

CONVEYOR BELT

FIRE SUPPRESSION SYSTEM

PATENT NUMBER: 2020/01580



I-CAT's advanced conveyor belt system is designed for various fire scenarios on conveyors. The design considers stationary localised fires, moving belt fires, smoke generation as well as belt 'burn-through' and breakage. The design aims to mitigate all the fire risks associated with these scenarios.

SYSTEM OBJECTIVES

- ❏ Conveyor protection.
- ❏ Effective fire detection.
- ❏ Efficient fire suppression.
- ❏ Equipment protection.
- ❏ Reducing downtime and cleanup after activation.
- ❏ Easy installation and operation.
- ❏ Cost-efficiency.



OUR COMPLETE CONVEYOR BELT SUPPRESSION SOLUTION CONSISTS OF:

- ❏ **PRIMARY:** (Head, Tail, Take-Up and Drive Sections). Minimum requirement for surface and underground conveyors.
- ❏ **SECONDARY:** (Suppression Zone) recommended for elevated, enclosed and underground conveyors.

I-CAT's Localised Suppression System is designed to protect conveyor belts – high risk areas like tail, head, take-up and drive sections. The comprehensive conveyor belt fire suppression system is patented, witnessed and tested by an international regulatory body.

THE SYSTEM MAKES USE OF WATER MIST TECHNOLOGY

I-CAT systems incorporate leading misting technology internationally. The system incorporates **AQUA COLLISION®** technology to create a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by fire, it leads to gradual cooling without causing thermal shock to the equipment. A foam additive, **CLEAVOS AFFF® / FFF®** (Fluorine Free Foam), is added to the system to prevent class B fires from spreading.

PRIMARY SYSTEM // HEAD, TAIL, TAKEUP AND DRIVE SECTIONS

Primary suppression systems are fixed automatic suppression systems and are designed to protect high-risk areas on the conveyor belt. As a standard, primary suppression systems are installed for both surface and underground / tunnelled conveyors for risk areas such as drive motors, drum rollers, plummer blocks, belting and high friction points.

SECONDARY SYSTEM // SUPPRESSION ZONE

I-CAT has developed the patented concept of suppression zones. Stand-alone suppression zones are predetermined zones along the length of the conveyor that consist of a flame- or equivalent detector and a fixed installation of discharge nozzles feeding from fire suppression cylinders. The purpose of a suppression zone is to suppress a moving fire on a conveyor belt and to cool the belt to a safe operating temperature, below its re-ignition temperature, as it moves through the zone.

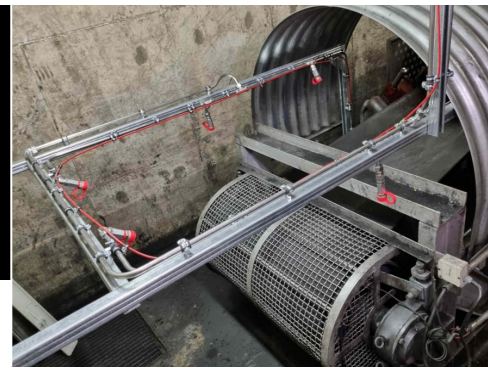
TERTIARY SYSTEM // SMOKE SCRUBBING

Part of I-CAT's patented conveyor suppression system includes a smoke scrubbing feature intended to contain smoke in confined or underground conveyors by filtering the environment of foreign particles using fine mist whilst allowing air to pass through the barrier, preventing smoke egress.

CONTINUOUS FLOW (OPTIONAL)

I-CAT's conveyor suppression system can be integrated to tie in with current or newly built reticulation, allowing for continuous flow. This system is proposed as an engineered alternative to the traditional water spray nozzle systems currently specified under NFPA 120 guidelines for fire protection of surface coal conveyors.

The system is specifically designed to enhance localised fire detection and suppression, targeting high-risk ignition zones on a typical coal conveyor system, such as head and tail pulleys, take-up areas, transfer points, and motors located on conveyors.



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9001:2015
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SYSTEM

COMPANY



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WITH



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