

Getting Detailed Guidelines For Achieving THE Best Practice In Drilling, Blasting & Explosives Safety

# Drilling & Blasting Explosive Technologies

CPD pending

Dates : **21-22 Feb 2022 , 29 -30 June 2022,  
21 – 22 Sept 2022, 28 -29 November 2022**

Venue : **Johannesburg, South Africa /Online**

NB\* dates set according to availability of our subject matter expert



For more information contact :

Tel: +27 794 117042 / +27 877005633 / Email: [register@casi.co.za](mailto:register@casi.co.za)

[www.casi.co.za](http://www.casi.co.za)



## Drilling and Blasting Explosive Technologies

With the increasing pressure on drill and blast teams to keep the pace of access to ore body for production, but with a new emphasis on being more aware of cost and efficiency, the challenge facing you and your team has never been greater.

The objective of the course is to provide mining Superintendents, mining Engineers and experienced mine personnel with an insight into improving the effectiveness of drilling and blasting operations at their mines. The primary method of production and rock breaking in the African mining industry is drilling and blasting. This method of rock breaking has been subjected to continuous improvement both with regard to the technological applied and the practices followed. To maximize the benefits offered by these new technologies and techniques, it is necessary to review the basic theory of rock breaking, blast design and drilling technology. Specialized blasting techniques and optimization drilling and blasting will be covered.

Best practices will be dealt with and case studies considered illustrating practically how to achieve the greatest benefit. Emphasis will be placed on the integration of drilling and blasting into the broader mine to mill value chain, in order to reach a true economic optimum for the total mining process.

This is an event that every drill and blast personnel can't afford to miss.

### Key Benefits of Attending:

- Interpreting and utilising the industry best practice rules on drilling and blasting
- Exploring the latest electronic detonator technologies to optimise productivity
- Handling drill and blast data
- Utilising initiation design
- Understanding the mechanics of rock breaking and rock blasting
- Complying to guidelines for achieving consistent presplitting and highwall controls
- Applying stem charge and air deck blasting theories
- Increasing fragmentation and casting
- Minimising ore dilution
- Outlining and handling single hole signature analysis for vibration predictions
- Minimising total mining system costs with good blast designs
- New innovations and technology with safety aimed practices

### What to expect

- New products & equipment
- Recent developments in blasting practices
- Safety issues
- Improved fragmentation
- Vibration control
- Changes in compliance
- Homeland security
- Regulatory changes

## Overview





## Drilling and Blasting Explosive Technologies

### Who Should attend

- Blast engineers
- Drill and blast supervisors
- Drill and Blast Managers
- Drill and Blast Superintendents
- Exploration Geologist
- Geology Managers
- Mine Managers
- Production Managers/Engineers
- Technical Services Managers
- Exploration managers
- Resource Geologists
- Underground surveyors
- Mining Engineers
- Blasters
- Blasting specialists
- Business line managers
- Consultants
- Contract managers
- Conversion engineers
- Drill & blast engineers
- Drill & blast supervisors
- Engineers
- Explosives engineers
- General managers
- Geotechnical engineers
- Mine managers
- Mine planners
- Mining engineers
- Operations managers
- Product managers
- Production engineers
- Project engineers
- Project managers
- Rock engineers
- Surveyors
- Technical co-ordinators
- Technical representatives

### Our Expert's Skills

Understanding of all aspects of the explosives and blasting industry with a focus on safety and efficiency. Experience in a broad range of underground and surface mines and construction operations including large diameter tunnels in urban environments. Project management and risk management related to blasting operations. Economic and technical analysis of blasting operations leading to precise and practical recommendations.

Development and implementation of competency based training systems.

Peter specialises in developing total blasting systems incorporating technical, economic and human factors to deliver an optimised result. Key to this process is the development, presentation and implementation of the standards, procedures and guidelines that comprise site-specific competency-based training.

Blast Management International provides Australia wide on-site blast consulting, nationally recognised shotfirer training and advanced blast design training for open cut coal, and both underground and open cut Metalliferous mines.





