

Model SW-20 and SW-24 — 11.2 K-factor Extended Coverage Ordinary Hazard Horizontal Sidewall Sprinklers (Standard Response)

General Description

The Model SW-20 and SW-24, 11.2 K-factor, Standard Response, Extended Coverage Ordinary Hazard (ECOH) Horizontal Sidewall Sprinklers are decorative glass bulb sprinklers designed for use in ordinary hazard occupancies per NFPA 13.

The SW-20 provides protection of coverage areas up to 16 ft. x 20 ft. (320 ft²), whereas the SW-24 provides protection of coverage areas up to 16 ft. x 24 ft. (384 ft²), as compared to standard coverage horizontal sidewall sprinklers having a maximum coverage area of 10 ft. x 10 ft. (100 ft²) for ordinary hazard occupancies.

Horizontal sidewall sprinklers are designed for installation along a wall or the side of a beam and are commonly used instead of pendent or upright sprinklers due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

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 appli-

cable approval agencies, the testing is not representative of all possible corrosive 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 Model SW-20 and SW-24 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.

Model/Sprinkler Identification Numbers

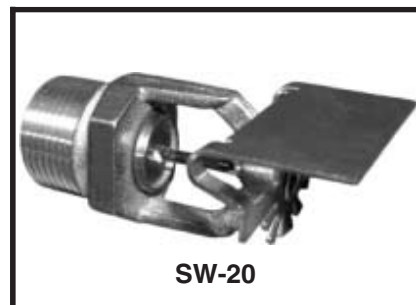
TY5332 - SW-20
TY5337 - SW-24

TY5332 is a redesignation for C5332.
TY5337 is a redesignation for C5337.

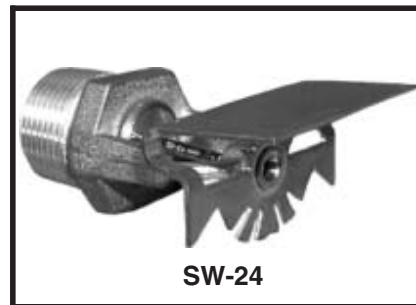
Technical Data

Approvals

UL and C-UL Listed.
(Refer to the Design Criteria Section)
Polyester coated sprinklers are UL and



SW-20



SW-24

C-UL Listed as Corrosion Resistant Sprinklers.

NYC under MEA 177-03-E.

Maximum Working Pressure
175 psi (12,1 bar)

Discharge Coefficient
K = 11.2 GPM/psi^{1/2}
(161,3 LPM/bar^{1/2})

