

**TECHNICAL REPORT**

for

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<b>Customer Order No:</b>	-	<b>Job Reference:</b>	EFS624101025-CG-02
<b>Supplied by:</b>	Not Specified	<b>Date received:</b>	30/10/2024
<b>Supplying to:</b>	Not Specified	<b>Date issued:</b>	28/11/2024
<b>Testing Period:</b>	30/10/2024 - 28/11/2024		

**Testing to B-Green GRS (Collection)**

The samples tested in this report have been assessed against the requirements of the specifications listed for the **SELECTED TESTS ONLY**. Statements of compliance against any specification relate exclusively to the sample tested as requested by the client and may not be representative of full specification testing:

**BS EN 1021-1:2014 & BS EN 1021-2:2014**

According to the requirements, the sample(s) were found to:

**Comply**

With the requirements of the above specification.

**Additional comments/information (if relevant)**



James Brennan  
Physical Testing Technician  
(Footwear Specialist)



Daniel Holmes  
Head of Physical Testing .

### DETAILS OF SAMPLE RECEIVED

Sample Reference	Description	Unique Reference/Identifier
A	B-Green GRS (Collection)	08414/7289

### CERTIFICATE OF ANALYSIS

#### †SMOULDERING CIGARETTE TEST - BS EN 1021-1:2014 (SMOULDERING CIGARETTE SOURCE)

	Test Results		
	1	2	3
-			
Progressive smouldering after 60 minutes	No	No	No
Flaming?	No	No	No
Tested with	CM 35 FR Foam	CM 35 FR Foam	CM 35 FR Foam
Was the samples subjected to water soaking?	Yes	Yes	Yes

#### †BUTANE FLAME TEST - BS EN 1021-2:2014 (MATCH FLAME EQUIVALENT SOURCE)

	Test Results		
	1	2	3
-			
Ignition source removed at (seconds)	15	15	15
Flaming ceased at (seconds)	1	1	1
Flaming still in progress 120 seconds after removal of ignition source?	No	No	No
Progressive smouldering?	No	No	No
Tested with	CM 35 FR Foam	CM 35 FR Foam	CM 35 FR Foam
Was the samples subjected to water soaking?	Yes	Yes	Yes

Test	Conclusion Pass/Fail
†SMOULDERING CIGARETTE TEST - BS EN 1021-1:2014 (SMOULDERING CIGARETTE SOURCE)	Pass
†BUTANE FLAME TEST - BS EN 1021-2:2014 (MATCH FLAME EQUIVALENT SOURCE)	Pass



## UNCERTAINTY OF MEASUREMENT

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of  $k = 2$ , providing a level of confidence of approximately 95 %.

Unless otherwise specified all compliance and pass/fail statements for physical test methods are binary simple acceptance based on the tolerance interval and, except for graded methods, a test uncertainty ratio greater (TUR) than 4:1.

For graded methods, the TUR will drop to as low as 0.5:1 when the tolerance limits are within a grade division of the upper scale limit.

The Uncertainty budgets are stated for each test method, these are for reference, and should be considered when results are on or close to Specification Limits / Requirements. In such cases, it should be noted that the risk of false acceptance or rejection may be as high as 50%, for further information please refer to ILAC G8.

Test Method	Parameter	Uncertainty of Measurement ( $\pm$ )
Ignitability of Foam Fillings (Furniture & Furnishings (Fire)(Safety) Regulations 1988 (as amended) – Schedule 1)	Ignition Source 5	2 seconds
Ignitability of Non-Foam Fillings (Furniture & Furnishings (Fire)(Safety) Regulations 1988 (as amended) – Schedule 2)	Ignition Source 2	2 seconds
Ignitability of Interliners (Furniture & Furnishings (Fire)(Safety) Regulations 1988 (as amended) – Schedule 3)	Ignition Source 5	2 seconds
Ignitability of Fabric (Furniture & Furnishings (Fire)(Safety) Regulations 1988 (as amended) – Schedule 4 & 5)	Ignition Source 0	2 seconds
	Ignition Source 1	2 seconds
Ignitability of Upholstered Seating by Smouldering and Flaming Ignition Sources (BS 5852:2006)	Ignition Source 5	2 seconds
Assessment of the ignitability of upholstered furniture Part 1: Ignition source smouldering cigarette (BS EN 1021-1:2006 / BS EN 1021-1:2014)	Cigarette Ignition Source	2 seconds
Assessment of the ignitability of upholstered furniture Part 2: Ignition source match flame equivalent (BS EN 1021-2:2006 / BS EN 1021-2:2014)	Match Flame Equivalent Ignition Source	2 seconds
Smoulder Resistance of Materials Used in Upholstered Furniture (TB 117)	Smouldering Time Measurement	2 seconds
	Vertical Char Measurement	0.032 inches
Standard for the Flammability of Clothing Textiles (16 CFR 1610)	Class I Designation	0.526%
	Class III Designation	0.982%
Standard for the Flammability of Carpets and Rugs (16 CFR 1630)	After Flame Time Measurements	0.245 seconds
	Damaged Length Measurement	0.0817 cm
Standard for the Flammability of Small Carpets and Rugs (16 CFR 1631)	After Flame Time Measurements	0.245 seconds
	Damaged Length Measurement	0.0817 cm
Assessment of the ignitability of mattresses and upholstered bed bases Part 1: Ignition source smouldering cigarette (BS EN 597-1:1995 / BS EN 597-1:2015)	Smouldering Cigarette	2 seconds
Assessment of the ignitability of mattresses and upholstered bed bases Part 2: Ignition source: match flame equivalent (BS EN 597-2:1995 / BS EN 597-2:2015)	Match Flame Equivalent	2 seconds
Methods of test for the assessment of the ignitability of mattresses, upholstered divans and upholstered bed bases with flaming types of primary and secondary sources of ignition. (BS 6807:2006 / BS 7177:2008 + A1:2011)	Ignition Source 5	2 seconds

