



# **FIRE CONTAINMENT CONCEPTS**

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## **EMERGENCY FIRE CONTAINMENT SYSTEM**

### **Folder Includes:**

- EFCS Certification Document
- EFCS ICA Maintenance Procedures
- Optional Mounting Procedures for EFCS Storage Case
- Servicing & Depressurizing Instructions
- EFCS Limited Warranty Information
- Material Safety Data Sheets (MSDS) ColdFire
- 8110-3 Burn Certification EFCS (If Requested)
- 8110-3 Burn Certification Storage Case (If Requested)



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## **-The E.F.C.S. Maintenance Procedures-**

### **Initial Suggested Maintenance Items:**

- 1) Update passenger briefing cards to indicate the designated location of Emergency Fire Containment System within your aircraft. Install a placard in visible location adjacent to the EFCS to clearly indicate its location.
- 2) Although the EFCS is categorized as Carry on Loose equipment it is optional to add the weight of the EFCS and storage container to the Weight and Balance Calculations for the aircraft.
- 3) The EFCS may be deferred and is not a part of the required equipment list at this time. It may be deferred if required for continued flight as part of Non-Essential Furnishing (NEF) items.
- 4) Create a logbook entry in the aircraft logbook referencing the installation of the Emergency Fire Containment System. Retain the original EFCS certifications, 8110-3 Burn Certification for the E.F.C.S. and 8110-3 Burn Certification (if requested) for the provided storage container with the aircraft.

### **Create & Comply with the following maintenance task cards for the E.F.C.S.**

#### **1) Monthly Interval Inspection Requirements – Task #: 25-60-00 EFCS-ICA Monthly**

Emergency Fire Containment System Monthly Inspection Due:

##### **Inspect the EFCS for the following items:**

- a) The Suppression System Pressure gauge on the EFCS is within the Green Arc.
- b) The Arming Lever with lanyard is in closed position and red tamper seal is intact.
- c) The User Instruction Card is free from Damage and attached to the EFCS.
- d) The fire resistant gloves are in designated pocket and are free from damage.

#### **2) Yearly Interval Inspection Requirements – Task#: 25-60-00 EFCS-ICA Annual**

Emergency Fire Containment System Monthly Inspection Due:

##### **Inspect the EFCS for the following items:**

- a) The Suppression System Pressure gauge on the EFCS is within the Green Arc.
- b) The Arming Lever with lanyard is full closed position and tamper proof seal is intact.
- c) The User Instruction Card is free from Damage and attached to the EFCS.
- d) The fire resistant gloves are in designated pocket and are free from damage.
- e) There are no physical defects or wear noted to any part of the EFCS assembly.
- f) The operating instructions are clearly visible.
- g) The Storage Box is free from damage & defects
- h) Weigh the EFCS assembly (*the weight is calculated without the gloves and storage container*) If the weight has increased or decreased substantially (1.5 Lb.) from the initial weight provided on the data plate contact Fire Containment Concepts.

#### **3) 6 Year Interval Inspection Requirements- Task #: 25-60-00 EFCS-ICA 6 year**

Emergency Fire Containment System 6-year Recertification Due

- a) Return to Fire Containment Concepts for Six Year Recertification-

#### **4) 12 Year Interval Maintenance Requirement –Task #: 25-60-00 EFCS-ICA 12 year**

Emergency Fire Containment System 12 Year Inspection & Hydrostatic testing Due:

- a) Return to Fire Containment Concepts for Hydrostatic Test & 12 Year Recertification-

## Optional Mounting Procedures for EFCS Storage Case

The Emergency Fire Containment System (EFCS) Storage Case may be Velcro mounted in any suitable safe location which does not interfere with emergency egress procedures. The EFCS may be mounted vertically or horizontally based on the needs of the individual installation. The EFCS storage case may be secured to a bulkhead or other suitable location utilizing the provided adhesive backed high temperature Velcro. The EFCS storage case was designed to be hard mounted to the aircraft interior if desired. Hard mounting of the EFCS Storage Case requires a specific Supplemental Type Certificate (STC) Approval. For assistance with acquiring STC approval for hard mounted installations. Please contact Fire Containment Concepts for assistance 1 (800) 877- 2204 or via email at [support@fccconcepts.com](mailto:support@fccconcepts.com).

\*Refer to page 2 for optional mounting locations.