Temperature Ratings
SW-20: 155°F/68°C & 200°F/93°C
SW-24: 200°F/93°C

Finishes

White Polyester, Chrome Plated, or Natural Brass

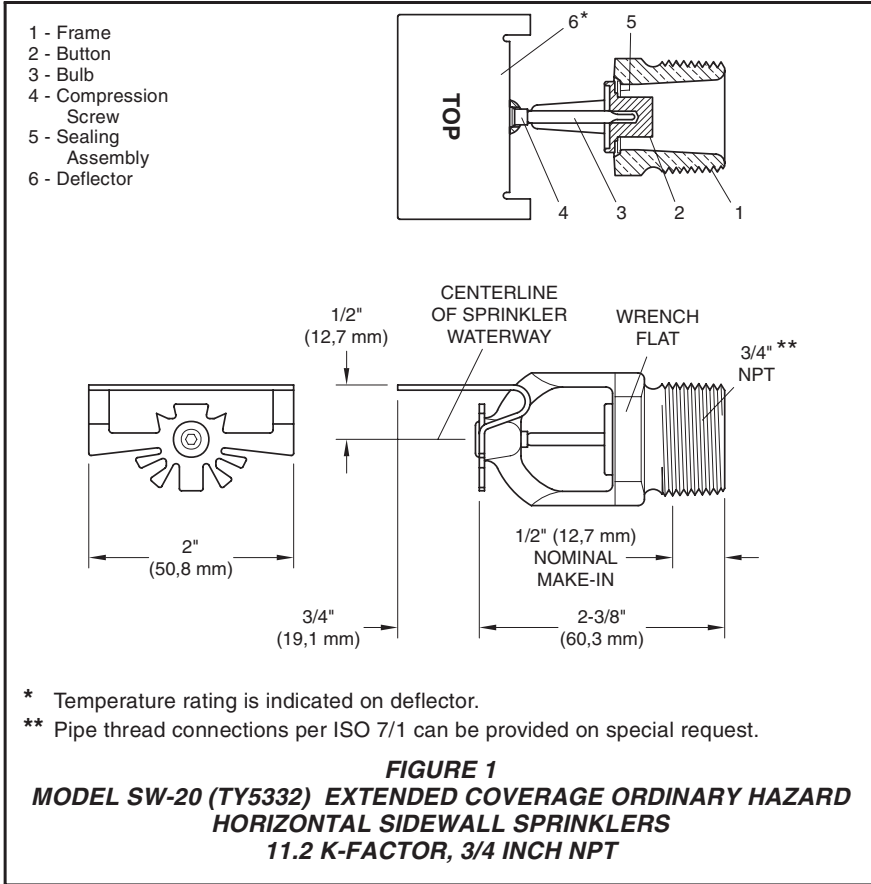
Physical Characteristics

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

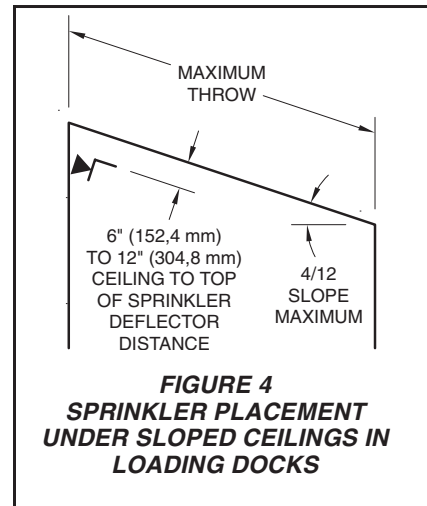
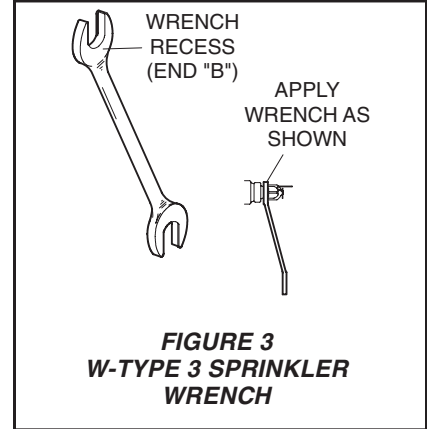
*DuPont registered trademark

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.

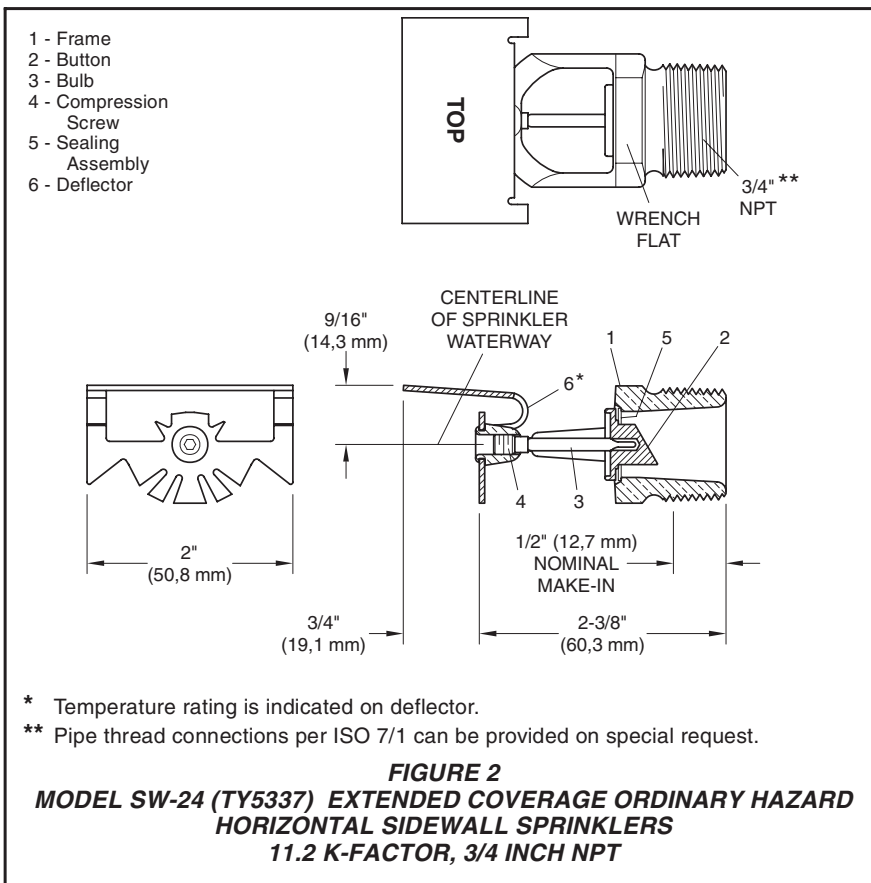


* Temperature rating is indicated on deflector.
** Pipe thread connections per ISO 7/1 can be provided on special request.



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.



* Temperature rating is indicated on deflector.
** Pipe thread connections per ISO 7/1 can be provided on special request.

MODEL SW-20 ECOH HORIZONTAL SIDEWALL SPRINKLER (TY5332)
OH Group 1 (0.15 gpm/sq.ft.)

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)	38 (144)	11.5 (0,79)	6 to 12 (150 to 300)	155, 200	8 (2,4)
Standard	16 x 18 (4,9 x 5,5)	43 (163)	14.7 (1,01)	6 to 12 (150 to 300)	155, 200	8 (2,4)
Standard	16 x 20 (4,9 x 6,1)	48 (182)	18.4 (1,27)	6 to 12 (150 to 300)	155, 200	8 (2,4)

MODEL SW-20 ECOH HORIZONTAL SIDEWALL SPRINKLER (TY5332)
OH Group 2 (0.20 gpm/sq.ft.)

