tyco / Fire & Building Products

Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

# BlazeMaster®
# TFP-500 One Step Solvent Cement
# MSDS (Material Safety Data Sheet)

Date Revised: AUG 2007
Supersedes: APR 2007

*TYCO*

## MATERIAL SAFETY DATA SHEET

Information on this form is furnished solely for the purpose of compliance with the U.S. Occupational Safety and Health Act , the Canadian Hazardous Products Act and Controlled Products Regulations and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.

## SECTION I - PRODUCT INFORMATION

**MANUFACTURER'S NAME**
IPS Corporation for Tyco
**ADDRESS**
17109 S. Main St., P.O. Box 379,
Gardena, CA. 90248 U.S.A. (310) 898-3300

**SUPPLIER'S NAME**
Tyco Fire and Building Products
**ADDRESS**
451 North Cannon Avenue
Lansdale, PA 19446, USA

**Transportation Emergencies:**
CHEMTREC: (800) 424-9300
**Medical Emergencies:**
3 E COMPANY (24 Hour No.) (800) 451-8346
**Business: Tyco (215) 362-0700**

**CHEMICAL NAME and FAMILY**
Mixture of CPVC Resin and Organic Solvents

**TRADE NAME:**
BLAZEMASTER® TFP 500 Low VOC Cement for CPVC Plastic Pipe

## SECTION II - HAZARDOUS INGREDIENTS, EXPOSURE LIMITS, TRANSPORT & WHMIS DATA

| None of the ingredients below are listed as carcinogens by IARC, NTP, OSHA or ACGIH. | CAS# | APPROX % BY WEIGHT | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL | LD50 | LC50 | DUPONT (A) AEL | DUPONT (B) STEL |
|---|---|---|---|---|---|---|---|---|---|---|
| Chlorinated Polyvinyl Chloride Resin (CPVC) | 68648-82-8 | 10 - 20 | N. AP. | | N. AP. | | N. AP. | N. AP. | | |
| Tetrahydrofuran (THF), Stabilized | 109-99-9 | 30 - 60 | 50 PPM Skin | 100 PPM Skin | 200 PPM | 250 PPM | Oral: 2880 mg/kg (rat) | Inhalation 3 hrs. 21,000 PPM (rat) | 50 PPM | 75 PPM |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 3 - 7 | 200 PPM | 300 PPM | 200 PPM | 300 PPM | Oral: 3.98 g/kg (rat) Dermal: 8-10 mg/kg (rabbit) | Inhalation 4 hrs. 4,000 PPM (rat) | | |
| Cyclohexanone | 108-94-1 | 1 - 5 | 20 PPM Skin | | 50 PPM | | Oral: 1900 mg/kg (rat) Dermal: 1.0 g/kg (rabbit) | , Inhalation LCLO, 4 hrs: 2000 PPM rat) | | |
| Acetone | 67-64-1 | 7 - 13 | 500 PPM | 750 PPM | 750 PPM | 1000 PPM | Oral: 9.75 g/kg (rat) Dermal: 20 g/kg (rabbit) | Inhalation LCLO 4 hrs: 16,000 PPM (rat) | | |

All of the constituents of IPS adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA and/or the Canadian Domestic Substance List (DSL), or are exempt from such listings.

(A) Dupont and BASF mfg's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, (B) Dupont/BASF recommended STEL for 15 minute TWA.

**DOT, IATA, IMO/IMDG SHIPPING INFORMATION**

| | |
|---|---|
| Proper Shipping Name: | Adhesives |
| Hazard Class: | 3 |
| Identification Number: | UN 1133 |
| Packing Group: | II |
| Label Required: | Flammable Liquid |

EXCEPTION: Case quantities of cement in containers of less than one liter may be shipped as LIMITED QUANTITY or CONSUMER COMMODITY, ORM-D

**TDG INFORMATION**

| | |
|---|---|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | ADHESIVES (TETRAHYDROFURAN) |
| UN NUMBER: | 1133, PG II |

**WHMIS CLASSIFICATION: CONTROLLED PRODUCT**
CLASS B, DIVISION 2
CLASS D, DIVISION 2B

**SPECIAL HAZARD DESIGNATIONS**

| | HMIS | NFPA | HAZARD RATING |
|---|---|---|---|
| HEALTH: | 2 | 2 | 0 - MINIMAL |
| FLAMMABILITY: | 3 | 3 | 1 - SLIGHT |
| REACTIVITY: | 0 | 1 | 2 - MODERATE |
| PROTECTIVE EQUIPMENT: | B - H | | 3 - SERIOUS<br>4 - SEVERE |

B = Eye, Hand/Skin (for normal solvent-welding activities)
H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/ immersion risks)

