

**THE MOST DURABLE & DEPENDABLE NEW
WEAPON AGAINST FIRE**

**COMPRESSED AIR CATALYST UNITS
(CAC)**



FireStopper Marketing Department

WHITE PAPER

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Preface

FireStopper International Limited, a transnational Registered Company, is the developer of the most advanced and powerful firefighting and anti-explosion technology in the “World”. It devoted the first 25-years of its existence to R&D and the recipient of subsequent stand-alone testing results in ratings and certifications by the most recognized and respected third-party testing and listing facilities in the world.

Moreover, this unique Technology has rendered the only available all fire class effective and anti-explosive products, which are non-toxic, non-irritant, environmentally safe and non-hazardous per the most demanding environmental and life exposure testing over all other existing and available products in the explosion, fire and safety channel of business.

In keeping with the extreme superiority of this novel technology’s firefighting, explosion protection, environmental bioremediation and other temperature control safety products, FireStopper® developed the only all stainless-steel product delivery systems to provide the end user the most durable and reliable equipment available.

Keeping in step with this superior level of developed products, FireStopper® provides a full range of fixed systems designed to fit and providing the control mechanism with the quickest detection and activation capacity to minimize any fire or explosion event.

Executive Summary

For the past 100-years or so, portable systems for delivering fire extinguishment has employed much the same structure. With the advent of FireStopper®, a leap in quality and reliability, enhanced flow-mechanics, advanced materials, and maximized ancillaries are employed to deliver the safest environment to achieve the end user’s safety goal.

When an emergent fire environment is present, the only lifeline available is the equipment necessary to combat the event. FireStopper® is providing through its full line of Compressed Air Catalyst (CAC) unit the most reliable, longer term dependable, quickest acting and longer reaching portable system in the industry.

Its 100% stainless-steel construction, low-weight frame for manageability and low silhouette for stability provide for a new generation of portable systems designed to fit any configuration requirements (please see Fig. 1)

These units are charged exclusively with FireStopper® ’s concentrates or premixes determined by the end user’s requirements or emergent needs. Moreover, the CAC, powered by compressed Nitrogen or air, whichever desired by end user, will deliver the only complete system that meets all environmental and health safety requirements, as certified by the most recognized and respected environmental and human exposure testing facilities in the world.

Please see the list of Certifications providers below:

