

SCRIM (Measurement of Skidding Resistance of the Road Surface)

Introduction

1. West Berkshire Council has a “Skid Resistance Related Accident Reduction Policy” to manage and maintain an appropriate level of skidding resistance on running surfaces, with the overall aim of reducing the frequency of skid related accidents in wet conditions on its classified road network (referred to as the ‘critical network’).
2. Whilst a high skid resistance will not prevent the emergency braking situation from arising or improve driver judgment, it can often alleviate the effects of driver error and reduce the risk of an accident occurring or at least reduce the severity of a collision. This will not only reduce the amount of suffering but also save considerable costs to the community. The implementation of a robust Skid Resistance policy will also provide a defence against litigation.
3. The intention of the policy is to provide procedures and guidance to assist the Engineer in measuring skid resistance and offer a methodology in assessing the need for and the prioritising of remedial works in order to maintain an appropriate level of skidding resistance on the highway network.
4. The term “skid resistance” refers to the frictional properties of the road surface, measured using an approved testing device, under controlled conditions. Measurements obtained from skid resistance testing of a road surface are analysed in conjunction with individual site characteristics and accident statistics to assess the need for maintenance.
5. The Highways Agency has produced a standard for skid resistance referred to as HD28/04. This standard describes how the provision of appropriate levels of skid resistance for trunk roads will be managed. There is also an interim advice note IAN98/07 which was issued in 2007 and overrules some of the statements in HD28/04. The HD28/04 standard has been revised and will be reissued in due course as HD28/09.
6. The Skid Resistance Policy for the West Berkshire Council is based on the Highways Agency Standard HD28/04 and also takes into account the information from the soon to be issued HD28/09. However, it should be noted that the Highways Agency standard is specifically for the management of skid resistance for Motorways and Trunk Roads within the UK. Therefore, the policy also considers advice from the following key documents, for managing skid resistance on the local road network:
 - County Surveyors Society (CSS) Guidance Note on Skidding Resistance
 - Horses and Highway Surfacing ENG 03/05
 - Code of Practice for Highway Maintenance Management
 - Interim Advice Note IAN 49/03
 - Skid resistance studies on Local Roads in the UK carried out by WDM®

Routine Testing (SCRIM)

7. Within West Berkshire, the SCRIM (Sideway-force Coefficient Routine Investigation Machine) is used for measuring skid resistance by measuring the force between a rubber tyre against a wetted road surface. The resulting value, referred to as the Sideway-force Coefficient, relates to the coefficient of friction and provides an indication of the polished state of a road surface.
8. The skid resistance policy only applies to the roads that are surveyed and this set of roads is referred to as the critical network. As a consequence, there is no formal skid resistance policy for the unclassified roads, however, there is a requirement for surfacing aggregates to meet minimum specified levels for Polished Stone Values to help maintain the skid resistance of the surface on the unclassified road network. The traffic levels on the unclassified roads are relatively low and so are the number of wet skidding accidents, therefore, this approach is considered an acceptable risk to achieve a cost effective output.
9. The Investigatory Level (IL) is a skid resistance warning level. If the skid resistance is found to be below the IL then an investigation is required to establish if treatment should be undertaken. The IL's have been specifically established for West Berkshire Council by using previous studies and comparing the accident rates to the skid resistance at various site categories across the critical network. It has been found that different sites present different risks and as a consequence, the IL varies depending on the site in an attempt to present an equal risk across the critical network. A summary of the IL bands is shown in Table 1 overleaf.
10. With reference to Table 1, the initial IL's are shown with an 'I' in the cell. The initial values will be applied to each site category but these initial values will be reviewed as each site is investigated and the IL will be confirmed or an alternative IL selected within the band highlighted in dark grey as appropriate to the risks presented by the site. Some site categories have a light grey cell below the dark grey band, as recommended in HD 28/04. These IL values may be used on sites that are considered very low risk.

Site Categories and Investigatory Levels

Site Category and Definition		Investigatory Level at 50 km/h							
		0.30	0.35	0.40	0.45	0.50	0.55	0,60	0.65
A	Motorway Class								
B	Dual Carriageway non-event								
C	Single Carriageway non-event								
Q1	Approaches to and across minor and major junctions								
Q2	Approaches to roundabouts								
K	Crossings and other high risk situations								
R	Roundabout								
G1	Gradient 5-10% longer that 50m								
G2	Gradient >=10% longer than 50m								
S1	Bend radius <=500m – dual carriageway								
S2<100	Bend radius <=100m – single carriageway								
S2>100	Bend radius > 100m and <=250m – single carriageway								
S2>250	Bend radius >250m and <500m – single carriageway								

Site-Investigation and Treatment

11. Once the SCRIM and accident data are processed, the information can be filtered and collated into lists that identify sites that are below the required SCRIM IL and or have disproportionately high accident rates. These sites will then be assessed and prioritised for investigation by a designated Site Investigator. In carrying out the investigation, the Site Investigator will carry out a risk assessment and make a recommendation based on the four options below for each site.
 - The site requires a change in the investigatory level
 - The site requires treatment to improve the skid resistance
 - The site requires a treatment other than for the skid resistance
 - The site does not require treatment.

12. The recommendation to treat sites for skid resistance will initially be made by the Site Investigator and then confirmed by the Highways Manager. The Highways Manager or his delegated representative will decide which sites are to be treated to improve the skid resistance and the time frame. If it is agreed that certain sites require treatment other than for the skid resistance, these sites will be considered as safety sites and passed over to the Traffic Services team within Highways and Transport.

13. If treatment for skid resistance is required and the work cannot be started within a reasonable period of time, slippery road signs may be erected if highlighted as a risk. If a site that has been signed but has not been treated due to timescale/budget constraints and wet injury accidents have decreased to zero within a 3 year period, signs will be removed. Once a site has been treated and on re-surveying, is found to be above the required IL, any slippery road signs will be removed as soon as is reasonably practicable.