



# Drill hole blasting plugs

## Blast for less!

### Paraplug®

Is a conic shaped drill hole blast plug ideal for creating air decks at any depth of the explosives column. It's innovative and patented design, with the application of an air deck, allows for a better distribution of the energy released by the detonation in a way that a greater proportion of it works towards rock fragmentation. Also, its conic shape creates a wedge guiding more of the blasting energy into the rock rather than upward out of the drill hole. The result is lower explosives consumption, improved rock fragmentation, decreased Fly-rock, reduced noise and vibration levels and savings in drilling costs.



### Reduce costs and simplify operations with Paraplug®

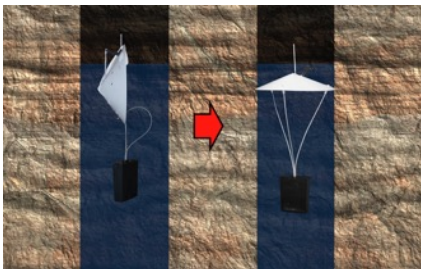
Paraplug® is practical, reliable and very easy to deploy. These features make Paraplug® a product that offers huge benefits to drill and blast operations.

#### Better blasting results and safer operations

- Improved **fragmentation**
- Lower **explosives** consumption
- Minimization or elimination of **sub-drilling**
- Safer blasting due to decreased **Fly-rock**
- Reduced **noise and vibration** levels



#### Versatility and simplicity in stemming operations



- Quick deployment (<20 seconds)
- Easy installation system without the need for any tools or poles
- Recoverable in case of incorrect positioning without
- Submersible device
- It works in almost any borehole condition

## Paraplug®

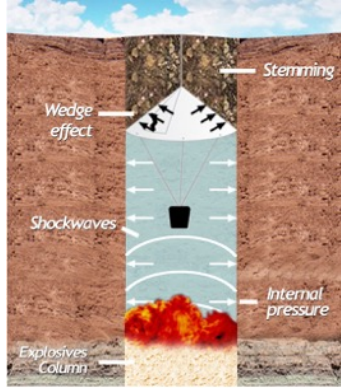
- Improved fragmentation
- Less explosives
- Less drilling
- Simpler operation
- Versatility of applications

## Lower costs!

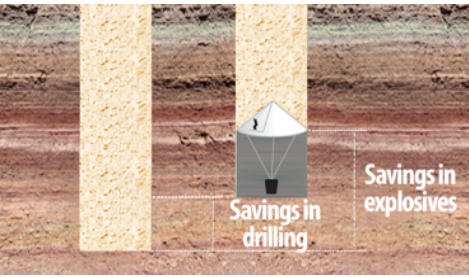
### Improved fragmentation and less Fly-Rock

Paraplug's innovative design is ideal for the creation of Air Decks at any depth of the explosives column. Its innovative design allows for a better distribution of the detonation energy so more of it is translated into tension forces that favor fragmentation. Also, its conic shape create a wedge forcing more of the blasting energy towards the rock rather than upward out of the drill hole (Similar to a "blocked cannon" effect), minimising fly-rock.

The results are better rock fragmentation and less fly-rock.



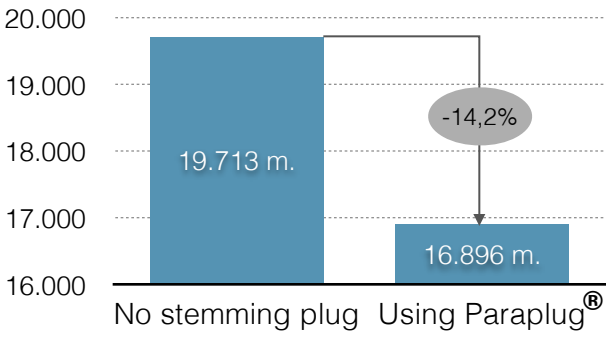
### Lower explosives consumption and less drilling



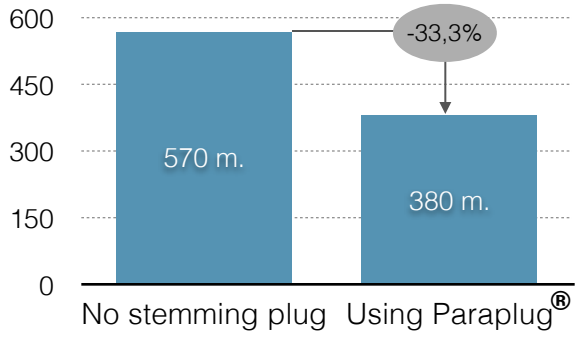
Paraplug® can be used at the bottom of the borehole to minimize sub-drilling achieving similar results in terms of bench stability, uniformity and improved rock fragmentation.

Paraplug users have reported savings of **33%** in explosives consumption and **14%** in drilled meters when using our device.

