



FINDLAY IRVINE

Skid Resistance

What is it

Thursday 23rd September 2010





FINDLAY IRVINE

Scottish Based Engineering Company World Wide Market

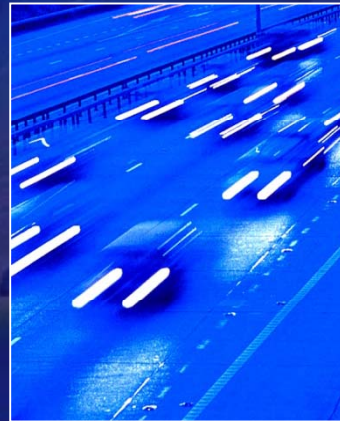




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What do we do ?





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Skid Resistance

- Why is it important ?
- What is it ?
- What is it not ?
- How do you measure it ?





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Skid Resistance

- Why is it important ?





Skid Resistance

Why is it important - safety?

- Stopping Distances
(Highway code)

50 mph

in Dry

in Wet



x 13

x 26

Assumes
car in good condition
road in good condition





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Skid Resistance

Why is it important ? - safety

- Public will assume roads provide expected stopping distances
I.e skidding resistance

Do they ?

What happens if they don't ?

Should public be told ?

How should public be told ?





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Skid Resistance

Why is it important ? - safety

- We regularly measure roads in UK



Investigatory Level 0.45 - 0.55

SMA Surface – Early Life Skid Resistance

0.51 now

0.37 several weeks

0.17 for a couple of weeks

<0.1 is ice

The authority did not know!!



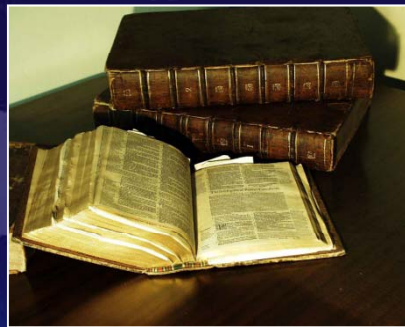


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Skid Resistance

Why is it important ? – Asset Condition

DMRB – HD28



1.4 In this Standard the provision of appropriate levels of skid resistance is treated primarily as an asset management issue rather than one of road safety engineering





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Skid Resistance

Why is it important ? – Asset Condition

- Asset Condition
 - Important condition index
 - Helps prioritise schemes
 - Ensures resource are used effectively
 - Easily understood – its slippery
 - Simple to use





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Skid Resistance

Why is it important ?

- **National Guidelines**

Authorities should endeavour to ensure that appropriate skid resistance is provided across the whole network, both for safety reasons in respect of skidding and to provide a defence in cases of litigation.

(Code of Practice for Maintenance Management published by the Institution of Highways & Transportation)





