

Guide for Writing Avalanche Control Blasting Procedures

This document has been created, with the assistance of the Canadian Avalanche Association, to guide employers in the typical content requirements of blasting procedures for avalanche control. These are operational documents that provide workers with concise safe work procedures for conducting avalanche blasting operations.

WorkSafeBC Occupation Health and Safety Regulation (OHSR) section 21.85(1): Explosive charges must not be placed manually on site by workers or projected by any means for the purpose of avalanche control, until the proposed work procedures have been submitted to and accepted by the Board.

If you have any questions about avalanche control blasting procedures, please contact the Certification Services Department of WorkSafeBC at 604-276-3090 or 1-888-621-7233 (local 3090).

Content of Blasting Procedures

Part One – General Procedures

- A. **Introduction** – state the name of the organization, type of operation (i.e. ski area, highway)
- B. **Personnel and Certification** – indicate that blasting operations will always be conducted under the control of a WorkSafeBC Certified Blaster of Record. Indicate that the blasting procedures will be reviewed by workers in a training session prior to each avalanche season.
- C. **Handling of Explosives** – state that Explosive materials will be stored, transported, handled and used in the manner recommended by the manufacturer and in compliance with Federal and Provincial regulation. Descriptions of regulations and equipment maintenance programs are not recommended as part of these Procedures.
- D. **Area Closure, Sweep and Security** – include a general description of how the blasting area and danger area are evacuated and secured. State measures taken as an alternative to blasting signals.
- E. **Record Keeping** – indicate that blasting records and blasting logs will be maintained.
- F. **Returning to the blast site** – indicate that Blaster of Record will examine the site post blast. The Blaster of Record will provide clearance to re-enter or open the site.
- G. **Misfire Disposal Procedures** – state that all misfires will be documented and locations recorded. Waiting periods will be observed before approaching misfires. Misfires will be destroyed in place without disturbing the misfire. State a schedule for searching and destroying misfires that cannot be accessed or found during the winter season. General description of how land that may contain misfired materials will be marked to warn public.
- H. **Standard Disposal of Explosive Products** – indicate that disposal of explosive products will conform to manufacturer's recommendations and to methods found in the WorkSafeBC Blasters Handbook.
- I. **Dangerous incident reports** – state that WorkSafeBC will be notified, and a report submitted, if a dangerous incident occurs during blasting operations.
- J. **Review and Revision of blasting procedures** – employer will review plan annually. Changes will be submitted to WorkSafeBC for acceptance.

Part Two – Operational Procedures

Written safe work procedures for each type of avalanche control blasting in use by the employer should be included in the blasting procedures. WorkSafeBC offers four specific endorsements for avalanche control blasting certificates; the recognized types of blasting are hand charging, cornice control (buried charge), Gas Launcher (projectile firing device) and Helicopter Deployment of Explosives. It is recognized that under the Hand Charging endorsement, Case Charging and Tramway deployment are permitted and procedures for these methods should be included in the blasting procedures.

Consider including the following content in the procedures for each type of blasting operation:

A. Hand Charge Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities
- Preparation of Explosives
- Area Closure
- Procedures for Initiation, Deployment & Firing
- Safety Precautions

B. Case Charge Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities
- Preparation of Explosives
- Area Closure
- Procedures for Initiation, Deployment & Firing
- Safety Precautions

C. Helicopter Deployment Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities
- Preparation of Explosives
- Pre-flight Safety Check
- Area Closure
- Procedures, pre-flight
- In-flight Procedures for Initiation, Deployment & Firing
- Safety Precautions

D. Cornice Control Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities

- Preparation of Explosives
- Area Closure
- Procedures for Initiation, Deployment & Firing
- Safety Precautions

E. Gas Launcher Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities
- Preparation of Explosives
- Gas Launcher Preparation
- Test Firing Procedure
- Area Closure
- Firing Projectiles – Preparation
- Firing Projectiles – Firing
- Shut Down
- Safety Precautions

F. Tramway Deployment Procedures

- Equipment for blasting
- Personnel Roles and Responsibilities
- Preparation of Explosives
- Area Closure
- Procedures for Initiation, Deployment & Firing
- Safety Precautions

G. Appendices

- WorkSafeBC Acceptance Letter

The employer that develops blasting procedures recognizes that all general and specific requirements of the WorkSafeBC *OHSR* must be met; the blasting procedures are only intended to address the procedures for handling, fixing and firing of explosives in accordance with Part 21 of the *OHSR*. Some of the work activities will have requirements from other regulatory bodies. Compliance with these requirements should be acknowledged in the blasting procedures but specifics are not part of the content of the Avalanche Control Blasting Procedures.