## SECTION III - PHYSICAL DATA

**APPEARANCE**
Red, medium syrupy liquid

**ODOR**
Ethereal (Threshold = 2-50 PPM)

**BOILING POINT (°F/°C)** **FREEZING POINT**
133°F (57°C) -139°F (-95°C)
Based on Acetone

**SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)**
Typical 1.0 ± 0.040

**VAPOR PRESSURE (mm Hg.)**
190 mm Hg. based on first boiling component, Acetone @ 68°F (20°C)

**PERCENT VOLATILE BY VOLUME (%)**
Approx: 70 - 80 %

**VAPOR DENSITY (Air = 1)**
2.49

**EVAPORATION RATE (BUAC = 1)**
> 1.0

**SOLUBILITY IN WATER**
Solvent portion completely soluble in water.
Resin portion separates out.

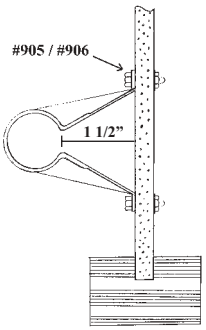
**COEFFICIENT OF WATER/OIL DISTRIBUTION**
N. AV.

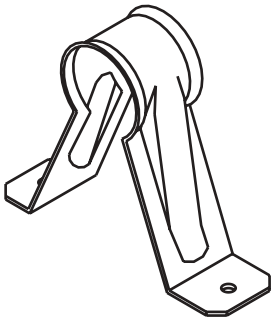
**PH INFORMATION**
N. AP.

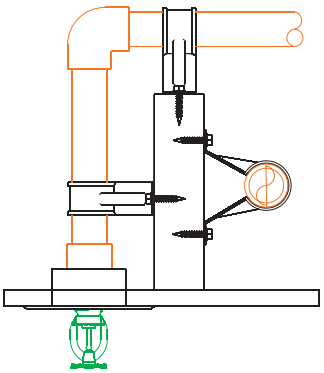
**VOC STATEMENT** Maximum VOC emissions as applied and tested per SCAQMD Rule 1168, Test Method 316A: 490 grams/liter. After drying and curing there are negligible or no emissions.

# 514

# OFFSET
# C.P.V.C. - STEEL - COPPER
# HANGER



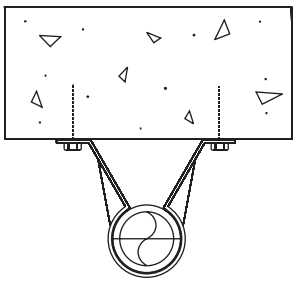





**SIZE** - 3/4" thru 2"pipe.
**MATERIAL** - Carbon Steel.
**FINISH** - Mil. Galvanized..
**LISTINGS** - c UL us **EX 4231, EX 2551**
**PATENT - No. 6,648,278.**
**FUNCTION** - To support horizontal piping - C.P.V.C., Copper or Steel. Hanger and restrainer in listed mounting positions - Top, Bottom or Side. Provides stability on vertical piping.
**INSTALLATION** - Per N.F.P.A 13, 13R and 13D on top, bottom or side of building element. Space by pipe type. On 3/8" wood web use #**906** backing nuts. - see drawing. Snap over pipe then squeeze strap back allowing pipe to slide freely.
**FASTENERS** - UL Listed per NFPA 13

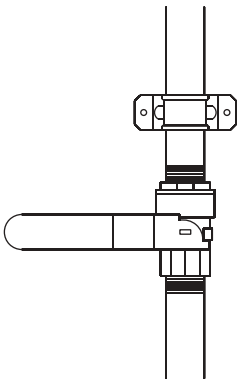
in **WOOD**:
- CPVC pipe - **#905** screw- no pre-drill.
- Copper pipe - **#905** screw- no pre-drill.
- Steel pipe - 1/4"x11/2" lag screw - no pre-drill.

in **STEEL**:
- CPVC pipe - 1/4" or #14 Tek Screw.
- Copper pipe - 1/4" or #14 Tek Screw.
- Steel pipe - 1/4" or #14 Tek Screw.



**FEATURES**
* 1 1/2" Offset.
* 3/4" and 1” pipe size made with common center-line.
* Leg design produces superior strength.
* Offset edge eliminates abrasion.
* Required *AFCON* **#905** screw has 5/16" hex head - included

