

# Residential Fire Protection Sprinklers & Systems

Product Guide



LFII Residential Sprinklers  
Sprinkler System Components  
CPVC Pipe & Fittings  
Specific Application Attic Sprinklers  
LFP™ Antifreeze for Fire Sprinkler Systems



**rapid response**<sup>®</sup>  
**Residential Fire Sprinkler System**

- Developed specifically for residential occupancies
- The most complete system on the market today from a single manufacturer
- Features BlazeMaster<sup>®</sup> CPVC pipe and fittings, making installation quick, easy flexible, and affordable
- LFP<sup>™</sup> Antifreeze is the first and only UL Certified solution for fire sprinkler systems
- Exclusive ten-year limited warranty lets you install with confidence
- Product line meets all NFPA standards
- Components are all UL listed for residential installations



# Residential Fire Protection Sprinklers & Systems Product Guide

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# Series LFII Sprinklers

## LFII (TY2234) Pendent, Recessed Pendent and Domed Concealed

- Fast response
- Approved for special applications with beamed ceilings
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13
- Can also be used in dry pipe systems per NFPA 13D, 13R, and 13 hydraulic design criteria
- We can match any Sherwin Williams color for Flat Plate and Domed Concealed sprinklers you install. See the cover plate chart on page 7 for standard colors and finishes.



K Factor	K=4.9 (70,6)
Thread Size	1/2" (15 mm)
Escutcheon	Style 20
Bulb Type	3 mm
Finish	White, Chrome, Brass, Custom
<b>Tech Data</b>	<b>TFP400 (TFP450 Domed Concealed)</b>



## LFII (TY1234) Pendent and Recessed Pendent

- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe sprinkler systems for residential occupancies up to and including four stories in height per NFPA 13R

K Factor	K=3.0 (43,2)
Thread Size	1/2" (15 mm)
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP402</b>



## LFII (TY1334) Horizontal and Recessed Horizontal Sidewall

- Fast response
- Used in wet and dry pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet and dry pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet and dry pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=4.2 (60,5)
Thread Size	1/2" (15 mm)
Escutcheon	Style 20
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP410</b>



## LFII (TY2334) Horizontal and Recessed Horizontal Sidewall

- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=4.4 (63,4)
Thread Size	1/2" (15 mm)
Escutcheon	Style 20
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP412</b>



# Series LFII Sprinklers

## LFII (TY3596) Flat Plate Concealed Pendent

- Fast response
- Solder type
- Can be used for horizontal and sloped ceilings
- Used in wet and dry pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet and dry pipe residential sprinkler systems for residential occupancies up to and including four stories in height per NFPA 13R
- Cover plate conceals sprinkler components above ceiling
- Can also be used in dry pipe systems per NFPA 13D, 13R, and 13 hydraulic design criteria
- We can match any Sherwin Williams color for Flat Plate and Domed Concealed sprinklers you install. See the cover plate chart on page 7 for standard colors and finishes.

K Factor	K= 4.9 (70,6)
Thread Size	1/2" (15 mm)
Finish	White, Chrome, Brass, Custom
<b>Tech Data</b>	<b>TFP442</b>



*New LFII intermediate temperature cover plates feature a reduced gap between the plate and the ceiling surface for a more flush appearance.*

## Flat Plate Concealed Cover Plate Tool

- Specially designed for installing and removing TYCO LFII, RFII and RFIII Flat plate concealed cover plates
- Contains foam insert to prevent scratching of cover plate finish
- Attaches to painter's pole, or a length of 1" CPVC pipe
- No need for ladder or scaffold to install cover plates



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## Flat Plate Concealed Cover Plate Colors & Finishes



**Grey White**  
(RAL 9002)



**Signal White**  
(RAL 9003)



**Pure White**  
(RAL 9010)



**Light Ivory**  
(RAL 1015)



**Beige**  
(RAL 1001)



**Terra Brown**  
(RAL 8028)



**Jet Black**  
(RAL 9005)



**Brushed  
Brass**



**Brushed  
Chrome**



**Custom Colors  
Available**

[tyco-fire.com/custompaint](http://tyco-fire.com/custompaint)

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## Before Making A Final Color Selection

The purpose of this color chart is to provide a basic representation of Rapid Response Flat Plate Concealed Cover Plate finish colors. This color chart shall not be used for final color selection, as color differences may occur in print and on monitors when compared to the actual product. Actual custom color selection should be made from a Sherwin Williams paint swatch. Please contact your Rapid Response representative for more information.

