

Report Number	RTF-21049
Customer	BSI Group
Contact	Peter Rossington
Product Type	Road Studs
Test Purpose	Type Test
Sales Order Ref	Q-LUX18-22305
Works Order Number	WO-11696
Test Item Reference	TI-15004, 05, 06
LAB Test Method Reference	TES-501603
Test Standards	BS EN 1463:2009 Clause 4, 5.1, 5.2, 5.3.1, 5.3.1.3, 5.3.2, 7
Lab Location Reference	Pencoed
Tested by	C.Shepherd
Date of Test	12 <sup>th</sup> June 2018
Analysed by	M.Schakel
Number of products tested	3 Studs White, Yellow, Red

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Signed:



STA+52 Galvanised Steel Road Stud

Date: 12/06/2018

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### Test Method

The tests were made in accordance with the requirements of BS EN 1463-1:2009 'Road marking materials – Retro reflecting road studs' for the following clauses:

- Clause 4       Types of Road Stud
- Clause 5.1     Construction
- Clause 5.2     Dimensions
- Clause 5.3.1   Photometric requirements –Permanent Road studs
- Clause 5.3.1.3 Interpretation of Results
- Clause 5.3.2   Colorimetric requirements
- Clause 7       Marking

### Calibration

Photocurrent meter correlated to a luminous intensity standard that is traceable to NIST.

### Details of Product

Product Name	STA+52 with Acrylic Glass Lens
Part / Serial Number	STA+52
Type of Product	Road stud in White, Yellow, and Red
Manufacturer	Studio Plastics Close Corporation
Date of Manufacture	15/05/2018

### Conclusion

The results obtained are detailed on the following pages of this report. The samples passed the requirements of the standard as follows:

Clause 4	Types of road studs	PASS
Clause 5	5.1 Construction	PASS
	5.2 Dimensions	PASS
	5.3.1.1 Night time visibility permanent road stud	PASS
	5.3.1.3 Interpretation of results	PASS
	5.3.2 Colorimetric Requirements	PASS
Clause 7	Marking	PASS

**DATA SHEET FOR TESTS ON ROAD STUD TO BS EN 1463-1:2009**

**MODEL NAME: STA+52**

**Clause 4 - Types of Road Stud**

Type of road stud	P	(Permanent)
Type of reflector	3	(Acrylic Glass with abrasive layer)
Type of design	A	(Non-Depressible)

**Clause 5 - Performance requirements**

**5.1 Construction** Compliant

**5.2 Dimensions (values in mm)**

Height		Maximum Horizontal Dimensions	
Measured (mm)	Class	Measured (mm)	Class
25	H3	106	HD1

**5.3 Night-time visibility**

**5.3.1 Photometric requirements**

5.3.1.1 Permanent road stud	PRP 1 See results on Page 4
5.3.1.2 Temporary road studs	Not applicable
5.3.1.3 Interpretation of result	* See Note on page 4

**DATA SHEET FOR TESTS ON ROAD STUDS TO BS EN 1463-1:2009**

**Clause 5.3.1.1 Night Time Visibility**

**Coefficient of luminous intensity with limits for PRP 1 Type 3**

Observation Angle	0.3		1.0		2.0	
	5 L	5 R	10 L	10 R	15 L	15 R
White Side A	685	724	88	89	10.2	10.2
White Side B	202	224	120	154	23.3	26.2
<b>Spec min limit</b>	<b>150</b>	<b>150</b>	<b>10</b>	<b>10</b>	<b>1.5</b>	<b>1.5</b>
Yellow Side A	486	500	46	47	8.8	9.2
Yellow Side B	458	476	44	48	8.7	8.8
<b>Spec min limit</b>	<b>90</b>	<b>90</b>	<b>6</b>	<b>6</b>	<b>0.9</b>	<b>0.9</b>
Red Side A	245	250	32	33	6.5	6.6
Red Side B	198	208	34	35	6.5	6.6
<b>Spec min limit</b>	<b>30.4</b>	<b>30.4</b>	<b>2</b>	<b>2</b>	<b>0.3</b>	<b>0.3</b>

(Measured values in mcd/lux)