**ORDERING** - Part # and pipe size.
*AFCON* #**906** sold separately.



CAD

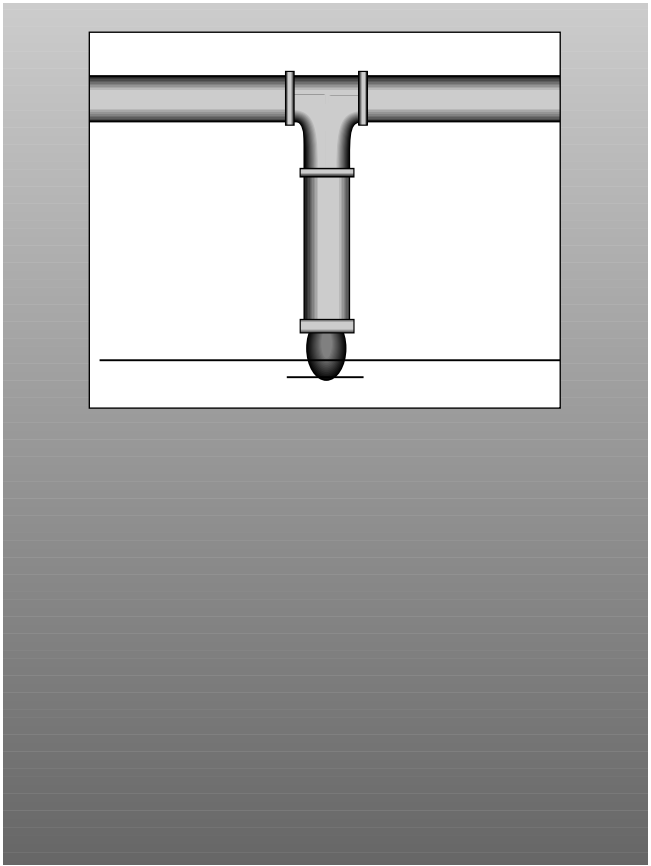
tyco / Flow Control / Tyco Fire Products

# BlazeMaster®

# Fire Sprinkler Pipe & Fittings Submittal Sheet


**Tyco Fire Products**
451 North Cannon Avenue
Lansdale, Pennsylvania 19446
www.tyco-fire.com

**Technical Services**
Tel: (800) 381-9312 · Fax: (800) 791-5500
E-mail: techserv@tycofp.com


**No. 19–1.5**
**TD915**
**4–1.1.20**
9/2001

# Introduction

Tyco Fire Products (TFP) BlazeMaster® CPVC pipe and fittings are designed exclusively for use in wet pipe automatic fire sprinkler systems. They are made from a specially developed thermoplastic compound composed of post chlorinated polyvinyl chloride (CPVC) resin and state of the art additives. TFP BlazeMaster® CPVC products are easier to install than traditional steel pipe systems, and at the same time, they provide superior heat resistance and strength as compared to traditional CPVC and PVC piping materials used in the plumbing trade. Various adapters are available to connect CPVC pipe to metallic piping. All female pipe thread adapters have brass inserts for durability. Grooved adapters connect directly to grooved end valves and metallic pipe, with flexible grooved end couplings.

# Technical Data

**Sizes:** 3/4" – 3"
**Maximum Working Pressure:** 175 psi
**Approvals:** UL, FM, CUL, NSF, Dade County, LPCB, MEA, and the City of Los Angeles
**Note:** See current TFP BlazeMaster Installation Instructions and Technical Manual, for exact listing/approval information

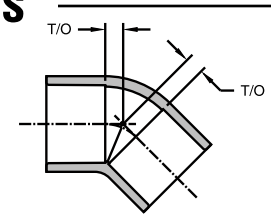
**Manufacture Source:** U.S.A.
**Material:**
**Pipe:** ASTM F442, SDR 13.5
**Fittings:** ASTM F438 (Sch. 40) and ASTM F439 (Sch. 80)
**Color:** Orange

# Pipe

| Nom.Pipe Size | Avg. O.D. Inches | Avg. I.D. Inches | Wt. Lbs./Ft. | Wt. $H_2O$ filled Pipe Lbs./Ft. | Ft. of Pipe per Lift | Wt. per Lift Lbs. |
|---|---|---|---|---|---|---|
| 3/4" | 1.050 | 0.874 | 0.17 | 0.43 | 7875 | 1413 |
| 1" | 1.315 | 1.101 | 0.26 | 0.67 | 5040 | 1320 |
| 1 1/4" | 1.660 | 1.394 | 0.42 | 1.07 | 2835 | 1191 |
| 1 1/2" | 1.900 | 1.598 | 0.55 | 1.40 | 2205 | 1136 |
| 2" | 2.375 | 2.003 | 0.86 | 2.20 | 1260 | 1063 |
| 2 1/2" | 2.875 | 2.423 | 1.26 | 3.22 | 1215 | 1531 |
| 3" | 3.500 | 2.952 | 1.87 | 4.79 | 720 | 1344 |