# Series LFII Sprinklers

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## LFII (TY2284) Flush Pendent

- Fast response
- Solder type
- Approved for special applications with beamed ceilings
- Used in wet and dry pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet and dry pipe residential sprinkler systems for residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet and dry pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=4.2 (60,5)
Thread Size	1/2" (15 mm)
Finish	White, Chrome, Brass, Black
<b>Tech Data</b>	<b>TFP420</b>

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## LFII (TY2284) Flush Horizontal Sidewall

- Fast response
- Solder type
- Approved for special applications with beamed ceilings
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential sprinkler systems for residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K= 4.2 (60,5)
Thread Size	1/2" (15 mm)
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP425</b>

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# Series LFII Dry Sprinklers

## LFII (TY2235) Residential Dry Sprinkler, Recessed Pendent

- Fast response
- For residential occupancies per NFPA 13D, 13R and residential portions of any occupancy per NFPA 13
- UL listed for use in wet pipe, dry pipe and pre action systems

K Factor	K=4.9 (70,6)
Thread Size	1" NPT (25 mm)
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP460</b>



## LFII (TY2335) Residential Dry Sprinkler, Horizontal Sidewall

- Fast response
- For residential occupancies per NFPA 13D, 13R and residential portions of any occupancy per NFPA 13
- UL listed for use in wet pipe, dry pipe and pre action systems

K Factor	K=4.4 (63,4)
Thread Size	1" NPT (25 mm)
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP461</b>



# NFPA 13 Optimized Sprinklers

## **LFII (TY4234) Pendent, Recessed Pendent and Domed Concealed**

- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13
- We can match any Sherwin Williams color for Flat Plate and Domed Concealed sprinklers you install. See the cover plate chart on page 7 for standard colors and finishes.



K Factor	K=6.9 (99,4)
Thread Size	3/4" (19.05 mm)
Escutcheon	Style 30
Bulb Type	3 mm
Finish	White, Chrome, Brass, Custom
<b>Tech Data</b>	<b>TFP408</b>



## LFII (TY3934) 5.8K Pendent, Recessed Pendent

- UL and C-UL Listed
- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=5.8 (83,5)
Thread Size	1/2" (19.05 mm)
Escutcheon	Style 20
Bulb Type	3 mm
Finish	Natural Brass, White, Black, Chrome
<b>Tech Data</b>	<b>TFP401</b>



# NFPA 13 Optimized Sprinklers

## **LFII (TY3334)** Horizontal and Recessed Horizontal Sidewall

- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=5.6 (80,6)
Thread Size	1/2" (15 mm)
Escutcheon	Style 20
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP415</b>



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## LFII (TY4334) Horizontal and Recessed Horizontal Sidewall

- Fast response
- Used in wet pipe residential sprinkler systems for one- and two-family dwellings and mobile homes per NFPA 13D
- Used in wet pipe residential occupancies up to and including four stories in height per NFPA 13R
- Used in wet pipe sprinkler systems for the residential portions of any occupancy per NFPA 13

K Factor	K=5.8 (80,6)
Thread Size	1/2" (15 mm)
Bulb Type	3 mm
Finish	White, Chrome, Brass
<b>Tech Data</b>	<b>TFP417</b>

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# CPVC Pipe & Fittings

The Rapid Response Residential Fire Sprinkler System features CPVC Pipe and Fittings manufactured with Lubrizol's BlazeMaster® compound – listed by Underwriters Laboratories, Inc. for use in:

Light hazard occupancies as defined in the Standard for Installation of Fire Sprinkler Systems, NFPA 13

Residential occupancies as defined in the Standard for Installation of Fire Sprinkler Systems in Residential Occupancies up to Four Stories in Height, NFPA 13R

Residential occupancies as defined in the Standard for Fire Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, NFPA 13D

Air plenums, as defined by the Installation of Air Conditioning and Ventilating Systems, NFPA 90A and model mechanical codes

Underground water pressure service, NFPA 24

Unfinished basements

(Note: for complete listing and approval information, please refer to the installation instructions and technical manual IH-1900)