Commercial Unit: (15-liter BackPac™) *

Fig. 1



Fig. 2



Fig. 3



Fig. 4



Military Version: (15-liter BackPac™) *

Fig. 5

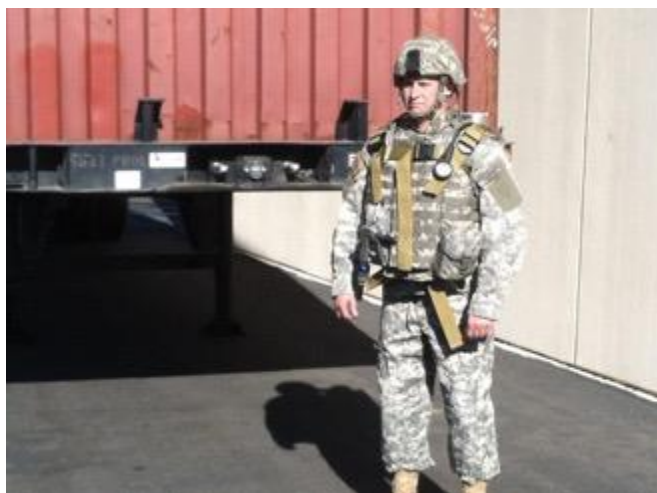


Fig. 7

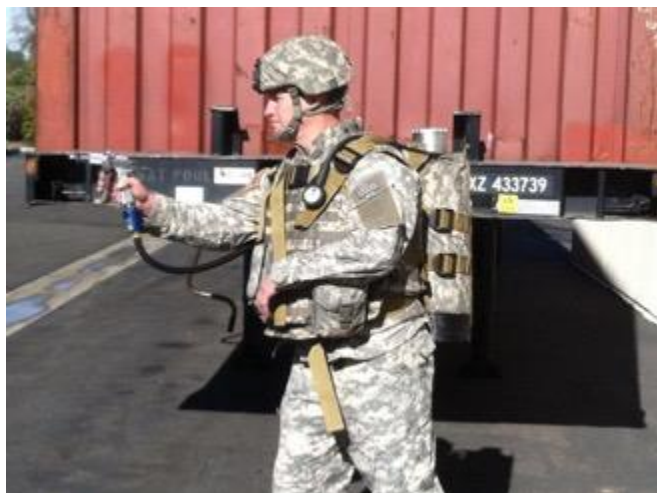


Fig. 6



Fig. 8



****We were not able to find a competitive product from the world recognized suppliers to represent a comparison.***

All CAC units are designed for use in firefighting applications and decontamination applications. Both in the military and civilian use, FireStopper® afford their use in every weather condition in the planet.

The hardware is manufactured in stainless-steel with micro polished finish to enhance durability against corrosion and resistance against red corrosion from offshore exposure (all stainless cylinders pass 1000-hour salt spray exposure test).

FireStopper® provides the end user the ability to choose the proper FireStopper® agent to fit the need.

Below is the list of FireStopper® usable agents and specifications:

Man-Wheeled: 20-gal CAC

Fig. 8



Fig. 9



Standard design by competition:

Fig. 10

33-gal



Fig. 11

150-lbs dry chem.



Fig. 12

100-lbs gas



Figures 10, 11, and 12 as shown above are fabricated in carbon steel, aluminum & brass. Generally, these manufactures offer 10 to 12-year warranty in contrast with FireStopper®'s 20-year warranty.

FireStopper® CACs' continued: 30-gal CAC

Fig. 13



Fig. 14



Fig. 15

60-gal CAC



Fig. 16

60-gal CAC rack style (narrow profile)



Fig. 17

120-gal CAC



Fig. 18

front view:



FireStopper® CACs' continued:

Fig. 19 200-gal CAC



FireStopper® offer additional capacity of 300-gal in this configuration.

Fig. 20 400-gal & 500-gal models:



High Performance Comparison:

Based on actual fire extinguishment exercises where FireStopper® units charged with the appropriate FireStopper® concentrate and/or premix, we can extrapolate the fire suppression/extinguishment comparison vs. water carrying fire trucks.

FireStopper® Model Comparison Concentrate & %	Fire Truck Water Tank Capacity Foam Tank Capacity	Type of Fire Event	Performance # of Trucks
30-gal-CAC AB40002 FFC 6%	350-gal Foam: 40-gal 6%	Class A-Structure (involvement: kitchen + 1-room) Class: B-Vehicle	2 to 3 Trucks
30-gal-CAC XL FFC 3%	350-gal Chem-Guard 3%	Class: B 250-gallon spill	3 to 5 Trucks
30-gal-CAC XL "PLUS" FFC	Any Mfg. 1%	Class: B 3 to 400-gallon spill	4 to 7 Trucks

To further illustrate the supremacy of FireStopper® Products in action, please see the additional comparison charts below:



CAC PORTABLE SYSTEMS VS. THE COMPETITION (CAF SYSTEMS)

MANUFACTURER	WARRANTY	CLASS "A"	CLASS "B"	CLASS "C" (Rated 100kv)	CLASS "D" (All Metals)	CLASS "K"/" F"	CONSTRUCTION MATERIALS & SAFETY	THROW DISTANCE RANGE & DISCHARGE	ECONMIC COMPARISON BY USE AND WEAR
FireStopper®* CAC Portable Systems	20-Yrs.	YES >10A to >40A	YES >100 ft ² to >5000ft ²	YES	YES	YES	ONLY ALL STAINLES STEEL PRODUCT LINE IN THE WORLD (2300-psi/155-Bars burs pressure)	From: >35-ft to >120-ft (By Model) 1.5-min to >3.5-min	1-UNIT IN 20- YEARS
Burner CAFs	1-Yr.	YES	YES 300 ft ²	NO	NO	NO	CARBON STEEL w/ INTERNAL COATING (Must be inspected yearly for recoating)	50-ft to 75-ft	3 TO 5 UNITS REPLACED IN 20- YEARS
Enforcer® CAFS	1-Yr.	YES	YES 150 ft ²	NO	NO	NO	CARBON STEEL w/ INTERNAL COATING (Must be inspected yearly for re-coating)	Up to <95-ft	3 TO 5 UNITS REPLACED IN 20- YEARS
Tri-Max	1-Yr.	YES	YES <50 ft ² to 300 ft ²	NO	NO	NO	CARBON STEEL w/ INTERNAL COATING (Must be inspected yearly for re-coating)	35-ft to <95	3 TO 5 UNITS REPLACED IN 20- YEARS
Amerex	5-Yrs.	YES	YES 400 ft ²	NO	NO	NO	Stainless Steel Tank Brass & Plastic Components	45-ft to 55-ft	3 TO 5 UNITS REPLACED IN 20- YEARS
Ansul	6-Yr.	NO	YES 400 ft ²	NO	NO	NO	CARBON STEEL (Must be inspected yearly for corrosion)	40-ft Max 57-secs	3 TO 5 UNITS REPLACED IN 20- YEARS

