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Unit 6, Yarrow Business Centre
Yarrow Road
CHORLEY
PR6 0LP

For the attention of: Joanne McMahon

Technical Report

Subject: TESTING OF TEMPORARY GUARD RAIL IN ACCORDANCE WITH
EN 13374: 2004
Our ref: SPC0204581/1222
Date: 27th June 2012

Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

Report signed by: D Harrison
Position: PPE Technologist
Department: Safety Product Centre

WORK REQUESTED

Samples of temporary edge protection system were tested by SATRA on 20th June 2012 in accordance with EN 13374: 2004 Temporary edge protection systems – Product specification & test methods. Clauses 5.1.1, 5.1.3, 5.1.4, 5.2.1, 6.3.1.1 & 6.3.6 were tested.

CONCLUSIONS

SAMPLE REFERENCE	STANDARD	CLAUSE / PROPERTY	PASS / FAIL
Temporary edge protection system	EN 13374: 2004	5.1.1 Basic requirements	PASS
		5.1.3 Principal guardrail	PASS
		5.1.4 Toeboard	PASS
		5.2.1 Additional requirements – Edge protection system class A	PASS
		6.3.1.1 Static loads – Horizontal load F_H – General	PASS
		6.3.6 Accidental loading	PASS

TESTING

Testing was carried out in accordance with EN 13374: 2004 on 20th June 2012

Samples were tested as received, and were not subject to any pre-conditioning processes other than those stated in individual test clauses

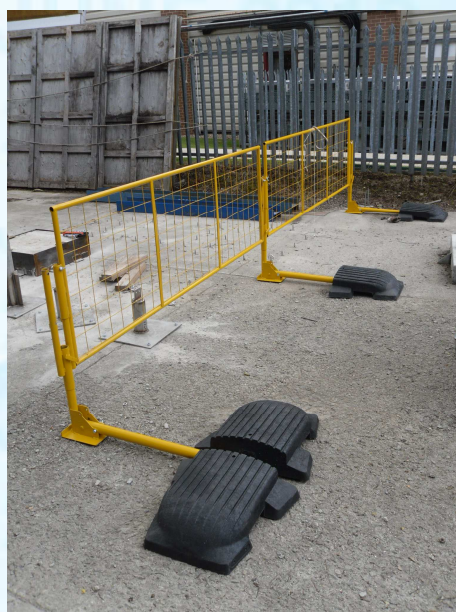


Figure 1 – Temporary edge protection system



Figure 2 – Temporary edge protection system including corner



Figure 3 – Attachable toeboard

TEST RESULTS

Table 1 – Testing of edge protection system in accordance with EN 13374: 2004 for a class A device

EN 13374: 2004 CLAUSE / TEST	EN 13374: 2004 REQUIREMENT	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL
5.1.1 Basic requirements	An edge protection system shall comprise at least a principal guardrail and an intermediate guardrail or intermediate protection It shall be possible to attach a toeboard	Edge protection system includes principle and intermediate guard rail with a 10cm square mesh inbetween Optional toeboard can be fitted to base	N/A	PASS
5.1.3 Principal guardrail	The distance between the uppermost part of the edge protection and the working surface shall be at least 1.0 m measured perpendicular to the working surface	Nominal height of principle guard rail: 1.10 m	± 0.3 mm	PASS
5.1.4 Toeboard	The upper edge of the toeboard shall be at least 150 mm above the working surface The toeboard shall be designed to avoid gaps between it and the working surface on normally a flat working surface If there are gaps, a sphere with a diameter of 20 mm shall not pass through them	Toeboard height = 0.23 m Toeboard includes a small gap between itself and the ground Gap created is 10mm	N/A	PASS

EN 13374: 2004 CLAUSE / TEST	EN 13374: 2004 REQUIREMENT	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL
5.2.1 Additional requirements – Edge protection system class A	The inclination of edge protection system class A shall not deviate from the vertical by more than 15 °	Angle of inclination: 0°		PASS
	If an intermediate guardrail is provided, any gap shall be so dimensioned that a sphere of 470 mm diameter will not pass through the protection	Largest gap of 120mm in the edge protection system is created at the up rights between two sections of rail	N/A	PASS
	If there is no intermediate guardrail or if it is not continuous, the edge protection system shall be so dimensioned that a sphere with a diameter of 250 mm will not pass through it	Largest gap of 120mm in the edge protection system is created at the up rights between two sections of rail		PASS

