



Shirley
Technologies
Limited

Confidential Report

Our Ref: 43133A/PH



Shirley Technologies Limited. Registered Office :
Wira House, West Park Ring Road, Leeds, LS16 6QL.
A company registered in England & Wales with company number 04669651.
VAT Number GB 816764800.

The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.

Our laboratories are accredited to EN ISO/IEC 17025



Shirley
Technologies
Limited

Shirley Technologies Limited
Unit 12, Westpoint Enterprise Park
Clarence Avenue, Trafford Park
Manchester, M17 1QS
England

Tel: +44 (0)161 869 1610
Fax: +44 (0)161 872 6492
Web: <http://www.shirleytech.com>
Email: info@shirleytech.co.uk

14 October 2016

Page 1 of 4

Our Ref: 43133A/PH

Client: Texfelt Ltd

Address: Texfelt Ltd
South Lane Mills
South Lane
Elland
West Yorkshire
HX5 0HQ

Job Title: VOC Analysis

Client's Order Ref: 6519

Date of Receipt: 03/10/2016

Date of Test: 13/10/2016

Description of Sample(s): Envirolay Felt Underlay

Work Requested: VOC testing on carpet sample according to BS EN ISO 10580:2012



Shirley Technologies Limited. Registered Office :
Wira House, West Park Ring Road, Leeds, LS16 6QL.
A company registered in England & Wales with company number 04669651.
VAT Number GB 816764800.
The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.
Our laboratories are accredited to EN ISO/IEC 17025



Shirley
Technologies
Limited

Shirley Technologies Limited
Unit 12, Westpoint Enterprise Park
Clarence Avenue, Trafford Park
Manchester, M17 1QS
England

Tel: +44 (0)161 869 1610
Fax: +44 (0)161 872 6492
Web: <http://www.shirleytech.com>
Email: info@shirleytech.co.uk

14 October 2016

Page 2 of 4

Our Ref: 43133A/PH

Client: Texfelt Ltd

INTRODUCTION

The sample was provided wrapped as instructed. The sample was tested in accordance with BS EN ISO 10580:2012, for the presence of volatile organic compounds. The sampling was performed at 3 days.

METHODOLOGY

The referenced methods are as follows:

BS EN ISO 10580:2012 Resilient, textile and laminate floor coverings - Test method for volatile organic compound (VOC) emission

Referenced Methods:

ISO 16000-6:2004 Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas-chromatography using MS/FID

ISO 16000-9:2006 Determination of the emission of volatile organic compounds from building products and furnishing - emission test chamber method

ISO 16000-11:2006 Determination of the emission of volatile organic compounds from building products and furnishing - Sampling, storage of samples and preparation of test specimens

ISO 16017-1:2000 Indoor, ambient and workplace air - Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography - Part 1

*All tests not covered by our UKAS accreditation.

*This analysis does not include formaldehyde or carbonyl compounds.

REQUIREMENTS

After 3 days any carcinogenic compound as defined in European Directive 76/769/EEC, not above the detection limit.

TVOC3 <10,000 µg/m³.

Additional target VOC's to be included in initial tests of carpet products and maximum emission factors for the office scenario. Maximum air concentrations of these target VOC's for carpet products modelled from 14 day chamber test data (Caprolactam CAS:105-60-2 – 100 µg/m³ max model concentration and 190 µg/m²h emission factor: 4-Phenylcyclohexene CAS: 4994-16-5 – 9.3 µg/m³ max model concentration and 17 µg/m²h emission factor.



Shirley Technologies Limited. Registered Office :
Wira House, West Park Ring Road, Leeds, LS16 6QL.
A company registered in England & Wales with company number 04669651.
VAT Number GB 816764800.

The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.

Our laboratories are accredited to EN ISO/IEC 17025



Shirley
Technologies
Limited

Shirley Technologies Limited
Unit 12, Westpoint Enterprise Park
Clarence Avenue, Trafford Park
Manchester, M17 1QS
England

Tel: +44 (0)161 869 1610
Fax: +44 (0)161 872 6492
Web: <http://www.shirleytech.com>
Email: info@shirleytech.co.uk

14 October 2016

Page 3 of 4

Our Ref: 43133A/PH

Client: Texfelt Ltd

RESULTS

The results of the analysis are shown below in terms of TVOC (total emissions in $\mu\text{g}/\text{m}^3$) and R value (unitless). All concentrations calculated by comparing peak areas to toluene equivalents. LCI values are taken from "AgBB - Evaluation procedure for VOC emissions from building products; February 2015"

Sampling	Carried out by customer
Sample prep	28cm x 28cm – wrapped in foil on back and sides
Sample area	0.0784 m ²
Chamber size	0.195 m ³
Air exchange (per hour)	0.5 H ⁻¹
Loading factor	0.4 m ² /m ³
Humidity	50%
Temperature	21 °C
Adsorbent	Tenax TA
Air sampling flow	100 ml/min
Air sample volume	3 litres



Shirley Technologies Limited. Registered Office :
Wira House, West Park Ring Road, Leeds, LS16 6QL.
A company registered in England & Wales with company number 04669651.
VAT Number GB 816764800.

The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.

Our laboratories are accredited to EN ISO/IEC 17025



14 October 2016

Page 4 of 4

Our Ref: 43133A/PH

Client: Texfelt Ltd

	LCI value*	Emissions @ 3 Days	R Value @ 3 Days	Emissions @ 28 Days	R Value @ 28 Days
	µg/M ³	µg/M ³	Unitless	µg/M ³	Unitless
2,3-butanediol	2000	14.5	0.0073	N/A	N/A
Decanal	900	1.7	0.0019	N/A	N/A
Xylene	500	2.5	0.0050	N/A	N/A
Octanal	900	1.0	0.0011	N/A	N/A
Benzaldehyde	90	1.2	0.0133	N/A	N/A
Limonene	5000	5.2	0.0010	N/A	N/A
Dodecane	6000	3.1	0.0005	N/A	N/A
Tetradecane	6000	2.3	0.0004	N/A	N/A
Napthalene	5	4.2	0.84	N/A	N/A
TVOC	N/A	46.6	0.8804	N/A	N/A

Limit of detection - 1 µg/M³ per component

Caprolactam and 4-Phenylcyclohexene were not detected on the sample tested.

COMMENTS

It was determined that the 28 day requirement had been met after analysis at the 3 day period. The 28 day test was therefore deemed to be unnecessary.

An estimation of uncertainty of measurement has not been taken into account when making a judgement on any pass/fail criteria.

Reported by:

Paul Hardman
Senior Analyst

Countersigned by:

Gareth Heywood
Operational Head

Enquiries concerning this report should be addressed to Customer Services.



Shirley Technologies Limited. Registered Office :
Wira House, West Park Ring Road, Leeds, LS16 6QL.
A company registered in England & Wales with company number 04669651.
VAT Number GB 816764800.

The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.

Our laboratories are accredited to EN ISO/IEC 17025