

## Exel™ LP



### Description

Exel™ LP detonators are a series of full strength nonelectric detonators with long period (LP) delay intervals between successive firing times. Exel™ LP detonator assemblies consist of a nonelectric detonator and a length of yellow Exel™ signal tube. Exel™ LP from Orica Sweden use the NPED (Non-Primary Explosives Detonator) technology and are therefore free of lead azide. The detonator has an aluminium shell. The Exel™ signal tube is a high strength, high abrasion resistant tubing which transmits the initiation signal to the detonator. One end of the signal tube is crimped into the detonator shell, and the other end is closed off by an ultrasonic seal.

### Application

Exel™ LP detonators provide a series of delay times suitable for development blasting in underground mining and for civil tunneling.

Exel™ LP detonators will directly initiate cap sensitive boosters and packaged explosives. Refer to the relevant Technical Data

### Technical Properties

Product	Exel™ LP
Shock Tube	Exel™ 3L or 3L XU (Yellow)
- Outer diameter (mm)	3.0 ±0.2
- Nominal tensile strength (min)	300 N at +20 °C
- Length (m)	6.0 – 45.0
- Shock wave propagation (m/s)	2000 ±100
Detonator	
- Initiating capability	REF. DET. #3
- PETN/RDX Base Charge (mg)	650
- Shell material	Al
- Hydrostatic pressure resistance	3 bar for 7 days

### Available Delay Range

Delay #	Nominal Delay Time* (ms)	Max. Std. Deviation (ms)	Delay #	Nominal Delay Time* (ms)	Max. Std. Deviation (ms)
0	25	16.7	11	1100	33.3
1	100	25.0	12	1200	50.0
1.5	150	16.7	14	1400	66.7
2	200		16	1600	
2.5	250		18	1800	
3	300		20	2000	100.0
3.5	350		24	2400	133.3
4	400		28	2800	
4.5	450	32	3200		
5	500	36	3600		
5.5	550	40	4000		
6	600	25.0	44	4400	
7	700	33.3	48	4800	
8	800		52	5200	
9	900		56	5600	
10	1000		60	6000	150.0

\*Including 6 m shock tube

### Recommendations for Use

Exel™ LP detonator assemblies can be reliably initiated by:

- Bunch initiation of up to 20 Exel™ LP detonators with a loop of detonating cord or with an Exel™ B Connector. Ensure that no shock tubes cross over or lie within 200 mm of the detonating cord.

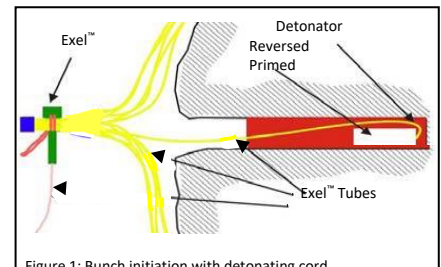


Figure 1: Bunch initiation with detonating cord

- Connection to detonating cord (with a core load approx. 5.0 g/m with clips (J-Hooks)).

Exel™ LP blasts can be reliably initiated with:

- Exel™ Starter / Exel™ Starter SL
- an approved blasting machines for shock tube initiation, e.g. Exel™ Start DS2 or Exel™ Start HN1
- a full strength detonator (REF. DET. #3, or higher).

## Packaging

Exel™ LP detonators are packed into plastic or aluminum bags inside cardboard cases. All units within a case have the same tube length and delay.

Tube length (m)	Qty per bag (1.1B)	Qty per box (1.1B)
6.0	10	100
6.6	10	100
7.8	10	100
9.0	10	70
12.0	10	50
18.0	5	40
24.0	5	30
30.0	4	20
45.0	2	20

1.4S packaging is available to special order.

Other tube lengths may be available upon request. Please ask your DEXPLOC representative for further information.

## Storage and Handling

### Product Classification

Authorised Name:	Exel™ LP	
Proper Shipping Name:	Detonator assemblies, non-electric	
UN No:	0360	0500
Classification:	1.1B	1.4S
EC Type Certificate:	0589.EXP.2783/18	

All regulations pertaining to the handling and use of such explosives apply.

Exel™ LP detonators should be stored in a cool, dry detonator magazine, Stacks of cases should be no more than 2 meters high.

Exel™ LP detonators should be used in temperatures from -45 °C up to 70 °C.

Exel™ LP detonators have a shelf life of 2 years.

## Disposal

Disposal of explosive materials can be hazardous. Methods of safe disposal of explosives may vary depending on the user's situation. Please contact a DEXPLOC Representative for information on safe practices.

## Safety

Avoid damage to the shock tube. Never pull so hard as to stretch or break shock tubing. A premature initiation may result.

Do not use the Exel™ LP assembly as a lowering line. Keep the shock tube taut until loading has been completed. Avoid damage to the shock tube during loading and stemming operations.

Exel™ LP detonators provide a high level of safety against initiation by static electricity, electrical stray currents and radio frequency transmissions. However, they contain sensitive explosives, which can initiate under intense impact, friction or heat. As with all explosives these detonators must be handled and stored with care.

## Training

This Technical Data Sheet is for information only. The Exel™ system including the Exel™ LP should only be used by personnel who have been properly trained to use this system.

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