**Day 1**

**Explosives blasting principles**

- Explosives ingredients and their role in explosives function?
- What makes explosives work?
- Explosives Features and functionality  
Comprehending the mechanics of rock breaking
- How do explosives break rock
- Mechanical properties and rock behavior
- Different explosives for different rocks
- Workshop on explosive product selection
- Energy distribution – Shock and Heave energy partition.

**Principles of blast design**

- Drill parameters and selection
- Determining cost effective blast parameters
- Workshop on developing cost effective blast design
- Blast Parameters and rules of thumb
- Innovations in blast design

**Poor Fragmentation And Ultimately Lost Production – Get Your Drilling Right**

Getting your drilling right is of paramount importance as this affects the blast and fragmentation, rippling to downstream processes. Human error is often cited as the reason why drilling becomes inaccurate and impact negatively on mine production. In this session you will get more information on:

- Matching drilling pattern to rock type
- Factors to consider when deciding on drill rig fleets to suit the mining geometry
- Common angle errors and how to ensure they are avoided
- How to drill the correct depth for rock material
- Strategies employed in ensuring correct drilling in areas where drilling quality and measurement is difficult

Examples from past experiences will be shared as well as recommendations on what could have been done to ensure correct drilling.

**DAY TWO**

**Principles of initiation design**

- Initiation products
- Electronics vs nonelectrics
- Workshop on initiation timing selection  
Managing drill and blast data
- Understanding the data from first principles
- Blast design software options  
Environmental and sensitive area blasting
- Achieving compliance in a competitive market
- Fragmentation vs environmental
- Outlining and handling problems with single hole signature analysis for vibration predictions
- Minimising blast fumes
- Workshop – Sensitive area blasting scenario

**Specialised Blasting Techniques**

- Achieving consistent pre-splitting and highwall controls
- Optimising development profiles and stope stability
- Airdeck and stemming deck charging
- Managing secondary breakage

**Determining the optimum hole, row and deck delays to increase fragmentation, casting and to minimise ore dilution**

- Timing vs fragmentation
- Timing vs Throw
- Minimising ore dilution
- Workshop on timing vs fragmentation, throw and dilution



## In-house Training

Maximize on learning and reduce on company downtime by managing your employee training .

### **Designed for you**

Tell us your training needs, and we will plan an agenda to address the issues that matter most to your organization Focus on your own company rather than generic examples, and maximize impact by incorporating presentations from your auditors or company management.

Run the training where and when you want it – at your own premises or at another suitable venue of your choice - anywhere in the world.

### **Rely on our experience**

Receive first class support and advice from our dedicated team from planning to delivery and de-brief.

Work with CASI CA instructor best qualified for your organization and your business sector.

Tackle confidential issues and strategic challenges privately under the guidance of our specialists.

### **The benefits**

Upgrade your team's skillset, invest in your staff and increase their job satisfaction through empowerment.

Our in-house courses qualify for professional education training credits (CPD) from relevant bodies.

Our cost effective In-House courses are priced per day with no limit to the number of participants. If you choose to train locally, you will save on course fees, travel expenses and time away from the office.

### **What are the Costs?**

Every In-House Training session is different - we customize the training and that applies to the pricing too. Tell us about your project, and we will give you a specific training proposal and price according to your training needs. The price will be based on a per day (rather than per person) basis, and we place no limit on the number of participants.

Contact our team of training consultants today to discuss your specific requirements. [register@casits.co.za](mailto:register@casits.co.za)

## Registration

- Complete the registration on the last Page
- Select delegate package
- Submit scanned copies to [register@casits.co.za](mailto:register@casits.co.za)
- Receive invoice , Make payment , Complete pre-workshop Questionnaire
- Attend Session



[www.casits.co.za](http://www.casits.co.za)

To register Email: [register@casits.co.za](mailto:register@casits.co.za)

Contact Numbers +27 87 700 5633 /+27 794 11 70 42

**Delegate Registration form- MK** [www.casi.co.za](http://www.casi.co.za) +27 (0) 87 700 5633/ +27 794117042 Email scanned copy to : [register@casi.co.za](mailto:register@casi.co.za)

**Delegate Details**

Full Names : \_\_\_\_\_

ID number : \_\_\_\_\_

Position : \_\_\_\_\_

Cell Number : \_\_\_\_\_

Email : \_\_\_\_\_

Regular          Vegetarian          Halal

Full Names : \_\_\_\_\_

ID number : \_\_\_\_\_

Position : \_\_\_\_\_

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**17 -18 Nov 2022**

**Delegate Fees**

**R9 999** Local Fees excl. VAT per delegate

fee includes Meals , Session , Conference fees , material hand outs .  
Does not include Travel and Accommodation .

