

Exel™ Handidet™ SL



Description

Exel™ Handidet™ SL is a ready-to-use combined detonator and delay unit consisting of an in-hole detonator on one end of a shock tube and a surface connection block with delayed detonator on the other end. It offers a fast and simple alternative to the traditional method of manually combining single in-hole detonators with separate surface connectors for nonelectric sequential blasting in open pit mines, quarries, pipeline & utility trenching and other construction projects. Exel™ Handidet™ SL from Orica Sweden use the NPED (Non-Primary Explosives Detonator) technology and are therefore free of lead azide. Exel™ Handidet™ SL assemblies are fast to apply, easy to verify, and provide accurate surface and in-hole timing without forgoing the possibility to give each particular blast hole its individual initiation time.

Application benefits

Exel™ Handidet™ SL units are highly visible non-electric detonator assemblies with rugged, abrasion resistant tubing and colour coded delays, which:

- Eliminate electrical hazards at blast site.
- Eliminate the need for detonating cord trunk lines.
- Reduce risk of cut-off failures caused by ground movement during blasts.
- Reduce the number of components on site, i.e. surface and in-hole delays in one unit.
- Reduce inventory.
- Allow easy pre-blast changes to pattern design.
- Provide easy blast hole sequencing.
- Allow easy hook-up, i.e. increase productivity.
- Facilitate rapid hook-up verification.
- Can be used in all weather conditions.

Technical Properties

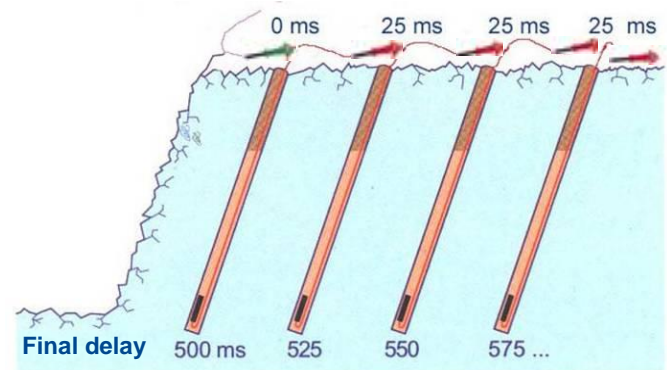
Product	Exel™ Handidet™ SL
Signal tube	Red Exel™
- Outer diameter (mm)	3.0
- Nominal tensile strength	300 N at +20°C
- Length (m)	from 6.0 m
- Shock wave propagation (m/s)	2000 ±100
Detonator	
- Initiating capability in-hole detonator	REF. DET. #3
- PETN/RDX Base Charge in-hole detonator (mg)	650
- PETN Base Charge surface detonator (mg)	160
- Shell material	Al
Connector block	7 tube capacity
Nominal delay times* (max. deviation, rk)**	
- Surface delays (ms)	25 (2.0), 42 (3.3)
- In-hole delays (ms)	500 (6.7)

*Including 6 m shock tube

**rk according to EN 13763-16

Recommendations for Use

Application example



In order to fully exploit the system's range of possibilities, the worksite should have a standardized work cycle with recurrent drilling, charging and firing patterns.

Exel™ Handidet™ SL surface connectors will hold and initiate up to five 3 mm signal tubes in both directions. It is important to ensure that the lid of the surface block is firmly closed and 'hooked' in place over the up to 7 signal tubes placed inside the connector block. Shrapnel from the mini-detonator or the plastic SL connector block could damage Exel™ tubes in close proximity, which are not directly initiated by the unit. Always maximise the safety distance between the SL unit to adjacent Exel™ tubes. The SL block must be covered with sand,

stemming or rocks to prevent any shrapnel damage to adjacent tubes.

Priming and all subsequent operations must be carried out in a manner that will ensure no damage to any surface tube and detonator.

Avoid tangling or tight stretching of signal tubes laid between holes.

Exel™ Handidet™ SL should normally be "reverse-primed", with the in-hole detonator base pointing towards the blasthole collar. It should be secured inside a suitable primer, which fully encloses the detonator shell to protect it from damage during charging.

The Exel™ signal tube is extremely robust, however if it is cut or split, moisture may enter the hollow core and cause a misfire.

Excessive force should not be applied to signal tube under any circumstances. If a primer becomes stuck when attempting to retrieve or reposition it, a replacement unit should be used.

Exel™ Handidet™ SL can be reliably initiated with:

- Exel™ Starter
- an approved blasting machines for shock tube initiation, e.g. Exel™ Start DS2 or Exel™ Start HN1
- electric (e.g. Dynadet™), non-electric (e.g. Exel™ MS) or electronic detonators (e.g. uni tronic™ 600 or i-kon™)

Packaging

Exel™ Handidet™ SL assemblies are packed into plastic 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	10	80
9	10	60
12	10	50
15	10	50
18	5	40
24	5	20
27	4	20
36	4	20

Other surface delay/downhole delay time combinations or tube lengths maybe available upon request. Please ask your local Orica representative for further information.

Storage and Handling

Product Classification

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

Exel™ Handidet™ SL assemblies should be stored in a dry detonator magazine licensed for explosives. Stacks of cases should be no more than 2 meters high.

Exel™ Handidet™ SL may be used in temperatures from -45 °C up to 50 °C. Exel™ Handidet™ SL detonators have a shelf life of 3 years.

Disposal

Disposal of explosives materials can be hazardous. Methods for safe disposal of explosives may vary depending on the user's situation. Please contact a local Orica 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™ Handidet™ SL 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™ Handidet™ SL provides a high level of safety against initiation by static electricity, electrical stray currents and radio frequency transmissions. The surface detonator is factory assembled in the connector block and no attempt should be made to disassemble it.

Exel™ Handidet™ SL assemblies 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™ Handidet™ SL should only be used by personnel who have been properly trained to use this system.

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