tuco Fire Suppression & Building Products

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FASTFLEX Model YN25, YB25, and YB28 Flexible Sprinkler Hose 700 mm to 3700 mm Nominal Assembly Lengths

General Description

The Tyco[®] **FASTFLEX** is a unique sprinkler drop assembly comprised of the following: branchline adapter nipple, stainless steel flexible hose with two slip nuts, sprinkler reducer, and lightweight ceiling bracket components. (Refer to Figure 1.)

Using **FASTFLEX** can save time and costs since the system can be installed in false ceilings without cutting and threading pipes associated with installing a drop, armover, and elbows. **FASTFLEX** makes it possible to test and charge the system with water before the ceiling grid is installed. Once the ceiling grid is in position, the **FASTFLEX** hoses can be reshaped to suit the final sprinkler location without draining the system.

FASTFLEX flexible sprinkler hose is installed quickly without large and expensive tools. Ideal projects are offices, schools, libraries, hospitals, and shopping complexes. **FASTFLEX** sprinkler hoses are for use on wet pipe sprinkler systems only.

FASTFLEX offers the following features:

- Reduced labor costs. Using FAST-FLEX will reduce labor costs by increasing efficiency. The installation rate is two to three times quicker when compared to traditional fitting methods of installing sprinkler drops.
- Reduced need to recut sprinkler drops. It is not necessary to adjust sprinkler location if ceiling alignment and level are changed.
- More convenient work flow. Using FASTFLEX eases bending and maneuvering around ducts and trays in congested spaces and for unusual ceiling types and curved plasterboard ceilings.

- **Construction advantage.** Adjustments can be made to ceiling levels after installation without impacting sprinklers and drops.
- Equipment cost savings. Using FASTFLEX reduces cost by eliminating pipe wastage and reducing the labor associated with cutting, threading, and sealing pipe threads.

NOTICE

The **FASTFLEX** flexible sprinkler hoses described herein must be installed and maintained in compliance with this document and with the applicable standards recognized by the Approval agency, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.



Technical Data

Approvals

LPCB, VdS, FM, and UL (Specific details for laboratory approvals are given in Table A, and the approvals apply to the service conditions indicated in the applicable Design Criteria sections on pages 6 and 7.)

APSAD accepted per Table A.

CSTB accepted for all models and assembly lengths.

Inlet Connections (Ref Fig. 1)

- ISO 7/1-R 1
- ISO 7/1-R 1-1/4

Outlet Connections (Ref Fig. 2)

- ISO 7/1-Rc 3/8
- 1/2 inch NPT
- 3/4 inch NPT

Nominal Assembly Lengths Refer to Table A.

Construction (Ref. Fig. 1)

The Inlet Nipple is mild steel, and the Flexible Hose is SS AISI 304. The connection at each end of the Flexible Hose utilizes a brass Slip Nut, NBR/CR o-ring, and Nylon W6 washer. The Sprinkler Reducer is mild steel. The Reducer Bracket, Bar Fixing Clamps, and Support Bar are pressed steel.





