

Series TY-B — 5.6 and 8.0 K-factor Extended Coverage Horizontal Sidewall Sprinklers Standard Response (Light Hazard)

General Description

The Series TY-B, 5.6, and 8.0 K-factor, Extended Coverage Horizontal Sidewall Sprinklers are extended coverage, decorative 5 mm glass bulb type spray sprinklers designed for use in hydraulically calculated sprinkler systems in light hazard, commercial occupancies such as churches, restaurant seating areas, hotels, educational facilities, offices, etc. With their coverage up to 16 feet (4.9 m) wide by 24 feet (7.3 m) long, they are designed for installation along a wall or the side of a beam and just beneath a smooth and level ceiling. Horizontal sidewall sprinklers are commonly used instead of pendent or upright sprinklers because of aesthetics or building construction considerations, where piping across the ceiling is not desirable.

The recessed version of the Series TY-B Extended Coverage Horizontal Sidewall Sprinkler utilizes either a two-piece Style 10 (1/2 inch NPT) or Style 40 (3/4 inch NPT) Recessed Escutcheon with 1/2 inch (12,7 mm) of recessed adjustment or up to 3/4 inch (19,1 mm) of total adjustment from the flush sidewall position, or a two-piece Style 20 (1/2 inch NPT) or Style 30 (3/4 inch NPT) Recessed Escutcheon with 1/4 inch (6,4 mm) of recessed adjustment or up to 1/2 inch (12,7 mm) of total adjustment from the flush sidewall position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe lengths to the sprinklers must be cut.

Corrosion resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion resistant coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible cor-

rosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these corrosion resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

WARNINGS

The Series TY-B Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity 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 relative to any questions.

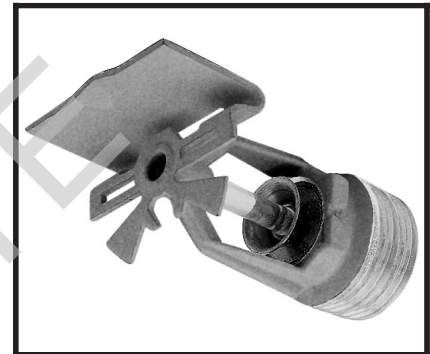
Model/Sprinkler Identification Numbers

TY3352 - EC HSW, 5.6K, 1/2" NPT
TY4352 - EC HSW, 8.0K, 3/4" NPT

Technical Data

Approvals

UL and C-UL Listed.
FM and NYC Approved.
(Refer to Table A for complete approval information including corrosion resistant status, as well as the Design Criteria Section pertaining to special design considerations.)



Maximum Working Pressure
175 psi (12,1 bar)

Discharge Coefficient
K = 5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})
K = 8.0 GPM/psi^{1/2} (115,2 LPM/bar^{1/2})

