



The Institute of Asphalt Technology
Irish Branch

Surface Dressing

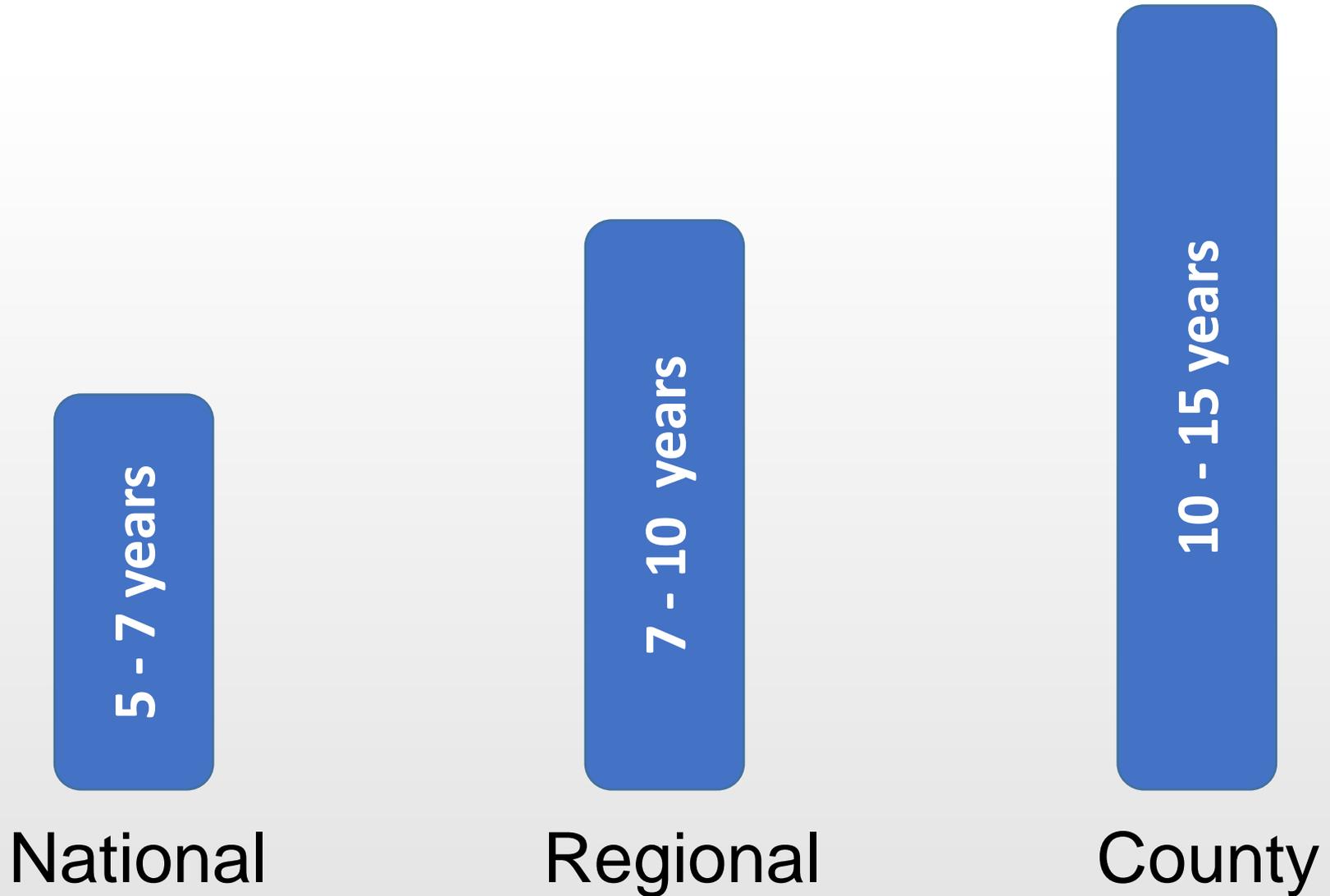
Back to Basics & Sustainability

Damien McCormack
Irish Tar





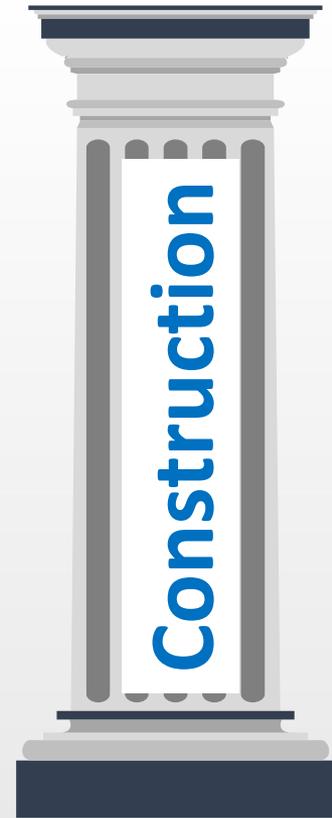
Surface Dressing Life Cycles



Surface Dressing

Sustainability = Durability

Control the Controllable's



Pillars to Success



IAT Guidelines



Materials

Binder

Types include:

- Cationic 70% Emulsion (C69B3)
- Polymer Modified Emulsion (C72BP3)



Materials

Advantages of Polymer Modified Emulsions

- Increased tolerance to higher and lower temperatures
- More resistant to bleeding
- Slows down the loss of macrotexture
- Better chip retention
- Longer life-cycle resulting in greater sustainability

Materials

Aggregates

- Key attributes
 - Flakiness Index (FI)
 - Aggregate Abrasion Value (AAV)
 - Los Angeles Coefficient (LAC)
- Chip size – Large / Medium /Small
- Dust Content - < 0.5%

AND DUST CONTENT			
Table 1			
4/20*	10/14	6/10	2/6
ing	% Passing	% Passing	% Passing
100			
3/100	100		
5/99	98/100	100	
d Value**			
0/20	85/99	98/100	
	Record Value**		100
	0/20	85/99	
		Record Value**	98/100
0/5		0/20	85/99
	0/5	0/5	Record Value**
			0/20
			0/5
(0/0.5)	f _{0.5} (0/0.5)	f _{0.5} (0/0.5)	f ₁ (0/1.0)
Fl ₂₀	Fl ₂₀	Fl ₂₅	No requirement