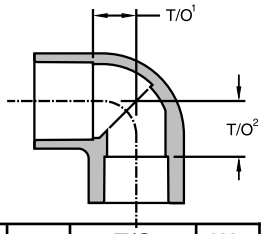
# Fittings

## 45° Elbow



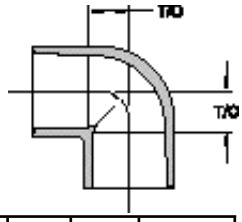

| Part No. | Size | Sch. | T/O | Wt. |
|---|---|---|---|---|
| 80050 | 3/4" | 40 | 3/8" | 0.08 lb. |
| 80051 | 1" | 40 | 3/8" | 0.11 lb. |
| 80052 | 1 1/4" | 40 | 3/4" | 0.20 lb. |
| 80053 | 1 1/2" | 80 | 7/16" | 0.31 lb. |
| 80054 | 2" | 80 | 3/4" | 0.56 lb. |
| 80055 | 2 1/2" | 80 | 3/4" | 0.89 lb. |
| 80056 | 3" | 80 | 1" | 1.19 lb. |

## Reducing 90° Elbow



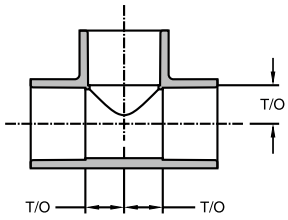

| Part No. | Size | Sch. | T/O | | Wt. lb. |
|---|---|---|---|---|---|
| | | | 1 | 2 | |
| 80032 | 1" x 3/4" | 40 | 11/16" | 13/16" | 0.16 |

## 90° Elbow



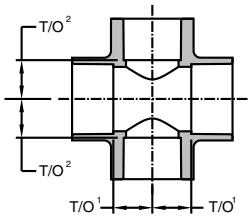

| Part No. | Size | Sch. | T/O | Wt. |
|---|---|---|---|---|
| 80025 | 3/4" | 40 | 9/16" | 0.09 lb. |
| 80026 | 1" | 40 | 3/4" | 0.14 lb. |
| 80027 | 1 1/4" | 40 | 7/8" | 0.21 lb. |
| 80028 | 1 1/2" | 80 | 1 1/16" | 0.40 lb. |
| 80029 | 2" | 80 | 1 1/4" | 0.79 lb. |
| 80030 | 2 1/2" | 80 | 1 1/2" | 1.14 lb. |
| 80031 | 3" | 80 | 1 13/16" | 1.82 lb. |

## Tee



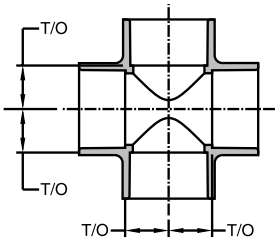

| Part No. | Size | Sch. | T/O | Wt. |
|---|---|---|---|---|
| 80000 | 3/4" | 40 | 5/8" | 0.11 lb. |
| 80001 | 1" | 40 | 3/4" | 0.19 lb. |
| 80002 | 1 1/4" | 40 | 7/8" | 0.26 lb. |
| 80003 | 1 1/2" | 80 | 1" | 0.51 lb. |
| 80004 | 2" | 80 | 1 3/8" | 0.90 lb. |
| 80005 | 2 1/2" | 80 | 1 9/16" | 1.59 lb. |
| 80006 | 3" | 80 | 1 11/16" | 2.41 lb. |

## Reducing Cross




| Part No. | Size | Sch. | T/O | | Wt. lb. |
|---|---|---|---|---|---|
| | | | 1 | 2 | |
| 80015 | 1" x 3/4" | 40 | 11/16" | 11/16" | 0.28 |

## Cross




| Part No. | Size | Sch. | T/O | Wt. |
|---|---|---|---|---|
| 80009 | 3/4" | 40 | 9/16" | 0.13 lb. |
| 80010 | 1" | 40 | 15/16" | 0.23 lb. |
| 80011 | 1 1/4" | 40 | 15/16" | 0.34 lb. |
| 80012 | 1 1/2" | 80 | 1 1/16" | 0.67 lb. |
| 80013 | 2" | 80 | 1 3/8" | 1.00 lb. |
| 80014 | 2 1/2" | 80 | 1 9/16" | 1.91 lb. |
| 80008 | 3" | 80 | 1 13/16" | 2.89 lb. |

# VSR-SG

## VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD AND GLUE-IN UNION

**FOR CPVC PIPE**

Specifications subject to change without notice.

**Stock Number:** 1144460

**Optional**: Cover Tamper Switch Kit, stock no. 0090148

**Replaceable Components:** Retard/Switch Assembly, stock no. 1029030

**UL, CUL and CSFM Listed**

**Service Pressure:** Up to 175 PSI (12,07 BAR)

**Flow Sensitivity Range for Signal:** 4-10 GPM (15-38 LPM) - UL

**Maximum Surge:** 18 FPS (5.5 m/s)

**Contact Ratings:** Two sets of SPDT (Form C)
10.0 Amps at 125/250VAC
2.0 Amps at 30VDC Resistive
10 mAmps min. at 24VDC

**Conduit Entrances:** Two openings provided for 1/2" conduit. Individual switch compartments suitable for dissimilar voltages.

