

Series EC-5 — 5.6 K-factor Extended Coverage Horizontal Sidewall Sprinklers Quick & Standard Response (Light Hazard)

General Description

The Series EC-5, Extended Coverage Horizontal Sidewall Sprinklers are extended coverage, decorative 3 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 and maximum deflector to ceiling distance of 18 inches (450 mm), 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 due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

The fast response thermal sensitivity rating of the Series EC-5, 3 mm Bulb Type Sprinklers provides a quick response extended coverage (QREC) rating for many of the coverage areas detailed in Tables B and C.

The recessed version of the Series EC-5 Extended Coverage Horizontal Sidewall Sprinkler utilizes a two-piece Style 50 Recessed Escutcheon. The Style 50 provides up to 3/8 inch (9,5 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.

NOTICE

The Series EC-5 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 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.

Sprinkler Identification Number

TY3302 - EC HSW, 5.6K
TY3302 is a redesignation for C3302.

Technical Data

Approvals

UL and C-UL Listed

FM and NYC Approved

(Refer to Table A for complete approval information. The approvals apply to the service conditions indicated in the Design Criteria section.)

Maximum Working Pressure

175 psi (12,1 bar)

Pipe Thread Connection

1/2 inch NPT

Discharge Coefficient

$K = 5.6 \text{ GPM/psi}^{1/2}$
(80,6 LPM/bar^{1/2})

Temperature Ratings

Refer to Table A



Finishes

Sprinkler: Refer to Table D

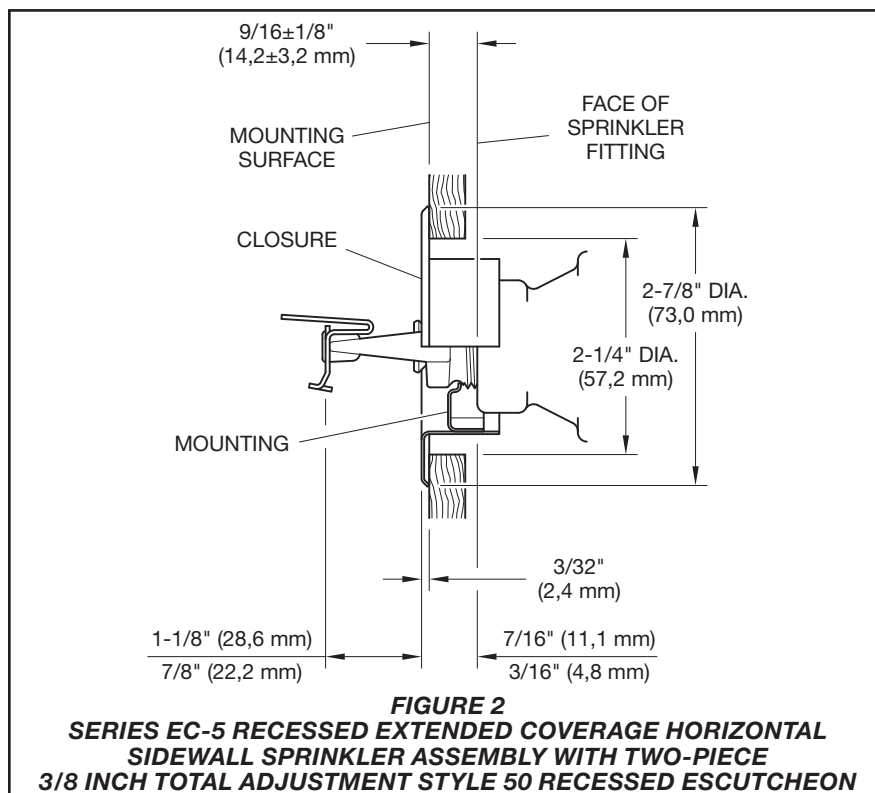
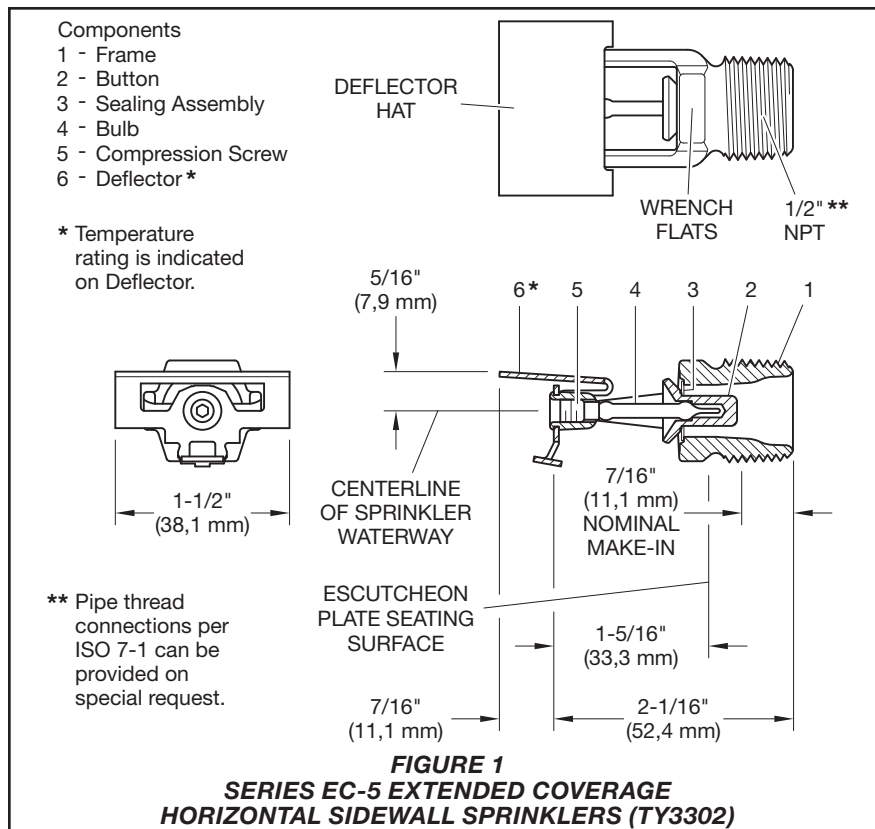
Recessed Escutcheon: White Coated,
Chrome Plated, or Brass Plated

