



# Confidential Report

**Our Ref: 23/59121J/11/21**





Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.  
Telephone: +44 (0) 113 259 1999  
Email: [info@bttg.co.uk](mailto:info@bttg.co.uk)  
: [www.bttg.co.uk](http://www.bttg.co.uk)

Date: 4 January 2022

Our Ref: 23/591211/11/21  
Your Ref: ---

Page: 1 of 6

**Client:** **Gabriel A/S**

Hjulgagerve 55  
DK-900 Aalborg  
Denmark

**Job Title:** Fire Test on One Fabric Sample

**Clients Order Ref:** 0011572342

**Date of Receipt:** 24 November 2021

**Date Test Started:** 23 December 2021

**Description of Sample:** One sample of fabric, which was referenced by the client as;  
Step/Light Grey, stated to be: 100% Trevira CS

**Work Requested:** We were asked to make the following fire test:  
BS 7176: 2007 + A1:2011 (Medium Hazard)

- \* subcontracted test, UKAS accredited
- \*\* subcontracted test, EN ISO/IEC 17025 accredited
- \*\*\* not UKAS accredited



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Note: This report relates only to the samples submitted and as described in the report.

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Date: 4 January 2022

Our Ref: 23/59121J/11/21

Your Ref: ---

Page: 2 of 6

Client: Gabriel A/S

**Specification BS 7176: 2007 + A1:2011 Resistance to Ignition of Upholstered Furniture for non-domestic seating by testing composites using BS EN 1021:2006 Furniture – Assessment of the ignitability of upholstered furniture Parts 1 and 2 and BS 5852:Clause 11:2006 (Medium Hazard)**

## Pre-Treatment

The material received no pre-treatment as the fabric is stated not to be FR treated.

## Conditioning

The materials for testing to Source 0 and 1 were conditioned and tested in the environments specified in Clause 7 of BS EN 1021:2006.

## Foam Used

The sample was tested over combustion modified polyurethane foam with a density of approximately 35-36kg/m<sup>3</sup>.



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Date: 4 January 2022  
 Our Ref: 23/59121J/11/21  
 Your Ref: ---  
 Page: 3 of 6

**Client:** Gabriel A/S

### Testing to BS EN 1021-1:2006 – Source 0 – Cigarette

The sample was tested in accordance with BS EN 1021-1:2006. The sample was tested over combustion modified polyurethane foam with a density of approximately 35-36kg/m<sup>3</sup>.

The test results relate only to the ignitability of the combustion of upholstery composites under the particular conditions of test stated, they are not intended as a means of assessing the full potential fire hazard of the materials of products in use.

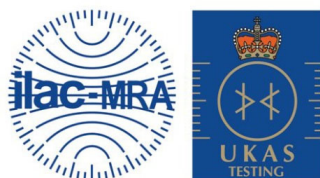
### Results

| Smouldering criteria                                      | Specimen No. |    |
|---|--------------|----|
|   | 1            | 2  |
| Unsafe escalating combustion                              | No           | No |
| Testing assembly consumed                                 | No           | No |
| Smoulders to extremities/full thickness                   | No           | No |
| Smoulders more than 1 hour                                | No           | No |
| In final examination, presence of progressive smouldering | No           | No |

| Flaming criteria                                     | 1                        | 2                        |
|--|--------------------------|--------------------------|
|  | Occurrence of flames     | No                       |
| <b>Specimen Result</b><br>(Ignition or Non-ignition) | <b>Non-Ignition (NI)</b> | <b>Non-Ignition (NI)</b> |

Any “Yes” in smouldering or flaming criteria means Ignition

**Cigarette Test Result**      **PASS**



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 Page: 4 of 6

**Client: Gabriel A/S**

**BS EN 1021-2: 2006 – Source 1 – Butane Flame (Match)**

The sample was tested in accordance with BS EN 1021-2:2006. The sample was tested over combustion modified polyurethane foam with a density of approximately 35-36kg/m<sup>3</sup>.

