

FEATURES

- UL Listed and FM Approved
- Complies with UL 1254 Standard, September 29, 1998
- 25 lb., 50 lb., and 100 lb. size tanks available with FORAY dry chemical for total flooding applications
- 25 lb. and 50 lb. size tanks available with PLUS-FIFTY C dry chemical for local application overhead and local application tank-side
- Three Basic Application Methods: Total Flooding, Local Application – Tankside, Local Application – Overhead
- Mechanical or Electrical Detection
- Low Temperature Total Flooding Application -20 °F (-29 °C)
- Multiple Total Flooding Options

APPLICATION

The Ansul IND-X™ Industrial Fire Suppression System is an automatic fire suppression system using FORAY dry chemical agent for Class A, B and C fires and PLUS-FIFTY C dry chemical agent for Class B and C fires, stored under pressure using dry nitrogen gas at 450 psi (31.0 bar) at 70 °F (21 °C). The system is designed to protect a wide variety of hazards involving flammable liquids and gases, wood and paper, and energized electrical equipment. The system can be used on most all hazards found in industrial settings. Some examples are:

- Hazardous Storage Buildings

TOTAL FLOODING SYSTEM

- Dip Tanks
- Paint Lockers
- Flammable Liquid Storage Facilities
- Stock Rooms
- Printing Machines
- Mixing Tanks
- Electrical Motors
- Pumps
- Switchgear Rooms
- Indoor Transformers
- Wood Finishing Operations

DESCRIPTION

The Ansul IND-X Industrial Fire Suppression System is a pre-engineered, stored pressure dry chemical type with a fixed nozzle distribution network. It is listed with Underwriters Laboratories, Inc. (UL) and approved by Factory Mutual Research Corporation (FMRC).

The system is capable of automatic detection and actuation and/or remote manual actuation. Additional accessories are available for shutting down electrical power to equipment and shutting down the flow of gas lines.

The detection portion of the fire suppression system allows for automatic detection by means of specifically rated mechanical fusible links or electric thermal detectors.

The fire suppression system has capabilities for total flooding, local application – tankside, and local application – over-head.

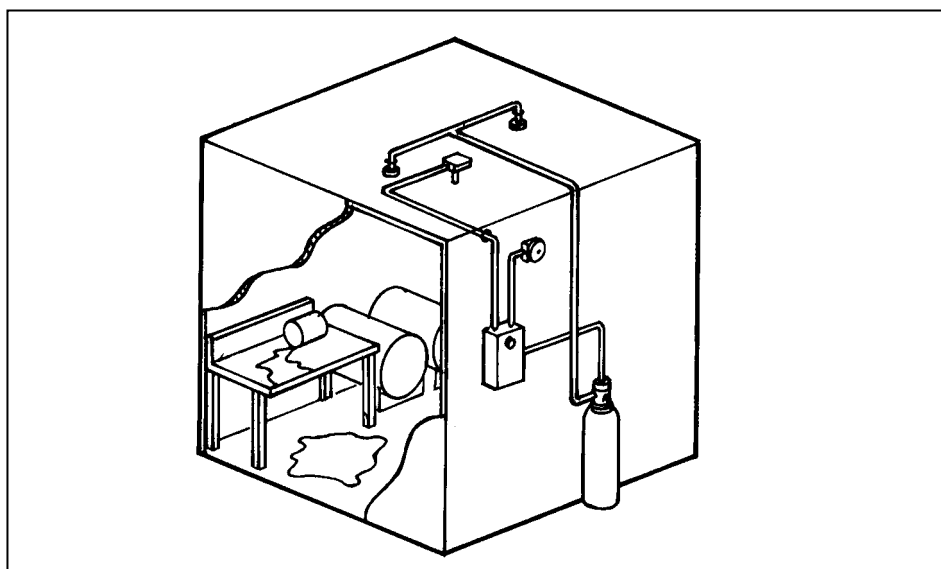
The IND-X system can protect Class A, B, and C type hazards. The basic system consists of: Dry Chemical Agent Storage Tank(s), Distribution Piping and Nozzles, Control System and/or Releasing Device, Thermal or Fusible Link Detectors, and Accessories.

