

Chapter 85

BLASTING

GENERAL REFERENCES

Building construction — See Ch. 91.

§ 85-1. Purpose.

- A. Unregulated blasting may cause undue psychological, physical or nuisance damage to the people and environment of the community. Blasting is an activity essential to the economic viability of Topsham.
- B. Through the establishment of standards, notice requirements and instrument monitoring of blasting operations it is intended to minimize the effects of airblast overpressure, ground vibration, dust and noise associated with blasting which may be detrimental to individuals and the community in the enjoyment of life, property and the conduct of business.
- C. It is intended to prevent permanent damage to the geologic, hydrogeologic and wildlife resources and ecological balance in the region, and to have a chapter which can be effectively and efficiently administered without causing undue financial and administrative hardship to blasting operators.

§ 85-2. Statutory authority; administration; effect on other regulations.

- A. This chapter is enacted pursuant to 30-A M.R.S.A. § 3001 and shall be administered by the Codes Enforcement Officer, Town Planner and the Planning Board of the Town of Topsham.
- B. The requirements of this chapter are in addition to any other ordinances, regulations and statutes, and where different standards are contained elsewhere, the more restrictive standards shall apply.
- C. This chapter in no way replaces or negates the requirements pertaining to explosives as contained in the Fire Prevention Code of the American Insurance Association, 1970 Edition, as the same may be amended, or any rule or regulation of any governmental agency.

§ 85-3. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

AIRBLAST — An airborne shock wave resulting from detonation of explosives. "Airblast" may be caused by burden movement or the release of expanding gas into the air. "Airblast" may or may not be audible.

APPLICANT — The person, company or corporation responsible for managing and conducting blasting operations.

BLASTING — Any activity entailing the use of explosives for the purpose of producing an explosion to demolish structures or to fragment rock for mining, quarrying, excavation and construction.

BLASTING OPERATIONS — Herein defined to mean drilling and site preparation for blasting, and detonation itself.

DECIBEL — The unit of sound pressure commonly used to measure airblast from explosives. The decibel scale is logarithmic.

EXPLOSIVES — Any substance, chemical compound or mechanical mixture that is commonly used for the purpose of producing an explosion to fragment rock for mining, quarrying, excavation and construction. Initiating devices (detonators, detonating cords, etc.) are also included under this definition.

FLYROCK — Rock that is propelled through the air or along the ground as a result of the detonation of explosives.

GROUND VIBRATIONS — A shaking of the ground caused by the blast wave emanating from a blast.

HERTZ — A term used to express the frequency of ground vibrations and airblast. One "hertz" is one cycle per second.

PARTICLE VELOCITY — A measure of ground vibration. "Particle velocity" describes the velocity at which a particle of ground vibrates when excited by a seismic wave. It is measured in inches per second.

SEISMOGRAPH — An instrument that measures and may supply a permanent record of earthborn vibration induced by blasting.

§ 85-4. Permit required; applications; hearings; fees; bond and insurance.

A permit shall be obtained prior to any blasting with explosive devices or materials for any purpose within the boundaries of the Town of Topsham.

- A. Applications for a permit may be obtained in the Planning Office. Permits shall be issued by the Codes Enforcement Office. Permits for removal of a total of 300 cubic yards or less of material per project will be issued by the Codes Enforcement Officer following review and approval by the Town Planner. Applications for blasting and removal of more than 300 cubic yards of material total per project must be reviewed by the Planning Board. For the purposes of this chapter, the "project" shall include all blasting anticipated to be undertaken during the completion of a contract or series of contracts, for demolition, excavation or construction, or during the anticipated life of a quarry

operation. Applications for the Planning Board shall be transmitted to the Board for review at the next available meeting.

B. Applications shall contain the following information:

- (1) The name of the applicant.
- (2) The name of the property owner.
- (3) The general contractor.
- (4) The locations of the proposed blasting activity.
- (5) The total number of cubic yards of material to be removed by blasting.
- (6) An estimate of the number of blasts required to remove the specified amount of material.
- (7) A description of the project for which the blasting is being undertaken.
- (8) Adjacent land uses.
- (9) The location of adjacent structures and distance to those structures.
- (10) The projected dates work is to be undertaken.
- (11) Any other studies or information deemed necessary by the Codes Enforcement Officer, Planner or the Board, which may include but not limited to:
 - (a) Preblast assessment.
 - (b) Hydrological studies.
 - (c) Geological studies.
 - (d) Test wells.
 - (e) Hours of blasting.
 - (f) Seismographs.

C. Upon receipt of a completed application, the Planner and the Codes Enforcement Officer shall review and act upon the application within 10 calendar days or forward the application to the Planning Board within 10 calendar days as appropriate under § 85-4A of this chapter.

- (1) If the application is forwarded to the Planning Board, the Board shall review and act upon the application within 30 days of transmittal of a completed application.
- (2) The Board may approve, approve with conditions or deny the application based on the performance standards contained herein

and in Chapter 225, Zoning. The applicant must be notified in writing by first class mail within 10 days of the decision.