**R10 999** International Fees excl. VAT per delegate

**Payment By Means Of Bank Transfer**

All Payments Must be made directly into the CASI Bank Account provided on the invoice and proof of banking details

Please state the invoice number as reference .

A copy of the bank deposit / Proof of Payment receipt must be emailed to [accounts@casits.co.za](mailto:accounts@casits.co.za)

**Invoice Contact**

Full Names : \_\_\_\_\_

Position : \_\_\_\_\_

Department : \_\_\_\_\_

Direct Line : \_\_\_\_\_

Cell Number: \_\_\_\_\_

Email : \_\_\_\_\_

**I hereby acknowledge that I have read an understood all the terms and conditions of registration and have the authority to approve the registration on behalf of the company**

Name \_\_\_\_\_ Position \_\_\_\_\_

Approving Managers Signature : \_\_\_\_\_ Date: \_\_\_\_\_ email: \_\_\_\_\_

Direct line: \_\_\_\_\_ Company Name: \_\_\_\_\_

Type of Business: \_\_\_\_\_ Company Registration# \_\_\_\_\_

Tel : \_\_\_\_\_ Fax: \_\_\_\_\_ VAT Number \_\_\_\_\_

Address: \_\_\_\_\_

P.O.BOX : \_\_\_\_\_

Term "CASI" refers to CASI Construction Academy PTY LTD . The signed registration form is a legally binding contract. The signed registration form is a legally binding contract. Please take note that a booking submission made via email or web submission or Telephonic is considered legally binding and as such , the registered delegates must inform the organiser if they will not be able to attend failure to which the case will be handed over and penalties apply . CASI does not provide refunds for cancellations, however you may provide substitute delegates at any time. For cancellations received in writing more than seven(7) days prior to the conference you will receive 100% credit, subject to a 10% administration fee, to be used at another CASI conference for up to one year from the date of issue. For cancellations received seven(7) days or less prior to an event (including day 7), no credit will be issued. In the event that CASI cancels an event, delegate payment at the date of cancellation will be credited to one future CASI This credit will be available for up to one year from the date of issue. All participants must pay the registration fee prior to arrival at the conference venue. The same applies to live online sessions , all delegates must pay the fees before receiving a link to register to attend . Delegate fees on online live sessions only include course fees and course material which are provided to fully registered delegates . CASI reserves the right to change the LMS platform if deemed fit .

In the event that CASI postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive 100% credit representing payments made towards one future CASI. This credit will be available for up to one year from the date of issue. No refunds will be available for cancellations or postponements. We reserve the right to postpone a seminar due to low enrolment. CASI reserve the right to amend any part of the Conference programme if necessary at any time. CASI suggests clients wait until a week prior to course commencement that a course has been confirmed to go ahead as scheduled before booking flight and accommodation. CASI is NOT responsible for cost associated with cancellation/ Postponement of classes such as flight and accommodation for clients.

CASI will not be held liable for travel and accommodation costs. The conference fee for physical classes includes: conference material, lunches and refreshments, but excludes travel & accommodation. CASI has a strict no cash Refund Policy . We reserve the right to cancel delegate registration if delegate conduct is not followed .CASI is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/ postponement of an event. CASI shall assume no liability whatsoever in the event this conference is cancelled ,rescheduled or postponed due to a fortuitous event, act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable or impossible. For purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergencies. Alterations to the program will be communicated to the fully registered delegates . Any venue/ platform listed must be treated as provisional . Please note: Upon receiving the registration form, an invoice will be issued electronically.

Delegates are not permitted to record or reproduce any part of the online session . When payments are made, please supply the bank with your Invoice number as reference. The organisers reserve the right to make to the programmes, speakers, venue or the dates should the need arise. All unpaid invoices will be handed over . Invoices must be paid within 5 days of registration . We have the right to limit the vouchers being offered.