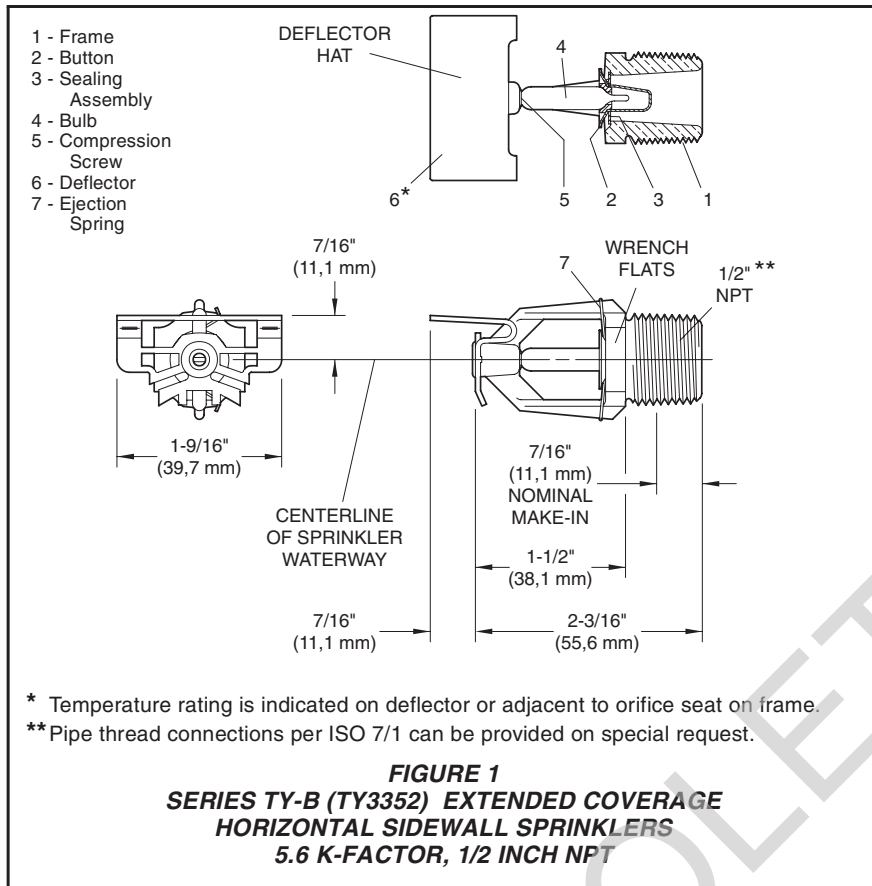
Temperature Ratings
Refer to Table A

Finishes

Sprinkler: Refer to Table A
Recessed Escutcheon: White Coated or Chrome Plated. (Other colors are available on request.)

Physical Characteristics

Frame	.....	Bronze
Button	.....	Brass/Copper
Sealing Assembly	.....
.....	.....	Beryllium Nickel w/Teflon†
Bulb	.....	Glass
Compression Screw	.....	Bronze
Deflector	.....	Copper



Operation

The glass Bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass Bulb, which then allows the sprinkler to activate and water to flow.

Design Criteria

The Series TY-B Extended Coverage Horizontal Sidewall Sprinklers must be installed and utilized in Light Hazard Occupancies, under smooth level ceilings as outlined in the applicable installation standard recognized by the Approval Agency (e.g., UL recognizes NFPA 13, and FM recognizes the FM Loss Prevention Data Sheets). Only the Style 10, 20, 30, or 40 Recessed Escutcheon, as applicable, is to be used for recessed installations.

Installation

The Series TY-B Sprinklers must be installed in accordance with the following instructions:

NOTES

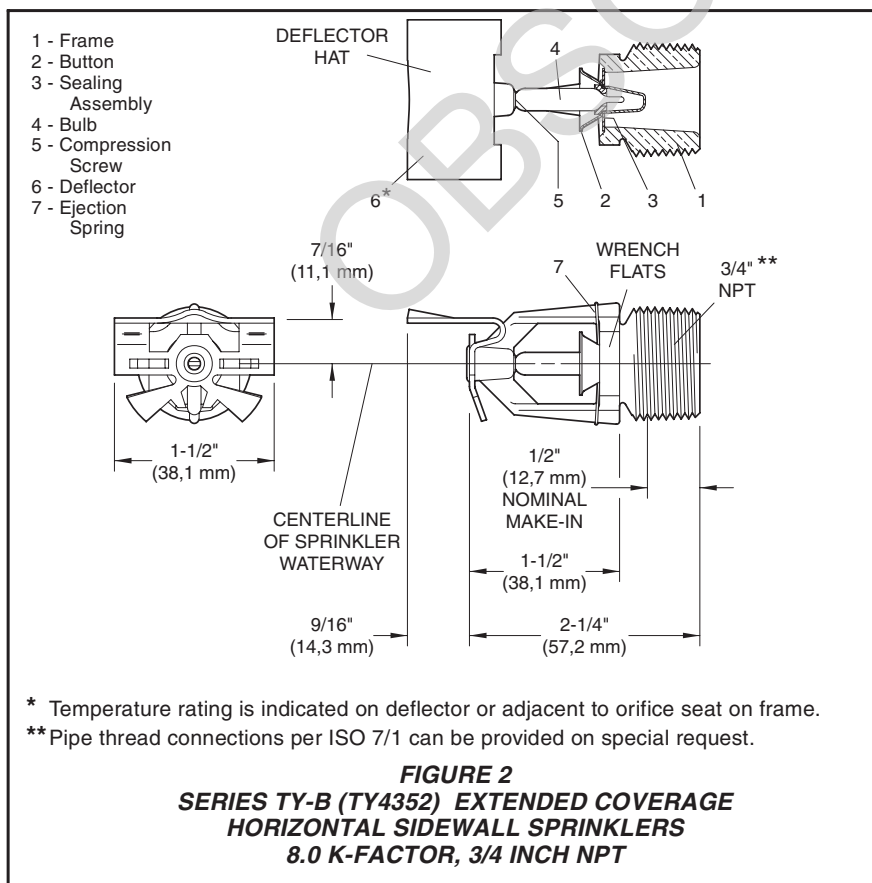
Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm).