**Environmental Specifications:**

- NEMA 4/IP54 Rated Enclosure suitable for indoor or outdoor use with factory installed gasket and die-cast housing when used with appropriate conduit fitting.
- Temperature Range: 40°F - 120°F, (4.5°C - 49°C) - UL

**Service Use:**

| | |
|---|---|
| Automatic Sprinkler | NFPA-13 |
| One or two family dwelling | NFPA-13D |
| Residential occupancy up to four stories | NFPA-13R |
| National Fire Alarm Code | NFPA-72 |

**⚠ WARNING**

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

**CAUTION**

Waterflow switches that are monitoring wet pipe sprinkler systems shall not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems. Waterflow switches used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.

### General Information

The Model VSR-SG is a vane type waterflow switch for use on wet sprinkler systems using CPVC plastic fittings (manufactured by Tyco, Nibco, Victaulic, Ipex, and Spears Manufacturing Company) that use 1", 1 ¼", 1 ½", or 2" pipe sizes. It is equipped with a union to accommodate installation in confined spaces.

The VSR-SG contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 GPM (38 LPM) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

### Enclosure

The VSR-SG switches and retard device are enclosed in a general purpose, die-cast housing. The cover is held in place with two tamper resistant screws which require a special key for removal. A field installable cover tamper switch is available as an option which may be used to indicate unauthorized removal of the cover. See bulletin number 5401103 for installation instructions of this switch.

# Technical Data: F1 Res 49 Pendent and Recessed Pendent

| Thread Size | Sprinkler Temp. Rating °F | Sprinkler Temp. Rating °C | Max. Pressure psi (bar) | Max. Ambient Temp. °F | Max. Ambient Temp. °C | Actual K Factor | Sprinkler Length Inch (mm) |
|---|---|---|---|---|---|---|---|
| ½″ NPT (R½) | 155<br>175 | 68<br>79 | 175 (12) | 100<br>150 | 38<br>66 | 4.9 | 2.25 (57) |

## Escutcheon*, F1 or F2, Data:

| Type | Adjustment Inch (mm) | "A" Inch (mm) | Face of fitting to ceiling Inch (mm) |
|---|---|---|---|
| F1 | ¾ (19.0) | Min.= ¾″ (19.1)<br>Max.=1½″ (38.1) | 3/16 - 15/16 (4.7 - 24.0) |
| F2 | ½ (12.7) | Min.= 15/16″ (23.8)<br>Max.=1½″ (38.1) | 3/16 - 11/16 (4.7 - 17.4) |

* **Note:** Escutcheons F1 or F2 may be used with Model F1 Res 49 & 58 Recessed Pendent Sprinkler

## Deflector - to - ceiling Maximum 1″ (25mm) to 4″ (100mm)

| Max. Sprinkler Spacing ft (m) | Flow gpm (Lpm) | Pressure psi (bar) | Sprinkler Identification Number (SIN) |
|---|---|---|---|
| 12 x 12 (3.6x3.6) | 13 (49) | 7.0 (0.48) | R3516 |
| 16 x 16 (4.9x4.9) | 13 (49) | 7.0 (0.48) | |
| 18 x 18 (5.5x5.5) | 17 (64.3) | 12.0 (0.83) | |
| 20 x 20 (6.1x6.1) | 20 (75.7) | 16.7 (1.14) | |

## *Deflector - to - ceiling Maximum 4″ (100mm) to 8″ (203mm)

| Max. Sprinkler Spacing ft (m) | Flow gpm (Lpm) | Pressure psi (bar) | Sprinkler Identification Number (SIN) |
|---|---|---|---|
| 12 x 12 (3.6x3.6) | 15 (57) | 9.4 (0.65) | R3516 |
| 14 x 14 (4.3x4.3) | 16 (60.5) | 10.6 (0.73) | |
| 16 x 16 (4.9x4.9) | 17 (64.3) | 12.0 (0.83) | |
| 18 x 18 (5.5x5.5) | 19 (72) | 15.0 (1.0) | |
| 20 x 20 (6.1x6.1) | 22 (83.2) | 20.2 (1.4) | |

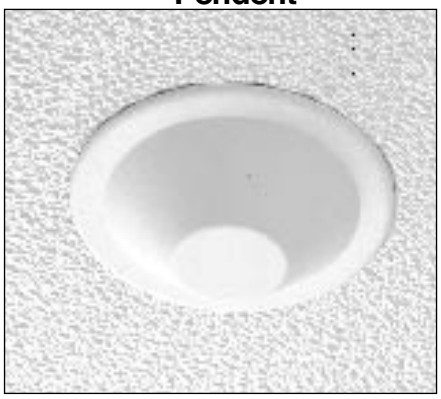
***Note:** The F1 Res 49 pendent and recessed pendent residential sprinklers can be installed per NFPA 13 in beamed ceilings meeting the following criteria:
1. Maximum beam depth = 7″ (178mm)
2. Beam spacing at or greater than 7.5 ft. (2.3m) on center.

