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The Irish Road Network of 100,112km is broken down as follows

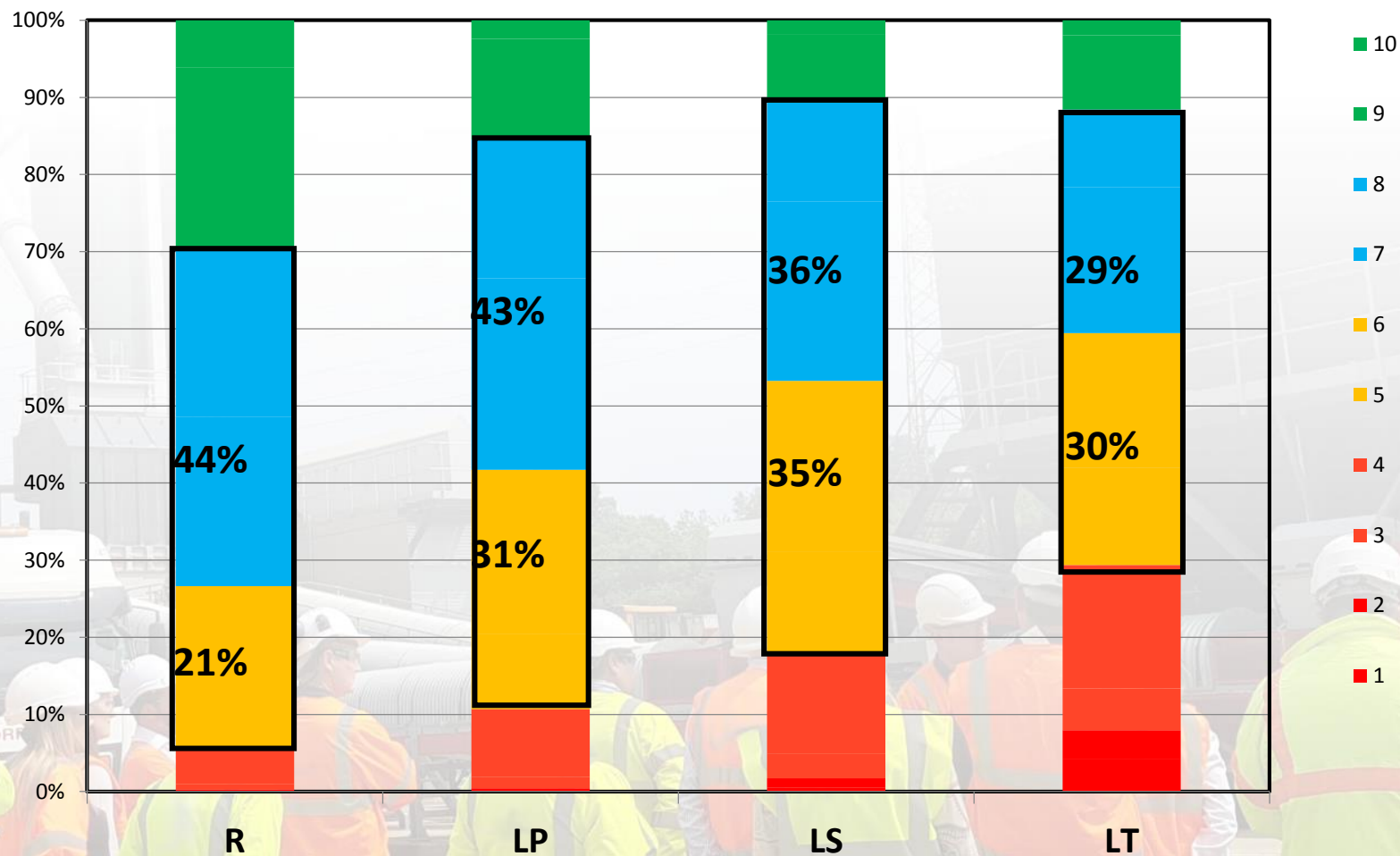
Roads in Ireland			Length (km)	% Surface Dressed
National Roads				
Motorway			916	0
National	Primary	& Secondary	4390	25%
Non National Roads				
Regional			13162	75%
Primary County			24177	82%
Secondary County			33404	86%
Tertiary County			24063	93%



Surface Dressing is the application of one or more alternating layers of Bitumen and Chippings to the surface of a road.

