



**COMMERCIALY
CONFIDENTIAL**

**DOC NO : CBIS-KM-SP-21-0001
DATE : 03.09.2022
REV : 4**

CBIS INTERNATIONAL GROUP

TECHNICAL SPECIFICATION

OF

SPECIFICATION OF ROAD ANTI-ICING ASPHALT COATING

(SEPTEMBER 2022)

**COMMERCIALY
CONFIDENTIAL**

**Gültepe Mah. Çimenli Sokak 24/33 Altındağ-Ankara
icanozer@cbis-group.net
www.cbis-group.net**



1. System Name:

ROAD ANTI-ICING ASPHALT COATING

2. Introduction:

The Road Anti-Icing Asphalt Coating is a pavement functional layer with high adhesion and wear resistance, which is painted or sprayed on the road surface. This product is based on the production mechanism of emulsified asphalt. In the production process, emulsified asphalt and low surface energy hydrophobic materials are used to emulsify-modify-fuse to obtain a new type of pavement spray type anti-icing material. This kind of coating can prevent the road from freezing, so as to achieve the purpose that the light snow cannot be retained and the heavy snow can be removed easily. At the same time, the coating forms a dense waterproof layer on the road surface to seal the road surface, which plays the role of water proof and anti-seepage, reducing water damage, consolidating the loose aggregate, maintaining the road surface cooperatively and prolonging the service life of the road surface.

3. Technical Information:

No	Test Items	Specified Value	Measured Value	
1	Curing time	Surface dry (h)	≤ 3	2
		Curing (h)	≤ 8	6
2	Wear resistance (wet wheel abrasion tester)	Area after abrasion in 300 seconds/Area before abrasion $\geq 70\%$	95%	
3	Stability at different temperatures	Whether the paint will demulsify, bond, solidify, etc. at different temperatures	Good	
4	Water resistance	After 3h soaking in water, observe whether the coating surface is blistered, wrinkled, or peeled off	Qualified	
5	Coating rate with mineral material	$\geq 2/3$	$\geq 2/3$	

6	Viscosity (road standard viscometer C25.3(s))	$\leq 60s$	20s
7	Ice melting effect (knock the ice cube every 30 minutes to observe if it falls off from the coating. Complete fall off indicates that it has ice melting effect, and record the number of times)	≥ 4 times	10 times
8	Anti-skid performance	>75	80

4. BENEFITS:

A. The Concept of Actively Melting Ice and Snow



The anti-icing coating technology has the characteristics of high snow removal efficiency, with no impact on the pavement structure, but advantages of low cost, simple construction, and convenient maintenance.

B. Efficient Ice and Snow Removal



It can play a role in melting snow under different low temperature conditions ($0 \sim -40^{\circ}\text{C}$), and at the same time, it can prevent the ice layer from adhering to the road surface, which greatly increases the safety of road driving.

C. Excellent Environmental Performance



No adverse effects on the road surface, road facilities, surrounding environment, etc., and conforms to the concept of low carbon and environmental protection.

D. Strong Durability



It can melt ice and snow continuously in at least two years, effectively solving the contradiction between low cost and durability.

E. Preventive Maintenance Function



It not only has the function of snow melting and antiskid, but also can play a preventive maintenance function such as waterproofing and sealing seams, which prolongs the service life of the road.

5. Construction Technology

5.1. Requirements:

A. Weather conditions:

The construction environment has a great influence on the drying time and effect of the coating. The best construction time should be at the end of the rainy season and before the snowfall, and construction cannot be carried out in humid or rainy environment.

B. Original road surface treatment:

In order to ensure the construction quality, the road surface construction must be treated in a dry, clean and dirt-free state. Before construction, it is necessary to thoroughly remove loose stones, dust, dirt, oil and other impurities on the original road surface. Cleaning can be done with road sweepers, electric brooms, or flushing with water. However, it needs to be noted that when washing with water, it must be completed 24 hours before construction to give the road enough time to reach a dry state. Before construction, it is necessary to deal with similar diseases such as potholes and wide cracks on the pavement in accordance with the corresponding specifications and requirements.

The coating materials need to be fully stirred evenly before construction.

