

## 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.

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 corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these 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 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.*



### Model/Sprinkler Identification Numbers

TY3302 - EC HSW, 5.6K

TY3302 is a redesignation for C3302.

### Technical Data

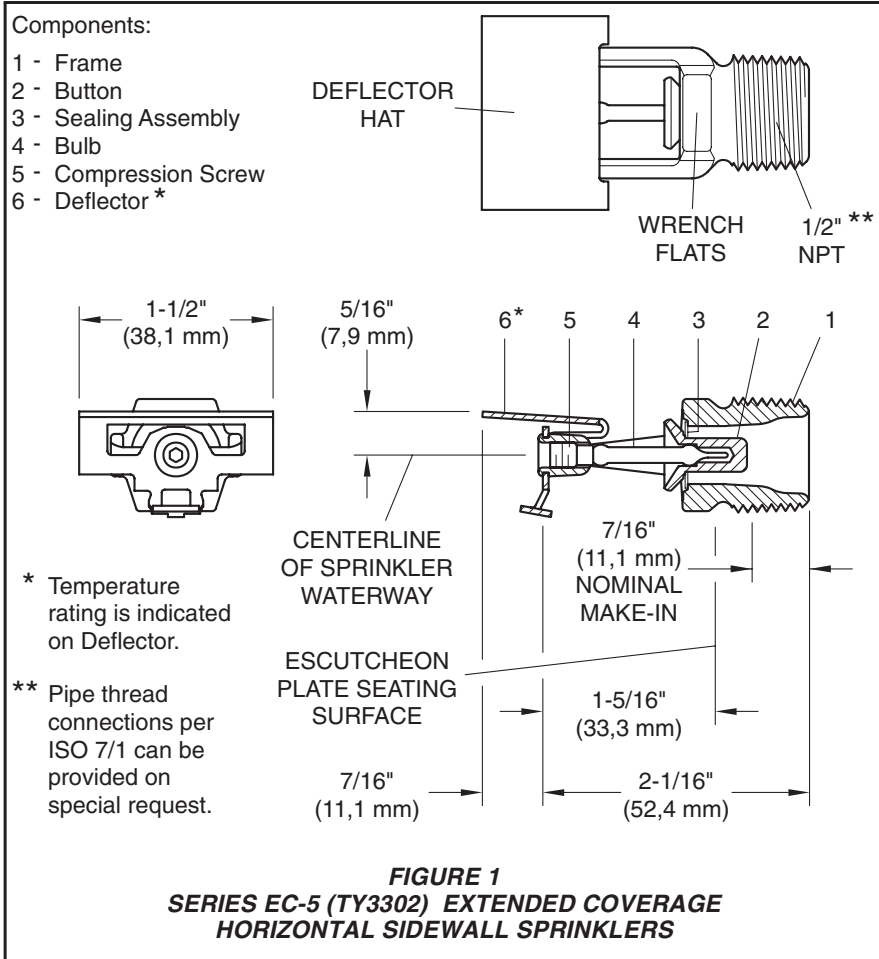
#### Approvals

UL and C-UL Listed.  
FM and NYC Approved.  
(Refer to Table A for complete approval information including corrosion resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.)

**Maximum Working Pressure**  
175 psi (12,1 bar)

#### 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.*



**Pipe Thread Connection**

1/2 inch NPT

**Discharge Coefficient**

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

**Temperature Ratings**

Refer to Table A

**Finishes**

Sprinkler: Refer to Table A  
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                     |