**14.2% reduction in drilled meters by 1.000.000 bcms**



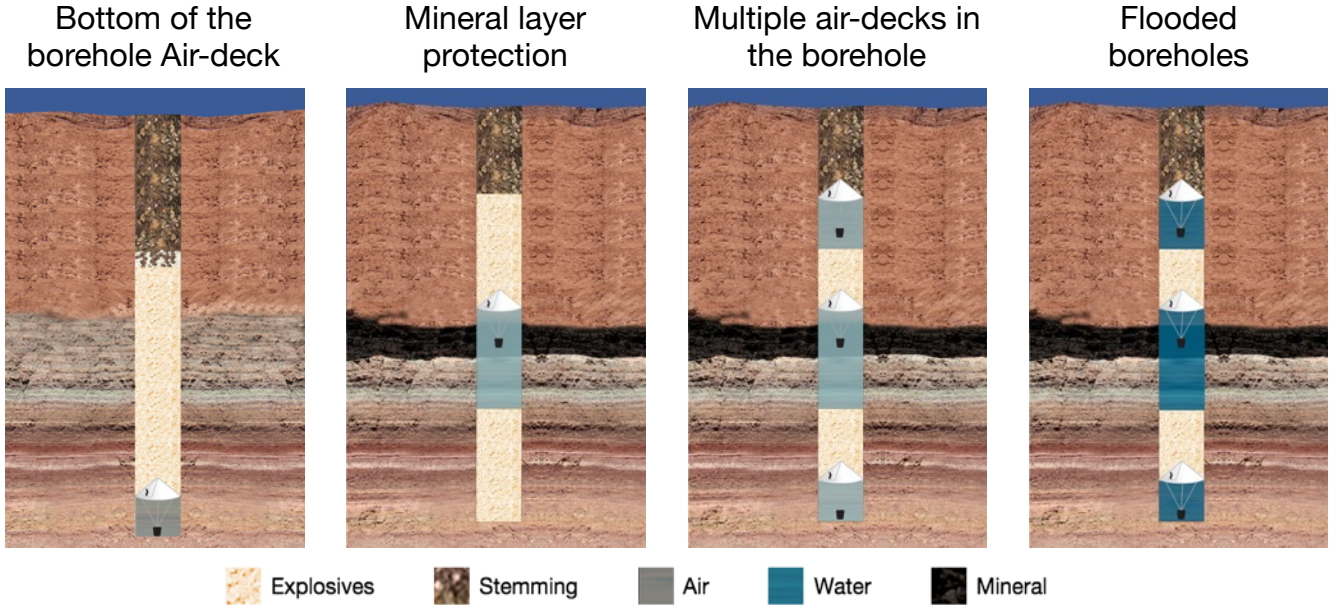
**33% reduction in BLEND 70/30 (ton) consumption by 1.000.000 bcms**





## Versatility in its applications

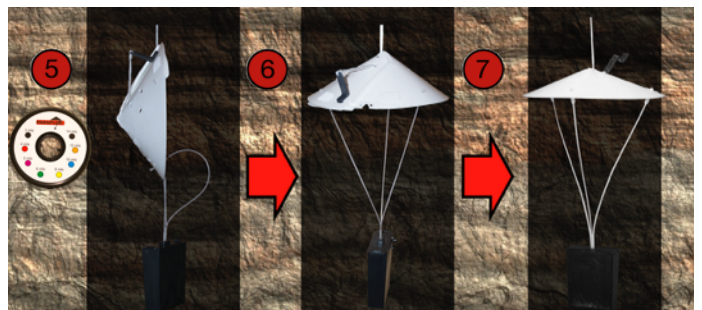
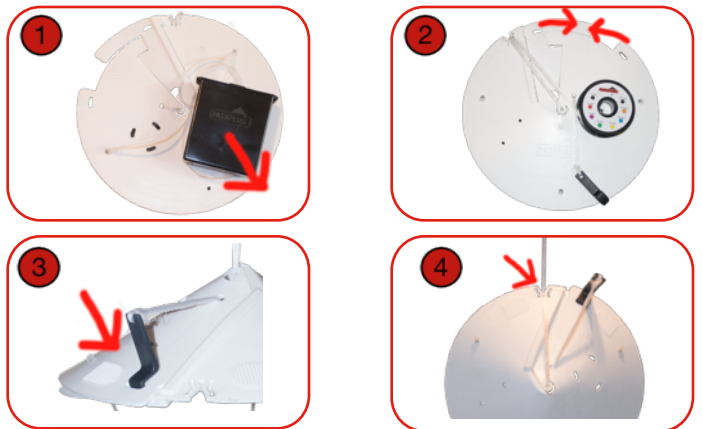
Paraplug® can be used for most blasting applications in open pit mining operations. Its self-supported design allows it to be placed with great accuracy in any rock type and borehole condition.



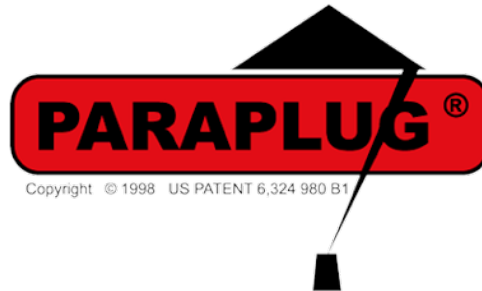
## Simple and quick operation

Paraplug® can be armed in less than 20 seconds and deployed at any depth in the borehole without the use of any additional tools.

1. Un-attach the weight box from the disc
2. Fold the disc into a conic shape by aligning the release peg slots
3. Insert release peg into the slots, make sure the peg is facing the center of the disc
4. Un-attach cord reel and latch the cord into the positioning latch
5. Lower the Paraplug® into desired depth guided by the color coded marks in the cord
6. Pull slightly on the cord to level the device
7. Pull on the cord again to trigger the device and fix it into the hole wall







Watch a video of Paraplug's deployment at:  
<http://www.paraplug.com/operation.html>



- Improved rock fragmentation
- Lower explosives consumption
- Less Fly-Rock
- Reduction or elimination of sub-drilling
- Increase in productivity due to faster loading cycles
- Preventing contamination of the explosives with the stemming material
- Lower noise and vibration levels
- Maximum reliability in blasting above and below a mineral layer
- Paraplug is:
- Un dispositivo:
  - Quickly and easily armed (<20 sec.)
  - Easily deployed without the need to use additional tools
  - Submersible and can be used at any depth for multilevel blasting
  - Recoverable in case of incorrect positioning
  - Completely mechanical
  - Can be stored indefinitely without any loss of performance
  - Absolutely reliable

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