- Surface Dressing is suitable for the majority of Irish roads and traffic conditions because:
- Surface dressing renews Skid Resistance on existing roads, contributing to user safety
- Seals the road against the effects of moisture, prolonging the pavement life
- Provides a cost effective and durable method of road surfacing.

Rating Percentage by Road Class



Technical Issues

- Surface Dressing is a complex process, requiring a high level of technical input.
- The process is Seasonal and weather dependent and requires:
 - Assessment of the road
 - Design of a solution
 - Control of the work
 - Record the work
 - Observe & assess the result

To achieve the best result

- Be familiar with the Guidelines and apply them.
- Training is provided by the LASNTG
 1. 'Surface Dressing Basic' one day for operatives/Supervisors
 2. 'Surface Dressing for Engineers'; one day online+2days lectures
 3. 'Surface Dressing TII Specification & Contracts'; one day after completion of 2 above
- Check details on LASNTG website for details, or ring your Regional Training Centre
- These are very good courses, prepared and delivered by experienced trainers

Development of IAT Guidelines

- Foras Forbartha Report.....1977
- Surface Dressing (Blue Book).....1981
- IAT Review of S/D Practice.....1991
- **IAT Guidelines for S/D in Ireland..... 2003**
(2nd Edition..... 2007)
(3rd Edition..... 2014)
(3rd Edition Revised 2017)



Why revise the Guidelines?

The existing print (1500 copies) run almost exhausted.

Need to reflect developments in Standards and Specifications.

Incorporate comments and observations from users.

Provide clarification where necessary ,e.g. seasonal factors,
Surface Dressing on Trench reinstatement

Amendments

- All references to Standards and Specifications amended throughout, references are up to date at time of printing (August 2017)
- Section 1.1.3 SD on trenches-possibly two different surfaces, old & new
- 1.1.4 I.S. EN 12271 Surface Dressing by Contract need for CE marking provided by Contractor-SD is a Product
- Mention of the TII Analytical Design Method

Amendments

- 1.2.3 Need to protect the lower layer In Double Surface dressing until the work is complete
- 1.2.4 Use of inverted Double SD on HRA.
- 2.1.1 Refers to TII Binder Specification, now included in Appendix J
- 4.4.1 Design; Break road into sections where needed; differing hardness, texture or local conditions
- Table 4 allows more use of 2/6mm chippings on hard low trafficked roads.

Amendments

- Design Summary 1 Use 1.0 l/m^2 as basic ROS of binder for 2/6mm chippings
- Design Summary 2 reduces ROS of Chippings to 3-4 l/m^2
- Design Summary 3 recommends the use of pad coat and Double SD
- Design Summary 4 Allows adjustments to pad coat layer

Amendments

- 4.6.3 sealing Footways and Cycleways – new section and Design summary 8
- 7.2.2 Dribble test on site to check for blocked jets
- Bond Coats reflect TII specification.