Agent Storage Tanks – The IND-X system utilizes three sizes of tanks: 25 lb., 50 lb., and 100 lb. The tank assemblies consist of a factory-filled dry chemical agent tank and valve assembly. This assembly meets the appropriate Department of Transportation, (4BW500) and NFPA Standards. Each tank is finished in red enamel paint and contains either FORAY or PLUS-FIFTY C dry chemical agent pressurized with dry nitrogen. All three sizes are available with FORAY dry chemical and the 25 lb. and 50 lb. sizes are also available with PLUS-FIFTY C dry chemical. A nameplate is affixed to the exterior and printed with contents, pressure and weight information. The nameplate is also color coded to specify either FORAY (yellow) or PLUS-FIFTY C (blue) dry chemical agent.

Distribution Piping and Nozzles – The distribution piping network is designed to properly distribute the dry chemical to the hazard areas. In the IND-X pre-engineered system; pipe sizes, maximum and minimum pipe lengths, and maximum and minimum number of pipe fitting are predetermined. There are six types of nozzles available for the IND-X system. Each type of nozzle has been designed and tested for specific applications and areas of coverage.

Releasing Device and/or Control System – The releasing devices consist of either an ANSUL AUTOMAN electric or mechanical release or an ANSUL AUTOMAN II-C releasing device. If no supervision is required, the releasing device can be connected directly to the mechanical fusible link detectors. All releasing devices contain an LT-10-R nitrogen cartridge which supplies the pressure to actuate the tank valve and allow the dry chemical to discharge.

An AUTOPULSE control system is designed to protect fixed fire hazards. The control system can automatically actuate the releasing device on the fire suppression system after receiving an input signal from any initiating device(s); i.e., manual pull station or thermal detectors. The control system incorporates an internal power supply, on-line emergency batteries, and solid state electronics. The AUTOPULSE control system can utilize the AUTOPULSE FOUR control panel or the AUTOPULSE 442R control panel. Other approved control system panels are also available. Contact Ansul Applications Engineering Department for details.



Fusible Link or Thermal Detectors –

Fusible link detectors consist of three basic components: the bracket, linkage, and fusible link. The bracket holds the entire assembly to the mounting surface. The linkage is used to support the fusible link. The fusible link is designed to separate at a specific temperature and release the tension on the detection cable which will cause the mechanical ANSUL AUTOMAN release mechanism to actuate. The fusible links are available in six temperature ratings.

Rate compensating thermal detectors are factory preset. They are normally open, mechanical contact closure switches designed to operate at the set temperature rating or when the surrounding air temperature increases in excess of 40 °F (4 °C)/minute. Electric thermal detectors are available in seven preset temperatures ranging from 140 °F to 725 °F (60 °C to 385 °C).

Accessories – Accessories, such as pressure switches, micro-switches, alarm bells, pressure trips, selector switches, electric gas valves, mechanical gas valves, and flashing alarm lamps, are available for closing doors and dampers, warning personnel, shutting down HVAC equipment, shutting down electrical equipment, and shutting off gas lines. Accessories can be operated electrically or pneumatically.

APPROVALS

The IND-X Industrial Fire Suppression System has been listed by Underwriters Laboratories, Inc. (UL) and approved by Factory Mutual Research Corporation (FMRC).

Fire tests conducted as a part of these listings/approvals are allowed to progress to maximum intensity before the system is actuated. Other tests required include:

Fuel in-depth splash tests under a minimum piping, maximum temperature, and minimum clearance condition to ensure that the nozzle does not cause splashing of fuel during the fire suppression process.

Fuel in-depth fire suppression tests under maximum piping, maximum nozzle clearance, and minimum temperature to ensure suppression under the most adverse conditions.



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Operation flow rate tests at the minimum and the maximum temperatures with maximum and minimum piping and with balanced piping in the system. Cycle tests on all mechanical and electrical devices to determine their structural/functional integrity. Electrical devices and circuits are also examined for compliance with safety circuit standards.

ORDERING INFORMATION

Order all system components through Ansul Customer Service Department, One Stanton Street, Marinette, WI 54143 (715) 735-7411.



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SPECIFICATIONS

An Ansul IND-X Fire Suppression System shall be furnished. The system shall be capable of three types of hazard protection: total flooding, local application-tankside, and local application-overhead.

