ing stone fragments into it to provide a thorough bond between the concrete and the wearing surface.

Where it is desired to use an existing old macadam for the foundation, 2 inches of new stone may be sufficient. The old surface should be well cleaned, and then be leveled up and put in good shape by scarifying and rolling before the new stone is applied.

Upon the base thus prepared by one of the above methods, the trap rock for the top course is laid to such a depth as will compact to two inches under the roller. The stone in this course should be of uniform size, 1½ to 2½ inches in diameter. It is then thoroughly rolled with the 12- ton roller and all depressions filled. No screenings are applied before applying the bitumen as this tends to seal up the surface and prevent the proper penetration of the bitumen. The top course should be dry-rolled so that there may be no moisture in the upper layer of stone when the bitumen is applied. Any water on the surface of the stone fragments will prevent thorough bond taking place between the stone and bitumen. When this course shows no movement under the roller, it is ready for the bituminous binder.

The binder should be a fairly heavy natural asphalt and applied at a temperature of 350 degrees (Fahr) under a pressure of sixty pounds per square inch. About 1¾ gallons per square yard are required for a two inch surface. The greatest care should be used to apply the binder uniformly. This should be covered immediately with a light layer of small gravel or pea-stone, just thick enough to prevent the roller from picking up the surface. The pea-stone is broomed and used to fill the voids and is then thoroughly rolled with a 6-ton roller. After rolling, a seal coat of bitumen is applied by a pressure distributor at the rate of about ½ gallon per square yard. This is again rolled with the light roller after a thin coat of the pea-stone has been applied to prevent sticking. After this final rolling, the surface may be opened for traffic within 24 to 48 hours if the bitumen used be one which sets up quickly, such as a natural asphalt.

Large stone of uniform size for the wearing course is considered by some of the most experienced engineers to be a very