ial The Institute of Asphalt Technology Irish Branch		SURFACE DRESSING DESIGN SHEET	
EXISTING ROAD PROPERTIES			
Road Number	R1234	Location	Somewhere
Road Authority/Client	A Local Authority		Date
Type of old road surface	Old 14mm SD	Hard Shoulder	No
Lean/Fat (0-5 Ratings)	2	Porosity (0-5 Ratings)	0
Ravelling (0-5 Ratings)	1	Patched (0-5 Ratings)	1
Tracking (0-5 Ratings)	0	Variability (0-5 Ratings)	2
AAOT Vehicles/day	150	No of lanes	2
HCV%	6.20%	Hardness mm	4
Texture mm	1.2	Speed limit	80 km/h
PCSI Rating	7.00		
DESIGN SUMMARY			
Proposed type of SD	Single Surface Dressing		Design Summary No
Type of Binder	Premium Polymer		Chipping PSV
BASIC DESIGN			
PRE-TREAT LAYER	Type of Binder: None at l/m ² 0.00		
Location	None		
Chip Size	0		
Source	Quarry at l/m ² 0.00		
FIRST LAYER	Type of Binder: Premium Polym at l/m ² 1.50		
Chip Size	6-10		
Source	Quarry at l/m ² 7.00		
ADJUSTMENTS TO RATE OF SPREAD OF BINDER			
TOTAL TRAFFIC	75	Traffic (Veh/l/d)	100 500 2000 5000 10000
COMMERCIAL TRAFFIC (HCV/Lane/d)	4.65	% Adjustment	+10 +5 0 -3 -5
HARDNESS (mm)	4		
TEXTURE	1.2	Texture mm	0 0.5 1 1.5 2 2.5
FLAKINESS INDEX	15	Flakiness %	0 10 15 20 25
GRAVEL CHIPPINGS	0	% Adjustment	+15 +10 +5 0 -2
RATE OF SPREAD	1st Layer 1.50	Rounded Faces %	30 15 0
		% Adjustment	+10 +5 0
		Adjusted Rate of Spread (l/m²)	
		22%	
		1.8	
FINAL ADJUSTED RATE OF SPREAD			
SEASON	0.00	HIGH ROAD TEMP	0.00
SHADED	0.20	HIGH ALTITUDE	0.00
		NORTH FACING	0.00
		CHIPPING SIZE	0.10
		UPHILL	0.00
		PORUS	0.00
RATE OF SPREAD OF BINDER - GENERAL		1.93	
SHADED		2.13	
NOTES			
Use the TAB key to navigate between the available cells where design information is required.			

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](#)

SURFACE DRESSING DESIGN SHEET

EXISTING ROAD PROPERTIES

Road Number	<input type="text" value="R1234"/>	Location	<input type="text" value="Somewhere"/>	Date	<input type="text" value="15/02/2018"/>
		Road Authority/Client	<input type="text" value="A Local Authority"/>	PCSI Rating	<input type="text" value="7.00"/>
Type of old road surface	<input type="text" value="Old 14mm SD"/>	Hard Shoulder	<input type="text" value="No"/>	Speed limit	<input type="text" value="80 km/h"/>
Lean/Fat (0-5 Ratings)	<input type="text" value="2"/>	Porosity (0-5 Ratings)	<input type="text" value="0"/>	AADT Vehicles/day	<input type="text" value="150"/>
				No of lanes	<input type="text" value="2"/>
Ravelling (0-5 Ratings)	<input type="text" value="1"/>	Patched (0-5 Ratings)	<input type="text" value="1"/>	HCV% %	<input type="text" value="6.20%"/>
				Hardness mm	<input type="text" value="4"/>
Tracking (0-5 Ratings)	<input type="text" value="0"/>	Variability (0-5 Ratings)	<input type="text" value="2"/>	Texture mm	<input type="text" value="1.2"/>

DESIGN SUMMARY

Proposed type of SD	<input type="text" value="Single Surface Dressing"/>	Design Summary No	<input type="text" value="1"/>
Type of Binder	<input type="text" value="Premium Polymer"/>	Chipping PSV	<input type="text" value="60+"/>

BASIC DESIGN

PRE-TREAT LAYER									
Type of Binder	<input type="text" value="None"/>	at l/m ²	<input type="text" value="0.00"/>	Chip Size	<input type="text" value="0"/>	Source	<input type="text" value="Quarry"/>	at l/m ²	<input type="text" value="0.00"/>
Location	<input type="text" value="None"/>								
FIRST LAYER									
Type of Binder	<input type="text" value="Premium Polym"/>	at l/m ²	<input type="text" value="1.50"/>	Chip Size	<input type="text" value="6-10"/>	Source	<input type="text" value="Quarry"/>	at l/m ²	<input type="text" value="7.00"/>