### Storage Case Velcro Attachment Procedures

1. Locate the EFCS Storage Case in the desired location and position.  
Suggested locations include but are not limited to:
  - Behind any seat in the passenger compartment
  - In an overhead storage bin
  - In a closet
  - Under a seat or in a divan
  - In a cabinet or accessible cargo compartment
2. Verify the EFCS in storage case is easily accessible and does not interfere with Emergency egress, seat, door, overhead bin, or cabinet proper operation.
3. Use masking tape and a marking utensil to locate the Velcro mounting locations installed on the back of the storage case on the mounting location.
  - **16" Storage Case** – (2) provided 4" wide fire resistant hook Velcro strips shall be placed adjacent to one another at 11.5" from the outside edges & 3.5" from inside edges. For direct mounting of EFCS Bag (2) provided 2" Velcro strips shall be placed adjacent to one another at 8" from outside edges & 4" from inside edges.
  - **20" Storage Case**-(2) provided 4" wide fire resistant hook Velcro strips shall be placed adjacent to one another at 15" to the outside edges of Velcro and 7" from inside edges. For direct mounting of EFCS Bag (2) provided 2" Velcro strips shall be placed adjacent to one another at 15" from outside edges & 11" inside edges.
  - **24" Storage Case**-Approximately 13" from center to center of the 4" Velcro strips on storage case. It is 17" to the outside edges of Velcro and 9" from inside.
4. Clean the desired mounting location thoroughly to remove all wax, oils, and dust with alcohol wipe or rubbing alcohol and cotton swabs. Allow to thoroughly dry before proceeding to the next step. **Note: The Velcro will not adhere to carpet or fabric.**
5. Remove adhesive protection film from 4" or 2" Velcro hook strips and place in previously marked location. For optimal adhesion of the Velcro adhesive the ambient temperature should be < 68° F or 20°C. Firmly seat the Velcro Hook supplied in the EFCS Kit with any suitable roller.
6. Place the EFCS storage Case or EFCS Bag in the selected location and mate the Hook & Loop Velcro to complete the installation.

*\*Note: Failure to store the EFCS in the provided storage container will void the provided limited manufacturer warranty.*

## Typical Mounting Options

*(Examples below are from a Challenger 604)*



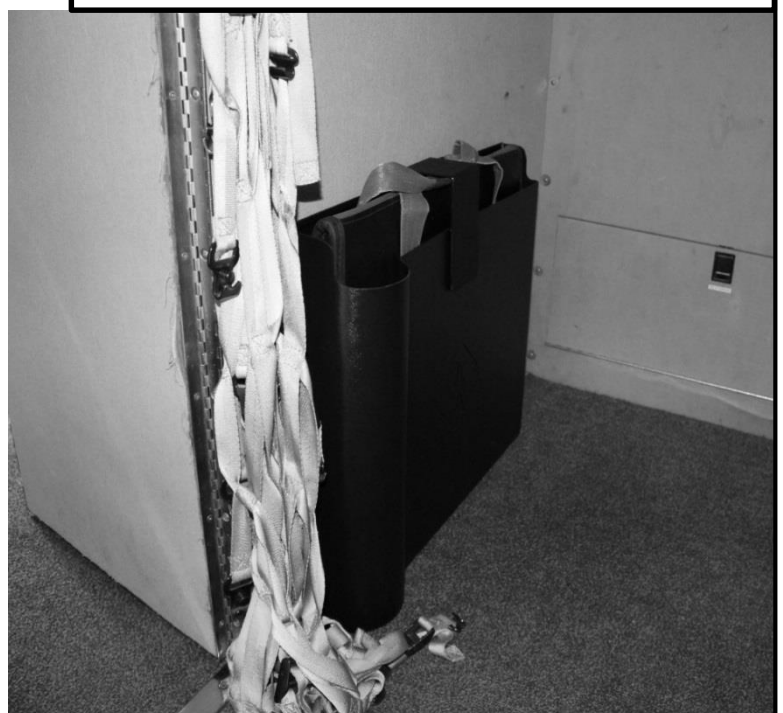
Storage Case mounted horizontally on forward cabin bulkhead behind passenger



Storage Case mounted vertically on forward cabin bulkhead behind passenger seat.



Storage Case mounted horizontally on forward Divan cabinet behind



Storage Case mounted horizontally on forward cargo compartment bulkhead.