				LPCB			VdS			FM			UL*			APSAD	**
		Assembly Type Length in Millimeters	50 a Bar F	and 90 Fixing C	mm Clamp	50 a Bar F	and 90 Tixing (mm Clamp	50 a Bar F	and 90 Fixing C	mm Clamp	Bar F	50 mm	i Clamp	50 a Bar F	and 90 Fixing (mm Clamp
Model	Туре		Sprinkler Reducer Type		Sprinkler Reducer Type		Sprinkler Reducer Type		Sprinkler Reducer Type		Sprinkler Reducer Type						
			0 °	45°	90°	0 °	45°	90°	0 °	45°	90°	0 °	45°	90°	0 °	45°	90°
YN25-700	Un-braided	700	×	×	×				i	<u> </u>		x			x		†
YN25-1000	Un-braided	1000	х	x	x							х			х		1
YN25-1200	Un-braided	1200	x	x	x							х			x		
YN25-1500	Un-braided	1500	х	x	x							х			х		
YN25-1800	Un-braided	1800	х	x	x							х					
YN25-2000	Un-braided	2000	х	x	x												
YN25-2500	Un-braided	2500	х	x	x							i –					
YN25-2700	Un-braided	2700	х	x	x												
YN25-3100	Un-braided	3100	х	х	x							İ –					
YN25-3700	Un-braided	3700	х	x	x							Í					
YB25-700	Braided	700				х	x	x		<u> </u>		х				Ì	<u> </u>
YB25-1000	Braided	1000	i —			х	х	x				х					
YB25-1200	Braided	1200		İ –		х	x	x				х	İ			1	
YB25-1500	Braided	1500	i —			х	х	x				х					
YB25-1800	Braided	1800				х	x	x				х					
YB25-2000	Braided	2000				х	х	x									
YB25-2500	Braided	2500	i —			х	x	x									
YB25-700	Braided-FM	700							x	Ì						Ì	<u> </u>
YB25-1000	Braided-FM	1000							х								
YB25-1200	Braided-FM	1200							х								
YB25-1500	Braided-FM	1500							х								
YB25-1800	Braided-FM	1800							х								
YB25-2000	Braided-FM	2000							х								
YB25-2500	Braided-FM	2500		1					х								
YB28-700	Braided	700	Î	İ		x	x	x		<u> </u>		x		<u> </u>	x	İ	†
YB28-1000	Braided	1000				х	x	x				х			х		
YB28-1200	Braided	1200				х	x	x		<u> </u>		х			х		
YB28-1500	Braided	1500				х	х	x				х			х		
YB28-1800	Braided	1800				х	x	x		İ —		х					
YB28-2000	Braided	2000	i –			х	x	x	i —			i –					
YB28-2500	Braided	2500	i —	İ	İ	х	x	x		1			İ			İ	
YB28-700	Braided - FM	700		<u> </u>					x							<u> </u>	<u> </u>
YB28-1000	Braided - FM	1000							x								<u> </u>
YB28-1200	Braided - FM	1200							x								1
YB28-1500	Braided - FM	1500							x								1
YB28-1800	Braided - FM	1800							x								1
YB28-2000	Braided - FM	2000							x								1
YB28-2500	Braided - FM	2500							x								+

x Indicates Listed or Approved as applicable.

* UL Listing is based on the use of the ISO 7/1-R 1 Inlet Connection.

** Acceptance by APSAD is based on using the LPCB, VdS, FM, or UL Design Criteria as may be acceptable to the authority having jurisdiction.

TABLE A FASTFLEX SPRINKLER HOSE ASSEMBLY – MODELS, ASSEMBLY LENGTHS, AND APPROVALS –



LPCB - Design Criteria

- Refer to Table A for Model, Nominal Assembly Length, and Sprinkler Reducer combinations.
- Wet-pipe systems only.
- Maximum service pressure of 16 bar.
- Pendent sprinklers with nominal K57, K80, or K115.
- Maximum ambient temperature of 148°C for YN25.
- Approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. They may be used in applications where little or mo differential movement between the two ends is expected after installation (e.g., supply to single sprinklers in suspended ceilings).
- Approved for the following locations:

Assembly Length in Millimeters	Pre-Calculated Town Mains	Pre-Calculated Pumps	Fully Hydraulically Calculated
Up to 700	Yes	Yes	Yes
Up to 1200	No	Yes	Yes
Up to 3700	No	No	Yes

- All pipe work supplying **FASTFLEX** in pre-calculated systems shall be sized as distribution mains.
- In suspended ceilings **FASTFLEX** must be installed in accordance with this data sheet.
- In suspended ceiling, sprinkler reducer must be connected to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.
- Minimum bend radius of 55 mm.
- LPCB Friction Loss for YN25.

Assembly Length in Millimeters	Number of 90° Bends	Equivalent Length* of DN25 Sch. 40 Pipe at C=120 in Meters
700	2	8,9
1000	2	13,5
1200	2	11,9
1500	2	18,7
1800	3	24,7
2000	3	20,7
2500	3	21,7
2700	3	24,2
3100	3	25,9
3700	3	30,3

 * Add 2,3 meters when using a 45° or 90° sprinkler reducer.

VdS - Design Criteria

- Refer to Table A for Model, Nominal Assembly Length, and Sprinkler Reducer combinations.
- Wet-pipe systems only.
- Maximum service pressure of 16 bar.
- Pendent sprinklers with nominal K57, K80, or K115.
- Maximum ambient temperature of 107°C for YB25 and YB28.
- Approved for use only in the following suspended ceilings:

Odenwald Systems- S3 & S15

Richter Systems- 11.1 - 11.5

Armstrong Systems- Board and Tegular with panel type "Prima Sahara"

API Systems- 15/38, 24/38, 24/60, 35/38, and 35/60 with panel type of a.m.

VdS Friction Loss

For compensation of pressure loss, the nominal assembly length is to be multiplied by 12. The resulting length will provide pressure drop in equivalent length DN20 (26,9 x 2,3 mm) seamless metal tube per DIN 2448.

- Add 2,3 m when using a 45° or 90° sprinkler reducer.
- Minimum bend radius of 55 mm.
- The tube assembly may not have more than one 90° bend or four 15° bends.