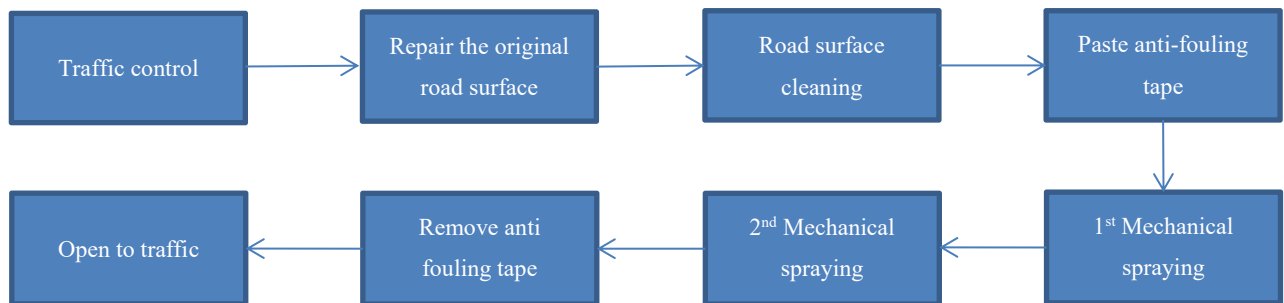
5.2. Techniques:

Two construction techniques, mechanical spraying or manual painting, can be used.

A. Mechanical Construction Flow Chart



When mechanical spraying is adopted, the product shall be fully mixed evenly. The amount of spraying should be fully considered the road condition, determined through the test section, and recommended as $0.4 \sim 0.6 \text{ kg/m}^2$. In order to ensure the construction effect, it is recommended to spray twice. For the first time, it is recommended to spray $0.2 \sim 0.3 \text{ kg/m}^2$, and for the second time after the pavement is fully dry.



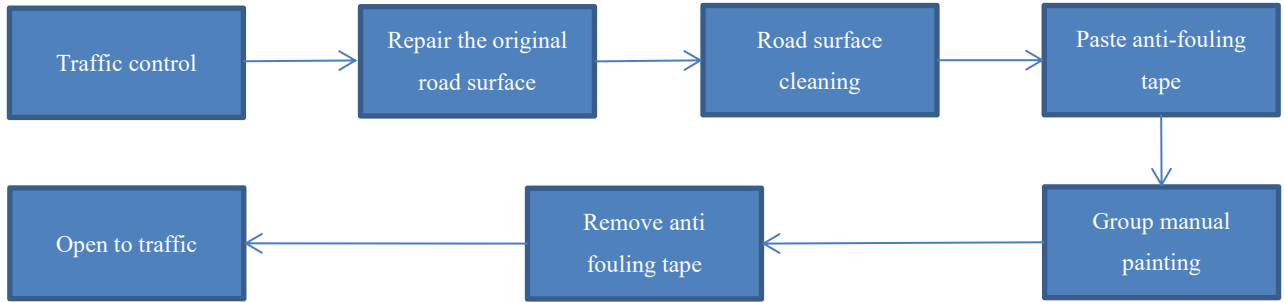
In case of small-scale construction, manual brushing method can be adopted. The coating shall be fully mixed before brushing. The amount of spraying shall be determined according to the actual road conditions. Generally, the recommended amount is $0.4 \sim 0.6 \text{ kg/m}^2$. When brushing, If the conditions do not permit it during painting, one-time painting can be used.

The workers are divided into 3 ~ 5 groups with 3 people in each group. The best area for each group is about $10 \sim 20 \text{ m}^2$. One person is responsible for spraying the paint with accurate measurement on the road evenly, and two people use long rod roller brush to brush the paint evenly. 3 ~ 5 groups of personnel can paint at the same time in different areas to speed up the construction speed.

B. Manual Construction Flow Chart



Whether it is mechanical spraying or manual brushing, it is necessary to ensure that the appearance is uniform after construction, and the amount of spraying is moderate. It is necessary to make the pavement completely and evenly coated, and not to have too much impact on the anti sliding performance of the original road surface.



C. Maintenance and Traffic Control

During the construction period, the construction area must be closed and vehicles and pedestrians are not allowed to enter. After construction, the traffic can be opened only after the coating is dried and formed. The opening time of traffic should be determined according to different construction factors.

The weather conditions have a great influence on the traffic opening time after the construction of the product. Generally, the traffic can be opened 2 ~ 4 hours after the construction.