Physical Characteristics

Frame	Bronze
Button	Bronze
Sealing Assembly	Beryllium
	Nickel w/TEFLON
Bulb	Glass (3 mm dia.)
Compression Screw	Bronze
Deflector	Copper

IMPORTANT

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.



Operation

The glass bulb contains a fluid that expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, allowing the sprinkler to activate and water to flow.

Design Criteria

The Series EC-5 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 50 Recessed Escutcheon, as applicable, is to be used for recessed installations.

Installation

The Series EC-5 Sprinklers must be installed in accordance with this section.

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. Higher levels of torque may distort the sprinkler inlet and cause 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.

Series EC-5 Sidewall Sprinkler

The Series EC-5 Sidewall Sprinklers must be installed in accordance with the following instructions.

Step 1. 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 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

K	TYPE	TEMP. RATING	BULB LIQUID	SPRINKLER FINISH		
				NATURAL BRASS	CHROME PLATED	POLYESTER**†
5.6 1/2" NPT	EC-HSW (TY3302)	135°F (57°C)	Orange	1, 2, 4		
		155°F (68°C)	Red	1, 2, 3, 4		
		200°F (93°C)	Yellow	1, 2, 4		
5.6 1/2" NPT	RECESSED EC-HSW* (TY3302)	135°F (57°C)	Orange	1, 2, 4		
		155°F (68°C)	Red	1, 2, 3, 4		
		200°F (93°C)	Yellow	1, 2, 4		

NOTES:
1. UL Listed per Table B.
2. C-UL Listed per Table B.
3. FM Approved per Table C.
4. Approved by the City of New York under MEA 113-04-E.
* Installed with Style 50 Recessed Escutcheon.
** Frame and deflector only.
† Sprinkler is available in Polyester color finishes as indicated in Table D.

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

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

Series EC-5 Recessed Sidewall Sprinkler

The Series EC-5 Recessed Sidewall Sprinklers must be installed in accordance with the following instructions.

Step A. Horizontal sidewall sprinklers are to be installed with their center-line 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 50 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 4). With reference to Figure 1, 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 50 Closure over the Series EC-5 Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the wall.

Care and Maintenance

The Series EC-5 Sprinklers must be maintained and serviced in accordance with this section.