## Servicing and Depressurizing Instructions

### Servicing

The Emergency Fire Containment System (EFCS) on board suppression system consists of a stainless steel DOT (4B) cylinder pressurized with nitrogen to 175 PSI. For the first 30 days of ownership verify the gauge on the fire suppression system stays within the green arc. If the needle should fall below the green arc, it is allowable to be serviced using compressed Nitrogen. The no-loss air servicing tool can be removed from the depressurization tool to service if needed. A strut gauge is the most ideal way to service the cylinder. If the pressure continues to drop below the green arc once serviced contact Fire Containment Concepts for corrective actions.

*Warning: Only qualified individuals should service the EFCS suppression system if needed. When servicing the EFCS cylinder a servicing cage should be utilized around the cylinder. Never Service the EFCS Suppression system beyond 175 PSI.*

### Depressurization Instructions

The EFCS must be depressurized when returning to Fire Containment Concepts to avoid hazardous shipping fees or if the suppression system was armed and was not deployed.



Remove the protective valve cap from suppression system and install included depressurization tool on Schrader valve fitting.

*Note: Ensure T-handle on no loss air fitting is in the fully open (counter-clockwise) position before installation on Schrader valve*



Once installed close the T-handle on the no loss fitting by turning the valve clockwise. This will allow compressed nitrogen to be released from the suppression system.

Any suppression agent that escapes should be disposed of properly. see MSDS

## **The Emergency Fire Containment System is covered by a 4-year Limited Warranty.**

### **1) Limited 4-year Warranty:**

Fire Containment Concepts ("Manufacturer") provides to its customers a four (4) year Limited Warranty against defects in material or workmanship of the **Emergency Fire Containment Systems (EFCS) Product** ("Product"), subject to the terms and conditions described herein below. Manufacturer warrants that during the warranty period the product delivered to the original purchaser will be free from defects in material and workmanship so long as the product remains in the ownership of the original purchaser, Product has not been activated or deployed, Product has been properly stored in storage case, and Product has been properly inspected and maintained per Manufacturer's Maintenance Procedures. The Manufacturer reserves the right to amend any or all of the maintenance requirements from time to time. The maintenance requirements in effect at any given time must be complied with in order to maintain warranty coverage. The warranties shall be valid from the date of shipment from the manufacturer to the purchaser.

### **2) Repairs Completed Under Warranty:**

If a product complies in all respect with the warranty provisions set forth above, Manufacturer will make all adjustments, repairs, modifications, corrections, or replacements at Manufacturer's expense; provided, however that Product has been properly inspected and otherwise treated in accordance with Manufacturer's requirements, Operating Instructions, Maintenance Procedures, applicable service bulletins, and the provisions of this limited warranty, and provided that Product has not been activated or deployed. Manufacturer shall use its best efforts to make all adjustments, modifications, corrections, or replacements under this warranty within Thirty (30) Business days or less from receipt of a Product.

### **3) Repairs Not Covered by Warranty:**

If Product fails to comply in any respect with the limited warranty set forth in Section 1, any and all repairs will be the sole responsibility of the original purchaser.

### **4) Return of Product under Limited Warranty Provisions:**

Purchaser must complete the online Material Return Authorization ("MRA") form located on the manufacturer's website or contact the manufacturer to receive the MRA forms in another manner such as via mail, email, or fax. Manufacturer must receive written notice of failure of a Product to comply with this warranty within thirty (30) days of discovery of such failure. Purchaser shall return the defective Product to the Manufacturer or its Approved Representative. Purchaser shall pay all costs of shipping the defective part to and from Manufacturer or its Approved Representative. All items shipped to Manufacturer or its Approved Representative must be prepared for shipment in accordance with the requirements of the Maintenance procedures, must be adequately packed to prevent damage in transit, and, if desired, insured by Purchaser. All items returned for replacement shall be shipped prepaid to the Manufacturer's current address provided on the MRA form. ***NOTE: IT IS THE SOLE RESPONSIBILITY OF THE PURCHASER OF THE PRODUCT TO SUBMIT AND CONFIRM RECEIPT OF THE MATERIAL RETURN AUTHORIZATION.***

### **5) Service costs—Product Not Found Defective (No Fault Found):**

In the event that Manufacture determines that any Product returned is not defective or not covered by this Limited Warranty, customer shall be responsible for service and handling charges "No Fault Found" shall mean a returned EFCS that is damaged or fails to operate properly as a result of operator error, abuse, or misuse or other causes not covered by this limited warranty.

