

# Stempac

Technical  
Information



## Description

Stempac is an underground stemming device used to retain explosive energy in blast holes drilled underground. The Stempac consists of a StemTite® Blast Control Plug surrounded by selected aggregate that is contained within a sleeve. The Stempac is held in the hole by a retention spider. In operation the explosive energy wedges the StemTite Blast Control plug into the surrounding aggregate. This redirects the energy of the blast into the blast hole wall, which effectively contains the explosive energy.

The Stempac stemming system consists of three components:

### 1. The Stempac Device

The Stempac device is an assembly of StemTite plugs and selected crushed aggregate. These components are contained in a package manufactured from a deformable material. The deformable material permits the Stempac to increase its diameter to fit variations in the designated blast hole diameter.

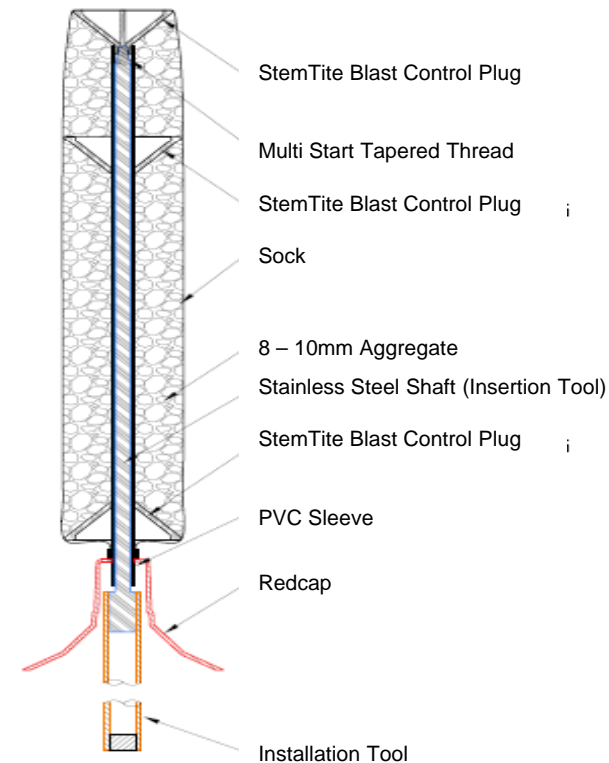
### 2. The Installation Tool

The installation tool consists of a stainless steel rod, which has a tapered multi start thread on the end. The stainless steel rod is fitted to a length of PVC conduit.

### 3. The Red Cap Retention Spider

The function of the red cap is to retain the Stempac in the blast hole and allow for the tamping of the stemming contained in the Stempac. The red cap has a hole drilled through the end to allow placement on the end of the insertion tool. The red cap is a standard device used to hold emulsion product in upholes.

## Properties



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## Application

### Attachment of Insertion Tool

1. Place the Red Cap onto the stainless steel rod ready for placement into the blast hole. (The plastic sleeve is part of the Stempac and should not be removed.)
2. Push the installation tool rod through the tube in the centre of the Stempac until it bottoms.
3. While holding the insertion tool, turn the Stempac by the closed end until a definite resistance can be felt. To ensure the Stempac is attached firmly to the installation tool, hold the installation tool steady while pulling back on the closed end of the Stempac. The Stempac should be attached to the installation tool ready for installation into the blast hole.

### Installation into the Blast Hole

1. While holding the installation tool, with the Stempac attached in a vertical up position, pull down on the lower open end of the Stempac. (This will stretch the Stempac, maximising the length and minimising the diameter, to ensure the section containing the aggregate is smaller than the diameter of the blast hole. If the Stempac has had excessive handling it may be necessary to knead the aggregate to reduce the diameter. The Stempac is now ready for placement in the blast hole.
2. Clip the NONEL lead(s) into the gate in the red cap.
3. Place the closed end of the Stempac into the blast hole and push it until the red cap fingers engage the blast hole wall.
4. Pull back on the NONEL lead to ensure it is free and has not become tangled.

5. While holding the NONEL lead slowly push the Stempac device into the desired position in the blasthole. It should be noted that the Stempac cannot be retracted because the red cap can only travel in one direction.
6. Tamp the stemming into place by pulling back hard on the insertion tool. This will spread the stemming at the closed end of the Stempac to the size and shape of the blasthole. This stemming protects the centre Stemtite plug from the heat of the blast, which is of vital importance.
7. Turn the insertion tool to unscrew from the Stempac and withdraw the insertion tool from the blast hole.

## Benefits

- Good stemming practices, with controlled energy retention prevents cratering and results in less damage to the brow of the stope.
- Effective stemming contains explosive gases, increasing the energy imported to the rock mass.
- Effective stemming results in improved fragmentation of the blasted rock.
- Effective stemming greatly reduces airblast and the damage caused as a result of airblast.
- Simple and easy to use and can be incorporated into charging procedures for underground blast holes.
- Ready for immediate use and conveniently packaged for underground storage.

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## Handling

It is advisable not to handle the Stempac more than necessary prior to installation.

## Packaging

The Stempac is delivered enclosed in a plastic sleeve and packaged in cartons. Each carton has a nominal weight of 30 kilograms. It is available in sizes to suit 76, 89 and 102 millimetre diameter blastholes.

Hole Size	Quantity per box
76mm	14
89mm	10
102mm	8

## Safe handling, transportation and storage

**First Aid** - Detailed first aid information regarding this product is contained on the relevant Dyno Nobel Material Safety Data Sheet.

**Safety** - All explosives are classified as dangerous goods and can cause personal injury and damage to property if used incorrectly.

**Transportation and Storage** - All explosives must be handled, transported and stored in accordance with all relevant regulations. Stock should be rotated such that older product is used first.

The information and suggestions contained in this document concern explosive products that should only be dealt with by persons having the appropriate technical skills, training and licence. The results obtained from the use of such products depend to a large degree on the conditions under which the products are stored, transported and used.

While Dyno Nobel makes every effort to ensure the details contained in the document are as accurate as possible, the conditions under which the products are used are not within its control. Each user is responsible for being aware of the details in the document and the product applications in the specific context of the intended use. If technical advice is required in the specific application of the products then you should contact Dyno Nobel for assistance.

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