EN 13374: 2004 CLAUSE / TEST	EN 13374: 2004 REQUIREMENT	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL																														
	<p>If it is not possible to verify the load requirements by calculation, the static load tests shall be carried out. In this case, to comply with this standard:</p> <p>a) On the completion of the deflection tests, the adjusted elastic deflection, δ, shall not be greater than 55 mm</p> <p>b) On completion of the strength tests, the adjusted strength, R_u, shall be not less than 1.2 times the maximum test load</p> <p>c) The residual deflection, δ_3, shall not exceed 10 % of the deflection at maximum load, δ_{max}</p>	<table border="0"> <tr> <td>Position</td> <td>Elastic deflection / mm</td> </tr> <tr> <td>Top rail, upright outward</td> <td>43</td> </tr> <tr> <td>Top rail, midspan outward</td> <td>30</td> </tr> <tr> <td>Bottom rail, upright outward</td> <td>3</td> </tr> <tr> <td>Bottom rail, midspan outward</td> <td>17</td> </tr> <tr> <td>Position</td> <td>Maximum load / kN</td> </tr> <tr> <td>Top rail, upright outward</td> <td>0.36</td> </tr> <tr> <td>Top rail, midspan outward</td> <td>0.39</td> </tr> <tr> <td>Bottom rail, upright outward</td> <td>0.43</td> </tr> <tr> <td>Bottom rail, midspan outward</td> <td>0.58</td> </tr> <tr> <td>Position</td> <td>Residual deflection / mm</td> </tr> <tr> <td>Top rail, upright</td> <td>4</td> </tr> <tr> <td>Top rail, midspan</td> <td>2</td> </tr> <tr> <td>Bottom rail, upright</td> <td>2</td> </tr> <tr> <td>Bottom rail, midspan</td> <td>0</td> </tr> </table>	Position	Elastic deflection / mm	Top rail, upright outward	43	Top rail, midspan outward	30	Bottom rail, upright outward	3	Bottom rail, midspan outward	17	Position	Maximum load / kN	Top rail, upright outward	0.36	Top rail, midspan outward	0.39	Bottom rail, upright outward	0.43	Bottom rail, midspan outward	0.58	Position	Residual deflection / mm	Top rail, upright	4	Top rail, midspan	2	Bottom rail, upright	2	Bottom rail, midspan	0	<p>± 0.3 mm</p>	<p>PASS</p>
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6.3.1.1 Static loads – Horizontal load F_H – General	Each edge protection and each of its components, except toeboards, shall be designed to withstand a load $F_{HI} = 0.3$ kN applied perpendicular to the axis of the post	Position: Top rail, upright, outward 0.3 kN sustained for 1 minute without failure Position: Top rail, midspan, outward 0.3 kN sustained for 1 minute without failure Position: Bottom rail, upright, outward 0.3 kN sustained for 1 minute without failure Position: Bottom rail, midspan, outward 0.3 kN sustained for 1 minute without failure	± 50 N	PASS
6.3.6 Accidental loading	Any guardrail or intermediate guardrail or toeboard, regardless of its method of support, shall be capable of resisting a downwards point load $F_D = 1.25$ kN on a length of 100 mm	Position: Top rail, midspan 1.25 kN sustained for 1 minute without failure Position: Top rail, upright 1.25 kN sustained for 1 minute without failure	± 50 N	PASS

ADDITIONAL INFORMATION / NOTES

Note 1 – ‘UoM’ denotes estimated Uncertainty of Measurement for stated test results. This uncertainty value is based on a standard uncertainty multiplied by a coverage factor $k = 2$, which provides for a confidence level of approximately 95%

***** END OF REPORT *****

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 - iii. The above items are submitted to the Customer as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which may come into the public domain.
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