

**SECTION 21 00 00
FIRE SUPPRESSION**

PART 1.00 - GENERAL

1.01 RELATED DOCUMENTS

- A. The "Contract Drawings"; the "Instructions to Bidders and General Conditions, NYCHA Contracts", latest edition; the "Form of Proposal", "Division 1 General Requirements"; the "Amendments to General Conditions"; and all amendments and addenda, apply to the work of this Section.

1.02 SUMMARY

- A. The work of this Section includes:
 - 1. Furnish and install all newelectrical power distribution systems for fire control panels, one per compactor room.
 - 2. Furnish and install new fire control systems.
 - 3. Testing of installed items.

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 11 82 26 - Waste Compactors.

1.04 SUBMITTALS

- A. Submit items in "List of Submissions" in General Requirements, Section 01 00 00.
- B. Electrical Component Standard: Provide components that comply with NFPA 70 "National Electrical Code" and are listed and labeled by UL.

PART 2.00 – PRODUCTS

2.01 FIRE CONTROL SYSTEM

- A. General
 - 1. Provide a separate 120V, 15 amp circuit with circuit breaker in the refuse compactor room as shown on the electrical block diagram, to energize the fire control system. Circuit breaker panel shall be in Rainproof housing, Square D Cat. No. Q02L40 with copper busses and keyed alike or approved equal.
 - 2. Provide two (2) heat sensors per compactor; one in the upper most part of the transition chute, and one in the middle of the hopper. Sensors shall be mounted to ¼ inch thick steel pockets in the hopper. The pockets shall be threaded to receive the sensors. Heat sensor shall be one of the following. Thermocouple
 - a. Thermocouple
 - 1) Shall consist of a thermocouple head and well assembly which will activate a wall mounted controller (one for each thermocouple). Thermocouple head and well assembly shall conform to NEMA 4 Standards and shall include a four (4) inch nipple, union nipple assembly with 1/2" inch internally threaded thermowell. Thermocouple shall be a Grade "J" Iron Constantan 20 AWG single element with double bore ceramic insulators. Thermowell shall be 304 stainless steel tap with an immersion length of [2-1/2] inches and process thread ¾ inches N.P.T. To improve response time, the thermowell bottom shall have a thin wall and the thermocouple tip shall touch the bottom of the well.
 - 2) Temperature controllers shall have a 0-200 degree F. range and an on/off control function. They shall have a 1% accuracy and down scale thermocouple

break protection. The output relay shall have the contact closed above set point. Controllers shall be individually enclosed and shall be a plug in type for ease of replacement. Controllers (2 per compactor), shall be mounted in a separate NEMA 12 enclosure with key lock assembly to be provided by the Contractor. Provide a long life neon lamp in NEMA 12 housing on face of the box to indicate that the fire control system is energized.

- b. Probe Thermostat
 - 1) Probe Thermostat shall be thermally sensitive bimetallic switch that opens or closes at a set 150 +/- 5 degree F temperature. Thermostats shall have stainless steel body and tube. Thermostat shall be Selco "CPO" Series or equal.
 - 2) Provide a push button manual override to allow flushing/testing of system.
3. All controllers or probe thermostats shall be wired in parallel with solenoid valve so that when the temperature sensed by any single thermocouple or thermostat exceeds the designated set point, the solenoid will energize and open. As the temperature falls below the designated set point, the controllers will automatically de-energize and close valve.
4. Wiring shall be in rigid conduit. For thermocouple provide glass braided insulation over each wire over the pair and wire shall be designed and labeled for use to 900 degrees Fahrenheit. All wiring for fire control system shall comply with the Electrical Specifications. Provide a union in the conduit at the thermocouple or thermostat for ease of replacement.
5. Each solenoid valve shall be Underwriter's Laboratory approved and shall be 1 inch, 115 volts, 60 Hertz, single coil, 2 way (with override), NEMA 4 enclosure, conforming to ASCO 8210.
- 6.
7. Provide a vacuum breaker downstream of the solenoid valve. Vacuum breaker to be brass, 1 inch size, Armstrong, Leonard, Wilkins, or equal.

B. Sprinkler System

1. Piping shall be black steel, schedule 40 as per ASTM A-53.
2. Fittings shall be cast iron threaded fittings as per ANSI B-16.4. with graphite based joint compound applied to male threads.
3. Nozzles shall be bronze, ½ inch minimum size, and Board of Standards and Appeals or CSA approved. The nozzles shall have an optimum spray pattern. They shall be sized to discharge 11 gpm minimum at conditions of minimum available water supply pressure of 15 psi.
4. Sprinkler system shall comply with NFPA 13-2002, Chapter 13.15 and NFPA 82-2004, Sprinkler system shall comply with NFPA 13-2002, Chapter 13.15 and NFPA 82-2004, Chapter 7.

2.02 REFERENCE STANDARDS

- A. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
 1. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
 2. NFPA 82 - Standard on Incinerators and Waste and Linen Handling Systems and Equipment; 2024.

PART 3.00 – EXECUTION

3.01 INSTALLATION

- A. General Requirements

1. Furnish, install, connect and field test all electrical equipment including circuit breakers, solenoid valves, temperature sensors, photo electric devices, and electrical wiring required for proper operation of systems.
 2. Clearly and permanently label each device, to describe its function. The sprinkler system breaker shall in addition, carry a warning that it shall be opened only for servicing of the units, and immediately re- energized.
 3. Mount all new electrical panels on 1-1/2 inch galvanized channel (Kendoff) to leave space between the wall and the panel. Location of the panels shall be as approved by the NYCHA.
- B. Sprinkler System
1. Flush the entire sprinkler system in each compactor room and chute. If the system is not working, it is the Contractor's responsibility to get the system working at no cost to the Authority.
 2. Nozzles shall be installed out of the refuse flow path.
 3. Provide chain and lock for existing sprinkler OS&Y shutoff valve. Provide two keys per lock, all keys alike, Padlock Master #4 1-1/2 x 3/4 inch

END OF SECTION 21 00 00 21 00 00