† Registered trademark of DuPont

**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.

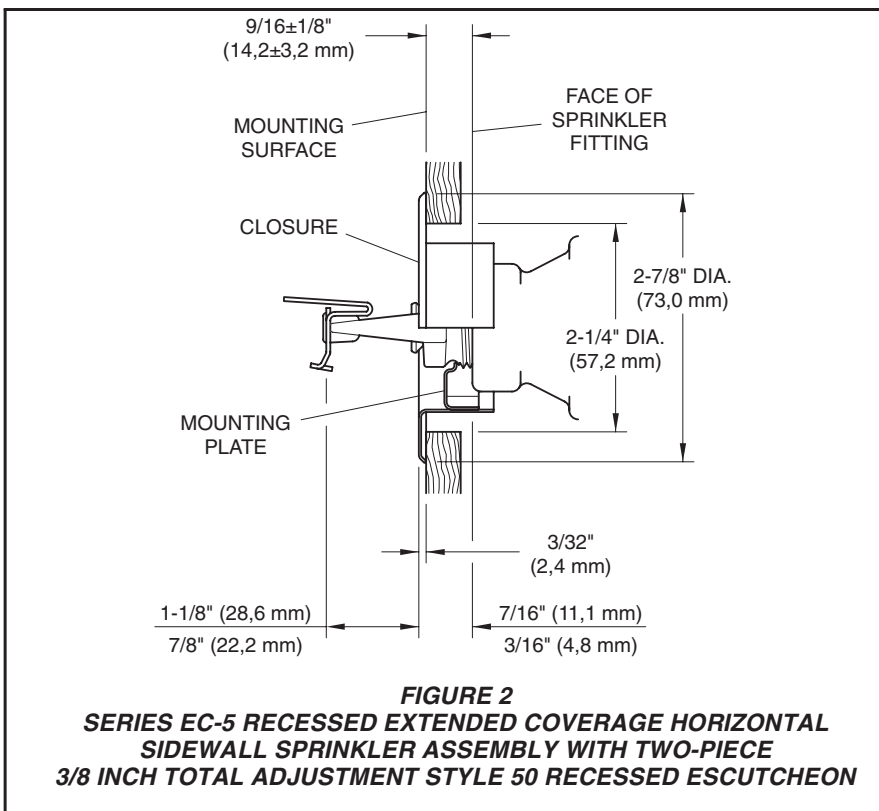
**Installation**

The Series EC-5 Sprinklers must be installed in accordance with 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*



| K                  | TYPE                            | TEMP.      | BULB LIQUID | SPRINKLER FINISH (See Note 4) |               |                   |
|--------------------|---------------------------------|------------|-------------|-------------------------------|---------------|-------------------|
|                    |                                 |            |             | NATURAL BRASS                 | CHROME PLATED | WHITE** POLYESTER |
| 5.6<br>1/2"<br>NPT | EC HSW<br>(TY3302)              | 135°F/57°C | Orange      | 1, 2, 5                       |               |                   |
|                    |                                 | 155°F/68°C | Red         | 1, 2, 3, 5                    |               |                   |
|                    |                                 | 200°F/93°C | Yellow      | 1, 2, 5                       |               |                   |
| 5.6<br>1/2"<br>NPT | RECESSED<br>EC HSW*<br>(TY3302) | 135°F/57°C | Orange      | 1, 2, 5                       |               |                   |
|                    |                                 | 155°F/68°C | Red         | 1, 2, 3, 5                    |               |                   |
|                    |                                 | 200°F/93°C | Yellow      | 1, 2, 5                       |               |                   |

**NOTES:**

1. Listed by Underwriters Laboratories, Inc. (UL) per Table B.
  2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL) per Table B.
  3. Approved by Factory Mutual Research Corporation (FM) per Table C.
  4. Where Polyester Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed Corrosion Resistant Sprinklers.
  5. Approved by the City of New York under MEA 113-04-E.
- \* Installed with Style 50 Recessed Escutcheon.  
 \*\* Frame and deflector only. Listings and approvals apply to color (Special Order).

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

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.

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.

**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.

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

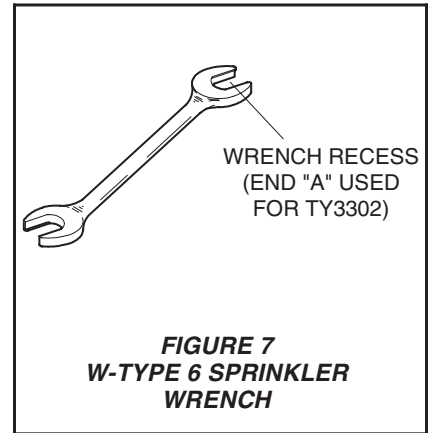
**Step D.** After the wall has been installed or the finish coat has been applied, slide on the Style 50 Closure over the Series EC-5 Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the wall.

## Care and Maintenance

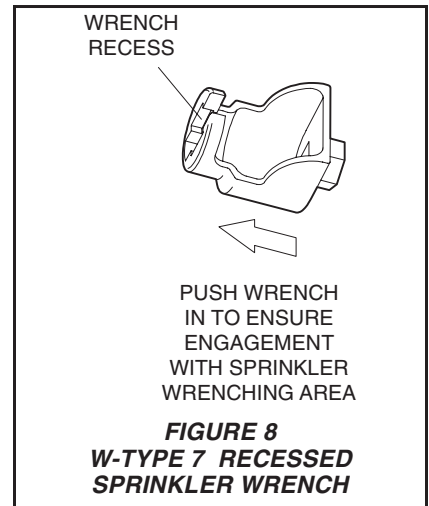
The Series EC-5 Sprinklers must be maintained and serviced in accordance with the following instructions:

