981019
Cylinder Manifold	70982000 through 70982004, 70982011, 70982012, 70982018 through 70982028, 70982030, 70982032 through 70982037, & 70982118 through 70982120
Restrictor, 1 in., G-K	70984005-050 through -180
Restrictor, 1-1/2 in., G-K	70984006-120 through -270
Nozzle Assembly, 1/2 in., CFS	70984041-030 through -100
Nozzle Assembly, 3/4 in., CFS	70984042-040 through -135
Nozzle Assembly, 1 in., CFS	70984043-050 through -170
Nozzle Assembly, 1-1/2 in., CFS	70984044-080 through -260
Restrictor, 1/2 in. NPT, CFS	70984053-035 through -075
Restrictor, 1 in. NPT, CFS	70984054-050 through -130
Restrictor, 1-1/2 in. NPT, CFS	70984055-080 through -220
Restrictor, 2 in. NPT CFS	70984056-115 through -270
Nozzle Assembly, 1/2 in., G-K	70984068-030 through -100
Nozzle Assembly, 3/4 in., G-K	70984069-070 through -140
Nozzle Assembly, 1 in., G-K	70984070-100 through -180
Nozzle Assembly, 1-1/2 in., G-K	70984071-150 through -260
Pilot Line Non-Return Valve	70985013
Check Valve, 300 bar, Argonite	70985014
Cylinder Valve, 200 bar	70985015
Lockout, 1/2 in. High Pressure Assembly	70985020
Lockout, 3/4 in. High Pressure Assembly	70985021
Lockout, 1 in. High Pressure Assembly	70985022
Lockout, 1-1/4 in. High Pressure Assembly	70985023
Lockout, 1-1/2 in. High Pressure Assembly	70985024
Lockout, 2 in. High Pressure Assembly	70985025
Pressure Relief Assembly, 300 bar set, 3/4 NPT	70985027