ADJUSTMENTS TO RATE OF SPREAD OF BINDER

		% Adjustments	
		1st Layer	
TOTAL TRAFFIC <div>75</div>	<p>Traffic (Veh/l/d) 100 500 2000 5000 10000</p> <p>% Adjustment +10 +5 0 -3 -5</p>	10	
COMMERCIAL TRAFFIC (HCV/Lane/d) <div>4.65</div> HARDNESS (mm) <div>4</div>	<p>HCV/L/DAY 25 100 250 500 1250 3000</p> <p>Harder ↑ HARDNESS PROBE READING (mm) ↓ Softer</p> <p>0 3 6 9 12 15</p> <p>+5% 0% -5% -10% -15% -20%</p>	0	
TEXTURE <div>1.2</div>	<p>Texture mm 0 0.5 1 1.5 2 2.5</p> <p>% Adjustment -5 0 +5 +10 +15 +20</p>	7	
FLAKINESS INDEX <div>Layer 1</div> <div>15</div> <p>When using a 2-6mm chip use a value of 20 for flakiness</p>	<p>Flakiness % 0 10 15 20 25</p> <p>% Adjustment +15 +10 +5 0 -2</p>	5	
GRAVEL CHIPPINGS <div>0</div>	<p>Rounded Faces % 30 15 0</p> <p>% Adjustment +10 +5 0</p>	0	
RATE OF SPREAD <div>1st Layer</div> <div>1.50</div>	Adjusted Rate of Spread (l/m^2)	22%	
		1.8	

FINAL ADJUSTED RATE OF SPREAD

SEASON

SHADED

HIGH ROAD TEMP

HIGH ALTITUDE

NORTH FACING

CHIPPING SIZE

UPHILL

PORUS

RATE OF SPREAD OF BINDER - GENERAL

SHADED

NOTES

SURFACE DRESSING DESIGN SHEET

EXISTING ROAD PROPERTIES

Road Number	<input type="text" value="1234"/>	Location	<input type="text" value="Anywhere"/>	Date	<input type="text" value="15/02/2018"/>
		Road Authority/Client	<input type="text" value="A Local Authority"/>	PCSI Rating	<input type="text"/>
Type of old road surface	<input type="text" value="Clause 810"/>	Hard Shoulder	<input type="text" value="No"/>	Speed limit	<input type="text" value="80 km/h"/>
		Porosity (0-5 Ratings)	<input type="text" value="0"/>	AADT Vehicles/day	<input type="text" value="300"/>
				No of lanes	<input type="text" value="2"/>
				HCV% %	<input type="text" value="5.00%"/>

DESIGN SUMMARY

Proposed type of SD	<input type="text" value="Sealing Unbound Layers/Bituminous Cold Mixes"/>	Design Summary No	<input type="text" value="7"/>
Type of Binder	<input type="text" value="Cationic 70"/>	Chipping PSV	<input type="text" value="60+"/>

BASIC DESIGN

PRE-TREAT LAYER									
Type of Binder	<input type="text" value="Cationic 70"/>	at l/m ²	<input type="text" value="0.00"/>	Chip Size	<input type="text" value="0"/>	Source	<input type="text" value="Quarry"/>	at l/m ²	<input type="text" value="0.00"/>
Location	<input type="text" value="None"/>								
FIRST LAYER									
Type of Binder	<input type="text" value="Cationic 70"/>	at l/m ²	<input type="text" value="2.20"/>	Chip Size	<input type="text" value="10-14"/>	Source	<input type="text" value="Quarry"/>	at l/m ²	<input type="text" value="9.50"/>
SECOND LAYER									
Type of Binder	<input type="text" value="Cationic 70"/>	at l/m ²	<input type="text" value="1.80"/>	Chip Size	<input type="text" value="6-10"/>	Source	<input type="text" value="Quarry"/>	at l/m ²	<input type="text" value="7.00"/>

