

**OPTRAL**

## Mining fibre Optic Cables

Since 1984 OPTRAL, a Spanish leader company, has been engaged in design, manufacture and sales fiber optic cables and fiber optic solutions with high added value for the Telecom, Mining, Oil & Gas, Industry, Broadcast and Data Centre fields. Quality and Innovation are Optral's strategic lines, ensuring our products to comply high quality standards and international certifications during manufacturing process.

Our Mining cable line includes a wide range of cables highly engineered to withstand the most demanding environmental conditions as well as mechanical uses. These cables feature resistant jackets and special designs (tailor made) to endure adverse mechanical conditions during long periods of time, (15 years guaranteed), our outstanding experience include very well known mines in Chile, Mexico and Peru, among others.

## Mining enviroments

We manufacture a wide range of cables for any environment, allowing our customers to develop any kind of project.

- 01 CONVEYOR BELT OPTIC CABLE
- 02 CHIMNEY RAISER OPTIC CABLES
- 03 FIRE RESISTANT CABLES. NORM IEC331-25
- 04 DTS: FIRE PREVENTIVE SOLUTIONS
- 05 ADSS / OUTDOOR AEREAL
- 06 GALERY CABLE , HANGING WITH RING



**OPTRAL**

HIGH PERFORMANCE  
OPTICAL CABLES

# MINING FIBRE OPTIC CABLES

**OPTRAL**

HIGH PERFORMANCE  
OPTICAL CABLES

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## Types of cables

### CONVEYOR BELT

#### CINFLEX

##### Flexible Industrial Cable for repeated bending

- Compact / Extra-Flexible and torsion resistant
- Excellent mechanical resistance / Easy to strip (gel free)
- Totally dielectric / Individual protection on each fibre
- Suitable for mobile applications belts and riser chimney.

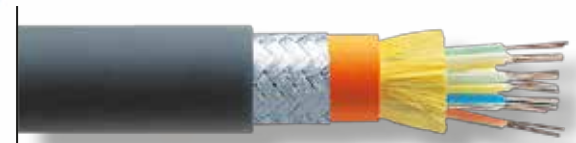


### SHAFT VERTICAL GALERY

#### CDAD

##### Dielectric Armoured Distribution Cable

- Universal (Indoor/Outdoor)
- Armoured with fibre glass braid (ultra flexible)
- Compact / Tough / Resistant / Easy to install
- Totally dielectric & fire resistant IEC331-25



#### CDAM

##### Metallic Armoured Distribution Cable (SWB)

- Universal (Indoor/Outdoor)
- Armoured with steel wire braid (ultra flexible)
- Compact / Tough / Resistant / Easy to strip (gel free)
- Saves installation costs / Excellent Rodent Protection

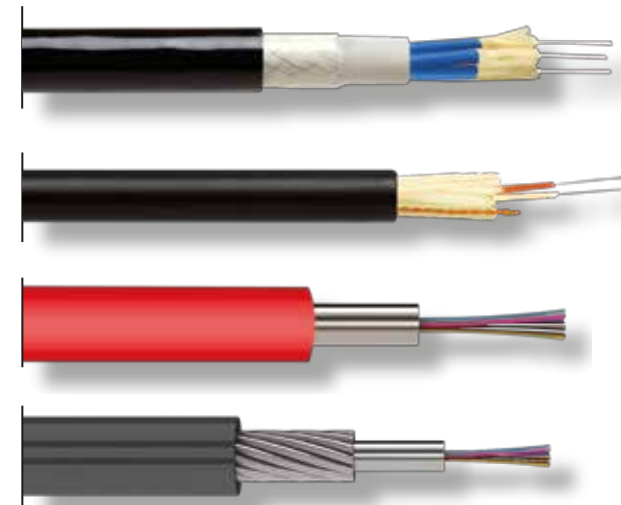


### FIRE RESISTANT CABLE / IEC331-25

#### DTST

##### Steel Armoured Optic Cable

- Universal (Indoor/Outdoor)
- Compact / Tough / Resistant
- Reduced diameter / Watertight
- Excellent rodent resistance