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). A maximum of 21 ft. lbs. (28,5 Nm) of torque may be used to install sprinklers with 1/2 NPT connections. A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.lbs. (13,4 to 26,8 Nm). A maximum of 30 ft.lbs. (40,7 Nm) of torque is to be used to install sprinklers with 3/4 NPT connections. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Do not attempt to make-up for insufficient adjustment in the escutcheon plate by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

The **Series TY-B EC Sidewall Sprinklers** must be installed in accordance with the following instructions.

Step 1. Horizontal sidewall sprinklers are to be installed with their centerline



K	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 5)		
				NATURAL BRASS	CHROME PLATED	POLYESTER COATED***
5.6 1/2" NPT	EC HSW (TY3352)	135°F/57°C	Orange	1, 2, 3, 4		
		155°F/68°C	Red	1, 2, 4		
5.6 1/2" NPT	RECESSED EC HSW* (TY3352)	135°F/57°C	Orange	1, 2, 4		
		155°F/68°C	Red	1, 2, 4		
5.6 1/2" NPT	RECESSED EC HSW** (TY3352)	135°F/57°C	Orange	1, 2, 3, 4		
		155°F/68°C	Red	1, 2, 4		
8.0 3/4" NPT	EC HSW (TY4352)	135°F/57°C	Orange	1, 2, 3, 4		
		155°F/68°C	Red	1, 2, 4		
8.0 3/4" NPT	RECESSED EC HSW* (TY4352)	135°F/57°C	Orange	1, 2, 3, 4		
		155°F/68°C	Red	1, 2, 4		
8.0 3/4" NPT	RECESSED EC HSW** (TY4352)	135°F/57°C	Orange	1, 2, 3, 4		
		155°F/68°C	Red	1, 2, 4		

NOTES:

1. Listed by Underwriters Laboratories, Inc. (UL) per Table B.
 2. Listed by Underwriters Laboratories, Inc. for use in Canada per Table B.
 3. Approved by Factory Mutual Research Corporation (FM) per Table C.
 4. Approved by the City of New York under MEA 354-01-E.
 5. Where Polyester Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed Corrosion Sprinklers.
- * Installed with Style 10 (1/2" NPT) or Style 40 (3/4" NPT) 3/4" Total Adjustment Recessed Escutcheon, as applicable.
- ** Installed with Style 20 (1/2" NPT) or Style 30 (3/4" NPT) 1/2" Total Adjustment Recessed Escutcheon, as applicable.
- *** White or Any Color (Frame and Deflector only).

TABLE A
LABORATORY LISTINGS AND APPROVALS
(Refer to the Design Criteria Section)

perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the deflector is to face towards the ceiling.

Step 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 7). With reference to Figures 1 and 2, the W-Type 6 Sprinkler Wrench is to be applied to the sprinkler wrench flats.

The **Series TY-B Recessed EC Sidewall Sprinklers** must be installed in accordance with the following instructions.

Step A. Horizontal sidewall sprinklers are to be installed with their centerline perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the deflector is to face towards the ceiling.

Step B. After installing the Style 10, 20, 30, or 40 Mounting Plate, as applicable, over the sprinkler threads and with pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step C. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Ref.

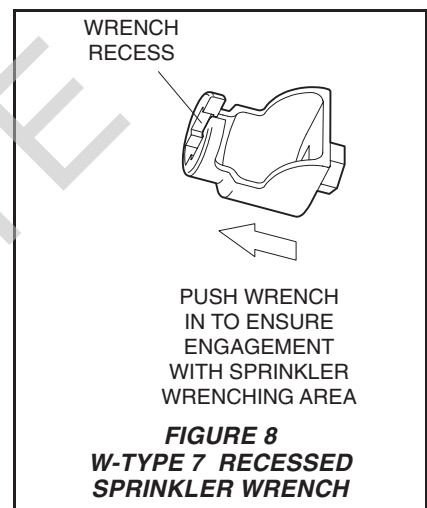
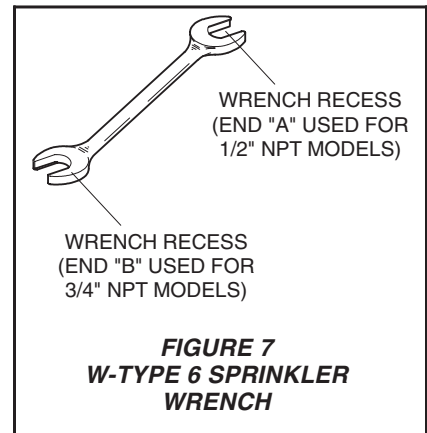


Figure 8). With reference to Figure 1 or 2, the W-Type 7 Recessed Sprinkler Wrench is to be applied to the sprinkler wrench flats.