ADDITIONAL POINTS

FireStopper®	AVAILABLE PRODUCTS
<p>NOZZLE: FireStopper®/AKRON SaberJet - The Single Shutoff SaberJet has a unique three position handle and ball to give you a solid bore, fog, or closed position. The nozzle is capable of operating efficiently at pressures as low as 50 psi (3 bar) to reduce firefighter fatigue, or up to 100 psi (7 bar) for maximum flow.</p> <ul style="list-style-type: none"> - Compatible with Style 768 Quick-Attack Foam Tube - Must specify tip options: 3/4", 7/8", 15/16" 1" - Fog flow at 100 psi (7 bar): 135 GPM (510 LPM) 	<p>NOZZLE: Varies by Manufacturer Burner: Pistol grip tube style Enforcer: Pistol grip tube style Tri-Max: Pistol grip tube style Amerex: Not Specified Ansul: Not Specified</p>
<p>FIREFIGHTING MEDIA: FireStopper® provides the only concentrate in the World that coupled with the FireStopper® CACs' makes these units effective on all classes of fire and sub-classes of fire. Certified "GREEN" (HOCNF); freeze resistant to -34.5 °C; Non-Toxic, Non-Irritant, Non-Aggressive and Environmentally Safe when using FireStopper® XL "PLUS" FFC (<i>please see the FireStopper® Liquids Catalog for additional information</i>). Also, for maximum overall protection, FireStopper® PFE-FR FFC, is available exclusively with FireStopper® trademarked systems; please refer to the FireStopper® Representative for additional info on this product. All FireStopper® Products are compatible with all other firefighting medias.</p>	<p>FIREFIGHTING MEDIA: Varies by Manufacturer Burner: AFFF Enforcer: Fire Ade Tri-Max: AFFF Amerex: FFFP Ansul: AFFF</p>



COMPETITIVE COMPARISON WITH ALL AFFF

PRODUCT	CERTIFIED USAGE	APPLICATION RATE/ APPROX. AREA	APPROX. EXTINGUISHMENT TIME	AFFF	APPLICATION RATE/ APPROX. AREA	APPROX. EXTINGUISHMENT TIME
AB 40002 FFC	6%	90/GPM/1000-ft ²	<15-secs	6%	90/GPM/1000-ft ²	4 to 6-min
XL FFC	3%; 6%	90/GPM/1000-ft ²	<10-secs	3%	90/GPM/1000-ft ²	4 to 6-min
XL "PLUS" FFC	1%; 3%; 6%	90/GPM/1000-ft ²	<5-secs	1%	90/GPM/1000-ft ²	4 to 6-min

ECONOMIC COMPARISON

PRODUCT	COST BY USAGE	AFFF (Chemguard)	COST BY USAGE
AB 40002 FFC	1-min@90/GPM/1000-ft ² @ \$60.95/gal=\$329.13÷4= \$82.28	6%	1-min@90/GPM/1000-ft ² @ \$20.95*/gal=\$113.13x4= \$452.52
XL FFC	1-min@90/GPM/1000-ft ² @ \$74.95/gal=\$374.75÷6= \$62.45	3%	1-min@90/GPM/1000-ft ² @ \$32.99*/gal=\$171.54x4= \$686.19
XL "PLUS" FFC	1-min@90/GPM/1000-ft ² @ \$97.50/gal=\$487.50÷6= \$40.62	1%	1-min@90/GPM/1000-ft ² @ \$44.20*/gal=\$229.84x4= \$919.36

