

Billian UK Ltd Type Testing

Laboratory Report



4076



1.0 Introduction

Billian UK Limited approached PTS to determine the resistance to permanent deformation of an HRA 30/14f surface course to BS EN 13108 containing pelletized bitumen

2.0 Laboratory Work

The material was heated to 155 deg C before being mixed and compacted in accordance with BS EN 12697-33. The subsequent 300mm square slabs were then conditioned and tested in accordance with BS EN 12697-22 small device procedure A at 60 deg C

3.0 Results Summary

The mean results were found to be: Mean Wheel-tracking slope in air WTR_{AIR} 0.69 μm /cycle and a mean rut depth RD_{AIR} 2.3

3.1 Interpretation of results

The results obtained were then compared to the limits specified in PD 6691 table C.3 No.2 "Very heavily stressed sites requiring very high rut resistance"

The limit for the WTR_{AIR} is 15.0 compared to the result obtained of 0.69 the value for RD_{AIR} is a maximum of 7mm

Table B.4 also states the limits when tested to the former standard BS 598-110 whilst the rut rate per hour cannot easily be derived from the current method, results can be compared with the former limit for the maximum rut depth of 7mm

PD 6691	limits	Billian mix		BS 598-110	Limits	Billian mix
WTR_{air}	15.0 μm /cycle	0.69 μm /cycle		Maximum rut depth	7 mm	2.3 mm
RD_{AIR}	7 mm	2.3 mm				

4.0 Conclusions

The results obtained indicate that the material is suitable to be applied to all sites where good resistance to permanent deformation is required.

Signed: 	Darren Foster Laboratory Manager
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Date: 09/07/15



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EN 12697-22:2003+A1-2007 Wheel tracking Small Device Procedure A Report

Test Method	Wheeltracking EN 12697-22:2003+A1-2007					
Equipment Type	Coopers Modified Small Device Wheeltracker					
Project Number and Name	PTS1519-B-02 Billian - E - Wheeltracking					
Client	Billian					
Client Address	Billian UK Limited Butterthwaite Business Park Butterthwaite Lane Ecclesfield Sheffield S35 9WA					
Material Supplier / Material Source	Billian					
Material Type / Specification	HRA 30/14f					
Details of Lab prepared samples	6 Slabs Made on the 06/07/2015					
Core Locations	N/A					
Sample Certificate Taken/Attached (Y/N)	Y					
Storage Temperature (°C)	Ambient until testing					
Target Test Temp (0.1°C)	60°C					
Target load cycles (N) and Rut Limit	1000 / 15mm					
Mean Specimen Thickness (mm)	51.1					
Method used for density determination (in accordance with BS EN 12697-6:2003)	Dimensions					
TEST RESULTS	Specimens					
	1	2	3	4	5	6
PTS Sample Number						
Client Ref	Slab 1	Slab 2	Slab 3	Slab 4	Slab 5	Slab 6
Date Laid	N/A	N/A	N/A	N/A	N/A	N/A
Date of Production	6/6/15	6/6/15	6/6/15	6/6/15	6/6/15	6/6/15
Date Sampled	6/6/15	6/6/15	6/6/15	6/6/15	6/6/15	6/6/15
Core Location Information	N/A	N/A	N/A	N/A	N/A	N/A
Bulk Density (in Kg/m ³)	2207	2217	2173	2213	2181	2143
Date of Test	8/7/15	8/7/15	8/7/15	8/7/15	8/7/15	8/7/15
Time of Test	8:00	8:45	9:35	10:15	11:00	11:55
Sample Thickness (mm)	50.6	50.6	52.0	50.6	51.3	51.3
Specimen Age at Test (days)	2 Days	2 Days	2 Days	2 Days	2 Days	2 Days
Actual Test Temperature (Target ±1°C)	61.7	61.6	61.6	61.4	61.5	61.6
Wheeltracking rate (+/-0.1 µm/cycle)	0.63	0.53	0.86	0.47	0.73	0.92
Rut Depth (± 0.1 mm)	2.0	1.8	2.8	1.5	2.5	2.9
Mean Rut Depth (mm)	2.3					
Mean Wheeltracking Rate (µm/cycle)	0.69					
Mean Wheeltracking Rate x1.1 (µm/cycle)	0.76					
Any result greater than 1.1x mean	N					
New Mean Rut Depth (mm)	N/A					
New Mean Wheeltracking Rate (µm/cycle)	N/A					
Any deviations, comments, anomalies, reasons for the deviation and, if possible estimates of its effect on the test.	None					

Tested By: Tom Houghton
 Authorised By: Darren Foster
 Report Date: 09/07/2015