Step D. After the wall has been installed or the finish coat has been applied, slide on the Style 10, 20, 30, or 40 Closure over the Series TY-B Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the wall.

5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3352)

Response Rating	Coverage Area ⁽¹⁾ , Ft. x Ft. (m x m)	Minimum Flow ⁽²⁾ , GPM (LPM)	Minimum Pressure ⁽²⁾ , PSI (BAR)	Deflector-To-Ceiling Distance ⁽³⁾ , In. (mm)	Sprinkler Temperature Rating, °F	Minimum Spacing ⁽⁴⁾ , Ft. (m)
Standard	16 x 16 (4,9 x 4,9)	26 (98)	21.6 (1,48)	4 to 12 (100 to 300)	135, 155	10 (3,1)
Standard	16 x 18 (4,9 x 5,5)	29 (110)	26.8 (1,85)	4 to 12 (100 to 300)	135, 155	10 (3,1)
Standard	16 x 20 (4,9 x 6,1)	32 (121)	32.7 (2,25)	4 to 6 (100 to 150)	135, 155	10 (3,1)
Standard	16 x 22 (4,9 x 6,7)	35 (133)	39.1 (2,70)	4 to 6 (100 to 150)	135	10 (3,1)

8.0 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY4352)

Response Rating	Coverage Area ⁽¹⁾ , Ft. x Ft. (m x m)	Minimum Flow ⁽²⁾ , GPM (LPM)	Minimum Pressure ⁽²⁾ , PSI (BAR)	Deflector-To-Ceiling Distance ⁽³⁾ , In. (mm)	Sprinkler Temperature Rating, °F	Minimum Spacing ⁽⁴⁾ , Ft. (m)
Standard	16 x 16 (4,9 x 4,9)	26 (98)	10.6 (0,73)	4 to 12 (100 to 300)	135, 155	10 (3,1)
Standard	16 x 18 (4,9 x 5,5)	29 (110)	13.1 (0,90)	4 to 12 (100 to 300)	135, 155	10 (3,1)
Standard	16 x 20 (4,9 x 6,1)	32 (121)	16.0 (1,10)	4 to 6 (100 to 150)	135	10 (3,1)
Standard	16 x 20 (4,9 x 6,1)	33 (125)	17.0 (1,17)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 22 (4,9 x 6,7)	35 (133)	19.1 (1,32)	4 to 6 (100 to 150)	135	10 (3,1)
Standard	16 x 22 (4,9 x 6,7)	36 (136)	20.3 (1,59)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 24 (4,9 x 7,3)	39 (148)	23.8 (1,64)	4 to 6 (100 to 150)	135	10 (3,1)
Standard	16 x 24 (4,9 x 7,3)	40 (151)	25.0 (1,72)	4 to 12 (100 to 300)	135	10 (3,1)

NOTES

1. Backwall (where sprinkler is located) by sidewall (length of throw).
2. Requirement is based on minimum flow in GPM from each sprinkler. The indicated residual pressures are based on the nominal K-factor.
3. The centerline of the sprinkler waterway is located 7/16 inch (11,1 mm) below the deflector (Ref. Figures 1 and 2).
4. Minimum spacing is for lateral distance between sprinklers located along a single wall. Otherwise adjacent sprinklers (i.e. sidewall sprinklers on an adjacent wall, on an opposite wall, or pendent sprinklers) must be located outside of the maximum listed protection area of the extended coverage sidewall sprinkler being utilized.