FM - Design Criteria

- Refer to Table A for Model, Nominal Assembly Length, and Sprinkler Reducer combinations.
- Wet-pipe systems only.
- Maximum service pressure of 12 bar.
- Pendent sprinklers with a maximum K80 (K5.6) for 1/2 inch NPT or maximum K115 (K8.0) for 3/4 inch NPT.
- Maximum ambient temperature of 107°C for Model YB25 and YB28.
- These connections are designed for use in ceilings with grids that meet ASTM C 635 (Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings) and ASTM C 636 (Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels) referenced by IBC. The three structural classifications are the following: Intermediate-Duty Systems and Heavy-Duty Systems. These connections have been approved for use in all Intermediate-Duty and Heavy-Duty structural classifications.
- Minimum bend radius of 150 mm for Model YB28 or 200 mm for Model YB25.
- FM Friction Loss for YB25 and YB28:

			YB25	YB28
Assembly Length in Millimeters	Outlet (NPT)	Number of 90° Bends	Equivalent Length of DN25 Sch. 40 Pipe at C=120 in Meters	Equivalent Length of DN25 Sch. 40 Pipe at C=120 in Meters
	1/0	0	3,9	1,1*
700	1/2	1	5,7	1,1*
700	2/4	0	3,9*	1,1*
	3/4	1	8,3*	1,6*
	1/0	0	5,7*	1,7
1000	1/2	1	7,5*	1,7
1000	2/4	0	5,7*	1,7
	3/4	1	9,7*	2,2
	1/0	0	6,8*	2,0*
1000	1/2	1	8,6*	2,1*
1200	0/4	0	7,1*	2,1*
	3/4	1	10,6*	2,6*
	1/2	0	8,6*	2,5*
1500		1	10,4*	2,7*
1500	2/4	0	9,3*	2,7*
	3/4	1	12,3*	3,2*
	1/0	0	10,3*	3,0*
1000	1/2	1	12,1*	3,2*
1800	2/4	0	11,0*	3,2*
	3/4	1	14,4*	3,8*
	1/0	0	11,5*	3,3*
0000	1/2	1	13,3*	3,6*
2000	2/4	0	12,5*	3,6*
	3/4	1	15,5*	4,2*
	1/0	0	14,4	4,1
2500	1/2	1	16,2	4,6
2000	2/4	0	16,2*	4,6
	3/4	1	18,3*	5,2
*App	proximate	e value bas	ed on interpolation	and extrapolation.

UL - Design Criteria

- Refer to Table A for Model, Nominal Assembly Length, and Sprinkler Reducer combinations.
- Wet-pipe systems only.
- The hose and fittings have limited flexibility and are intended for direct connection to sprinklers in accordance with NFPA 13, 13D, or 13R.
- Maximum service pressure of 13 bar.
- Pendent sprinklers with a maximum K80 (K5.6) for 1/2 inch NPT or maximum K115 (K8.0) for 3/4 inch NPT.
- Maximum ambient temperature of 107°C for Model YB25 and YB28, or maximum ambient temperature of 148°C for Model YN25.
- These connections are designed for use in ceilings with grids that meet ASTM C 635 (Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings) and ASTM C 636 (Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels) referenced by IBC. The three structural classifications are the following: Intermediate-Duty Systems and Heavy-Duty Systems. These connections have been approved for use in all Intermediate-Duty and Heavy-Duty structural classifications.

		Maximum	YN25 and YB25	YB28		
Assembly Length in Millimeters	Outlet (NPT)	Number of 90° Bends*	Equivalent Length of DN25 Sch. 40 Pipe at C=120 in Meters	Equivalent Length of DN25 Sch. 40 Pipe at C=120 in Meters		
700	1/2	2	6,7	3,0		
700	3/4	2	8,5	4,9		
1000	1/2	2	9,8	4,9		
1000	3/4	2	11,6	7,0		
1000	1/2	2	12,5	6,1		
1200	3/4	2	14,6	7,6		
1500	1/2	2	14,9	7,0		
1500	3/4	2	16,5	8,5		
		2	18,3	7,9		
1000	1/2	3	20,4	9,8		
1800	1800 2	2	20,4	10,1		
	3/4	3	22,6	11,6		

• Minimum bend radius of 76 mm.

* Information in this column indicates the maximum number of allowable bends and that hoses are installed with at least one bend.

Installation

The Tyco[®] **FASTFLEX** Flexible Sprinkler Hose as shown in Figure 1, is to be installed with the following instructions.