**COUPLING**



**PIPE (3/4" – 3")**



**ELBOW 90°**



**REDUCING COUPLING**



**ELBOW 45°**



**TEE**



**REDUCING TEE**



**BACK-TO-BACK  
SPRINKLER HEAD ADAPTER**



**BUSHING**



**CROSS**



**CAP**



**90° ELBOW  
SPRINKLER HEAD ADAPTER**



**SPIGOT SPRINKLER HEAD  
ADAPTER (SLIP X FIPT)**



**FEMALE SPRINKLER  
HEAD ADAPTER (EAST)**



**FEMALE SPRINKLER  
HEAD ADAPTER (WEST)**

## Install With Confidence

Tyco BlazeMaster® CPVC Piping Systems are UL and cUL listed, FM approved, and exceed ASTM standards. Benefits over traditional piping systems include:

- Resistant to rust, scale and foreign contaminant buildup
- Superior flow characteristics for increased hydraulic capabilities (C-Factor=150)
- Easily transported, handled and modified on site
- Can be easily connected to copper and steel piping
- Resist sweating and condensation
- Immune to Microbiologically Influenced Corrosion (MIC)

## Fire Performance

CPVC has an LOI (Limited Oxygen Index) that is better than wood, PVC, PB or other common building materials. It will not support combustion; therefore, it cannot be the source of a fire or cause a fire to spread.

- Does not contribute to flashover
- Low smoke generation
- Toxicity is extremely low when compared with common building and finishing materials; equal to wood and less than wool or cotton

(University of Pittsburgh protocol)



**CPVC TO COPPER-  
MALE ADAPTER (SLIP X MALE)**



**BACK-TO-BACK  
CROSS SPRINKLER HEAD  
ADAPTER**



**CPVC TO COPPER-FEMALE  
ADAPTER (SLIP X FEMALE)**



**GROOVED COUPLING ADAPTER  
(GROOVE X SLIP)**

## Rapid Seal Sprinkler Head Adapter Fittings

- All-CPVC sprinkler head adapter fittings
- No brass, no lead, no dezincification
- Easier sprinkler installation
- No need for thread tape or sealant
- UL, ULc, FM, NSF, and LPCB approved
- Multiple sizes and styles



**90° ELBOW  
SPRINKLER HEAD ADAPTER**



**FEMALE SPRINKLER  
HEAD ADAPTER**

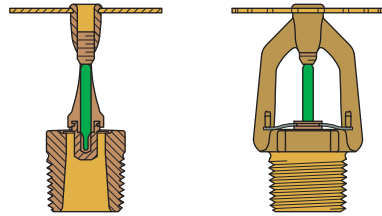


**SPIGOT SPRINKLER HEAD  
ADAPTER (SLIP X FIPT)**

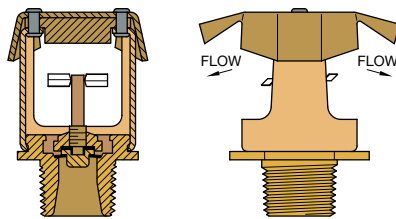
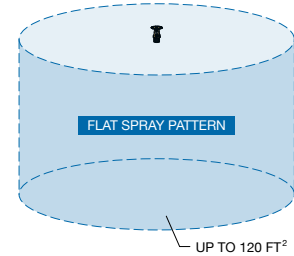
# Specific Application Sprinklers for Protecting Attics

Specific Application Attic Sprinklers provide superior fire protection in attic spaces and, when compared to Standard Spray Sprinklers, cost savings are achieved by eliminating branch line materials and the associated installation labor. "The Specific Application Sprinklers For Protecting Attics" have undergone the most extensive fire testing ever performed for sloped attic spaces. They are UL Listed with their specific application guidelines for use as special sprinklers as defined by the NFPA.

