



Statens vegvesen
Norwegian Public Roads
Administration

Asphalt transport - by boat

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Figure 1: High falling distance results in cooling and segregation. (Photo: Bjørn Hoven)

Asphalt is a hot product. For the pavement to have a long service life, the asphalt should be laid and compacted while it is still hot. It is therefore important to avoid loss of temperature under transport from the asphalt factory.

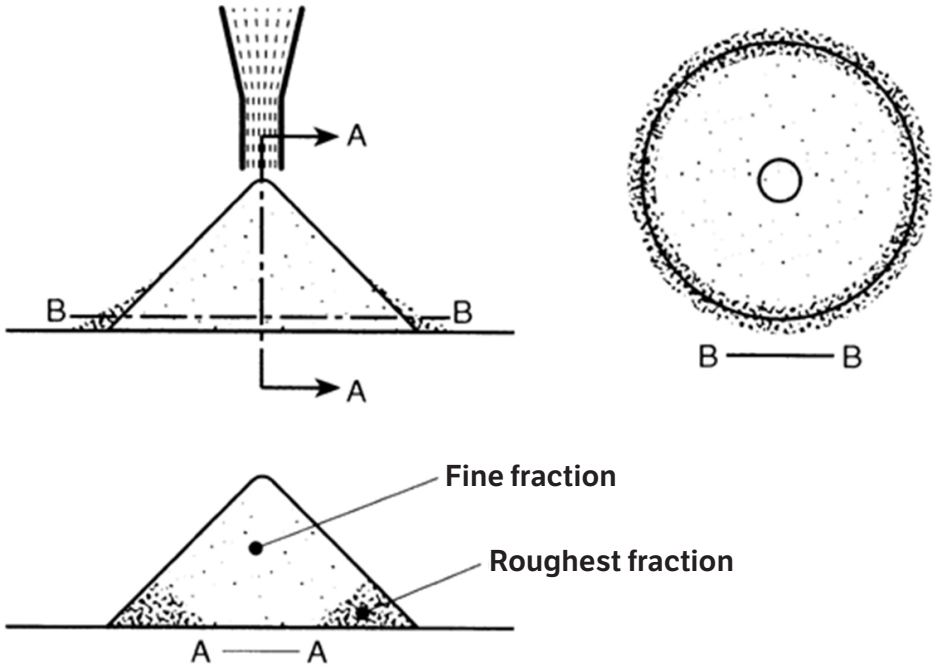


Figure 2: Course particles gather at the outer edges of the pile

Loss of temperature and segregation of the mixture will happen during loading.

The loading rooms of the boat must be well insulated so that the asphalt maintains its temperature.

Loading of the boat must be done as fast as possible to avoid loss of heat. The asphalt mixture should not be exposed to rain and wind.



Figure 3: Proper covering prevents loss of heat. (Photo: Bjørn Hoven)

Proper covering of the asphalt under transport is necessary to avoid loss of heat.

To prevent heat loss, the load should if possible be covered stepwise during loading.

Two layers of fibre cloth and loading hatches over the loading room is a minimum. For longer transport distances, the covering should be strengthened, for example by using insulation mats.

Use loading hatches during transport.



Figure 4: Remove the cover gradually to avoid loss of heat. (Photo: Bjørn Hoven)

During unloading of the boat, the cover should be removed stepwise. If there is a break in the unloading, the asphalt should be covered.

Avoid rain on the asphalt mixture. Evaporation of the rain water «steals» a lot of heat from the asphalt.

The asphalt is warmest in the middle and colder at the surface and the outer edges. The operator of the excavator/loader must make sure that the colder and warmer asphalt are mixed well before loading.

It is beneficial if the shovel of the excavator/loader stays in the mixture to maintain heat in between loadings on to the trucks.



Figure 5: Good mixing with the shovel gives uniform temperature in the truckload.
(Photo: Bjørn Hoven)

Asphalt from the edges of the loading room should be distributed by loading of no more than one shovel load of colder asphalt per truck.

Make sure that the last shovel load to be loaded on to a truck contains asphalt from the centre of the loading room.



Figure 6: Cold asphalt gathered from the bottom and edges of the loading room must not be loaded onto the truck. (Photo: Bjørn Hoven)



Figure 7: The truck should be perpendicular to the side of the boat during unloading (Photo: Marit Fladvad)

Never load only asphalt from the edges of the loading room onto one truck.

Clumps of cold asphalt and collected left-over asphalt from the loading rooms should not be laid on the road, but should be returned to the asphalt plant.

Asphalt should *never* be thrown into the sea.



Figure 8: Cold asphalt results in defects in the asphalt pavement (Photo: Geir Johnsen)

The trucks should, if possible, stand perpendicular to the side of the boat during loading. This prevents segregation.

Good communication between the boat and the paving crew is important. The paving crew should inform the boat when there is a break in the paving and when they change lane so that the unloading of the boat also stops and the asphalt is covered. In this way, unnecessary cooling caused by waiting time for the loaded trucks can be avoided.



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