NOTICE

Flexible Hoses are intended only to connect sprinklers directly to system piping; for an example, refer to Figure 1. Flexible Hoses cannot be joined together to form longer hoses. Joining Flexible Hoses together creates an assembly with "unknown performance" that has not been accounted for in system calculations or safe product performance.

Step 1. Review the Design Criteria section that applies to the Approval agency recognized by the authority having jurisdiction, as well as Figure 3 that provides "Installation Guidance".

Step 2. Determine the approximate place where the sprinkler will be located. The Support Bar is 700 mm long and shall be mounted on the 600 mm width of the ceiling grid. The sprinkler should be located as close as possible to the center of the distance between ceiling grid t-bars.

Step 3. Slide the Reducer Bracket onto the Support Bar. Loosely attach the Reducer Bracket and the two Bar Fixing Clamps on the Support Bar and place the Bar Fixing Clamps such that the Support Bar crosses the location where the sprinkler will be located.

Step 4. Attach one end of the Flexible Hose onto the sprinkler reducer. Applying the wrench to the Slip Nut, and not to the Flexible Hose, tighten to a maximum torque of 35 Nm.

Step 5. Attach the Inlet Nipple on to the branch line. Ensure that the arrow is in the appropriate direction of flow to the sprinkler and to use pipe thread sealant at the connection to the branch line.

Attach one end of the Flexible Hose on to the Inlet Nipple. Applying the wrench to the Slip Nut, and not to the Flexible Hose, tighten to a maximum torque of 35 Nm. Do not twist the Flexible Hose.

Step 6. Bend the Flexible Hose into a curve(s) that locates the Sprinkler Reducer at the other end of the Flexible Hose in the area where the sprinkler will be located. The tube arc should not be twisted, and the arc should be as large and smooth as possible.

NOTICE

For minimum bend criteria, refer to the Design Criteria section that applies to the Approval agency recognized by the authority having jurisdiction.

A bend radius smaller than provided by the minimum bend criteria may adversely effect the friction loss specifications stated by the approval laboratory.

For assembly lengths greater than 1800 mm the Flexible Hose shall be supported to the structure to ensure that the maximum unsupported length does not exceed 1800 mm. In these cases, it is recommended that the tube be secured to a fixed mounting point every 600 mm, in order to provide a more stable installation.

For installations per LPCB, all bends greater than 45° shall be fitted with a MRI55 Plastic Clip Minimum Radius Indicator (Refer Figure 4).

Step 7. Insert the Sprinkler Reducer into the Reducer Bracket. Locate the Reducer Bracket and Sprinkler Reducer where the sprinkler will be, and loosely tighten the Butterfly Bolt on the Reducer Bracket.

Step 8. Attach the sprinkler to the Sprinkler Reducer. Put a wrench on the Sprinkler Reducer to counteract the tightening torque and prevent the Flex-ible Hose from twisting. Reference the sprinkler manufacturer's sprinkler data sheet for appropriate sprinkler tightening torque, sprinkler wrench, and other guidance.

Step 9. Verify that the Sprinkler Reducer is seated in the Reducer Bracket. Precisely locate the sprinkler in all three axes in accordance with the sprinkler manufacturer's data sheet. Tighten the Butterfly Bolts on the Bar Fixing Clamps and the Reducer Bracket. The tightening torque for the Bar Fixing Clamp fastener is 4,5 to 5,7 Nm, and the tightening torque for the Reducer Bracket fastener, is a minimum of 2,3 Nm.

Step 10. After tightening all the Butterfly Bolts, verify that the sprinkler is properly located in accordance with the manufacture's instructions. If not, loosen the Butterfly Bolts and readjust as required.

Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the authorities having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

NOTICE

Before closing a fire protection system control valve for inspection or maintenance work on the fire protection system that it controls, permission to shut down the effected fire protection system must first be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.



Limited Warranty

Products manufactured by Tyco Fire Suppression & Building Products (TFSBP) are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by TFSBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFSBP or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with the standards recognized by the Approval agency, as well as the standards of any other Authorities Having Jurisdiction. Materials found by TFSBP to be defective shall be either repaired or replaced, at TFSBP's sole option. TFSBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFSBP shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

In no event shall TFSBP be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether TFSBP was informed about the possibility of such damages, and in no event shall TFSBP's liability exceed an amount equal to the sales price.

The foregoing warranty is made in lieu of any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.

Ordering Procedure

When placing an order, indicate the full product name. Contact your local distributor for availability.