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## **The Emergency Fire Containment System is covered by a 4-year Limited Warranty. (Continued)**

### **6) Failure to Maintain in Accordance with Manufacturer's Maintenance Requirements:**

Failure to service Product in exact and specific compliance with the Manufacturer's prescribed Maintenance Requirements herein below or as amended from time to time shall immediately void this limited warranty.

### **7) Maintenance Requirements:**

Purchaser shall, prior to, or simultaneously with shipment, send a separate written warranty claim to the Manufacturer or its Approved Representative, advising that an EFCS is to be shipped for Warranty claim purposes and shall include a description of the failure, and airway bill number. Purchaser is hereby authorized to use any selected Shipping Agent or as otherwise mutually agreed, for goods returned to the Manufacturer or its Approved Representative. Shipments are to be conspicuously marked with Purchaser's and Manufacturer's name. Except when otherwise stated, all shipping and insurance shall be at the Purchaser's expense.

**Note:** Please see the current EMERGENCY FIRE CONTAINMENT SYSTEM (EFCS) Maintenance and User Instructions Manual for complete and current instructions.

### **Current Maintenance Requirements**

- Monthly Inspection Requirement
- Yearly Inspection Requirements
- Product must be returned to Manufacturer every (6) six years from the Date of Manufacture for inspection, and recertification maintenance requirements
- Product must be returned to Manufacturer every (12) twelve years from the Date of Manufacture for Hydrostatic testing, and 6-year recertification.

***Note: Maintenance requirements do change. It is the EFCS owner's responsibility to know and understand manufacturer's maintenance requirements at all times. Failure to comply with those requirements, which may be different from those described above, WILL VOID WARRANTY COVERAGE.***

## COLD FIRE↓ Fire Suppressing Agent

Cold Fire is an environmentally friendly fire suppressing agent, specially designed to extinguish Class A, B, and D fires. Cold Fire has a rapid cooling effect, which provides rapid extinguishment, prevention of re-ignition, and the encapsulation of hydrocarbons. The product is safe to store, handle and use is environmentally friendly, non-toxic, non-corrosive, and biodegradable.

<b>Capabilities</b>	
<b>Fire Suppressing Power:</b>	Quickly snuffs out fires. "Cools" burning fuel on contact. Prevents re-ignition by encapsulating fuel source. Retards smoke generation. Cools rapidly.
<b>Applications:</b>	Class A, B and D fires of all types.
<b>Cleanup:</b>	Leaves slightly oily residue, rinse with water. Product biodegrades rapidly. Oil molecules do not form a tight emulsion with the suppressing solution.
<b>Dispersant Capability:</b>	Low. Treated oils are not dispersed in water.

<b>Characteristics</b>	
<b>pH:</b>	pH is 7.5 – 8.5
<b>Flash Point:</b>	Negligible.
<b>Boiling Point:</b>	212°F.
<b>Odor:</b>	Neutral odor. Does not contain d-limonenes. Cloudy in appearance
<b>Water Solubility:</b>	Complete.
<b>Shelf Life:</b>	Indefinite when stored in closed containers between -50°F and 120°F.
<b>Dilution Strength:</b>	Use at full strength, do not dilute.
<b>Residue:</b>	Leaves slightly oily residue

<b>Environmental and Safety Considerations</b>	
<b>Biodegradability:</b>	100% in 21 days under ideal conditions.
<b>Hazardous Components:</b>	No components are listed in the NIOSH Recommendations for Occupational Health Standards, 1988, or are defined as hazardous by SARA, CERLA, or RCRA. No OSHA PEL's are established for other ingredients.
<b>Handling:</b>	Suppressor is slightly alkaline. It may irritate the eyes if sprayed directly into them. When handling bulk concentrate, eye protection, gloves, and impervious clothing should be worn when there is danger of splashing, prolonged exposure to vapor, or prolonged skin contact, as with all chemicals.
<b>Disposal:</b>	Suppressant itself may be disposed through municipal systems.

