

Classification of Explosion-Proof Optical Cable Grades



Article Overview

Explosion-proof optical cables are classified according to ATEX, IECEx, and NEC standards based on hazardous zones, equipment protection levels, and temperature ratings.

Optical Cable Classification Overview

Explosion-proof optical cables are designed for use in hazardous areas where flammable gases, vapors, or combustible dusts may be present. Their classification depends on the zone of use, equipment protection level (EPL), and type of explosive atmosphere (gas or dust) according to international standards.

Standard	Zone / Division	Equipment Category	Atmosphere Type	Equipment Protection Level (EPL)	Typical Marking	Temperature Class	Notes
ATEX / IECEx	Zone 01	GGas (continuous/frequent)	GaEx op is IIC T6 GaT6	Optical radiation protection for continuous explosive gas presence	Zone 12	GGas (occasional)	GbEx op is IIC T6 GbT6 Suitable for areas where explosive gas occurs occasionally
	Zone 23	GGas (rare)	GcEx op is IIC T6 GcT6	For areas with rare or short-term explosive gas presence	Zone 201	DDust (continuous/frequent)	DaEx tb IIIC T80°C DaT80°C Optical cables for continuous dust exposure
	Zone 212	DDust (occasional)	DbEx tb IIIC T80°C DbT80°C	For areas with occasional dust presence	Zone 223	DDust (rare)	DcEx tb IIIC T80°C DcT80°C For areas with rare dust exposure
NEC / CEC (North America)	Class I, Division 11	GasT6	Class I, Div 1, Groups C & D, T6T6	Suitable for normal operation with flammable gases	Class I, Division 22	GasT6	Class I, Div 2, Groups C & D, T6T6 For abnormal conditions or accidental release
	Class II, Division 11	DustT80°C	Class II, Div 1, Groups E, F, G, T80°C	Suitable for normal operation with combustible dusts	Class II, Division 21	DustT80°C	Class II, Div 2, Groups E, F, G, T80°C For abnormal conditions or accidental release
	Class III, Division 1	GasT6	Class III, Div 1, Groups C & D, T6T6	Suitable for normal operation with flammable gases	Class III, Division 2	GasT6	Class III, Div 2, Groups C & D, T6T6 For abnormal conditions or accidental release

Article Content

Mar 30, 2026

Explanation of Explosion Proof Classifications

Explanation of Explosion Proof Classifications Note: The following outline is for reference only and the current National Electric Code,

Oct 06, 2025

Cables and Lines for Hazardous Areas

The purpose of this brochure is to help them in the selection of suitable cables and cable entry components, as well as the

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The differences between optical fiber grades A, B, C, and D

In summary, optical fiber grades A, B, C, and D differ significantly in terms of their end-face quality standards, which directly impact

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The NFPA establishes area classifications based on Classes, Divisions, and Groups which are factors combined to define the

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Explosion Proof Classifications

Explosion classified areas are defined by the following classes, divisions and groups, by the National Electric Code (NEC) (*See

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Factory Mutual (FM) Research Corporation Approval Standard, Explosion-proof Electrical Equipment, Class Number 3615, sets forth

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How Fibre Optic Cables Pose A Risk In Explosive Atmospheres

In short, while fibre optic cables are often perceived as completely risk-free in explosion-prone areas, that is only true

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For maximum fire safety: Cca and B2ca fibre optic cables from Draka

Cable specialist Draka, part of Prysmian Group, offers a complete range of high fire safety Cca and B2ca fibre optic

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Specific Classification of Explosion Proof Light Fixture

Explosion proof light fixture, a sophisticated blend of engineering and innovation, is designed to prevent ignition risks in

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Explosion-Proof Cables | EX Industries

Explore EX Industries' certified explosion-proof cables designed for hazardous environments. Ensure safety and compliance with our

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Understanding Grades of Explosion-Proof Equipment

Explosion-proof equipment is typically classified into different classes and divisions. The primary classes include Class I, Class II,

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EU CPR Fire Performance Classifications Guide – Which Rating Does

This article will systematically interpret the full set of CPR cable fire classifications, core performance indicators, and

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Fibre Optic Cabling Basics

Fibre Optic Cabling Basics Fibre Optic Cabling Basics The EN 50173-1 standard describes different categories of fibre-optical cables

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OPTICAL FIBER CLASSIFICATIONS UNDER ISO 11801 & EN

SINGLE-MODE GLASS FIBRE OS Single mode fibres are governed by two different regulatory documents: ITU-T standards or

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Explosion Protection for Optical Radiation | R. STAHL

Protected optical radiation "op pr" is based on the idea of preventing radiation from escaping from its enclosure. FO

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CABLETECH HAZARDOUS LOCATIONS

Any suitable type of wire or cable if installed in type PVC conduit, type RTRC conduit, and type HDPE encased in a concrete

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Cables and Lines for Hazardous Areas

Cables and lines are not included in the scope of the ATEX Directive and therefore cannot be certified in accordance with it. If an

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Understanding Explosion Proof Lighting Classes, Divisions, and Groups

In fact, an explosion proof light that is safe for one work location may be a real danger in another. That is why it is

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Understanding Explosion-Proof Classifications: What

Explosion-proof electrical equipment refers to devices designed to operate in hazardous environments

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Explosion Proof Classification: Understanding Safety Standards For ...

Classes, groups, grades, and categories are all used to define usefulness across any industry. Industrial facilities also

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Laser Classifications and Safety | ICT Solutions & Education

Safety should always be a major element of any organization's culture. In this month's column, I'll address laser safety applicable to

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ATEX and IECEx classifications

Temperature Classification: Defines the maximum surface temperature that the equipment may reach. For dust explosion proof

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Hazardous Location Cables

Each type of hazardous location requires specific types of cable and/or installation methods. Approved wiring methods range from a

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Comprehensive Guide to Explosion Proof, Ingress Protection

Complete guide to Explosion Proof protocols & standards. Learn more about the IP rating system & Ex classification

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What cables to use in Ex zones

In these parts of the world, particularly in the European Union where the ATEX directive is applied, cables

May 10, 2026

Overview of optical fibres standardization

3. Conclusion Optical fibres are characterized by many parameters, some of which are subject to standardization, as well as the

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