# Technical Data: F1 Res 58 Pendent and Recessed Pendent

| Thread Size | Sprinkler Temp. Rating °F | Sprinkler Temp. Rating °C | Max. Pressure psi (bar) | Max. Ambient Temp. °F | Max. Ambient Temp. °C | K Factor | Sprinkler Length Inch (mm) |
|---|---|---|---|---|---|---|---|
| ½″ NPT (R½) | 155<br>175 | 68<br>79 | 175 (12) | 100<br>150 | 38<br>66 | 5.8 | 2.25 (57) |

| Max. Sprinkler Spacing ft (m) | Flow gpm (Lpm) | Pressure psi (bar) | Ceiling -to- Deflector Inch (mm) | Sprinkler Identification Number (SIN) |
|---|---|---|---|---|
| 12 x 12 (3.6x3.6) | 16 (61) | 7.6 (0.53) | 1-4 (25-100) | R3513 |
| 14 x 14 (4.3x4.3) | 16 (61) | 7.6 (0.53) | | |
| 16 x 16 (4.9x4.9) | 16 (61) | 7.6 (0.53) | | |
| 18 x 18 (5.5x5.5) | 19 (72) | 10.8 (0.75) | | |
| 20 x 20 (6.1x6.1) | 22 (83.3) | 14.4 (1.0) | | |

- **Model F1 Res 49 CCP Pendent**



- **Model F1 Res 49 Recessed Pendent / FP**

FP push-on/thread-off escutcheon

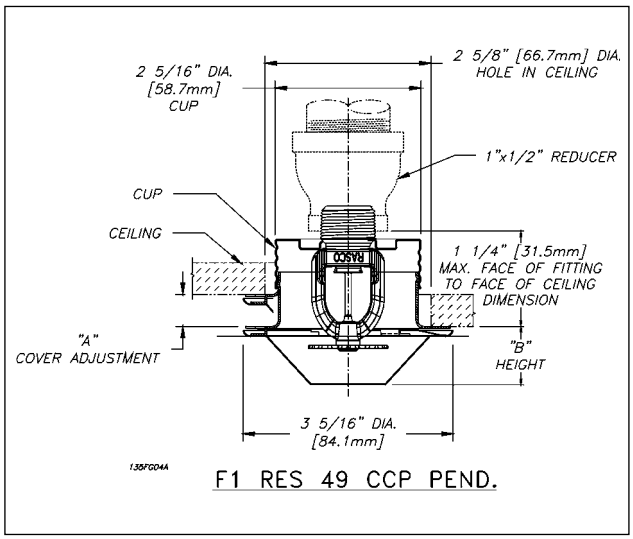



Fig. 3

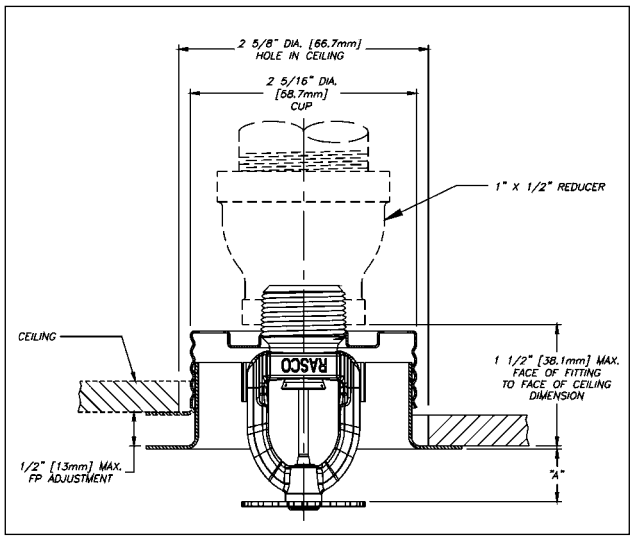



Fig. 4

## Technical Data: F1 Res 49 CCP and FP

| Thread Size | Sprinkler Temp. Rating | | CCP Assembly Temp. Rating | | Max. Pressure psi (bar) | Max. Ambient Temp. | | K Factor | Sprinkler Length Inch (mm) |
|---|---|---|---|---|---|---|---|---|---|
| | °F | °C | °F | °C | | °F | °C | | |
| ½" NPT (R½) | 155 | 68 | 135 | 57 | 175 (12) | 100<br>150 | 38<br>66 | 4.9 | 2.25 (57) |