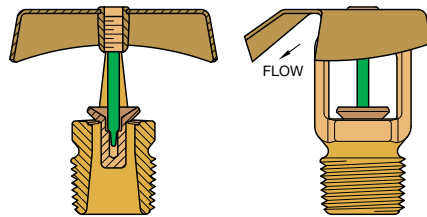
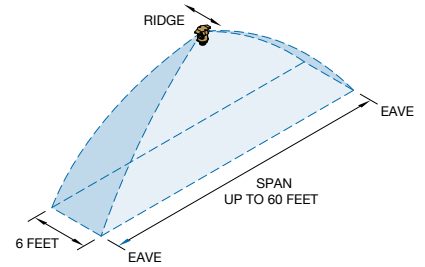
- Listed for extended coverage in combustible construction
- Full-scale fire tested in both wet and dry system scenarios
- Full-scale tested for use in wood truss construction
- Listed for specific roof slopes



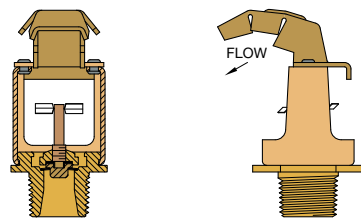
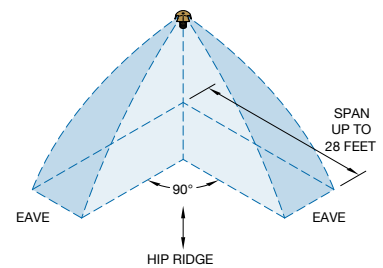
**AP -Attic Plus**



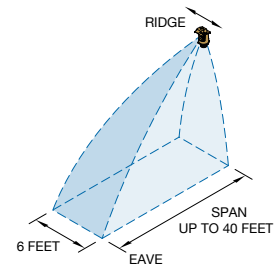
**BB -Back to Back**



**HIP**



**SD -Single Direction**





# LFP™ Antifreeze for Fire Sprinkler Systems

LFP™ Antifreeze is the first and only UL Certified antifreeze solution for fire sprinkler systems.

This pre-mixed solution is formulated to help protect against freeze damage failure and ensure flow in wet pipe fire sprinkler systems. Additionally, LFP™ Antifreeze is both more cost-effective and easier to install and maintain than alternate freeze protection methods, such as heat tracing or dry systems.

- Helps meet requirements for NFPA 13, 13R, 13D and 25
- Freeze point -10°F (-23,3°C)
- Certified for use in residential, commercial and some storage applications
- Compatible with both CPVC and steel pipe
- Non-toxic\*



\*For the purpose of this product, non-toxic means acute exposure to ingredients in the LFP™ Antifreeze does not pose a risk of adverse effects in humans or the environment following short-term exposure in scenarios related to fire sprinkler system installation, maintenance, and discharge.

# System Components

## Residential Domestic Shut-off Valve 1" and 2"

Used in piping systems that supply water to both domestic service and the fire sprinkler system per NFPA 13D or 13R in one/two- family dwellings and mobile homes

In the set position, water is available on demand to the domestic system, and the valve acts as a check valve for the fire protection system

When a sprinkler operates, the supply to the domestic system is automatically shut off, maximizing the available water supply for fire protection

Eliminates the need for expensive pumps, pressurized tanks, or electrically operated domestic shutoff valves

## "Powerball" Butterfly Valves

Ideal for use in residential sprinkler systems as main control valves

An alternative to bulky OS&Y valves

Mandated visual indicator showing that the valve is open or closed

Available from 1" through 2-1/2"

## Resi-Riser

Compact, pre-assembled, ready to install sprinkler riser

Brass construction for use in potable water supply

Available in 1" - 2" (25 mm - 50 mm) sizes

Integral test and drain assembly, flow switch with retard mechanism, 300 psi gauge, and check valve