TABLE B
UL AND C-UL LISTING COVERAGE AND FLOW RATE CRITERIA

5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3352)

Response Rating	Coverage Area ⁽¹⁾ , Ft. x Ft. (m x m)	Minimum Flow ⁽²⁾ , GPM (LPM)	Minimum Pressure ⁽²⁾ , PSI (BAR)	Deflector-To-Ceiling Distance ⁽³⁾ , In. (mm)	Sprinkler Temperature Rating, °F	Minimum Spacing ⁽⁴⁾ , Ft. (m)
Standard	16 x 16 (4,9 x 4,9)	26 (98)	22 (1,51)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 18 (4,9 x 5,5)	30 (114)	29 (2,00)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 20 (4,9 x 6,1)	33 (125)	35 (2,41)	4 to 12 (100 to 300)	135	10 (3,1)

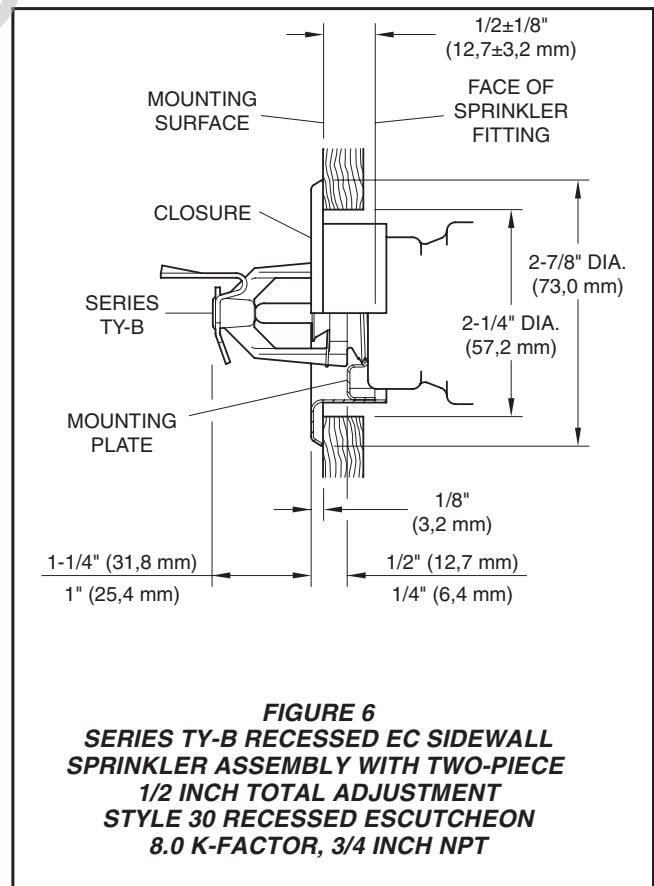
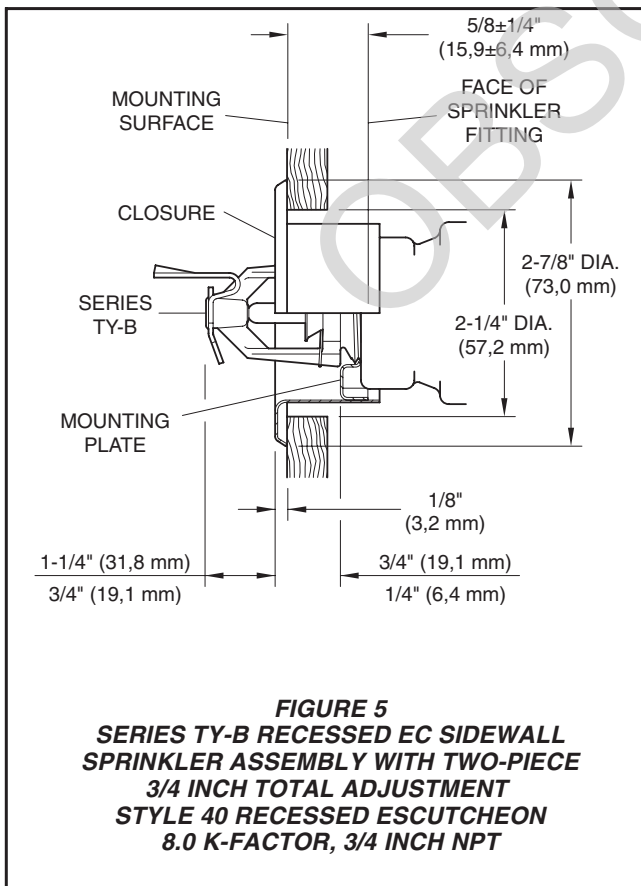
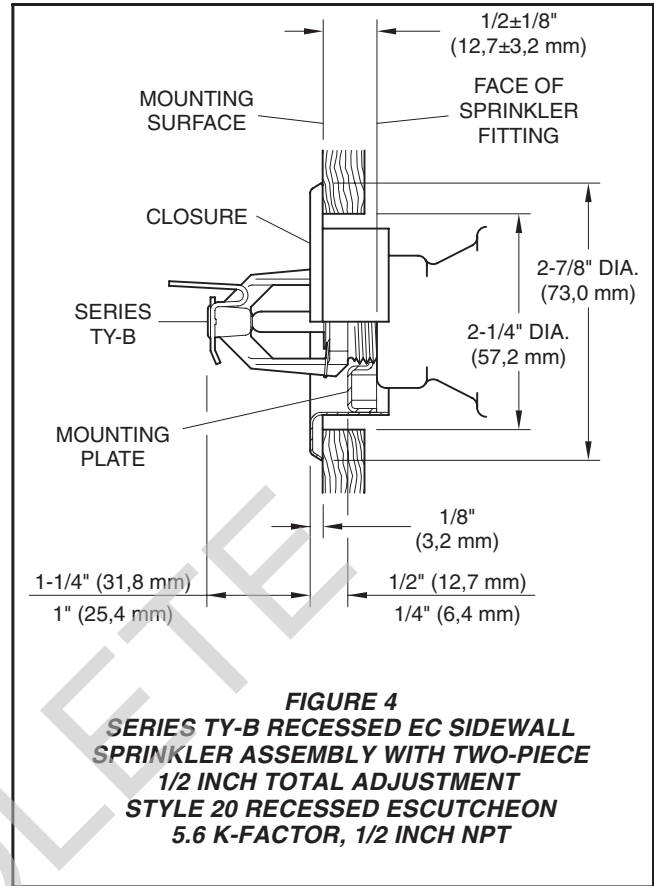
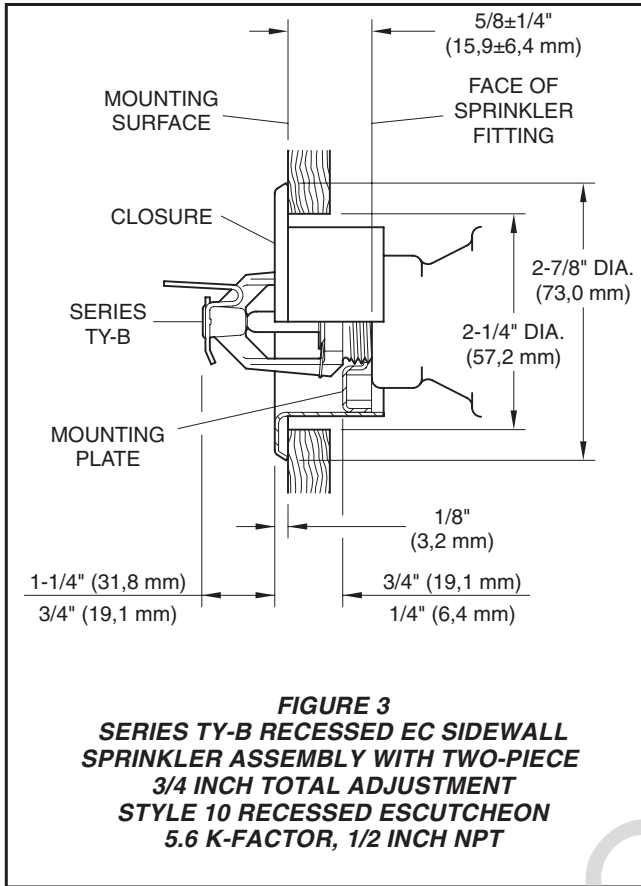
8.0 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY 4352)

