



Certificate of Conformity

Certificate num.	Registration date	Version	Valid until	
afp - 1768	1-Jul-2005	Number 9	Issue date 1-May-2013	30-Apr-2014

Product designation

PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system
(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Fire Protection Technologies Pty Ltd
Unit 1 / 251 Ferntree Gully Road, MT WAVERLEY, VIC, AUSTRALIA, 3149

Registrant

Fike® Corporation
47 Loveton Circle, Suite F, SPARKS, MD, UNITED STATES, 21152

Producer

Fike® Corporation
704 SW 10th Street, BLUE SPRINGS, MISSOURI, UNITED STATES, 64015

Conformance criteria and evaluation

The PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS ISO 14520.1-2009, 'Gaseous fire-extinguishing systems - Physical properties and system design - General requirements (ISO 14520-1:2006, MOD)'.
2. Australian Standard AS ISO 14520.14-2009, 'Gaseous fire-extinguishing systems - Physical properties and system design - IG-55 extinguishant (ISO 14520-14:2005, MOD)'.
3. Loss Prevention Standard LPS 1230:2001, 'Requirements for Fire Testing of Fixed Gaseous Fire Extinguishing systems, 2001'.
4. Loss Prevention Council - Evaluation, surveillance and approval, 'LPC approval'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

1. The system shall be designed, installed, operated, and maintained, in accordance with the FIKE® Corporation System's Manual, P/N 06-294, issued August 2009
2. The system is considered suitable for environmental conditions from -20° to +50°C.

(Limitations/conditions of conformance continue)

Issued by

David Whittaker
Executive Officer – ActivFire Scheme



- This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.
- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

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3. Container pressure shall be specified as 200 bar or 300 bar @ 15°C.
4. The system is considered unsuitable for fire risks associated with the following materials:
 - Chemicals or mixtures of chemicals that are capable of rapid oxidation in the absence of air. Examples include Cellulose Nitrate and Gunpowder.
 - Reactive metals such as Lithium, Sodium, Potassium, Magnesium, Titanium, Zirconium, Uranium and Plutonium.
 - Metal hydrides such as Sodium Hydride and Lithium Aluminium Hydride.
 - Chemical capable of undergoing auto-thermal decomposition. Examples include Organic Peroxides and Hydrazine.

Producer's description

The PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system is of the fixed central-storage automatic and/or manual type. PROINERT™ is a gaseous agent, which is the mixture of two all-natural gases (nitrogen and argon) that do not support combustion. Argon and Nitrogen have no atmospheric lifetime, so they pose no risk to the environment and have no impact on the ozone layer. PROINERT™ has been developed as an alternative to Halon 1301, production of which ceased at the end of 1993, under the agreed adjustments made to the Montreal Protocol in November 1992. PROINERT™ gaseous agent has a mixture of N₂ and Ar in the following proportions:

Nitrogen	50%
Argon	50%

PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system designed to extinguish fires involving flammable liquids, gases and electrical equipment. PROINERT™ extinguishes fire by lowering the oxygen content below the level that supports combustion. In simple terms if the oxygen content of the atmosphere is reduced to a level below 15%, most ordinary combustibles will not burn. Typically PROINERT™ system will reduce the oxygen content to approximately 12.5% (based on 39.7% design concentration). PROINERT™, 200/300 Bar, Engineered Total Flooding Gaseous Fire Suppression Systems are designed and tested to operate in the temperature range -20°C to 50°C or as stated in separate components approvals.

PROINERT™ gaseous agent is colourless and has a density similar to air. It does not decompose when subjected to heat from a fire so avoiding hazardous breakdown products, but it must be recognised that in a fire condition, decomposition products from the fire itself especially carbon monoxide, smoke and heat can create a hazard in the protected enclosure and the reduced oxygen level occurring in a fire situation may lower the resultant level below that calculated from the agent discharge alone. No observed adverse effect level (NOAEL) for cardiac sensitization is 43%. Lowest observed adverse effect level (LOAEL) for PROINERT™ is 52%.

PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression systems are particularly valuable in extinguishing fires in enclosures containing hazards or equipment where a clean, electrically non-conductive medium is essential or where the cleaning up of foam, water or powder would be problematic.

The minimum design concentrations are as follows for

Surface Class A	39.7% based upon a safety factor of 1.3 on the minimum design required for extinguishing a fire.
Higher Hazard Class A	43.7 % based upon 95% of Class B design concentration.
Class B	46.0% based upon a safety factor of 1.3 on the minimum design required for extinguishing a fire.

Class B and C fires are quickly extinguished by PROINERT™ at the appropriate concentrations, but in case of Class C fires the risk of explosion should be carefully considered and where possible the flammable gas flow should be isolated before or as soon as possible after extinguishment.

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Technical specification

The following details are a representative extract of the technical specification for the PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

Australian Standard AS ISO 14520.14 design concentrations as determined by evaluation for conformity.