Compact size allows for easy installation between 2" x 4" studs in wall

Molded mounting points allow for fast and easy left or right-hand installation

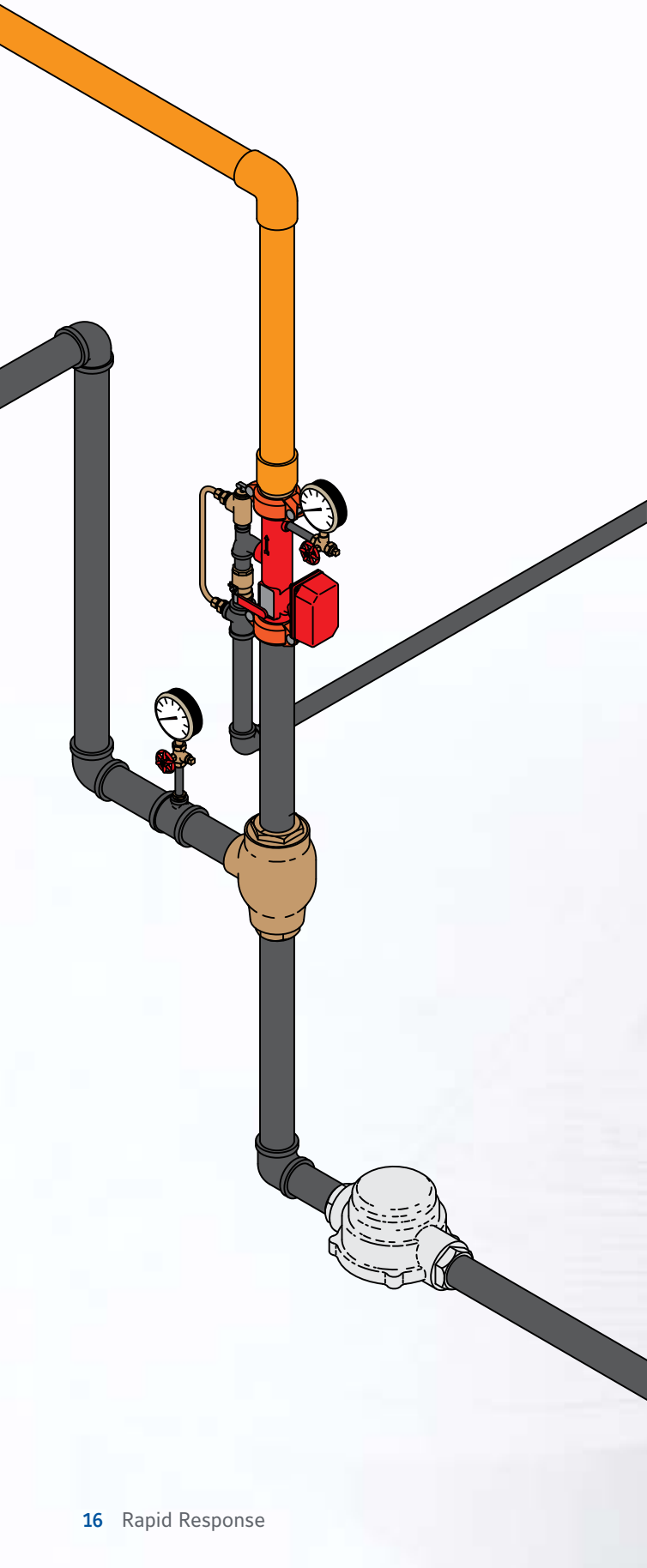
Available with or without pressure relief valve feature and flow switch retard mechanism

## RM-1 Riser Manifold

Available in 1" - 2"

Available in either threaded or grooved configurations

Meets NFPA 13, 13R, and 13D requirements



## Model VS-SP WaterFlow Detector

Used with wet pipe sprinkler systems in residential dwellings and mobile homes

Actuation of the switch can initiate an alarm indicating that the sprinkler system is operating

Sustained flow of 8 gallons per minute will deflect the vane and actuate a single-pole, double-throw snap action switch

Can be wired to a local bell and/or protection panel for outside notification to an alarm company or fire department

## Hangers for BlazeMaster® CPVC Products

Rapid Response offers a full line of pipe hangers designed especially for use with BlazeMaster® CPVC Products.

Designed for ease of installation

Hangers have rounded edges to prevent damage to pipe and fittings

Meets the requirements specified in NFPA 13, NFPA 13R, and NFPA 13D

## Sprinkler Head Cabinet

Spare sprinkler head cabinets are available.  
All cabinets have ample room for sprinkler wrench storage.

## Electric Alarm Bell

Ideally suited for residential applications

Unobtrusive to the homeowner, yet absolutely dependable in a fire event

When used with a flow switch, if water flow occurs in a sprinkler system protecting residential occupancies, an audible alarm sounds to alert the occupants and neighbors of trouble