Materials



Materials



Equipment Sprayer Calibration

Depot Tray Test

Ensures **Even & Accurate** ROS across the full width of the spraybar



Equipment Sprayer Calibration

Carpet Tile Test

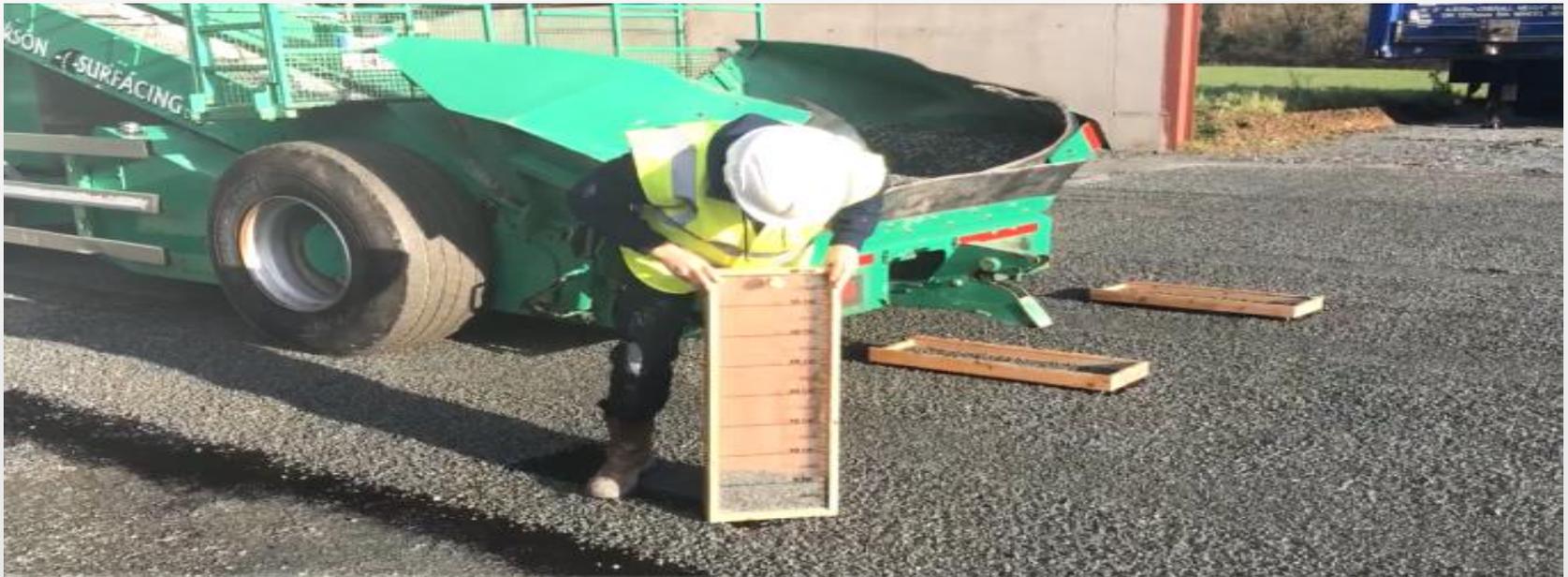
Ensures **Accurate** ROS on site



Equipment Gritter Calibration

Rate of Spread Box

Ensures **Even & Accurate** ROS across the full width of the gritter



Equipment Calibration



Design

- **Questions to ask yourself....**

- Is S/D appropriate treatment
- Traffic control/aftercare
- Existing road Condition

- **Type of S/D**

- Site, Traffic

- **Design Inputs / Parameters**

- Texture Depth
- Hardness
- Traffic
- Chip – Grading & Fl



Design Adjustments

NOTE 3: ADDITIONAL ADJUSTMENTS TO RATES OF SPREAD OF BINDER

	Condition	Adjustment to rate (l/m ²)
SITE	Shaded Areas	+0.1 for 2/6 chippings +0.2 to +0.3 for 6/10 chippings +0.2 to +0.4 for 10/14 chippings
	High Altitude	+0.1 to +0.3
	Climbing Lanes/ Steep uphill gradients	-0.1 (However, see (ii) below)
	North facing	+0.1 for 2/6 or 6/10 chippings +0.2 for 10/14 chippings
	Porous/Crazed Areas	+0.1 to +0.4
SEASON	Seasonal adjustment*	1st month +0.1 (2/6, 6/10); +0.2 (10/14) 2nd month +0.2 (2/6, 6/10); +0.3 (10/14) 3rd month +0.3 (2/6, 6/10). The use of 10/14 chippings is not recommended this late in the season.
	High Road Temperature (@ spraying) 35°C to 45°C	-0.1 to -0.2
	Chipping Size Large Small	As determined using Appendix G
*Seasonal adjustment to be applied:		South & East From 1st September Remainder of Country From mid August



IAT Surface Dressing Design Sheet

IAT Website



SURFACE DRESSING DESIGN SHEET

SELECT THE SURFACE DRESSING DESIGN YOU REQUIRE

