

to two inches, judgment being exercised as to time and amount of rolling necessary.

Maintenance.—There is no such thing as a permanent road. There is nothing permanent in the universe. The sooner that fact is realized and given due thought by our taxpayers, the sooner grumbling over unmaintained roads will cease. The most enduring structures in the world, whether natural or erected by man, are not proof against the elements, and a roadway, exposed as it is at all seasons of the year to the weather, needs and should receive the best of care.

Just why it is so difficult to make the average man realize that a road needs more maintenance than his house or his office or his barn or his farm machinery is impossible to say. Yet the popular notion still obtains, even among officials who should know better, that once a road is built it is there forever, although their common sense and observation should tell them otherwise.

Maintenance of a tar macadam is such a simple matter that there is little or no excuse for failure to keep the road, once properly constructed, in excellent condition for years to come. All that is necessary is the patching of such few depressions as may need it and the cold application of a light tar yearly, or bi-yearly, as the traffic may dictate or the condition of the surface may indicate.

The amount of tar necessary to maintain a tar macadam varies from $\frac{1}{8}$ gallon per yard to $\frac{1}{2}$ gallon per yard. It is seldom that the latter amount is needed, and where maintenance is the rule, the former figure is nearer the average amount used. In order to get such a small amount as a pint to the yard, a pressure distributor is absolutely necessary. Such a distributor may be made by attaching a system of gearing onto the rear wheels of a horse-drawn sprinkler and connecting this to a pump, which forces the tar out under pressure. Or an auto truck may be used, or even a man-driven pump attached to a barrel may be employed.

The means of application are so many, and the cost is so slight, that it is wasteful economy not to treat bituminous-bound roads when they need it.

Water-bound macadam may be treated and maintained in the same way.

Maintenance of Water-Bound Macadam.—As noted elsewhere, refined tar will not stick to dirty or wet surfaces, so that it is absolutely necessary to sweep and thoroughly clean a water-bound macadam before treating it with refined tar. The sweeping is most economically done with horse-drawn sweepers, followed by men with push-brooms, who remove any crust or scale that may have formed on the surface. It is most essential that the sweeping and cleaning be thoroughly well done, for if any dirt is left on the surface it is to be expected that the tar will peel off at such places. Ruts and pot-holes should be scarified and repaired in advance of the cleaning.

When the road is dry, $\frac{1}{4}$ imperial gallon of refined tar, liquid at ordinary temperatures, is applied cold, and, if necessary, broomed in with fibre push-brooms. The application of the tar may be done with pressure distributors or with hand-sprinklers. The former give a more uniform distribution.

Whenever it is possible, traffic should be kept off a newly-treated highway for twenty-four hours or more, after which the surface should be covered with screenings or sand and traffic admitted. In any event, the treated surface should be closed to traffic for at least two hours. Always cover the treated surface with

screenings or sand to prevent the tar from being tracked into houses and on to sidewalks. The covering acts like a blotter, taking up the excess tar not absorbed by the road.

This film of tar, which penetrates about $\frac{1}{2}$ inch of the surface, prevents ravelling, prevents the formation of dust, and keeps the road intact. When traffic is heavy, a second and lighter treatment should be given the first year, after which one light application a year should be sufficient to keep the road in excellent condition.

Surface Treatment of Gravel Roads.—Good gravel roads may be maintained in a similar way. In case the road is rutted or pitted it should be scarified and rolled. Two light coats, about $\frac{3}{16}$ imperial gallons each, are applied after the road has been swept. The first coat is applied in the morning, followed by the second in the afternoon. Sand or stone chips are then spread, as noted above. Sometimes it is necessary to give the centre of the road a third light coat of tar.

A few barrels of tar should be kept on hand for patching purposes. With surface-treated gravel roads it is very essential that the surface be kept intact, and patching in time saves much annoyance later on, as well as keeping the road in constant good condition.

Tar is not recommended for treating dirt roads.

STEEL COMPANY OF CANADA.

The profits of the Steel Company of Canada for the past year at \$3,230,452 were double those of the best previous twelve months' period. Equally gratifying is the fact that 55 per cent. of the company's output during 1915 represents domestic trade. The company manufactures a very wide range of steel products, mines its own ore and finishes its products to the last stages, all of which factors help materially to obtain a good share of business offering at home.

Deducting a sum of \$400,000 on account of depreciation, \$88,500 set aside for bond sinking fund, \$531,000 for bond interest, and \$454,741 for preferred stock dividends, surplus profits, after all fixed charges, amount to \$1,756,211, equal to 15.2 per cent. on the common stock. Adding this latter to the previous surplus, the amount carried forward at the end of the year is \$3,014,641, the largest balance in the company's history, comparing as it does with \$1,258,430 in 1914, \$1,571,603 in 1913 and \$1,060,571 in 1912. The depreciation allowance is substantial, providing as it does for the extra wear and tear entailed by the working of extra shifts. The sinking fund provision of \$88,500 is on account of the first payment in this respect, which is due July 1st, 1916, as under the terms of the security a cash sinking fund of 2 per cent. per year becomes operative on that date. The amount now being set aside, therefore, takes care of the six months up to the end of last year. The preferred stock dividend allowance covers two quarters of arrears and two quarters of 1915. The remaining $3\frac{1}{2}$ per cent. arrears, covering two quarters, which were unpaid at the end of the year, have since been arranged for.

The company has materially improved its liquid position. An increase of over 50 per cent. is shown in current assets, these now totalling \$9,796,200 as against \$6,479,770 at the end of 1914. Cash on hand has grown from \$99,407 at the end of 1914 to \$182,691 at the end of 1915, an increase of 85 per cent. The company's financial statement generally shows an excellent position.