The test results relate only to the ignitability of the combustion of upholstery composites under the particular conditions of test stated, they are not intended as a means of assessing the full potential fire hazard of the materials of products in use.

| Smouldering criteria                                      | Specimen No. |    |
|---|--------------|----|
|   | 1            | 2  |
| Unsafe escalating combustion                              | No           | No |
| Testing assembly consumed                                 | No           | No |
| Smoulders to extremities/full thickness                   | No           | No |
| Smoulders more than 1 hour                                | No           | No |
| In final examination, presence of progressive smouldering | No           | No |

| Flaming criteria                                     | 1                            | 2                   |
|--|------------------------------|---------------------|
|  | Unsafe escalating combustion | No                  |
| Testing assembly consumed                            | No                           | No                  |
| Flames to extremities/full thickness                 | No                           | No                  |
| Flames longer than 120 seconds                       | No                           | No                  |
| <b>Specimen Result</b><br>(Ignition or Non-ignition) | <b>Non-Ignition</b>          | <b>Non-Ignition</b> |

Any “Yes” in smouldering or flaming criteria means Ignition

**Match Test Result PASS**



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Page: 5 of 6

**Client:** Gabriel A/S

**Testing BS 5852:Clause 11:2006 (2011) Assessment of the ignitability of upholstered seating by Smouldering and Flaming Sources – Source 5 (Crib 5)**

The sample was conditioned and tested in the environments specified in Clause 10 of BS 5852:2006 (2011).

The material was tested in accordance with the above standard using Source 5 (Crib 5) and was tested over approximately 35-36 kg/m<sup>3</sup> combustion modified polyurethane foam. The sample was tested at 18°C and 45% r.h.

The following test results relate only to the ignitability of the combination of upholstery composites under the particular conditions of test stated; they are not intended as a means of assessing the full potential fire hazard of the materials or products in use.

**Results**

|   | <b>Specimen 1</b>   | <b>Specimen 2</b>   |
|---|---------------------|---------------------|
| Time of Ignition (s)                              | 14                  | 10                  |
| Time of Flame Extinction (s)                      | 195                 | 188                 |
| Time of Smoke Extinction (s)                      | 314                 | 500                 |
| Time of cover split                               | 18                  | 13                  |
| <b>Extent of damage (mm) - Seat</b>               |                     |                     |
| Width   | 150                 | 122                 |
| Length  | 110                 | 105                 |
| Depth   | 57                  | 64                  |
| <b>Extent of damage (mm) - Back</b>               |                     |                     |
| Width   | 153                 | 101                 |
| Length  | 362                 | 359                 |
| Depth   | 61                  | 42                  |
| Melting   | Yes                 | Yes                 |
| Dripping  | No                  | No                  |
| Charring  | Yes                 | Yes                 |
| Comments and Observations                         |                     |                     |
| <b>Specimen Result (Ignition or Non-ignition)</b> | <b>Non-Ignition</b> | <b>Non-Ignition</b> |

**Acronyms**

ME – Manually extinguished      EC – Escalating combustion      DNS – Material did not split  
 DNO – Did not observe time of event      BTT – Burnt through thickness of foam      DNI – Did not ignite





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Page: 6 of 6

**Client:** Gabriel A/S

### Comment

The results indicate 'Non-Ignition' of the materials and the test is designated NI/5 (ie. Pass).

### Conclusion

The combination of materials meets BS 7176:2007 + A1:2011 for Medium Hazard.

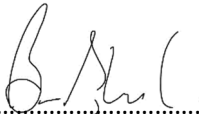
See BS 7176:2007 + A1:2011 Clause 6 for labelling and identification requirements. The test results relate only to the ignitability of the combination of upholstery composites under the particular conditions of test stated (BS EN 1021-1: 2006, BS EN 1021-2: 2006 and BS 5852: 2006 respectively); they are not intended as a means of assessing the full potential fire hazard of the materials or products in use.

An estimation of uncertainty of measurement has been taken into account when making a judgment to any pass/fail criteria. Under our Policy we have used a non-binary decision rule.

See our Decision rules Policy (<http://www.bttg.co.uk/decision-rules-policy>) for further information.

### Uncertainty Budget

Measurements:  $\pm 2\text{mm}$   
Timings:  $\pm 2$  seconds.

Reported by:  B Bland, Technical Customer Services Officer

Countersigned by:  P Doherty, Manager

Enquiries concerning this report should be addressed to Customer Services.



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