[Single Surface Dressing](#)

[Racked in Surface Dressing](#)

[Double Surface Dressing](#)

[Inverted Double Surface Dressing](#)

[Sandwich Surface Dressing](#)

[Surface Dressing Fresh Asphalt Concrete](#)

[Sealing Unbound Layers & Bituminous Cold Mixes](#)

[Sealing Footways and Cycleways](#)

IAT Surface Dressing Design Calculator

This is a tool to assist in carrying out Surface dressing design in accordance with the 'IAT Guidelines for Surface Dressing in Ireland 3rd Edition Revised' 2017.

The programme will also facilitate the electronic storage and sharing of designs. The information contained in this document is believed to be correct. However, the Institute does not warrant its accuracy and users must check the information provided in the source document

How to use the calculator

1. Use the 'IAT Guidelines for Surface Dressing in Ireland 3rd Edition Revised' to decide the suitability of the road for Surface Dressing, the type of SD to be used, binder type and Chipping size(s). A road with varying conditions may require a number of separate designs.
2. Open the programme

DESIGN_SELECTION_SHEET

SINGLE SURFACE DRESSING

RACKED IN SURFACE DRESSING

DOUBLE SURFACE DRESSING

INVERTED D ...

Design



Back to Basics

Construction Practices

- Hedges & Verges trimmed and cut back
- Road surface is clean & free from debris
- Sprayer jets fully operational
- Correct Pressure & Temperature
- Gritter is set up for various Chip Sizes



Back to Basics Construction Practices



Back to Basics Construction Practices

Jointing Technique



“Follow Me” Convoy Vehicle



Poor Construction



To Finish



THANK YOU

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