1.0 GENERAL

1.1 References

- 1.1.1 Underwriters Laboratories, Inc., (UL)
 - 1.1.1.1. UL Standard 1254: Sept. 29, 1998 (Pre-Engineered Dry Chemical Extinguishing System Units)
- 1.1.2 Factory Mutual Research Corporation (FMRC)
- 1.1.3 National Fire Protection Association (NFPA)
 - 1.1.3.1 NFPA 17 (Standard For Dry Chemical Extinguishing Systems)
- 1.1.4 Department of Transportation (DOT)
 - 1.1.4.1 4BW500

1.2 Submittals

- 1.2.1 Submit two sets of Manufacturer's Data Sheets
- 1.2.2 Submit two sets of Piping Design Drawings

**1.0 GENERAL
(Continued)**

1.3 System Description

- 1.3.1 The system shall be an automatic and/or manual fire suppression system using FORAY dry chemical agent for Class A, B, and C fires and PLUS-FIFTY C dry chemical for Class B and C fires.
- 1.3.2 The system shall be capable of providing fire protection using three application methods which are total flooding, local application-overhead, and local application-tankside.
- 1.3.3 The system shall be the pre-engineered type having minimum and maximum guidelines established by the manufacturer and approved and listed by FM and UL respectively.
- 1.3.4 The system shall be installed and serviced by personnel trained by the manufacturer.

1.4 Quality Control

- 1.4.1 Manufacturer: The industrial fire suppression system shall be manufactured by a company with at least ten years experience in the design and manufacture of pre-engineered fire suppression systems.
- 1.4.2 Certificates: The dry chemical shall be FORAY or PLUS-FIFTY C manufactured by Ansul and shall meet the requirements of Underwriters Laboratories, Inc., under UL Standard 299: (Dry Chemical Fire Extinguishers). Dry chemical shall be certified by the extinguisher manufacturer for use in the equipment furnished.

1.5 Warranty, Disclaimer, and Limitations

- 1.5.1 The pre-engineered industrial fire suppression system components shall be warranted for one year from date of delivery against defects in workmanship and material.

1.6 Delivery

- 1.6.1 Packaging: All system components shall be securely packaged to provide protection during shipment.

1.7 Environmental Conditions

- 1.7.1 Operating Temperature Range: The total flooding application systems shall be capable of operating in a temperature range of -20 °F to 130 °F (-29 °C to 54 °C). The local application systems shall be capable of operating in a temperature range of 32 °F to 130 °F (0 °C to 54 °C).

1.8 Extra Material

- 1.8.1 One complete set of recharge material shall be available. Materials shall include: dry chemical, nitrogen cartridge(s), fusible link(s).

2.0 PRODUCT

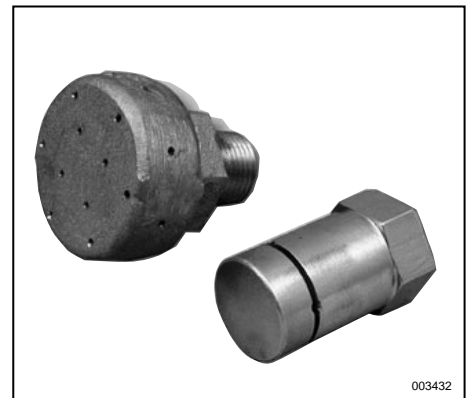
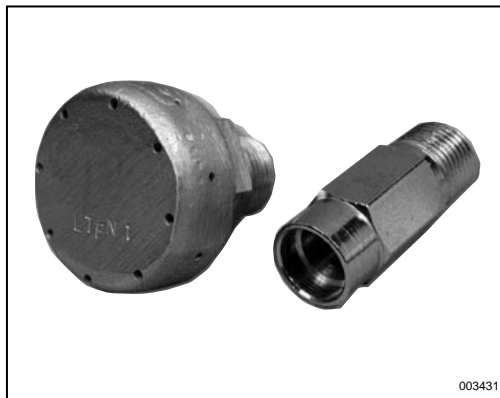
2.1 Manufacturer

- 2.1.1 Ansul Incorporated, One Stanton Street, Marinette, Wisconsin 54143-2542, Telephone: (715) 735-7411