## CPVC Installation Equipment

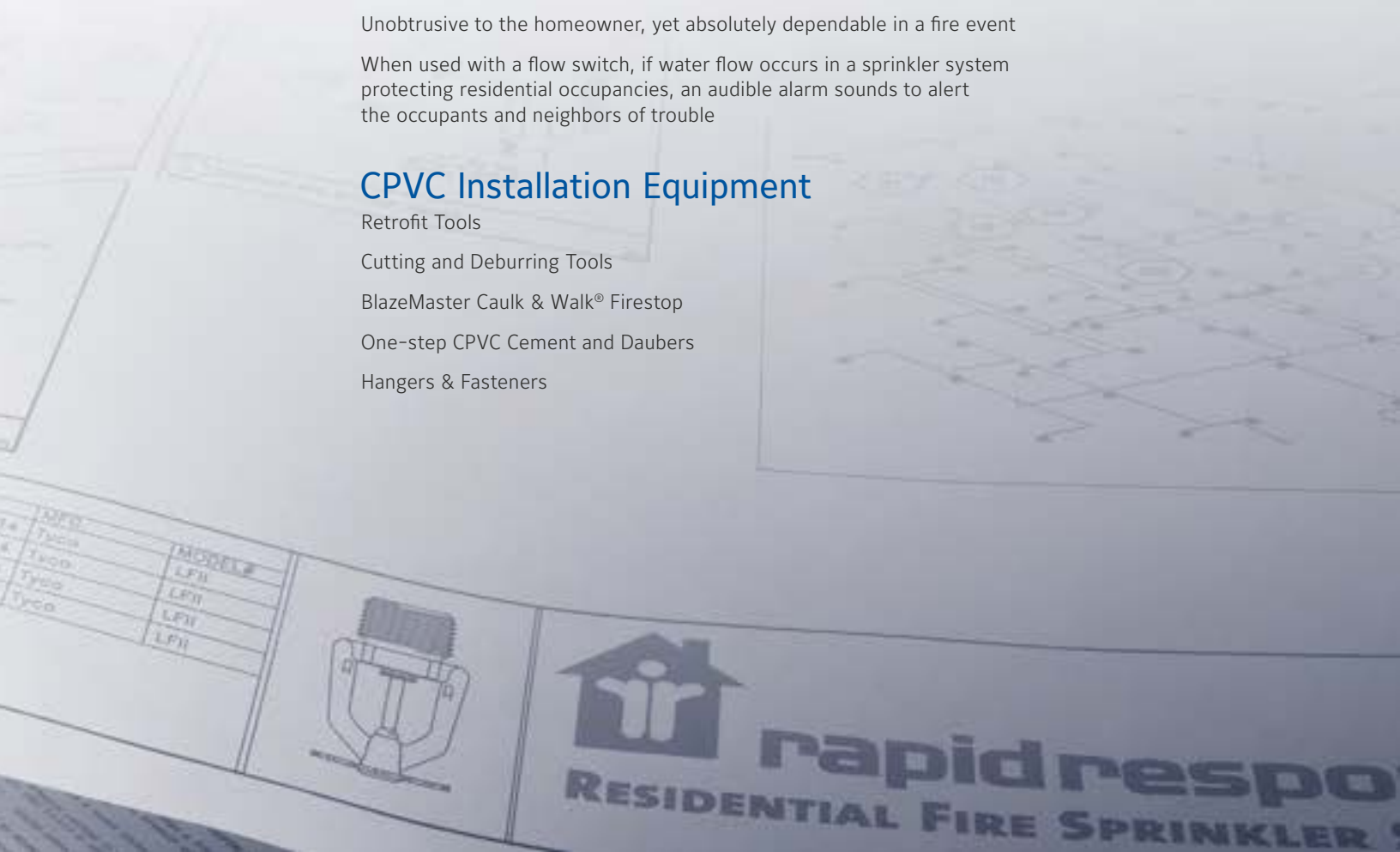
Retrofit Tools

Cutting and Deburring Tools

BlazeMaster Caulk & Walk® Firestop

One-step CPVC Cement and Daubers

Hangers & Fasteners



## Global Strength. Local Expertise. At Your Service.

### North America

1400 Pennbrook Parkway  
Lansdale, PA, 19446, USA  
Tel: +1 215 362 0700  
1 800 558 5236

### Europe

Kopersteden 1  
Enschede, Overijssel 7547 TJ  
The Netherlands  
+31 (0) 53 428 4444

### Middle East

Internet City, Office Park Building  
Block D, Floor 3  
Dubai, United Arab Emirates  
+971 4455 0700

### Asia Pacific

2 Serangoon North Avenue 5  
#07-01  
Singapore 554911  
+65 6577 4360

[www.tyco-rapidresponse.com](http://www.tyco-rapidresponse.com)