Flexible Hose Assembly*

Specify: Model (from Table A) **FASTFLEX** Flexible Hose Assembly with (specified) length, and (50 or 90 mm) Bar Fixing Clamps, P/N (specify):

*The FASTFLEX Flexible Hose Assembly includes the following items:

- Flexible Hose
- Inlet Nipple, ISO 7/1-R 1
- Straight Sprinkler Reducer, 1/2" NPT
- Reducer Bracket
- Bar Fixing Clamps
- Support Bar

Model YN25, Un-braided, 50 mm Clamps

(LPCB to 3700 mm, UL to 1800 mm, and APSAD to 1500 mm; Refer to Table A for details)

700	P/N YN250700
1000	P/N YN251000
1200	P/N YN251200
1500	P/N YN251500
1800	P/N YN251800
2000	P/N YN252000
2500	P/N YN252500
2700	P/N YN252700
3100	P/N YN253100
3700	P/N YN253700

Model YN25, Un-braided, 90 mm Clamps

(LPCB to 3700 mm and APSAD to 1500 mm; Refer to Table A for details)

700 P/N YN250700C
1000 P/N YN251000C
1200 P/N YN251200C
1500 P/N YN251500C
1800 P/N YN251800C
2000 P/N YN252000C
2500 P/N YN252500C
2700 P/N YN252700C
3100P/N YN253100C
3700 P/N YN253700C

Model YB28, Braided, 50 mm Clamps

(VdS to 2500 mm, UL to 1800 mm, and APSAD to 1500 mm; Refer to Table A for details)

'00P/N YB280/00	
000P/N YB281000	
200P/N YB281200	
500P/N YB281500	
800P/N YB281800	
2000 P/N YB282000	
2500 P/N YB282500	

Model YB28, Braided - FM, 50 mm Clamps

(FM to 2500 mm; Refer to Table A for details)
700P/N YB280700-F
1000P/N YB281000-F
1200P/N YB281200-F
1500P/N YB281500-F
1800P/N YB281800-F
2000P/N YB282000-F
2500P/N YB282500-F

Inlet Nipple

Specify: (25 mm or 28 mm) hose thread **FASTFLEX** Inlet Nipple with (ISO 7/1-R1 or ISO 7/1-R1-1/4) inlet thread connection, P/N (specify):

25 mm	Hose	Thread

ISO 7/1-R 1	P/N HOSENIP25
ISO 7/1-R 1-1/4	P/N HOSENIP25R
28 mm Hose Thread	
ISO 7/1-R 1	P/N HOSENIP28
ISO 7/1-R 1-1/4	P/N HOSENIP28R

Sprinkler Reducer

Specify: (Straight, 45 Degree, or 90 Degree) for (25 mm or 28 mm hose threads) **FASTFLEX** Sprinkler Reducer with (ISO 7/1-Rc 3/8, 1/2 inch NPT, or 3/4 inch NPT) outlet thread connection, P/N (specify):

Straight

25 mm Hose Thread	
ISO 7/1-Rc 3/8	P/N PBR120
1/2 inch NPT	P/N RBR120
3/4 inch NPT	P/N SBR120

28 mm Hose Thread

ISO 7/1-Rc 3/8	P/N PBR28120
1/2 inch NPT	P/N RBR28120
3/4 inch NPT	P/N SBR28120

45 Degree

25 mm Hose Thread	
ISO 7/1-Rc 3/8	P/N PBAR45
1/2 inch NPT	P/N RBAR45
3/4 inch NPT	P/N SBAR45
28 mm Hose Thread	
ISO 7/1-Rc 3/8	P/N PB28AR45
1/2 inch NDT	

1/2 inch NPT	. P/N RB28AR45
3/4 inch NPT	P/N SB28AR45

90 Degree

25 mm Hose Thread	
ISO 7/1-Rc 3/8	P/N PBAR90
1/2 inch NPT	P/N RBAR90
3/4 inch NPT	P/N SBAR90
28 mm Hose Thread	
28 mm Hose Thread ISO 7/1-Rc 3/8	P/N PB28AR90
28 mm Hose Thread ISO 7/1-Rc 3/8 1/2 inch NPT	P/N PB28AR90 P/N RB28AR90

Bar Fixing Clamps

Specify: **FASTFLEX** (50 mm or 90 mm) Bar Fixing Clamps, P/N (specify):

50 mm.												P/N RBF58T
90 mm.												P/N RBF90T

Minimum Radius Indicator

Specify: MRI55 Plastic Clip Minimum Radius Indicator of 55 mm to be attached to Sprinkler Hose YN25, P/N MRI55.

Note: For installations per LPCB, all bends greater than 45° shall be fitted with a MRI55 Plastic Clip Minimum Radius Indicator. (Refer to Figure 4.)

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