**NITREX®**

NON-EXPLOSIVE DEMOLITION AGENT

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# CFX - CFE Product description

**NITREX®** is a demolition agent, completely different from others, such as conventional explosives and other dangerous, hard-to-handle agents.

**NITREX®** is a powder that, when mixed with the right amount of water and poured into pre-drilled boreholes in the rock or the concrete to be demolished, hardens and swells, systematically cutting and cracking the material, which can be later extracted with tools and equipment according to its volume.

**NITREX®** produces no noise, no vibration, no ashes or gas emissions, and no flyrocks.

These characteristics make it safe both for human beings and the environment.

**NITREX®** can be used in many activities, including **mining**, **construction** and, in general, as a substitute for explosives and blasting equipment.

When the rock and/or concrete structures to be demolished (foundations, columns, beams, etc.) are located in places of difficult access, the use of explosives and other conventional demolition agents is nowadays avoided for safety and environmental reasons, and this is where **NITREX®** can be employed with many advantages.

**Other characteristics of NITREX®:**

♦ Its use is not regulated, as is the case of explosives and blasting equipment.

♦ There are no qualification requirements to handle it.

♦ Its storage and transportation to the demolition do not require special measures.

♦ It is easy and safe to handle in demolitions anywhere.

FOR DEMOLITIONS, WE RECOMMEND **NITREX ® CFE** CARTRIDGE

The use of non-explosive demolition agents is widespread around the world. In our country, they had not been used before, and its availability is subject to expensive imports.

**NITREX®** is produced in Argentina, as well as all its components, which guarantees its availability and use by consumers without any problems and with many advantages as compared to similar, imported products.

# Application:

# Given the characteristics described above, it can be used with many advantages in mining and construction industries.

# Mining Industry:

# Mixing NITREX® with the right amount of water creates a chemical reaction that generates a strong expansive force (over 8000 kg./cm2.), a lot more than the minimum necessary to break any rock, whatever its texture or hardness. This breaking strength is only comparable to that of explosives and blasting equipment.

# In blasting open pit quarries and in tunneling operations, the explosive is loaded into plotted boreholes, drilled according to the blasting plan, creating free faces with their backs towards the blasting force.

As with conventional explosives, for **NITREX®** to fracture the rock, it is imperative to have at least one free face (at the front or the back) apart from the one on which the boreholes are drilled.

In Mining, **NITREX®** applies to:

**1-** Rock demolition.

**2-** Rock excavation.

**3-** Fragmentation of small blocks

**4-** Removal of rock enclaves.

**5-** Quarrying and tunneling

**6-** Creation of cutting lines (in quarries producing blocks of application rocks).

In all these activities, it is fundamental to correctly plot and drill the boreholes, in order to break the rock mass according to plan.

The drilling diameter, the space between the bore-holes, and their depth, among other things, are very important.

It is advisable to use a minimum drilling diameter of 30 mm. The boreholes’ plotting must be as accurate as that used for regular explosions.

Construction industry**:**

**NITREX®** is fundamental for:

## **1-** Demolition of concrete structures

**2-** Demolition of concrete bridges

**3-** Demolition concrete foundations

**4-** Demolition of retaining walls

1. Demolition of concrete blocks
2. Basement sealing (Sealing Product ESX)

As well as in mining activities, it is imperative to plot and drill boreholes into which **NITREX®** will expand, creating fracture lines between them.

**NITREX®** is most useful for civil constructions. Due to the fact that most of these constructions take place either in or near urban areas, roads, dams, other buildings, etc., vibrations caused by explosives may cause undesired damages to property or the environment, that in most cases are irreversible.

# How to use NITREX®:

# NITREX® comes in four (4) polyethylene bags of five (5) kg each, in a hermetically sealed plastic bucket or in cardboard boxes.

The CFE product line comes in 25 x 250mm cartridges.

**Preparation**:

Once the amount to be mixed has been determined, pour a 30% of its weight in cold, clear water (at 22 / 23°C) into the bucket. The product is poured into the water slowly, constantly stirring either manually or with a stirrer. Once it is blended, the boreholes are filled with it (half an inch below the surface level). Filling the boreholes should take less than twenty minutes after the blending. To fill a large number of horizontal or vertical boreholes, it is advisable that hand or pneumatic loaders be used. Any surplus of blend must be trashed, as it cannot be reutilized.

The boreholes to be filled with the blend must be completely dry at the moment of filling them, and once the process is completed, they must be covered with any type of waterproof cover.

**NITREX®** will start to swell almost immediately and will reach its peak after 24-48 hours; this process may continue up to eight days after filling the boreholes, depending mostly on the temperature.

CFE cartridges must be submerged in water for a few minutes before filling the horizontal boreholes with them.

**Precautionary measures**:

Some precautionary measures must be taken when using **NITREX®:**

* Store the product in a dry place, in its original package.
* When a bag is opened, it must be used in its entirety.
* As it is a highly alkaline, irritating product, wear rubber gloves and safety glasses while handling it.
* Any surplus of the preparation must be trashed in a place where it cannot ignite, and it must not be stored in metallic or glass recipients (bear in mind that the product can expand up to 7000 or 8000 kg. / cm2 ).

**Warning:**

* Do not look into the borehole until 6 hours have passed after filling it.
* Wear a dust mask while handling the product within enclosed premises.
* In case of breathing the product or having skin or eye contact, wash with copious amounts of water and, if necessary, seek medical assistance.
* Keep the product away from children.

**Average Consumption:**

In order to calculate the amount of **NITREX®** to be used, the following table is enclosed, indicating specific consumption, expressed as kg. of product by linear meter of load, for different drilling diameters:

**Specific Consumption (kg./ linear m.) 1.2 1.6 2.0 2.4 2.8 4.6 5.3 6.3**

### Borehole Diameter (mm) 30 35 40 45 50 60 65 70

**THE NEW ESX SEALANT LINE IS BEING SUCCESSFULLY USED IN BASEMENT SEALING AND ABANDONED WELLS CAPPING.**