*ALL CHEMGUARD FOAM UNIT PRICING ACQUIRED FROM AMAZON.COM

Additional Uses/Deployment

Globally, human habitat poses difficulty in providing fire protection against the many potential for catastrophic results. In the case of structure fire, where access by municipal equipment is tedious or impossible, the CACs' small silhouette will provide quick access where fire vehicles cannot.

Moreover, the public can employ the use of CAC's to provide self-protection both in the case of wildlands fire and/or in the event of the most common cause of residential fire, the "kitchen/cooking media cause fire event (which the NFPA and the U.S. Fire Administration confirm that approx. 92% of residential fires begin in the kitchen).

For the prevention of catastrophic fire events in fueling operation and in rural locations where municipal fire service will deploy in excessive time to destination. The CAC is ideal for deployment by all manufacturing and industrial application, including the Nuclear and Electrical Energy generating Industry and all Governmental fire protection demands.

Conclusion

Responsibility to provide safety is owed to the public by both Government and Industry. In the current profound social and economic conditions, Government, Industry and the consumer cannot afford the risk of loss both materially and the ever present "risk to life".

FireStopper® in the 21st Century now offers the only real security against the always present danger of catastrophic fire.

As we see over and over the complete devastation of infrastructure as a consequence of the inability of today's fire protection arsenal to extinguish and terminate the fire event in a timely fashion. The FireStopper® solution now promises to usher in a wave of safety, reliability and for the first time, a complete system to extinguish every flammable source and prevent the escalation to total destruction.

In addition, going forward the FireStopper® CAC System will provide the following benefits over the available CAF, or equipment no matter what media it provides:

- The deployment of the FireStopper® CAC guarantee the safety of the firefighting personnel by providing the quickest solution and implementation of the simplest modality to deploy and execute their duty.
- The simplicity of its operation, will require the minimum time operate.
- The application of the FireStopper® software (the liquid fire suppression/extinguishment product) whether a concentrate or a premix, will not only extinguish the event, it will eliminate the ever-present collateral damage.
- The FireStopper® CAC Portable System will deliver its payload without causing harm to the environment, which today AFFF carries the massive burden of cleaning up and contingent liabilities estimated into the billions of dollars.
- As a bonus, this novel system carries with it, for the first-time, the ability to reduce man-hour for clean-up due to the massive lowering of volume required to complete its task and its enormous endothermic capability.

- At all times, no matter which FireStopper® product the CAC deploy, it will extinguish every class or subclass of fire it is tasked with.
- The CAC can be deployed as a hazmat system
- All CACs' are fabricated in stainless-steel
- FireStopper® provides for the longest warranty in the Industry; 20-years
- And more...

In the International arena, the FireStopper® brand is the recipient of the highest certifications in all categories of Governmental requirements to market such as defined below:

Anti-Explosion:

Initial Stage Testing - Gexcon¹, AS (Norway)

Handheld Portable Extinguishers:

ANSI/UL711, ULC – Southwest Research Institute (San Antonio, TX)
 Defense Logistics Agency (DLA) US Gov. NSN Approval #'s'

EN3-7; EN3-8² – MPA, Dresden (Germany)
 CE³ – DNV

Firefighting Foam Concentrate Certifications:

EN1568 – MPA Dresden
 ICAO – CNPP (France)
 IMO – MPA Dresden, Lloyds Registry, DNV, MED
 CE

Environmental Testing:

NAMSA⁴, USA
 Associated Laboratories, CA USA
 Environmental Medicine, Inc., USA
 OPUS⁵, Ltd., UK

CERTIFICATION PROVIDER



¹ A world leader in explosion testing and certification
² This Standard refers to hardware durability, reliability and efficacy
³ This Mark assures manufacturing quality through yearly inspections
⁴ NAMSA is a world leader in medical testing
⁵ The world leader in environmental testing for the Petrochemical Industry