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)	51 (193)	20.7 (1,43)	6 to 12 (150 to 300)	155, 200	8 (2,4)
Standard	16 x 18 (4,9 x 5,5)	58 (220)	26.8 (1,85)	6 to 12 (150 to 300)	155, 200	8 (2,4)
Standard	16 x 20 (4,9 x 6,1)	64 (242)	32.7 (2,25)	6 to 12 (150 to 300)	155, 200	8 (2,4)

MODEL SW-24 ECOH HORIZONTAL SIDEWALL SPRINKLER (TY5337)
OH Group 1 (0.15 gpm/sq.ft.)

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 22 (4,9 x 6,7)	53 (200)	22.4 (1,54)	6 to 12 (150 to 300)	200	8 (2,4)
Standard	16 x 24 (4,9 x 7,3)	58 (220)	26.8 (1,85)	6 to 12 (150 to 300)	200	8 (2,4)

MODEL SW-24 ECOH HORIZONTAL SIDEWALL SPRINKLER (TY5337)
OH Group 2 (0.20 gpm/sq.ft.)

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 22 (4,9 x 6,7)	71 (269)	40.2 (2,77)	6 to 12 (150 to 300)	200	8 (2,4)
Standard	16 x 24 (4,9 x 7,3)	77 (291)	47,3 (3,26)	6 to 12 (150 to 300)	200	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 indicted residual pressures are based on the nominal K-factor.
3. The centerline of the sprinkler waterway is located below the deflector as shown in 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 A
UL AND C-UL LISTING COVERAGE AND FLOW RATE CRITERIA

Design Criteria

The Model SW-20 and SW-24, 11.2 K-factor, Standard Response, Extended Coverage Ordinary Hazard (ECOH) Horizontal Sidewall Sprinklers are for use in ordinary hazard occupancies with non-combustible unobstructed construction and with a ceiling slope not exceeding 2 inches per foot (9.2°), using the design criteria provided in Table A, (as well as any additional requirements specified in NFPA 13 for Extended Coverage Sidewall Spray Sprinklers).

A 36 inch (914 mm) clearance must be maintained between the top of the sprinkler deflector and any miscellaneous storage.

The SW-20 and SW-24 may be installed on sloped ceilings in loading docks with a maximum roof slope of 4 inches per foot (18.4°) as shown in Figure 4 and using the design criteria provided in Table A.

The SW-20 and SW-24 can be used only for exposed applications. The SW-20 and SW-24 cannot be recessed.

Installation

The Model SW-20 and SW-24 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 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 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.

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.

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

Care and Maintenance

The Model SW-20 and SW-24 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 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.

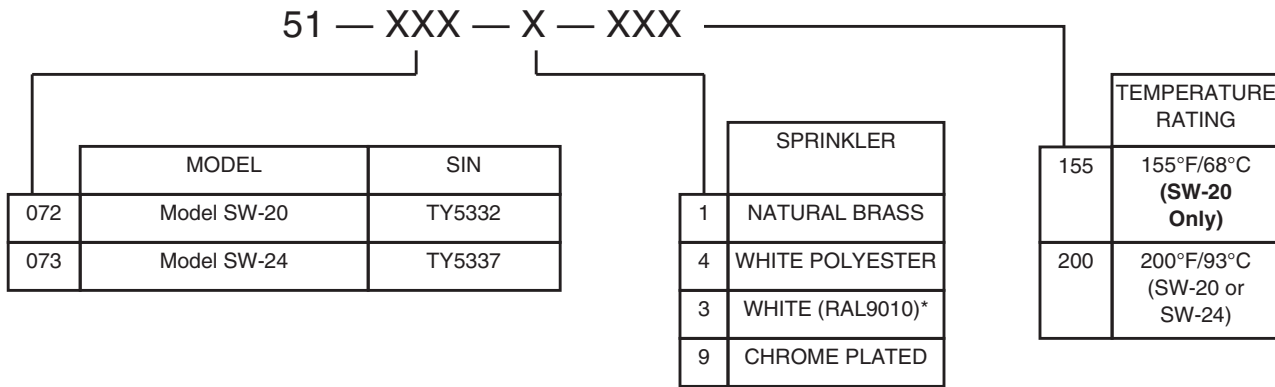
Care must be exercised to avoid damage to the sprinklers - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. (Ref. Installation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

tion 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 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 codes.



* Eastern Hemisphere sales only.

TABLE B
PART NUMBER SELECTION
MODEL SW-20 AND SW-24 ECOH HORIZONTAL SIDEWALL SPRINKLERS
WITH 3/4 INCH NPT CONNECTIONS

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.

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), (specify SIN), (specify temperature rating), ECOH Horizontal Sidewall Sprinkler with (specify type of finish), P/N (specify from Table B).

Sprinkler Wrench:

Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001.