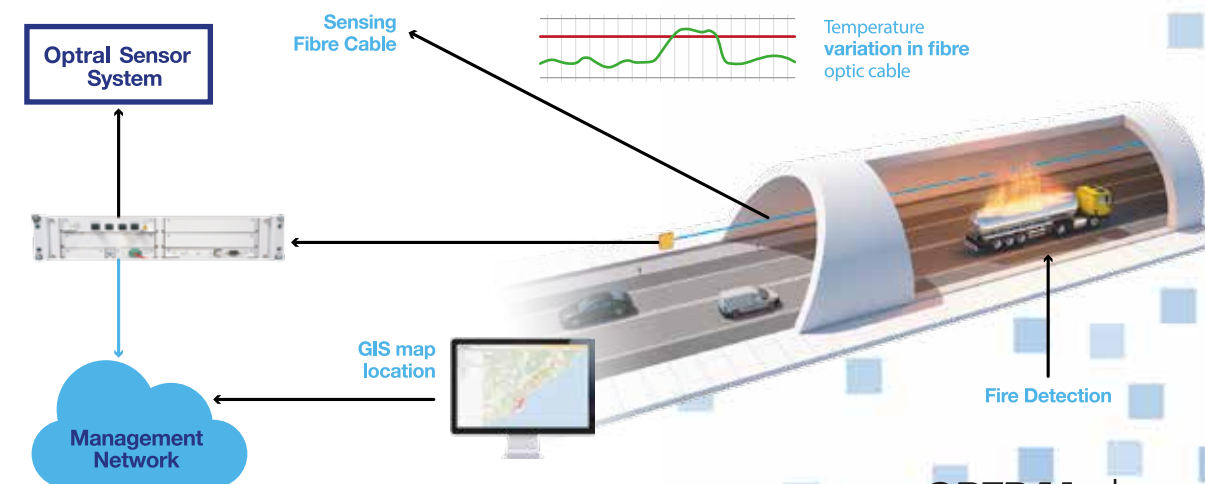
### FIBRE OPTIC SENSING SOLUTIONS

#### DTS

##### Distributed Temperature Sensor

Optral designs and produces fibre optic cables for DTS sensing to provide reliable and cost effective temperature monitoring system:

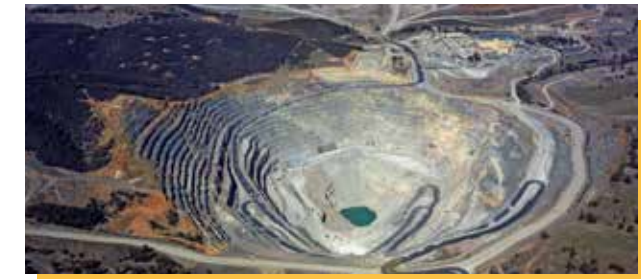
- Fibre optic is a reliable smart technology that provides preventive alarm in real time in case of heating up or fire.
- DTS provides preventive maintenance in Conveyor belt, to identify defective rolls, also DTS is used in the gallery fire preventive system
- OPTRAL Fire sensor cables are suitable to be operative under fire conditions.



### AERIAL OPEN PIT

#### ADSS OUTDOOR AREAL Aerial Loose Tube Cable

- Excellent mechanical resistance / Totally dielectric /
- Tough / Resistant / High density of fibres
- Self-supported aerial applications.



### RING GALERY CABLE

#### SUITABLE FOR HANGING

- Reinforced cable, light and reliable for gallery
- Smart cable design for longer life cable hanging on rings



## Optral Mining Deployments

### Success Worldwide

- ICA Flour (México)
- Sicartsa (México)
- Flour Daniel (Chile)
- Mina El Teniente
- Minasur Codelco (Chile)
- Mina Los Filos (México)
- Mina Peñoles (México)
- Proyecto Coloso Mina en Antofagasta (Chile)
- Project Las Bambas (Perú)
- Mina El Teniente (Chile)
- Control Center Link in Zacatecas (México)