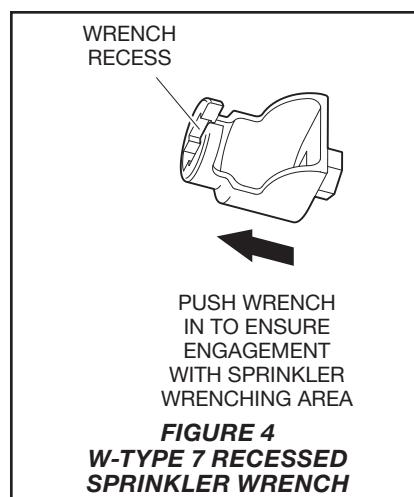
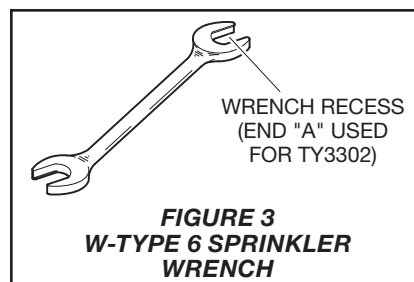
Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

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 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).



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 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 in accordance with local requirements and/or national code.

**5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3302)
AND RECESSED HORIZONTAL SIDEWALL SPRINKLER (TY3302)**

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)
Quick	16 x 16 (4,6 x 4,9)	26 (98)	21.6 (1,48)	4 to 18 (100 to 450)	135, 155	8 (2,4)
Quick	16 x 16 (4,6 x 4,9)	26 (98)	21.6 (1,48)	4 to 12 (100 to 300)	200	8 (2,4)
Quick	16 x 18 (4,9 x 5,5)	29 (110)	26.8 (1,85)	4 to 18 (100 to 450)	135, 155	8 (2,4)
Quick	16 x 20 (4,9 x 6,1)	32 (121)	32.7 (2,25)	4 to 18 (100 to 450)	135, 155	8 (2,4)
Standard	16 x 18 (4,9 x 5,5)	29 (110)	26.8 (1,85)	4 to 12 (100 to 300)	200	8 (2,4)
Standard	16 x 20 (4,9 x 6,1)	32 (121)	32.7 (2,25)	4 to 12 (100 to 300)	200	8 (2,4)

**5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3302)
NON-RECESSED**

Quick	16 x 22 (4,6 x 6,7)	36 (136)	41.3 (2,85)	4 to 18 (100 to 450)	135	8 (2,4)
Standard	16 x 24 (4,9 x 7,3)	39 (148)	48.5 (3,34)	4 to 18 (100 to 450)	135	8 (2,4)

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
DESIGN CRITERIA**

5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3302)

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)
Quick	16 x 16 (4,6 x 4,9)	26 (98)	22 (1,51)	4 to 12 (100 to 300)	155	8 (2,4)
Quick	16 x 18 (4,9 x 5,5)	30 (114)	29 (2,00)	4 to 12 (100 to 300)	155	8 (2,4)
Quick	16 x 20 (4,9 x 6,1)	33 (125)	35 (2,41)	4 to 12 (100 to 300)	155	8 (2,4)

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., 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 C
FM APPROVED
DESIGN CRITERIA**

P/N 51 – XXX – X – XXX					
		SIN		SPRINKLER FINISH	
053	5.6K EC HSW	TY3302	1	NATURAL BRASS	135
			3	PURE WHITE (RAL9010)* POLYESTER	155
			4	SIGNAL WHITE (RAL9003) POLYESTER	200
			9	CHROME PLATED	
				TEMPERATURE RATING	
					135°F (57°C)
					155°F (68°C)
					200°F (93°C)

* Eastern Hemisphere sales only

TABLE D
SERIES EC-5 EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLERS
PART NUMBER SELECTION

Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Sprinkler Assemblies with NPT Thread Connections

Specify: TY3302, 5.6 K-factor, (specify temperature rating), Series EC-5 Extended Coverage Horizontal Sidewall Sprinkler with (specify type of finish or coating), P/N (specify from Table D)

Recessed Escutcheon:

Specify: Style 50 Recessed Escutcheon with (specify*) finish, P/N (specify*)

*Refer to Technical Data Sheet TFP770

Sprinkler Wrench:

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

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