Response Rating	Coverage Area ⁽¹⁾ , Ft. x Ft. (m x m)	Minimum Flow ⁽²⁾ , GPM (LPM)	Minimum Pressure ⁽²⁾ , PSI (BAR)	Deflector-To-Ceiling Distance ⁽³⁾ , In. (mm)	Sprinkler Temperature Rating, °F	Minimum Spacing ⁽⁴⁾ , Ft. (m)
Standard	16 x 16 (4,9 x 4,9)	32 (121)	16 (1,10)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 18 (4,9 x 5,5)	36 (136)	20 (1,38)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 20 (4,9 x 6,1)	40 (151)	25 (1,72)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 22 (4,9 x 6,7)	44 (167)	30 (2,06)	4 to 12 (100 to 300)	135	10 (3,1)
Standard	16 x 24 (4,9 x 7,3)	48 (182)	36 (2,48)	4 to 12 (100 to 300)	135	10 (3,1)

NOTES

1. Backwall (where sprinkler is located) by sidewall (length of throw).
2. Requirement is based on maintaining both minimum flow and minimum residual pressure.
3. The centerline of the sprinkler waterway is located 7/16 inch (11,1 mm) below the deflector (Ref. Figures 1 and 2).
4. Minimum spacing is for lateral distance between sprinklers located along a single wall. Otherwise adjacent sprinklers (i.e. side-wall sprinklers on an adjacent wall, on an opposite wall, or pendent sprinklers) must be located outside of the maximum listed protection area of the extended coverage sidewall sprinkler being utilized.

TABLE B
FM COVERAGE AND FLOW RATE CRITERIA



Care and Maintenance

The Series TY-B Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTES

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

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be shipped or stored where their temperature will exceed 100°F/38°C and they must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage to the sprinklers - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. (Ref. Installation Section).

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the corrosion resistant coating, as it may be affected by the corrosive conditions present.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this docu-

ment, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler 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.

Limited Warranty

Products manufactured by Tyco Fire Products 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 Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products 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 applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products 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 TYCO FIRE PRODUCTS 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 TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' 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.

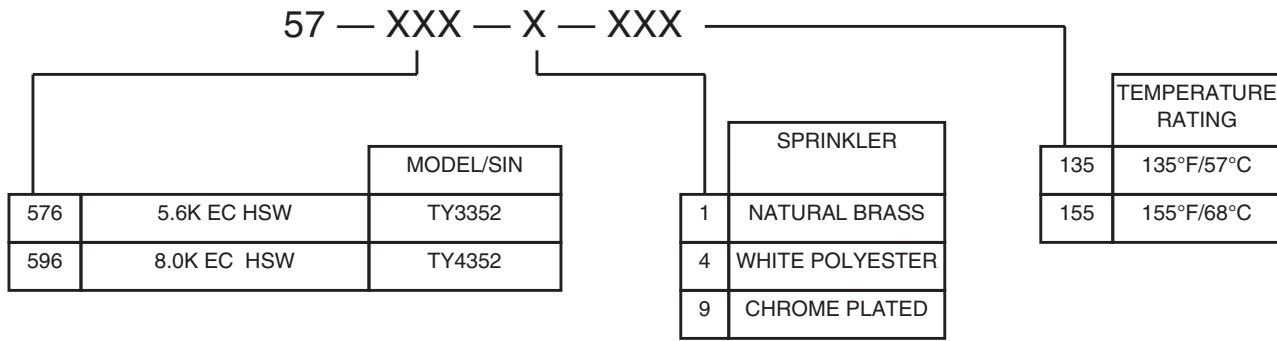


TABLE D
PART NUMBER SELECTION
SERIES TY-B EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLERS

Ordering Procedure

When placing an order, indicate the full product name. Refer to the Price List for complete listing of Part Numbers.

Contact your local distributor for availability.

Sprinkler Assemblies with NPT Thread Connections:

Specify: (Specify Model/SIN), (specify K-factor), (specify temperature rating), Series TY-B Extended Coverage Horizontal Sidewall Sprinkler with (specify type of finish or coating), P/N (specify from Table D).

Recessed Escutcheon:

Specify: Style (specify) Recessed Escutcheon with (specify finish), P/N (specify).

- 1/2" (15 mm)
Style 10
Chrome Plated P/N 56-701-9-010
- 1/2" (15 mm)
Style 10
White Color
Coated P/N 56-701-4-010
- 1/2" (15 mm)
Style 20
Chrome Plated P/N 56-705-9-010
- 1/2" (15 mm)
Style 20
White Color
Coated P/N 56-705-4-010
- 3/4" (20 mm)
Style 30
Chrome Plated P/N 56-705-9-011
- 3/4" (20 mm)
Style 30
White Color
Coated P/N 56-705-4-011
- 3/4" (20 mm)
Style 40
Chrome Plated P/N 56-700-9-010
- 3/4" (20 mm)
Style 40
White Color
Coated P/N 56-700-4-010

Sprinkler Wrench:

Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387.

Specify: W-Type 7 Sprinkler Wrench, P/N 56-850-4-001.