- D. Public hearing. A public hearing shall be held on the application.
- (1) All abutting property owners and/or those property owners within 250 feet of the property line of the property for which the permit is requested shall be notified by first class mail at least 10 days prior to the date of the hearing. A list of names and mailing addresses shall be provided as part of the application. Such notification shall be the responsibility of the applicant, and evidence of such notification shall be provided to the Planning Board.
 - (2) Notification of the public hearing shall be given in a newspaper of local publication twice, the first time being at least seven days prior to the date of the hearing. Cost of this publication will be paid by the applicant.
- E. Fees. All applications for blasting permits shall be accompanied by a fee and deposit as indicated in Chapter 109 of the Town Code. **[Amended 1-30-1997 STM, Art. 10; 5-20-2004 STM, Art. 16]**
- F. Bond and proof of insurance.
- (1) The applicant and/or the blaster may be required to post a bond in an amount to be determined by the Planning Board for those cases reviewed by the Board.
 - (2) The applicant and/or the blaster shall present proof of liability insurance in a minimum amount of \$1,000,000 combined single limit per occurrence, except for agricultural purposes by an individual on his own property using binary explosives.
- G. Effective period. Permits shall be effective for no more than 365 days from the date of approval. For blasting operations the scope of which exceeds one year, renewal of the permit shall be accomplished by reapplying in accordance with the procedure for a new permit, except that a public hearing may be held to review past compliance with the standards contained herein and any effects on existing uses and property owners in the vicinity of such blasting operations.

§ 85-5. Performance standards.

- A. Hours of detonation. Hours of detonation shall be limited to daylight hours, no earlier than 7:00 a.m. or later than 7:00 p.m. Monday through Friday inclusive, except by special exception as in § 85-11 of this chapter, excluding the following legal holidays: New Year's, Memorial Day, Fourth of July, Labor Day, Thanksgiving and Christmas.
- B. Water quality protection. Water is a precious resource and measures shall be taken to protect groundwater quality. Water quality shall be as found in the nearest nonowned well within 250 feet from the property

line or as determined by the Town Planner or Planning Board and from post-blast testing results. Post-blast testing shall be done no sooner than 24 hours or no later than 48 hours following a blast. Turbidity in wells tested shall be no greater than that which existed prior to the blasting as established in the preblast survey if such survey has been completed.

C. Ground vibration.

(1) Peak particle velocity limits (inches per second) not to be exceeded at any time: **[Amended 1-30-1997 STM, Art. 10]**

(a) Quarries:

[1] Up to 30 Hertz: 0.5 inches per second.

[2] More than 30 Hertz: 1.0 inches per second.

(b) Other:

[1] Up to 30 Hertz: 0.5 inches per second.

[2] Thirty-one to 40 Hertz: 1.0 inches per second.

[3] More than 40 Hertz: 2.0 inches per second.

(2) Ground vibration shall be measured as particle velocity. Particle velocity shall be recorded in three mutually perpendicular directions. The maximum allowable peak particle velocity shall apply to each of the three measurements. **[Amended 5-20-1998 STM, Art. 29]**

(3) A seismographic record shall be provided for each blast as required by the Codes Enforcement Officer, Town Planner and/or the Town of Topsham Planning Board. The applicant shall be responsible for such record and for providing proper instrumentation as specified in this chapter. Personnel conducting such monitoring shall be properly trained in the operation of the equipment being used. **[Amended 1-30-1997 STM, Art. 10]**

D. Airblast overpressure. **[Amended 1-30-1997 STM, Art. 10]**

(1) Level not to be exceeded at any time: 133 peak dB (linear) two Hertz high-pass system.

E. The requirements established herein apply to any property of concern as determined by the Town Planner or Planning Board but no closer than the property line of property under the control, through ownership or lease or other contractual arrangement, or persons having blasting operations performed. **[Added 1-30-1997 STM, Art. 10¹]**

1. Editor's Note: This article also provided for the relettering of former Subsection E as Subsection F.

- F. The applicant shall also comply with all standards and conditions contained in other permits issued for such projects and local, state and federal statutes and regulations. The requirements established herein shall be measured at the property line of the applicant or at the closest building(s) on abutting properties as determined by the Code Enforcement Officer, Town Planner and/or Planning Board. **[Amended 5-21-1997 STM, Art. 23]**

§ 85-6. Notices.