**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*



**FIGURE 7  
W-TYPE 6 SPRINKLER  
WRENCH**



**FIGURE 8  
W-TYPE 7 RECESSED  
SPRINKLER WRENCH**

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 rec-

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

| <b>Response Rating</b> | <b>Coverage Area<sup>(1)</sup>,<br/>Ft. x Ft. (m x m)</b> | <b>Minimum Flow<sup>(2)</sup>,<br/>GPM (LPM)</b> | <b>Minimum Pressure<sup>(2)</sup>,<br/>PSI (BAR)</b> | <b>Deflector-To-Ceiling<br/>Distance<sup>(3)</sup>, In. (mm)</b> | <b>Sprinkler Temperature<br/>Rating, °F</b> | <b>Minimum Spacing<sup>(4)</sup>,<br/>Ft. (m)</b> |
|------------------------|---|--|--|--|---|---|
| Quick                  | 16 x 16 (4,9 x 4,9)                                       | 26 (98)  | 21.6 (1,48)  | 4 to 18 (100 to 450)   | 135, 155                                    | 8 (2,4)   |
| Quick                  | 16 x 16 (4,9 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)**

|          |                     |          |             |                      |     |         |
|----------|---------------------|----------|-------------|----------------------|-----|---------|
| Quick    | 16 x 22 (4,9 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 indicted 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**

ommended 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.

stalling 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.

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 in-

**5.6 K EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER (TY3332)  
AND RECESSED HORIZONTAL SIDEWALL SPRINKLER (TY3302)**

| <b>Response Rating</b> | <b>Coverage Area<sup>(1)</sup>,<br/>Ft. x Ft. (m x m)</b> | <b>Minimum Flow<sup>(2)</sup>,<br/>GPM (LPM)</b> | <b>Minimum Pressure<sup>(2)</sup>,<br/>PSI (BAR)</b> | <b>Deflector-To-Ceiling<br/>Distance<sup>(3)</sup>, In. (mm)</b> | <b>Sprinkler Temperature<br/>Rating, °F</b> | <b>Minimum Spacing<sup>(4)</sup>,<br/>Ft. (m)</b> |
|------------------------|---|--|--|--|---|---|
| Quick                  | 16 x 16 (4,9 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., 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**

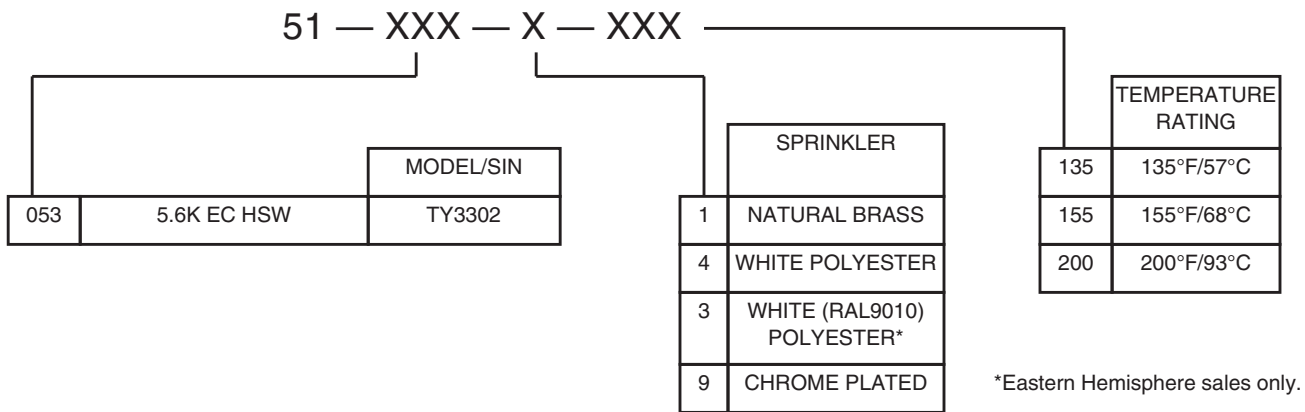
## **Limited Warranty**

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-FRB 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: 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).

#### Style 50 Recessed Escutcheon

Chrome Plated . . . . . PSN 56-711-9-010  
White Color Coated . . . . . PSN 56-711-4-010  
White (RAL9010)\* . . . . . PSN 56-711-3-010  
Brass Plated . . . . . PSN 56-711-2-010

\*Eastern Hemisphere sales only.

### 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.