ADJUSTMENTS TO RATE OF SPREAD OF BINDER

ADJUSTMENTS TO RATE OF SPREAD OF BINDER			% Adjustments					
			1st Layer	2nd Layer				
<div>FLAKINESS INDEX</div> <table><tr><td>Layer 1</td><td>Layer 2</td></tr><tr><td>14</td><td>18</td></tr></table> <div>When using a 2-6mm chip use a value of 20 for flakiness</div>	Layer 1	Layer 2	14	18	<div>Flakiness %</div> <div><div><div>0</div><div>10</div><div>15</div><div>20</div><div>25</div></div><div><div>+15</div><div>+10</div><div>+5</div><div>0</div><div>-2</div></div></div>	6	2	
Layer 1	Layer 2							
14	18							
<div>GRAVEL CHIPPINGS</div> <div>0</div>	<div>Rounded Faces %</div> <div><div><div>30</div><div>15</div><div>0</div></div><div><div>+10</div><div>+5</div><div>0</div></div></div>	0	0					
<div>RATE OF SPREAD</div> <table><tr><td>1st Layer</td><td>2nd Layer</td></tr><tr><td>2.20</td><td>1.80</td></tr></table>	1st Layer	2nd Layer	2.20	1.80			6%	2%
1st Layer	2nd Layer							
2.20	1.80							
Adjusted Rate of Spread (l/m ²)			2.33	1.84				

FINAL ADJUSTED RATE OF SPREAD

SEASON

SHADED

HIGH ROAD TEMP

HIGH ALTITUDE

NORTH FACING

CHIPPING SIZE

UPHILL

PORUS

RATE OF SPREAD OF BINDER - GENERAL

SHADED

NOTES

The record sheet will allow records to be uploaded and calculate achieved application rates, records can be filed and shared electronically.

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CONSTRUCTION RECORD								
Road Number	1234		Location					
Date of Construction		Time Start		Time Stop				
WEATHER: (yes or no)	Sunny		Cloudy		Showers		Drizzle	
				Air Temp (Celsius)		Humidity (%)		
ROAD CONDITION:	Dry		Damp		Road Temp (Celsius)			
CHIPPINGS:	Supplier		Quarry		Co. Co. Depot			
	Size		PSI		AST		LA	
CONDITION:	Dry		Damp		Sample Ref			
RATES OF SPREAD OF CHIPPINGS:								
		TONNAGE (t)	AREA (m ²)	AVG. RATE OF SPREAD (kg/m ²)				
	Pre-treatment Layer	0	1	0.00				
	1 st Layer	0	1	0.00				
	2 nd Layer	0	1	0.00				
	Spot Check (Box) Results (3/1m ²)							
BINDER:	Supplier		Type of Binder		Sample Ref			
RATES OF SPREAD OF BINDER:								
		QUANTITY USED (litres)	AREA (m ²)	AVG. RATE OF SPREAD (l/m ²)				
	Pre-treatment Layer	0	1	0.00				
	1 st Layer	0	1	0.00				
	2 nd Layer	0	1	0.00				
	Spot Check (Target 10l) Results (3/1m ²)							
PLANT:								
	Sprayer Reg. No.		Sprayer Type		Cover Test	Yes	No	
	Spray Bar Height (mm)		Pressure (bar/PSI)		Temperature (Cels)			
DISTRIBUTOR TYPE:								
	Tailgate		Self Propelled		Expanding			
ROLLER TYPE:								
	Pneumatic		Steel (m/s)		Steel (static)		Other	
SWEEPERS TYPE:								
	Suction		Brush		SPORS	Yes	No	
	APTES:	Yes		No				
TRAFFIC CONTROL:								
	Speed Control Vehicle		Stop/Go		Traffic Lights			
SHIMMERS:								
SPRINT SHIMMER USED DURING AND AFTER SURFACE DRESSING (ATTACH SERVICE)								
	How Long Signs Left in Place After Surface Dressing		Photo Ref:					
AFTERCARE:								
	Weather After Surface Dressing							
	Overnight Temp (cels)		Speed Limit Enforcement (km/h)					
	Traffic Control Following Surface Dressing	Yes	No		How Long (min)			
INSPECTIONS								
Date	Texture	Comments						
SIGNED		TITLE	DATE					

What to do if you are new to the process

- Get the Book
- Read and study it.
- Attend the Training Courses.
- Apply the Guidelines to the work.
- Plan and execute the work in Season.
- Spend time on site to understand the process



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