2.2 Components

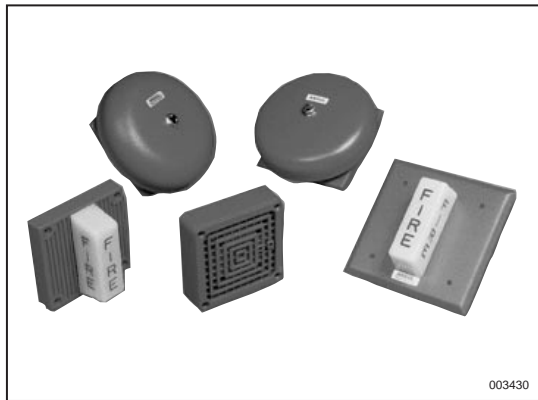
The pre-engineered industrial fire suppression system shall meet the following requirements:

- 2.2.1 Dry Chemical Tank: The dry chemical tanks shall be available in three sizes: 25 lb., 50 lb., and 100 lb. The tank assemblies shall consist of a factory-filled or authorized distributor filled dry chemical agent tank and valve assembly. This assembly shall meet the appropriate Department of Transportation and NFPA Standards and shall be UL Listed and FM Approved. Each tank assembly shall have a nameplate affixed to the exterior and stamped with contents, pressure and weight information. Each tank shall be pressurized with dry nitrogen at 450 psi (31.0 bar).
- 2.2.2 Mounting Bracket: The tank mounting bracket shall consist of two pre-formed bracket straps, one back channel and a bolt, washer and nut to secure the strap. Bracket straps shall be constructed of stainless steel and the back channel shall be constructed of low carbon steel, painted red.
- 2.2.3 Dry Chemical: For Class A, B, and C fires, the dry chemical shall be FORAY. It shall be a monoammonium phosphate based agent and color coded yellow for easy identification. For Class B and C fires, the dry chemical shall be PLUS-FIFTY C. It shall be a sodium bicarbonate based agent and color coded blue.
- 2.2.4 Nozzles: Nozzles shall be constructed of brass, aluminum, or plated steel with 1/2 in. or 3/4 in. NPT threads. Nozzles shall be designed to distribute the dry chemical agent in a uniform pattern throughout the hazard area. The nozzle orifices shall be protected by a plastic blow-off cap.



- 2.2.5 Distribution Piping: Distribution piping shall be Schedule 40 black iron, galvanized, chrome-plated, or stainless steel pipe and fittings conforming to ASTM A120, A53, or A106.
- 2.2.6 Detection Control Equipment: The detection control equipment shall be the AUTOPULSE Control System. It shall automatically actuate the releasing device after receiving an input signal from one or more initiating devices. The control system shall incorporate an internal power supply, on-line batteries, and solid-state electronics. The control system shall utilize the AUTOPULSE FOUR control panel, AUTOPULSE 442R control panel, or other ANSUL-approved panels.

- 2.2.7 Releasing Devices: The releasing devices shall consist of a metal enclosure which contains a spring-loaded puncture pin release mechanism and a nitrogen actuation cartridge. The releasing device shall be capable of being actuated from an AUTOPULSE control panel and/or directly from the detection system.
- 2.2.8 Detectors: The detectors shall be either rate compensating thermal detectors used with an AUTOPULSE Control System (if supervision is required) or with a releasing device (if supervision is not required) or they shall be the fusible link style designed to separate at a specific temperature. The fusible link style shall be used with a releasing device (when supervision is not required).
- 2.2.9 Nitrogen Cartridge: The nitrogen cartridge shall be a sealed steel pressure vessel containing nitrogen gas. The nitrogen cartridge seal shall be designed to be punctured by the releasing device to supply the required pressure to actuate the dry chemical agent tank(s).
- 2.2.10 Accessory Components: Accessory equipment shall be available for use with the Ansul IND-X system. Typical accessories shall include alarm bells, warning lights, and electric, manual, or pneumatic pull stations.



3.0 IMPLEMENTATION 3.1 Installation

- 3.1.1 The industrial fire suppression system shall be designed, installed, inspected, maintained, and recharged in accordance with the manufacturer's listed instruction manual.

3.2 Training

- 3.2.1 Training shall be conducted by representatives of the manufacturer.

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