

Guidance Note No. GN 7

How to Apply for a Blasting Permit



Mines Division, Geotechnical Engineering Office
Civil Engineering and Development Department

1. Introduction

- 1.1 Under Regulation 46 of the Dangerous Goods (General) Regulations (Cap. 295B), no person shall carry out any blasting without the permission of the Commissioner of Mines (CoM).
- 1.2 Prior to applying to the CoM for permission to undertake blasting, a Blasting Assessment Report (BAR) has to be submitted to and approved by the relevant regulatory authority. For private projects, a BAR prepared by a competent person and signed by the Registered Geotechnical Engineer and/or the Registered Structural Engineer, as appropriate, must be submitted with relevant plans to the Buildings Department, in accordance with PNAP APP-72. For public projects, the BAR, prepared by a competent person, normally at the design stage of the project and before award of the contract, must be submitted by the project proponent to GEO for agreement, in accordance with Chapter 4 of the Project Administration Handbook (PAH).
- 1.3 The purpose of the BAR, prepared before the contract is awarded (known as the pre-contract BAR), is to identify all sensitive receivers, assess any adverse effects and risks arising from the transport, storage and use of explosives for blasting, and to demonstrate that it is feasible to carry out the blasting works in a practical, safe and acceptable manner. As it is essentially a feasibility study at the project planning and design stage, unless stipulated under the contract, the contractor is not bound to follow the BAR. Therefore, the contractor may propose alternative arrangements after award of the contract.
- 1.4 For private projects, if the pre-contract BAR is amended by the contractor, it will need to be resubmitted to the Buildings Department for approval, with the relevant plans, and time needs to be allowed to complete this statutory process. For public projects, the pre-contract BAR is normally included in the tender documents. After commencement of the contract, the contractor has to re-visit and confirm the assumptions adopted in the pre-contract BAR and/or revise parts or the whole of blasting assessment to suit the proposed method of work (see para. 2.2(b)). The proposed amendments should be submitted to the GEO District and Mines Divisions for agreement after being endorsed by the project proponent.

2. Application for a ‘Licence to Possess Category 1 Dangerous Goods’ and a ‘Permit to Use Category 1 Dangerous Goods’

- 2.1 After commencement of the contract, the contractor must apply for a ‘Licence to Possess Category 1 Dangerous Goods’ to possess explosives for immediate use at a blast site, and a ‘Permit to Use Category 1 Dangerous Goods’ for preparing, loading and firing of explosive charges. These are collectively referred to as a Blasting Permit.

2.2 Submission of Application

To apply for a Blasting Permit, the contractor is required to submit the following documents to the CoM:

- (a) a covering letter enclosing a duly completed application form No. MIN f1, which can be downloaded from:
https://www.cedd.gov.hk/filemanager/eng/content_680/ptu.pdf;
- (b) an updated BAR (known as the Contractor's BAR) to confirm or amend, if needed, the assumptions and recommendations made in the pre-contract BAR (the contents of a BAR are given in PNAP APP-72 and Chapter 4 of PAH);
- (c) a Blasting Method Statement (BMS) checked and endorsed by the Blasting Competent Supervisor (BCS). The typical contents of a BMS are given in Annex A;
- (d) a minimum of four copies of an A1 size plan, at a scale of 1:500 or 1:1000, showing:
 - (i) the intended boundary marked with coordinates for the Licence to Possess Category 1 Dangerous Goods, which should normally cover all blasting areas, including all access routes to the blasting areas within the site boundary;
 - (ii) the intended boundary of the blasting areas marked with coordinates for the Permit to Use Category 1 Dangerous Goods, together with notes on any restrictions and conditions regarding the blasting proposal;
 - (iii) for tunnel/shaft blasting, longitudinal cross sections of the tunnel/shaft; and
- (e) upon request by the CoM, one set of the relevant specifications and parts of contract drawings (for government projects) or relevant plans approved by the Buildings Department (for private projects) showing any restrictions and conditions affecting the blasting works.

2.3 Processing of Application

Mines Division will normally respond within 28 days upon receipt of a submission from the contractor or within 25 days upon receipt of the subsequent submission of any missing/supplementary information. Upon acceptance of the BMS, a site check will be carried out by Mines Division, followed by the issue of pre-licensing requirements for the contractor to implement. The agreed BMS will form part of the conditions of the Blasting Permit.

2.4 Issue of Permit

Upon satisfactory completion of site preparatory works and compliance with the pre-licensing requirements, a Blasting Permit (normally valid for one year) will be issued to the contractor within 3 working days upon payment of the prescribed licence and permit fees.

2.5 Renewal of Permit

Any application for renewal of a Blasting Permit must reach Mines Division not less than 28 days before the expiry date. The contractor must provide an updated BMS to review the site conditions, the manner of working, precautionary and protective measures for the existing sensitive receivers and also new sensitive receivers, if any.