- A. All blasting operations greater than 300 total cubic yards shall have notice of such blasting published in a newspaper of local publication and mailed by first class mail to all property owners within 250 feet of the blasting property 10 days prior to the intended date of the commencement of blasting. Notice shall include the description of the blasting signals to be used during the operation and an address and telephone number where property owners may request further information and notification. Any property owner requesting further notification shall do so in writing to the person conducting the blasting operation. **[Amended 1-30-1997 STM, Art. 10]**
- B. Any person intending to detonate explosives shall first notify the Codes Enforcement Officer or his duly authorized representative that a blast is planned. Such notification shall be received at least 24 hours prior to the planned detonation and shall give the time (within two hours), location where the blasting is to be done, the amount of explosives to be used and the name and business address of the person responsible for the blasting operation. Additional notification shall be received at least one hour prior to the planned detonation and shall give the time (within 30 minutes). The notification may be given orally over the telephone; however, the burden of proof as to whether the notification was in fact received rests with the person responsible for the blasting operation. **[Amended 5-21-1997 STM, Art. 24]**
- (1) Prior to any blast, the person responsible for the blast shall inform all property owners, who have requested in writing to be so informed, of the impending blast. Such notification shall be given by telephone 24 hours prior to the blast stating the time of the blast one hour. The burden of proof as to whether the notification was in fact received rests with the person responsible for the blasting operation.
 - (2) Notification requirements for blasting operations of less than 300 total cubic yards shall be determined by the Town Planner.

§ 85-7. Instrumentation.

All seismographs used for compliance with this chapter shall meet the following minimum specifications:

- A. Seismic frequency range: two to 200 Hz (\pm three \pm Hz).

- B. Acoustic frequency range: two to 200 Hz (\pm one \pm db).
- C. Velocity range: 0.02 to 4.0 inches per second.
- D. Sound range: 110 to 140 dB linear.
- E. Transducers: three mutually perpendicular axes.
- F. Recording: provide time-history of waveform.
- G. Calibration: be laboratory calibrated as often as necessary, but at least once every 12 months according to manufacturer's recommendations.

§ 85-8. Inspection and monitoring.

The Codes Enforcement Officer or his authorized representative may conduct tests and observe any authorized blasting operations, and may also order that additional ground vibration and airblast overpressure measurements using approved instrumentation be made by persons responsible for blasting operations to ensure that the limits specified in § 85-5 are not exceeded.

§ 85-9. Records.

Persons responsible for blast operations shall maintain a record of each blast. All records shall be retained at least three years following cessation of the blasting operation, and shall be available for inspection by the Codes Enforcement Officer and shall contain the following minimum data:

- A. The name of person responsible for the blasting operation.
- B. The location, date and time of blast.
- C. The names of blaster in charge.
- D. The type of material blasted.
- E. The number of holes, burden and spacing.
- F. The diameter and depth of holes.
- G. The types of explosives used.
- H. The amount of explosives used.
- I. The maximum amount of explosives per delay period of eight milliseconds or greater.
- J. The maximum number of holes per delay period of eight milliseconds or greater.
- K. The method of firing and type of circuit.
- L. The weather conditions (including such factors as wind direction, cloud cover, etc.).

- M. The height or length of stemming.
- N. If mats or other protections were used.
- O. The type of detonators used and delay periods used.
- P. Seismograph and airblast readings when measured and from where measured.

§ 85-10. Compliance schedule.

- A. For blasting operations existing at the time of adoption of this chapter where this chapter is more restrictive, a grace period of six months will be granted wherein such operations will be "grandfathered" in order to bring existing operations in line with this chapter. Six months after the adoption of this chapter all preexisting blasting operations shall also be brought under the provisions of this chapter.
- B. A complete review of all activities under this chapter shall be undertaken by the Codes Enforcement Officer and the Town Planner 12 months after adoption of this chapter to determine if the levels are adequate and reasonable to achieve the purpose for which this chapter is intended. The results of this review shall be reported to the Chairman of the Board of Selectmen of the Town of Topsham and the Chairman of the Planning Board of the Town of Topsham.

§ 85-11. Exceptions based on undue hardship.

Applications for a permit for exception from the performance standards designated in this chapter may, on the basis of hardship, be made to the Codes Enforcement Officer. Any permit granted hereunder shall contain all conditions upon which said permit has been granted and shall specify a reasonable time that the permit shall be effective.

- A. The Codes Enforcement Officer may grant the exception as applied for only if:
 - (1) The activity or operation will be of a temporary duration, i.e., a limited number of blasts at a specific site, and cannot be done in a manner that would comply with this chapter;
 - (2) No other reasonable alternative is available to the applicants; and
 - (3) The applicants represent, and the Codes Enforcement Officer finds, that blasting as permitted will not violate recognized safety standards.
- B. Upon the issuance of any exception permit, the Codes Enforcement Officer may prescribe any reasonable conditions or requirements he deems necessary to minimize adverse effects upon the community.

§ 85-12. Violations and penalties.

The submission of false information required by this chapter or the violation of this chapter or the violation of any condition attached to a permit granted under this chapter shall constitute a land use violation and be penalized in accordance with 30-A M.R.S.A. § 4452.

§ 85-13. Severability.

If any provision of this chapter is declared unconstitutional or held invalid, it shall not affect any other section, clause or provision thereof, but the same shall remain in full force and effect.