| Max. Sprinkler Spacing ft (m) | Flow gpm (Lpm) | Pressure psi (bar) | Sprinkler Identification Number (SIN) |
|---|---|---|---|
| 12 x 12 (3.6x3.6) | 13 (49) | 7.0 (0.48) | R3516 |
| 14 x 14 (4.3x4.3) | 13 (49) | 7.0 (0.48) | |
| 16 x 16 (4.9x4.9) | 14 (53) | 8.2 (0.56) | |
| 18 x 18 (5.5x5.5) | 18 (68.1) | 13.5 (0.93) | |
| 20 x 20 (6.1x6.1) | 20 (75.7) | 16.7 (1.14) | |

### CCP Options Data:

| "A" Cover Adjustment Inch (mm) | "B" CCP Height Inch (mm) |
|---|---|
| ½ (12.7) | 15/16 (24) |
| 3/16 (4.7) | ¾ (19) |

### FP Data "A":

| FP Position | "A" Inch (mm) |
|---|---|
| Max. Recessed | 7/16 (11) |
| Min. Recessed | 15/16 (24) |

**Note:** Sprinklers shown in Fig. 3 and Fig. 4 are not suitable for installation in ceilings which have positive pressure in the space above.

Reliable®

# Model F3QR Quick Response Dry Sprinklers

Bulletin 157 Rev. H

## Features

1. The Model F3QR sprinkler utilizes Belleville Spring Closure Technology. Reliable is the first in the industry to produce a Quick Response Dry Concealed sprinkler utilizing this technology.
2. Styles available
   - Pendent
   - Recessed FP Pendent
   - Recessed F1 Pendent
   - Concealed
   - Horizontal Sidewall
   - Recessed FP Horizontal Sidewall
   - Recessed F1 Horizontal Sidewall
3. 1½" (38mm) escutcheon adjustment on pendent sprinkler.
4. ½" (13mm) escutcheon adjustment on recessed sprinkler with push-on/ thread-off FP Model Escutcheon ring.
5. 3/8" (9.5mm) cover plate adjustment on concealed sprinkler with push-on/ thread-off CCP Cover Plate.
6. 3/4" (19mm) escutcheon adjustment on recessed sprinkler with F1 Escutcheon.
7. Attractive appearance. Employs 3mm frangible glass bulb and galvanized nipple.
8. Lengths available to accommodate installation dimensions from 2" - to - 48" (51mm - to - 1219mm), in ¼" (6mm) increments.
9. Available in a variety of plated and painted finishes.
10. Polyester Coated Corrosion Resistant Sprinklers.

**US Patent Numbers 5,775,431 and 5,967,240.**

## Approvals

1. Listed by Underwriters Laboratories Inc. and UL Certified for Canada (cULus)

| Style | Response | Sprinkler System Type | Hazard |
|---|---|---|---|
| Pendent<br>Recessed Pendent<br>Recessed F1 Pendent<br>CCP Concealed<br>(R5714) | Quick | Wet Pipe<br>Dry Pipe<br>All Preaction | Light<br>Ordinary |
| Horizontal Sidewall<br>Recessed Horizontal Sidewall<br>(R5734) | Quick | Wet Pipe<br>Dry Pipe<br>All Preaction | Light |

2. Certified by FM Approvals

| Style | Response | Sprinkler System Type | Hazard |
|---|---|---|---|
| Pendent<br>Recessed F1 Pendent<br>(R5714) | Quick | Wet Pipe<br>Dry Pipe<br>All Preaction | Light<br>Ordinary,<br>Groups<br>1&2 |
| Horizontal Sidewall<br>Recessed F1 Horizontal Sidewall<br>(R5734) | Quick | Wet Pipe<br>Dry Pipe<br>All Preaction | Light |

3. NYC MEA 258-93-E

Pendent
(See Fig. 1)

Pendent / HB
(See Fig. 2)

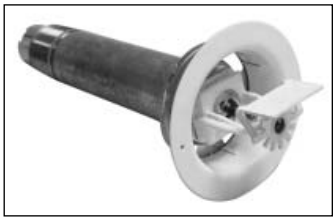
Recessed FP Pendent
(See Fig. 3)

Concealed
(See Fig. 4)

Recessed F1 Pendent
(See Fig. 5)

Horizontal Sidewall
(See Fig. 6)

Horizontal Sidewall / HB
(See Fig. 7)



Recessed FP
Horizontal Sidewall
(See Fig. 8)

