

ISSUE: 05. OPERATIONAL APPROACHES, EQUIPMENT AND PRODUCTS FOR WINTER CONDITIONS

SUB-ISSUE: Friction

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Room: D

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Presentation title:

SKID RESISTANCE OF SIDEWALK OF RESIDENCE AREA IN WET, SLUDGY AND SNOWY CONDITIONS

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Summary:

Skid resistance is one of the important factors in assuring road safety at winter season. Though many studies have been focused on road safety of vehicles, few studies have addressed on the safety of pedestrians in snowy walking conditions. This study measured the skid resistance while moving along the sidewalk in residence area using British Pendulum Tester in a wet after snow-melting, sludgy, and snowy conditions. The skid resistance was measured on different road surface types including concrete interlocking block, color asphalt concrete, granite block, manhole covers made of steel and concrete in each, and tactile paving for visually impaired made of concrete and plastic in each. At the every points of measurement, five trials were made to acquire the average and standard deviation of British Pendulum Number (BPN). Relatively higher BPN were derived in a wet after snow-melting on average of 88.0 in concrete interlocking block and 87.4 in color asphalt concrete. However, the resistance was decreased to 52.8 and 55.8 in sludgy and snowy conditions respectively for concrete interlocking block, and 50.8 and 58.4 in sludgy and snowy conditions respectively for color asphalt concrete. In case of granite block paving, 53.2 on average in wet and 39.8 in mix of sludgy and snow condition was acquired. Average of 81.0 was acquired for manhole made of concrete and 50.6 in case of steel under wet condition. Skid resistance of manhole of steel in snowy was almost same to that of rainy with the average value of 50.2. Average of 89.4 and 24.8 was acquired for tactile paving made of concrete and plastic respectively. Skid resistance of tactile paving made of concrete is reduced to 62.6 on average in snowy, but the resistance of plastic tactile paving is almost same to that of rainy with the value of 24.4. As a result, we concluded within this study scope that the skid resistance of sidewalk is varied depending on the type of paving and the materials of being made of it. So the management of skid resistance is highly recommended to ensure the consistency of skid resistance along the route within residence area. In addition to this, careful consideration in material selection for point based paving such as manhole and paving for vision impaired should be recommended for the safety of pedestrian at winter season specially.



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