Fuel classification	Design concentration	
Class A	39.7%	
Higher Hazard Class A	43.7%	
Class B	46.0%	

Recognised body	Primary criteria	Reference
Loss Prevention Certification Board (LPCB)	LPS 1023	Cert. num.: 654b Issue num.: 03, 30-Oct-2009
Building Research Establishment Ltd		Test report num.: 214668 Issue num.: 2, 15-Mar-2004

The components of the PROINERT™, 200/300 Bar, engineered, total flood gaseous fire suppression system that have been evaluated and form part of the listed system include the following:

Description	Part num.
Discharge outlet valve, 200 Bar	IG71-001-1
Discharge outlet valve, 300 Bar	IG71-001-2
80 litre PROINERT™, 200 Bar container assembly	IG71-080-200
80 litre PROINERT™, 300 Bar container assembly	IG71-080-300
Mounting straps	74-1013-100
Flexible discharge hose	02-10721
Flexible discharge hose kit	IG71-003
Check Valve	IG71-008
Pressure gauge and switch, 200 Bar	02-10672
Pressure gauge and switch, 300 Bar	02-10673
PROINERT actuation package	IG71-017
ProInert slave actuation Package	IG71-019
Electric solenoid	02-4958
Nitrogen cartridge	02-4960-1
Discharge pressure switch assembly	02-9635
25 mm, 2 cylinder discharge manifold	IG71-004-2
25 mm, 3 cylinder discharge manifold	IG71-004-3
25 mm, 4 cylinder discharge manifold	IG71-004-4
25 mm, 5 cylinder discharge manifold	IG71-004-5
15 mm nozzle, 360°, orifice plate hole diameter – 3.0 mm	IG71-010-030
15 mm nozzle, 360°, orifice plate hole diameter – 3.5 mm	IG71-010-035
15 mm nozzle, 360°, orifice plate hole diameter – 4.0 mm	IG71-010-040
15 mm nozzle, 360°, orifice plate hole diameter – 4.5 mm	IG71-010-045
15 mm nozzle, 360°, orifice plate hole diameter – 5.0 mm	IG71-010-050
15 mm nozzle, 360°, orifice plate hole diameter – 5.5 mm	IG71-010-055
15 mm nozzle, 360°, orifice plate hole diameter – 6.0 mm	IG71-010-060
15 mm nozzle, 360°, orifice plate hole diameter – 6.5 mm	IG71-010-065
15 mm nozzle, 360°, orifice plate hole diameter – 7.0 mm	IG71-010-070
15 mm nozzle, 360°, orifice plate hole diameter – 7.5 mm	IG71-010-075
15 mm nozzle, 360°, orifice plate hole diameter – 8.0 mm	IG71-010-080
15 mm nozzle, 360°, orifice plate hole diameter – 8.5 mm	IG71-010-085
15 mm nozzle, 360°, orifice plate hole diameter – 9.0 mm	IG71-010-090
15 mm nozzle, 360°, orifice plate hole diameter – 9.5 mm	IG71-010-095
15 mm nozzle, 360°, orifice plate hole diameter – 10.0 mm	IG71-010-100
20 mm nozzle, 360°, orifice plate hole diameter – 7.0 mm	IG71-011-070
20 mm nozzle, 360°, orifice plate hole diameter – 7.5 mm	IG71-011-075
20 mm nozzle, 360°, orifice plate hole diameter – 8.0 mm	IG71-011-080
20 mm nozzle, 360°, orifice plate hole diameter – 8.5 mm	IG71-011-085
20 mm nozzle, 360°, orifice plate hole diameter – 9.0 mm	IG71-011-090