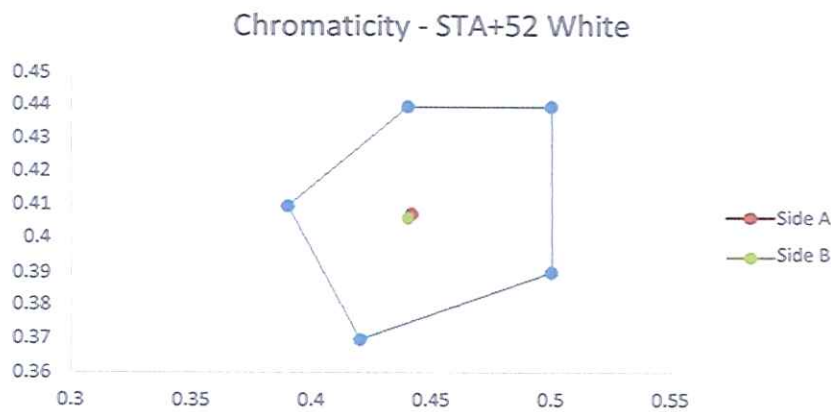
\*5.3.1.3 Interpretation of results – Not implemented as all samples met the minimum requirements.

**DATA SHEET FOR TESTS ON ROAD STUDS TO BS EN 1463-1:2009**

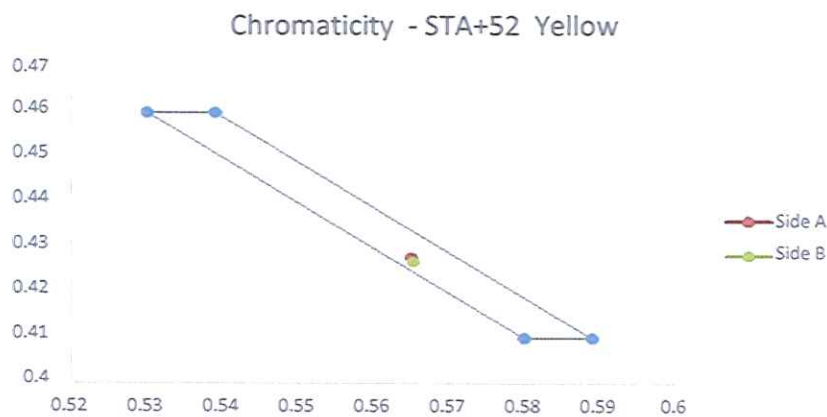
**Clause 5.3.2 Colorimetric requirements**

Sample	Colour Coordinates		Result
	X	Y	
White Side A	0.442	0.408	Compliant
White Side B	0.44	0.406	Compliant
Yellow Side A	0.565	0.428	Compliant
Yellow Side B	0.565	0.427	Compliant
Red Side A	0.681	0.341	Compliant
Red Side B	0.681	0.3155	Compliant

**White**

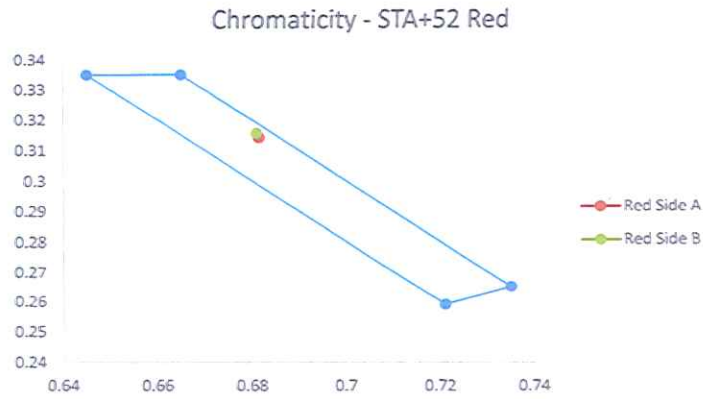


**Yellow**



**Clause 5.3.2 Colorimetric requirements (Contd)**

**Chromaticity Plot - Red**



**Clause 7.0 Marking**

Minimum Marking on product – Name or identifying mark of manufacturer

Result – Compliant

No assessment carried out on packaging or accompanying commercial documents

### Photographs

#### White



#### Yellow



#### Red



----- End of report -----