Recessed F1
Horizontal Sidewall
(See Fig. 9)

**The Reliable Automatic Sprinkler Co., Inc.,** 103 Fairview Park Drive, Elmsford, New York 10523

## Model F1Res44 Horizontal Sidewall Sprinkler & Models FV & F2 Recessed Escutcheon — SIN R3531

**Technical Specifications**
**Style:** Sidewall and Recessed Sidewall
**Threads:** 1/2" NPT or ISO7-1R1/2
**Nominal K-Factor:** 4.4 (63 metric)
**Max. Working Pressure:** 175 psi (12 bar)

**Material Specifications**
**Thermal Sensor:** 3 mm glass bulb
**Sprinkler Frame:** Brass Alloy
**Button:** Copper Alloy
**Sealing Assembly:** Nickel Alloy with PTFE
**Load Screw:** Bronze Alloy
**Deflector:** Bronze Alloy

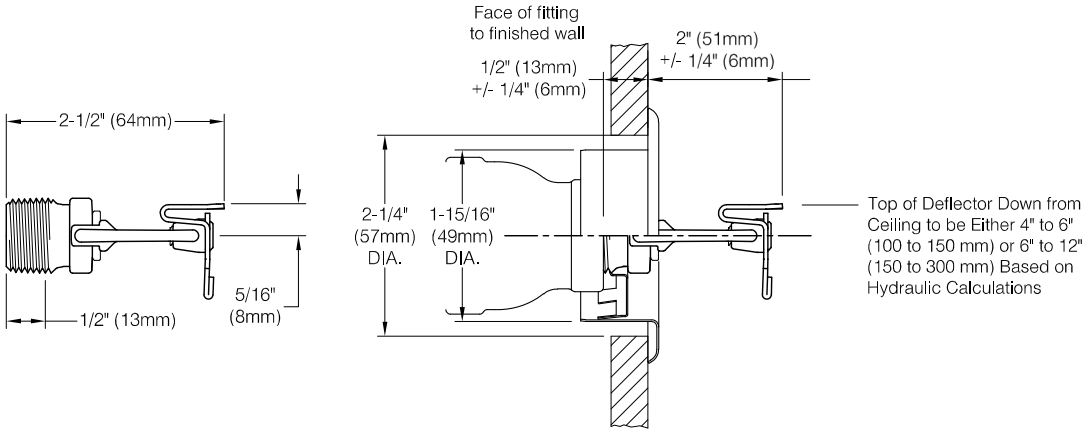
**Finishes**
(See Table N)

**Temperature Ratings**
155°F (68°C)
175°F (79°C)

**Recessed Escutcheons**
F2 Recessed
FV Recessed

**Sprinkler Wrenches**
Model W2
Model GFR2 (Recessed)

## Model F1Res44 Horizontal Sidewall Sprinkler Installation Dimensions — Figure 9




**Dimensions** — **F2 & FV Recessed Escutcheon Installation**

## Model F1Res44 Horizontal Sidewall Sprinkler Hydraulic Design Criteria — Table J

| Minimum Flow and Residual Pressure in Wet Pipe Systems[1] | | | |
|---|---|---|---|
| **Maximum Coverage Area[2] ft. x ft. (m x m)** | **Flow gpm (l/min)** | **Pressure psi (bar)** | **Deflector to Ceiling Distance** |
| 12 x 12 (3.7 x 3.7) | 12 (45) | 7.5 (0.52) | 4 to 6 inches (100 to 150 mm) |
| 14 x 14 (4.3 x 4.3) | 14 (53) | 10.2 (0.70) | |
| 15 x 15 (4.6 x 4.6) | 15 (57) | 11.6 (0.80) | |
| 16 x 16 (4.9 x 4.9) | 16 (61) | 13.3 (0.92) | |
| 16 x 18 (4.9 x 5.5) | 18 (68) | 16.8 (1.16) | |
| 16 x 20 (4.9 x 6.1) | 23 (87) | 27.4 (1.89) | |
| 18 x 18 (5.5 x 5.5) | 19 (72) | 18.7 (1.29) | |
| 12 x 12 (3.7 x 3.7) | 14 (53) | 10.2 (0.7) | 6 to 12 inches (150 to 300 mm) |
| 14 x 14 (4.3 x 4.3) | 16 (61) | 13.2 (0.91) | |
| 15 x 15 (4.6 x 4.6) | 16 (61) | 13.2 (0.91) | |
| 16 x 16 (4.9 x 4.9) | 17 (64) | 15.0 (1.03) | |
| 16 x 18 (4.9 x 5.5) | 20 (76) | 20.7 (1.43) | |
| 16 x 20 (4.9 x 6.1) | 23 (87) | 27.4 (1.89) | |

**Notes:**
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in the table above or (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.