LABORATORY REPORT:
ABRASION RESISTANCE TESTING

Assessment of Abrasion Resistance on Synthetic Turf Samples (Notts Grass NG12 & Wilton Woven) to BS EN 13672: 2004

Report Number **LSUK.13-0041G**

Client
Notts Sport Ltd
Innovation House
Magna Park
Lutterworth
Leicestershire
LE17 4XH

Date(s) **14/11/2013**

This report contains 4 pages.

Labosport Limited is registered in England Number: 5185905 at Unit 3 Heanor Gate Road, Heanor, DE75 7RJ

LABOSPORT
Unit 3, Heanor Gate Road ● Heanor ● Derbyshire ● England ● DE75 7RJ
info@labosport.co.uk
Tel. +44 (0) 1773 765007 ● Fax. +44 (0) 1773 765009

www.labosport.co.uk

LABORATORY REPORT: ASSESSMENT OF ABRASION RESISTANCE

SUMMARY

Notts Sport Ltd provided samples of two products NottsGrass NG12 and Wilton Woven for assessment to abrasion resistance following the test method BS EN 13672: 2004.

This report outlines the testing undertaken and results.

REPORT COPIES TO:

Mr Steve Foxon — Head of Technical Services

REPORTED BY:

……
Colin Young (Operations Manager)

CONTENTS

LABOSPORT
Unit 3, Heanor Gate Road ● Heanor ● Derbyshire ● England ● DE75 7RJ
info@labosport.co.uk
Tel. +44 (0) 1773 765007 ● Fax. +44 (0) 1773 765009

www.labosport.co.uk

1. INTRODUCTION

Two samples of synthetic turf were supplied by Notts Sport Ltd for determination of resistance to abrasion of non-filled synthetic turf following the test method BS EN 13672. The testing was undertaken to simulate representative wear and to evaluate the resistance to damage for each system.

2. PRODUCT DETAILS & DESCRIPTION

System A: NottsGrass NG12

System B: Wilton Woven

Specifications for the two carpets form Appendix A of this report.

3. TEST PROCEDURE

4 samples of each system were tested to the requirements of BS EN 13672 but with the addition of extra cycles for extended abrasion resistance.

The abrasion resistance of the four samples was determined in accordance with the European Standard test method EN 13672 Surfaces for Sports Areas – Determination of Resistance to Abrasion of Non-filled Synthetic Turf. This test uses a Taber Abrader fitted with H18 abrasive wheels and a mass acting on each wheel of 1,000g.

The test procedure may be summarised as:

Weigh the test piece to an accuracy of 0.001 g. Position the test piece in the abrasion apparatus. Lower the loaded abrasive wheels onto the surface of the test piece and start the machine. After 2,000 revolutions stop the machine and remove the test piece from the machine. Remove any loose debris from the test piece by vacuuming and re-weigh the test piece. Re-face the abrasive wheels. Repeat this procedure after a further 3,000 revolutions so that the test piece is subjected to a total of 5,000 revolutions.

In a deviation/extension from the standard procedure an additional 6,000 cycles was undertaken on each sample giving a total of 11,000 cycles. Each sample was check every 2,000 cycles as per the above method.

Note:

The test is a standard laboratory method for assessing the abrasion resistance of flooring materials. As described above it mechanically abrades the sample using abrasive wheels and allows comparisons to be made between

different products; through experience acceptable limits of abrasion can be determined and quality limits established.

Although many suppliers of synthetic turf cricket surfaces specify that players should not wear cricket spikes when playing on a synthetic turf surface, it is known in practice this advice is often ignored. This test method makes no attempt to assess a product's resistance to spike wear and the results obtained and conclusions drawn do not imply or infer one surface would be better than another with respect to this property. If spike resistance is of concern alternative test methods are available.

4. TEST RESULTS

Product/System Name	% Weight Loss				
	After 2,000	After 5,000	After 7,000	After 9,000	After 11,000
NottsGrass NG12	1.715	2.258	4.147	5.758	7.914
Wilton Woven	3.124	5.475	8.459	9.159	14.985
Note: these results are the average of the 4 samples for each system					

5. CONCLUSIONS

The synthetic turf was tested in accordance with test method BS EN 13672: 2004 for their resistance to abrasion.

After 5,000 cycles as per BS EN 13672: 2004 NG12 had a weight loss % of 2.258 and Wilton Woven had a higher loss % of 5.475.

Following the extended wear testing to a total of 11,000 cycles the NG12 continued to have a similar weight loss % of 7.914 with much better performance than the Wilton Woven which had a loss of 14.985 %.

The results detailed apply to the samples tested. Any change in the specification of either carpet may result in different levels of wear.

Annex A – product specifications (as supplied by Notts Sport Ltd)

Property	Notts Grass NG12	Wilton Woven
Yarn type	Polypropylene Fibrillated	Polypropylene Fibrillated
Dtex	4,700	7,220
Pile height	12mm	8mm
Pile weight	1056g/m^2	780 g/m^2
Backing	Woven Polypropylene with Glass Fibre mesh Eurobond SBR Unitary Compound	Polypropylene Warp & Weft, Cross Linked SBR Anchor-coat
Total weight	2361 g/m^2	1450 g/m^2
Total height	10mm	11mm