

## Fire Protection and Insurance.

The question of fire protection and insurance rates is one of considerable importance to urban municipalities. The rates of insurance charged by the regular stock companies depend to a great extent on the fire protection furnished, and it is in that way municipalities receive returns for the expense of fire departments.

The benefit derived by a municipality supplying the apparatus necessary to secure an insurance rate, class "C" instead of class "D" can only be ascertained when we know the amount of insurance on property within the municipality. For the purpose of informing a council desirous of improving their fire protection, the assessor might be requested to secure information relating to the amount of insurance. Councils would then know to what extent they would be justified in improving their fire department, and would be enabled to regulate expenditure thereby. Insurance rating in municipalities is governed by the Canadian Underwriters' Association, and for the information of councils we have procured the Underwriters' revised standard classification, which is as follows:

"Notwithstanding that a town may have the required appliances to entitle it to a certain classification, it shall not be so entitled unless it fulfills the following conditions of a standard town; and further, it must be understood that the whole of the fire apparatus, hydrants, hose and equipments, shall be kept in thoroughly efficient condition at all times, or the town will be subject to being placed in a lower classification, or having a percentage added to the rates until such defects shall be remedied. An undue loss ratio, or the prevalence of incendiarism or arson, especially if the authorities of the place shall not promptly take measures to secure the conviction of offenders, and to suppress the evil, shall also subject a place to a lower classification than it would otherwise be entitled to.

## 1. STANDARD TOWNS.

A town to be entitled to be classed under the following schedule shall not have more than twenty-five per cent. of frame structures in the business portion, it shall have by-laws against the frame buildings and shingle roofs in business part, against storage of coal oil and other inflammable and explosive substances over the whole, all of which shall be strictly enforced.

There shall not be any specific tax on the Insurance Companies or their agents.

The inspectors of the association, without giving previous notice, shall have the right to sound alarms of fire to call out the brigade and appliances by day or night, and to take water pressure and any other tests at such times and places as

they may deem expedient for the purposes of a thorough inspection.

## 2. WATERWORKS.

Must be efficient and sufficient at all seasons of the year (provision being made to guard against frost), for the size and requirements of the place, with mains of sufficient capacity and necessary hydrants, and for fire purposes must be under the control of the municipality. Supply and pressure from mains must be sufficient to concentrate and throw efficiently the following number of streams over any building in any of the business portions of the place, but not less than 120 feet horizontally, each through 300 feet of  $2\frac{1}{2}$  inch hose and a  $1\frac{1}{4}$  inch nozzle, viz:—Five streams for class "A," four for class "B," and three for class "C." Failing the necessary pressure, steamers must be provided to supply that want. Pumping station must be an independent and separate first-class building, unexposed, and shall not be used for electric light station or other purposes.

A fully paid engineer and assistant must be in charge at the pumping station day and night. When direct pressure is necessary for fire purposes, the pump house must have telephone communication with the fire hall, or there must be a gong at the pump house operated by the electric fire alarm boxes.

## HYDRANTS AND MAINS.

In the business parts, hydrants shall be placed at all intersections of streets, but in no case shall their distance apart be more than 500 feet. In the residential portion, the hydrants shall not be more than 600 feet apart, and no greater length than 500 feet of four inch pipe will be allowed (upon which only one hydrant shall be placed), unless it be supplied from a larger cross main at both ends, in which case the extreme length between such larger pipes shall not exceed 1,500 feet and not more than two hydrants shall be fed from said length. The upper surface of all mains shall be at least 12 inches below the extreme frost limit, and all hydrants must be properly drained. An approved steam boiler must be kept for thawing the hydrants where necessary. In all cases where steamers are required, hydrants should have large supply branch.

## 3. WATER SUPPLY OTHER THAN WATERWORKS.

A supply of water, either by tanks or running stream, or other natural source sufficient to supply the steamer at its full working capacity for not less than two hours, shall be immediately available at all seasons of the year, at distances not exceeding 500 feet from any and all parts of the business or congested districts of the town:

If the supply is from a running stream or other natural source, convenient platforms must be maintained upon which to place and work the steamers.

## 4. STEAM FIRE ENGINES.

Must be capable of throwing a stream at least 150 feet horizontally through a nozzle not less than  $1\frac{1}{4}$  inch in diameter, through 500 feet of leading  $2\frac{1}{2}$  inch hose; or two streams the same distance through two such lines of 500 feet, with a 1 inch nozzle on each. Not less than 20 feet of suction hose must be carried on each steamer for regular use, and a spare length of at least 10 feet must constantly be maintained ready for immediate use in case of accident; and at least 1,000 feet of  $2\frac{1}{2}$  inch rubber or rubber lined hose, and two reels—carrying "Y" and "Siamese" couplings, must be provided for each steamer. Steam engines must have a permanent paid engineer and an assistant engineer, and be fully equipped with all tools necessary for the effective working of the same. A spare set of boiler tubes must also be kept. Except in cases where the water pressure is direct, and up to the standard, all steamers must have heaters and steam kept up to 15 lbs. constantly, and one man (or more, if deemed necessary by the Fire Appliances Committee), capable of operating the engine, shall sleep in engine house at night. In places of less than 10,000 inhabitants, one steamer shall be provided; in places of less than 20,000, but over 10,000, two steamers must be provided; over 20,000, up to 30,000, three steamers. Steamers must be tested at least once a month, the year round, and, except in winter, water must be thrown through the hose. Dated records of all tests shall be made and signed by the engineer, in which he shall state particularly whether or not any defect existed or was to be apprehended; such records shall be made in the "register" provided, and to be kept at the fire hall. In addition to the usual supply of coals carried on each steamer, a cart ready loaded with coals shall be kept at the fire hall in waterworks towns, and in towns where the water supply is from other sources than waterworks, a further supply of coal shall be kept at each tank or pumping station.

## 5. CHEMICAL FIRE ENGINE.

Must be self-acting, with a copper cylinder of not less than 80 gallons capacity, or two such cylinders of not less than 50 gallons capacity each, or other chemical engine of equal capacity and efficiency. The engine must be supplied with not less than 150 feet of suitable hose, at least one inch internal diameter, with an automatic reel or some other arrangement equally effective. All other necessary appliances, including three spare charges ready for immediate use, must be provided and maintained at all times. Fire companies, of not less than fifteen men, must be organized and maintained for the effectual working of the engine. A competent man must be paid for taking charge of the engine, who shall be held responsible for keeping it in thoroughly effective working order.