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20 mm nozzle, 360°, orifice plate hole diameter – 9.5 mm	IG71-011-095
20 mm nozzle, 360°, orifice plate hole diameter – 10.0 mm	IG71-011-100
20 mm nozzle, 360°, orifice plate hole diameter – 10.5 mm	IG71-011-105
20 mm nozzle, 360°, orifice plate hole diameter – 11.0 mm	IG71-011-110
20 mm nozzle, 360°, orifice plate hole diameter – 11.5 mm	IG71-011-115
20 mm nozzle, 360°, orifice plate hole diameter – 12.0 mm	IG71-011-120
20 mm nozzle, 360°, orifice plate hole diameter – 12.5 mm	IG71-011-125
20 mm nozzle, 360°, orifice plate hole diameter – 13.0 mm	IG71-011-130
20 mm nozzle, 360°, orifice plate hole diameter – 13.5 mm	IG71-011-135
20 mm nozzle, 360°, orifice plate hole diameter – 14.0 mm	IG71-011-140
25 mm nozzle, 360°, orifice plate hole diameter – 10.0 mm	IG71-012-100
25 mm nozzle, 360°, orifice plate hole diameter – 10.5 mm	IG71-012-105
25 mm nozzle, 360°, orifice plate hole diameter – 11.0 mm	IG71-012-110
25 mm nozzle, 360°, orifice plate hole diameter – 11.5 mm	IG71-012-115
25 mm nozzle, 360°, orifice plate hole diameter – 12.0 mm	IG71-012-120
25 mm nozzle, 360°, orifice plate hole diameter – 12.5 mm	IG71-012-125
25 mm nozzle, 360°, orifice plate hole diameter – 13.0 mm	IG71-012-130
25 mm nozzle, 360°, orifice plate hole diameter – 13.5 mm	IG71-012-135
25 mm nozzle, 360°, orifice plate hole diameter – 14.0 mm	IG71-012-140
25 mm nozzle, 360°, orifice plate hole diameter – 14.5 mm	IG71-012-145
25 mm nozzle, 360°, orifice plate hole diameter – 15.0 mm	IG71-012-150
25 mm nozzle, 360°, orifice plate hole diameter – 15.5 mm	IG71-012-155
25 mm nozzle, 360°, orifice plate hole diameter – 16.0 mm	IG71-012-160
25 mm nozzle, 360°, orifice plate hole diameter – 16.5 mm	IG71-012-165
25 mm nozzle, 360°, orifice plate hole diameter – 17.0 mm	IG71-012-170
25 mm nozzle, 360°, orifice plate hole diameter – 17.5 mm	IG71-012-175
25 mm nozzle, 360°, orifice plate hole diameter – 18.0 mm	IG71-012-180
40 mm nozzle, 360°, orifice plate hole diameter – 15.0 mm	IG71-013-150
40 mm nozzle, 360°, orifice plate hole diameter – 15.5 mm	IG71-013-150
40 mm nozzle, 360°, orifice plate hole diameter – 16.0 mm	IG71-013-160
40 mm nozzle, 360°, orifice plate hole diameter – 16.5 mm	IG71-013-165
40 mm nozzle, 360°, orifice plate hole diameter – 17.0 mm	IG71-013-170
40 mm nozzle, 360°, orifice plate hole diameter – 17.5 mm	IG71-013-175
40 mm nozzle, 360°, orifice plate hole diameter – 18.0 mm	IG71-013-180
40 mm nozzle, 360°, orifice plate hole diameter – 18.5 mm	IG71-013-185
40 mm nozzle, 360°, orifice plate hole diameter – 19.0 mm	IG71-013-190
40 mm nozzle, 360°, orifice plate hole diameter – 19.5 mm	IG71-013-195
40 mm nozzle, 360°, orifice plate hole diameter – 20.0 mm	IG71-013-200
40 mm nozzle, 360°, orifice plate hole diameter – 20.5 mm	IG71-013-205
40 mm nozzle, 360°, orifice plate hole diameter – 21.5 mm	IG71-013-215
40 mm nozzle, 360°, orifice plate hole diameter – 22.0 mm	IG71-013-220
40 mm nozzle, 360°, orifice plate hole diameter – 22.5 mm	IG71-013-225
40 mm nozzle, 360°, orifice plate hole diameter – 23.0 mm	IG71-013-230
40 mm nozzle, 360°, orifice plate hole diameter – 23.5 mm	IG71-013-235
40 mm nozzle, 360°, orifice plate hole diameter – 24.0 mm	IG71-013-240
40 mm nozzle, 360°, orifice plate hole diameter – 24.5 mm	IG71-013-245
40 mm nozzle, 360°, orifice plate hole diameter – 25.0 mm	IG71-013-250
40 mm nozzle, 360°, orifice plate hole diameter – 25.5 mm	IG71-013-255
40 mm nozzle, 360°, orifice plate hole diameter – 26.0 mm	IG71-013-260
Selector valve assembly, Pipe 25 mm BSP	IG71-025-SV-1
Selector valve assembly, Pipe 40 mm BSP	IG71-040-SV-1
Selector valve assembly, Pipe 50 mm BSP	IG71-050-SV-1
Selector valve assembly, Pipe 80 mm BSP	IG71-080-SV-1
Single-row cylinder rack assembly	IG71-016-005
Double-row cylinder rack assembly	IG71-016-050
Triple-row cylinder rack assembly	IG71-016-500
14 cylinder rack assembly	IG71-016-410
Caution sign	02-10758
Manual discharge station sign	02-10759
Cylinder racking foot-print	IG71-016-010

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Cylinder racking foot-print	IG71-016-031
Cylinder racking foot-print	IG71-016-200
Cylinder racking foot-print	IG71-016-020
Cylinder racking foot-print	IG71-016-002
Cylinder racking foot-print	IG71-016-041
Cylinder racking foot-print	IG71-016-300
Cylinder racking foot-print	IG71-016-030
Cylinder racking foot-print	IG71-016-003
Cylinder racking foot-print	IG71-016-140
Cylinder racking foot-print	IG71-016-400
Cylinder racking foot-print	IG71-016-040
Cylinder racking foot-print	IG71-016-004
Cylinder racking foot-print	IG71-016-320
Cylinder racking foot-print	IG71-016-500
Cylinder racking foot-print	IG71-016-050
Cylinder racking foot-print	IG71-016-005
Cylinder racking foot-print	IG71-016-410
Cylinder racking foot-print	IG71-016-001
Design, installation and maintenance manual, issued August 2009	06-294
Fike Proinert Flow Calculation Software, Version 6.2	-