## MATERIAL SAFETY DATA SHEET COLD FIRE↓

FIREFREEZE Worldwide, Inc.  
272 Route 46, Rockaway, N.J. 07866  
Tel: (973) 627-0722 Fax: (973) 627-2982



1/4/2014

## SECTION I - IDENTIFICATION

**Manufacturer:** FIREFREEZE Worldwide, Incorporated  
**Address:** 272 Route 46, Rockaway, N.J. 07866  
**Phone:** (973) 627-0722 **Fax:** (973) 627-2982  
**Date Prepared:** JANUARY 4, 2014 **Formulation #:** JG302AS  
**Trade Name:** Cold Fire 302 All Season Blend  
**Product:** Class A:B:D fire suppressing agent

## SECTION II - INGREDIENTS AND HAZARD CLASSIFICATION

Components are classified trade secret. No components are believed to be hazardous, or listed in the NIOSH Recommendations for Occupational Safety and Health Standards, 1988, or are listed as hazardous by SARA, CERCLA, or RCRA. No OSHA PEL's are established for any of the other ingredients.

## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

**Boiling Point:** 212°F. **Vapor Pressure (mm Hg):** Same as water.  
**Solubility in water:** 100% **Specific Gravity:** 1.02 @ 60°F.  
**pH:** 8 Slightly Alkaline **Appearance and Odor:** Cloudy, neutral smell.

## SECTION IV - FIRE AND EXPLOSION DATA

**Flash Point:** Not applicable **Flammable Limits:** Non-flammable.  
**LEL:** Not applicable. **UEL:** Not applicable.  
**Extinguishing Media:** Not applicable.  
**Special Fire Fighting Procedures:** None. **Unusual Fire and Explosion Hazards:** None.

## SECTION V - REACTIVITY DATA

**Stability:** Stable. **Incompatibility:** None.  
**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.  
**Hazardous Polymerization:** Will not occur.

## SECTION VI - HEALTH HAZARD DATA

### Exposure Limits

**OSHA PEL:** Not established. **ACGIH TLV:** Not established.

### Routes of Entry

**Inhalation:** Yes **Skin:** Yes **Ingestion:** Yes

### Signs and Symptoms of Exposure

**Skin:** Negligible hazard. Not a primary skin irritant. pH is slightly Alkaline 8.0  
**Eyes:** Not considered to be a primary ocular irritant.  
**Inhalation:** Negligible.  
**Ingestion:** Not considered to be orally toxic.

### First Aid

**Eyes:** Immediately flush eyes with water.  
**Skin:** Rinse with water.  
**Inhalation:** Negligible. Remove to fresh air.  
**Ingestion:** Drink water.

### Carcinogenicity

**NTP?** No **IARC?** No **OSHA Regulated?** No

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## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

### Spill or Leak Procedures

Rinse affected area with water.

### Waste Disposal Method

Dispose as non-hazardous waste in accordance with local regulations.

### Storage and Handling Precautions

Store in temperatures from -50°F to 120°F in closed containers to prevent evaporation and deterioration.

### Other Precautions

Avoid prolonged skin contact.

## SECTION VIII - CONTROL MEASURES

### Respiratory Protection

Not required.

### Ventilation

Under ordinary conditions of use for its intended purpose, no special ventilation is required.

### Protective Gloves

Wear if there is prolonged skin contact.

### Eye Protection

Wear if needed to prevent reasonable probability of eye contact.

## SECTION IX - HAZARD CLASSIFICATION

**IMO Hazard Class and Number:** Non-hazardous.

**UN Number:** Not applicable.

**US DOT Hazard Class:** Not regulated by DOT

**US DOT Identification Number:** Not applicable.

## SECTION X - REGULATORY INFORMATION

### **EPA SNAP:**

Significantly New Alternative Policy Program Listed.

Cold Fire is listed by the EPA as a substitute for Halon 1211.

### **HMIS Rating:**

Health: 0

Flammability: 0

Reactivity: 0

## SECTION XI- ENVIRONMENTAL DATA

**Biodegradability:** Product is 100% biodegradable in an active environment within 21 days.

### **Toxicity:**

In accordance with U.S. EPA Office of Pollution Prevention and Toxics criteria for ranking the acute toxicity of chemicals in the aquatic environment, ColdFire 302AS is considered to be of low concern.

The information presented in this MSDS is believed to be factual. However, nothing contained in this information is to be taken as a warranty of any kind by FIREFREEZE Worldwide, Inc. The user should review any recommendations, in the specific context of the intended use, to determine whether they are appropriate.