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Skid Resistance

- What is it ?
 - Resistance to Skidding



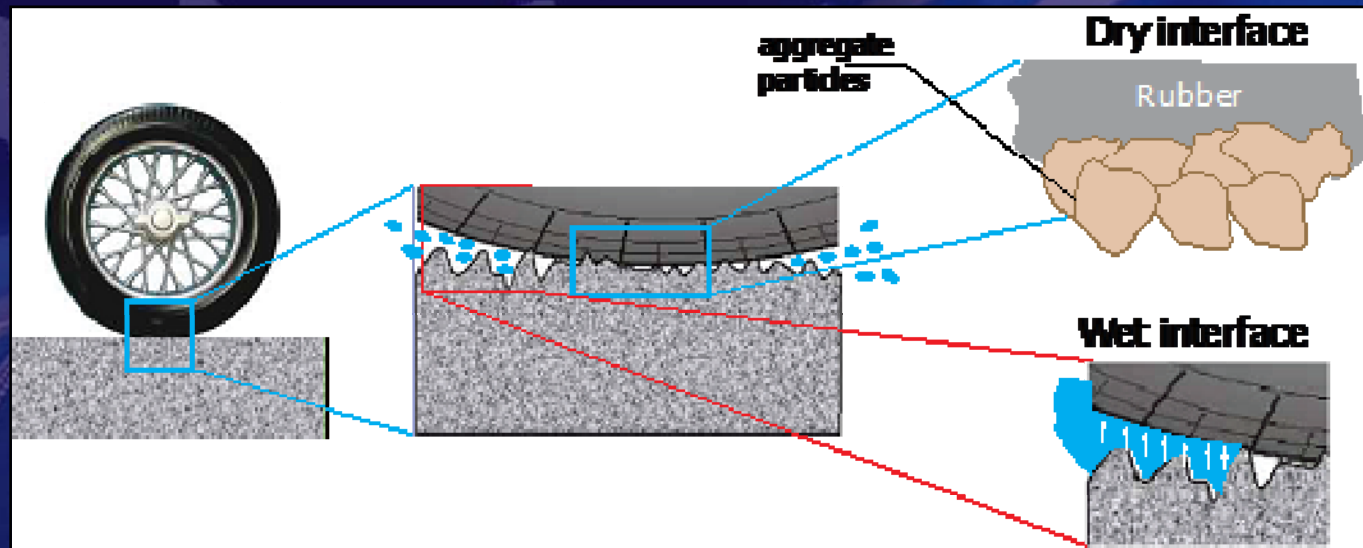


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Skid Resistance

What is it ?

It's an interaction between tyre and surface
It's an effect
It's complicated





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Skid Resistance

What is it ?

Micro and Macro Texture



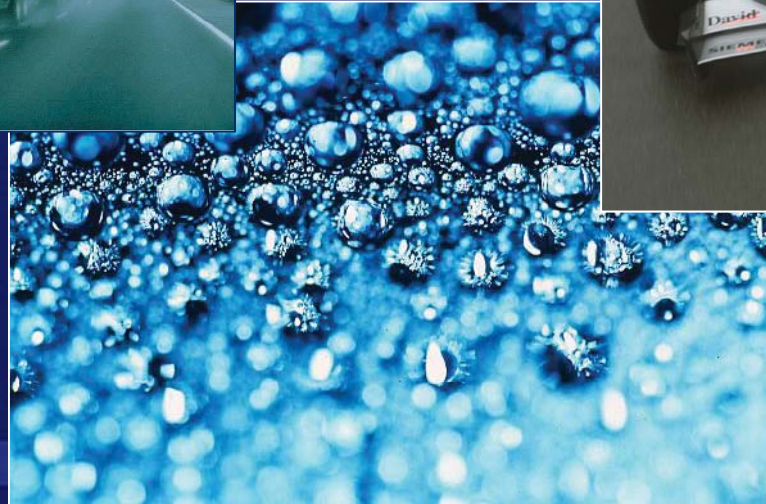


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Skid Resistance

What is it ?

Macro Texture



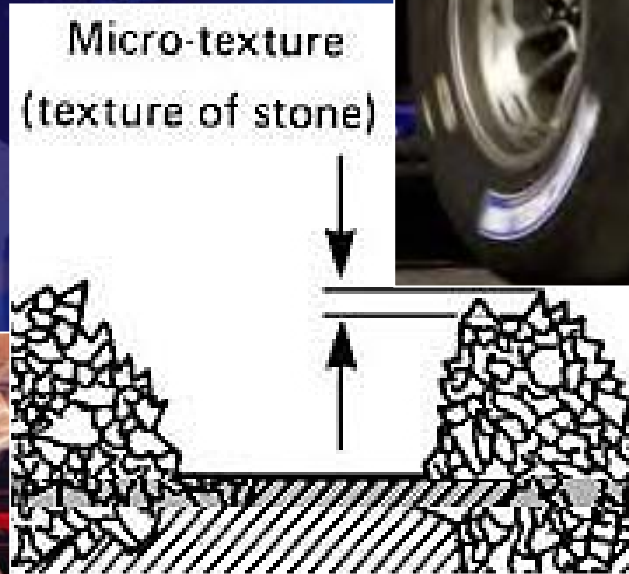


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Skid Resistance

What is it ?

Micro Texture





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Skid Resistance

What is it ?