**Mines Division
September 2019**

*General guidance is provided in this Note. Site-specific requirements may be imposed by the Commissioner of Mines to suit the conditions and characteristics of the site. Any feedback on this document should be sent to the Chief Geotechnical Engineer/Mines, Geotechnical Engineering Office, Civil Engineering and Development Department .
Telephone: (852) 3842 7210 Facsimile: (852) 2714 0193 E-mail: mines@cedd.gov.hk*

Typical Contents of a Blasting Method Statement

1. Brief description of the project (including blasting period, amount of rock excavation, works programme, number of blasts per day/week, time of blast, etc.).
2. Outline design of blasting works
 - (a) Open-cast blasting
 - (i) Table showing general blasting parameters (ranges of values, where applicable) in production and pre-split blasting, including:

1. Bench height	2. Hole diameter	3. Stemming (including inter-deck stemming, if applicable)
4. Sub-drill	5. Drill hole depth	6. Burden x spacing
7. Inclination	8. No. of rows	9. Cartridged/bulk explosive charge per hole
10. Use of detonating cord	11. Excavation volume per shot	12. Powder factor
13. Others		

- (ii) Cross-sections showing the charging details of blast holes for production and pre-split blasting.

- (b) Underground blasting
 - (i) Table showing combination of general blasting parameters (ranges of values, where applicable) in underground blasting (tunnels, shafts, caverns, etc.), including:

1. Face area	2. Hole diameter	3. Stemming (including inter-deck stemming if applicable)
4. Drill hole spacing	5. Drill hole depth/length	6. Drill hole inclination
7. Cartridged/bulk explosive charge per Hole	8. Expected pull	9. Excavation volume per shot
10. Powder factor	11. Use of detonating cord	12. Others

3. Typical daily blast design
4. Estimated blast effects
 - (a) Blasting induced vibration. A charge weight per delay table based on the allowable PPVs proposed for the nearby sensitive receivers.
 - (b) Blasting induced air overpressure. An air overpressure target of 120dB_L should be adopted initially for blasting adjacent to sensitive receivers (e.g. residential buildings, schools, hospitals, churches, etc.) to avoid causing any undue nuisance, discomfort, alarm or damage to hearing. This may subsequently be adjusted upwards or downwards in response to feedback/complaints from those affected.

- (c) Evacuation zone. The zone to be evacuated to protect people against possible ejection of flyrock, taking into account the difference in elevation between the blasting area and sensitive receivers.
5. Anticipated maximum daily consumption of explosives types and quantities
 6. Sequence of blasting works
 7. Non-blast zone
Where necessary, a non-blast zone should be established to avoid causing any unacceptable adverse effects on the stability of adjoining temporary/permanent slopes and/or sensitive receivers as a result of blasting.
 8. Protective measures
 - (a) Drawings showing typical details of protective measures¹ against flyrock, such as vertical screens, blasting cages, blast doors², etc.
 - (b) Arrangement and layout of protective measures to demonstrate the blasting proposal is safe and feasible.
 9. Precautionary measures
 - (a) A plan showing the evacuation zone³ and sentry points.
 - (b) For any evacuation zone encroaching into any public road/area outside the site boundary, temporary closure/evacuation of the area should only be carried out with the prior agreement of the Police and other relevant government departments. It is the permittee's responsibility to obtain such agreement in a timely manner before carrying out the blast. If no prior agreement can be obtained, the permittee will be required to provide suitable protective measures (e.g. vertical screens, blasting cages, etc. at the blast location) to protect the affected public area/road.
 - (c) Evacuation procedures for the contractor, sub-contractors and the site supervisory staff.
 - (d) Locations of blasting notice boards and warning signboards.
 10. Safe handling of explosives
 - (a) A cordon-off line to prevent unauthorised entry to the explosives unloading / blasting areas during handling of explosives.
 - (b) The maximum number of people permitted at the explosives unloading areas/ blasting areas .
 - (c) The location of handing over the explosives to the shot firers.
 - (d) The contractor's on-site transport arrangement for the explosives.

¹ When necessary, blasting cages and vertical screens will need to be provided at blast locations to ensure that flyrock does not adversely affect members of the public or adjacent sensitive receivers.

² A blast door should be provided at each tunnel entrance to protect against ejection of flyrock and to reduce noise and air overpressure during blasting. Sufficient air vents should be formed at areas between the frame and arch ribs to release air pressure effectively, and the door should be covered with acoustic material to mitigate noise and air overpressure.

³ A mobile robust blast shelter for the shot firer should be provided if the shot firer needs to remain in the evacuation zone during the blast.

11. Inspection and monitoring plan⁴
 - (a) Details of the company / personnel responsible for blast monitoring.
 - (b) Schedule for calibration/recalibration of seismographs.
 - (c) Locations and details of vibration and air overpressure monitoring stations
 - (d) Procedures for checking and setting up of the monitoring equipment.
 - (e) Monitoring action levels.
 - (f) Procedures for handling and management of monitoring data and production of monitoring reports.
 - (g) Requirements for inspection of sensitive receivers before and after each blast.

12. Contractor organization and responsibility
 - (a) Contractor's drilling and blasting crew organization chart, and their respective roles, duties and responsibilities.
 - (b) A system to identify the Registered Shot firer, Blasting Engineer, Safety Officer and other supervision personnel, including Blasting Competent Supervisor and Resident Explosive Supervisor, in the blasting area.
 - (c) Channels of communication between the contractor and the site supervisory staff.
 - (d) An emergency contact list.

13. Contingency plans, including but not limited to:
 - (a) loaded blastholes not being able to discharge within the same day;
 - (b) thunderstorm or lightning;
 - (c) rainstorm;
 - (d) typhoon; and
 - (e) misfire.

⁴ Requirements for vibration monitoring equipment are given in Guidance Note GN 10.