Its not a constant

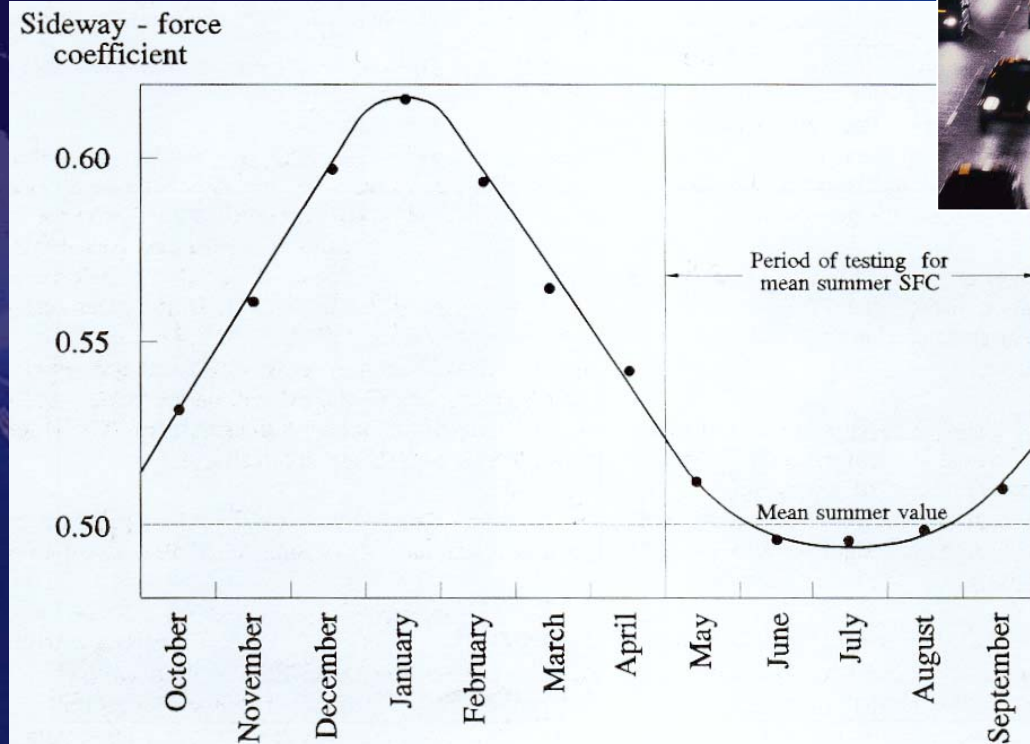
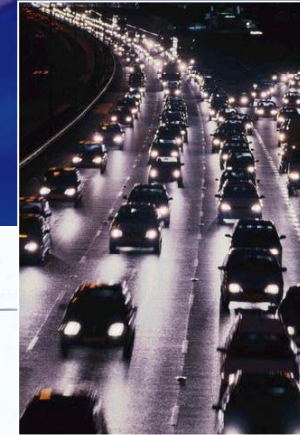


FIGURE 3.3 Example of the Seasonal Variation of SFC





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Skid Resistance

- What is it Not ?





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Skid Resistance

What is it Not?

Its not PSV



Quality of Aggregate





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Skid Resistance

What is it Not?

Polished Stone Value

Is a measure of wear resistance

Not skid resistance

The type of aggregate does contribute to skid resistance

Micro Texture

Macro texture





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Skid Resistance

What is it Not?



Texture Depth

Macro Texture Only

Skid Resistance is determined by

a combination of micro and macro texture, the contribution of each factor varies with speed. 50kph

Higher speeds Macro Higher effect

Lower speeds Micro Higher effect

High Friction Surface

Low Texture

High Friction





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Skid Resistance

- How do you measure it ?





FINDLAY IRVINE

Skid Resistance

How do you measure it?



Pendulum Site Investigation



SCRIM

Network Testing



GripTester

Site Investigation
Network Testing





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Skid Resistance

How do you measure it?

$$\text{SCRIM (SC)} = 0.85 \times \text{GN}$$



$$= 0.85 \times$$



2010 Correlation ADEPT (CSS)





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Skid Resistance

How do you measure it?



To ensure quality

Repeatability 0.03

Reproducibility 0.07

Robust \ Verifiable
Transport Scotland





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Skid Resistance

How do you measure it?



Grip Tester more suited to
local authority networks

- Safer
- Measures more easily at roundabouts and junctions
- More deployable





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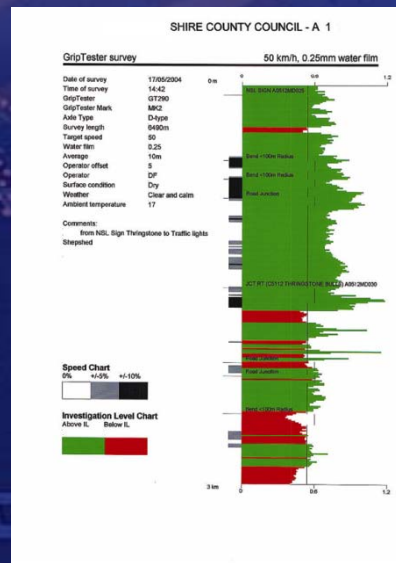
Skid Resistance

How do you measure it?

Useable Data

GIS Format reports

HMDIF for PMS





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Skid Resistance

How do you measure it?

Micro GripTester A New Concept





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And finally...





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Thank you
For
listening