**STANDARD TECHNICAL NOTES**

(all may not be applicable)

Terms and Conditions	Our Terms and Conditions of Testing can be found at <a href="http://www.blcleathertech.com">www.blcleathertech.com</a>
†	Test within the scope of Eurofins BLC's internal ISO 17025 UKAS accreditation.
SC■	Testing performed within the scope of an external ISO 17025 UKAS accredited body (a Eurofins BLC approved partner laboratory)
SC◇	Testing performed within the scope of an external ISO 17025 accredited body (a Eurofins BLC approved partner laboratory)
SC	Test performed by an unaccredited Eurofins   BLC approved partner laboratory.
Technical Notes (listed by test method)	
Sample conditioning	<p>Foam, sheeting, cigarettes, and upholstery samples are conditioned for at least 4 days prior to testing at <math>21 \pm 3^{\circ}\text{C}</math> and <math>&lt; 55\%</math> Humidity. The flammability conditioning chamber is suitable for this.</p> <p>NOTE: TB 117 specifies a minimum of 24 hours, however, BLC has standardised conditioning to 4 days for consistency with the other flammability tests, thereby eliminating potential for confusion. If conditions in the test area are not the same as in the conditioning area, tests should begin within 10 minutes of removal of samples from conditioning area.</p>
Ignitability testing to †BS 5852: Part 1:1979 as specified in Schedule 4, Part 1 (the cigarette test) and Schedule 5, Part 1 (the match test) of the Furniture and Furnishings (Fire)(Safety) Regulations 1988 and The Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations 1989	<p>The test results relate only to the ignitability of the combinations of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.</p> <p>Filling type: VP45 Non FR modified foam with a density of <math>20\text{-}22 \text{ Kg/m}^3</math></p>
†BS EN 1021-1:2014 (Smouldering cigarette source) and †BS EN 1021-2:2014 (Match flame equivalent source)	<p>The test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use</p>

<p>†BS 5852:2006 Ignition Source 5</p>	<p>The test results only relate to the ignitability of the combinations of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use</p> <p>4.2.1 a) Escalating flaming combustion behaviour so that it is unsafe to continue the test and forcible extinction is required  4.2.1 b) Burns until it is essentially consumed within the test duration  4.2.1 c) Flame front reaches the extremities of the specimen other than the top of the vertical part of the test specimen, or passes through the full thickness of the specimen within the duration of the test  4.2.1 e) Continues to flame for more than 10 minutes after ignition of the crib  4.2.1 g) Flaming debris causes an isolated floor fire that continues to flame longer than 10 minutes after ignition of the crib</p> <p>4.1.1 a) Escalating smouldering combustion behaviour so that it is unsafe to continue the test and forcible extinction is required  4.1.1 c) Smoulders until it is essentially consumed or that smoulders to the extremities of the specimen, i.e. to either side or to/through the full thickness of the specimen, within the duration of the test  4.1.1 e) Externally detectable amounts of smoke, heat or glowing 60 minutes after ignition of the crib  4.1.1 f) Final examination - evidence of charring within the filling (other than discolouration) more than 100 mm in any direction, apart from upwards, from the nearest part of the original position of the source</p> <p>Filling type: Combustion modified (FR) foam with a density of 35 Kg/m<sup>3</sup></p>
<p>Schedule 3 of The Furniture and Furnishings (Fire)(Safety) Regulations  †BS 5852: Part 2:1982 (Ignition Source 5)</p>	<p>Filling type: VP45 Non FR modified foam with a density of 20-22 Kg/m<sup>3</sup> covered in 100% FR polyester 220 g/m<sup>2</sup></p>
<p>†BS 5852: Part 2: 1982 as modified by Schedule 2 Part 1 (non-foam filling materials) of The Furniture and Furnishings (fire) (safety) Regulations 1988 (Ignition Source 2)</p>	<p>The test results relate only to the ignitability of the combinations of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use</p>
<p>Technical Notes (listed by test method)</p>	
<p>†Schedule 3 of The Furniture and Furnishings (Fire)(Safety) Regulations BS 5852: Part 2:1982 (Ignition Source 5)</p> <p>AND</p> <p>†Schedule 1 Part 1 of the Furniture &amp; Furnishings (Fire) (Safety) Regulations 1988 (As Amended)  BS 5852: Part 2: 1982 (Ignition Source 5)</p> <p>AND</p> <p>†BS 5852: Part 2: 1982 as modified by Schedule 2 Part 1 (non-foam filling materials) of The Furniture and</p>	<p>The test results only relate to the ignitability of the combinations of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use</p> <p>4.1.a) Externally detectable amounts of smoke, heat or glowing 30 minutes after the removal of the burner tube  4.1 b) Externally detectable amounts of smoke, heat or glowing 60 min after ignition of the crib  4.1 c) Escalating smouldering behaviour so that it is unsafe to continue the test and required forcible extinction  4.1 d) Smoulders until it is essentially consumed within the test duration  4.1 e) Smouldering reached the extremities of the test specimen (other than the top of the vertical part of the specimen) within the duration of the test  4.1 f) On final examination shows evidence of charring, other than discolouration, more than 100 mm in any direction apart from upwards from the nearest part of the original position of the ignition source</p> <p>4.2.a) The test specimen continued to flame for more than 120 seconds after the removal of the burner  4.2 b) Continues to flame for more than 10 minutes after the ignition of the crib</p>

<p>Furnishings (fire) (safety) Regulations 1988 (Ignition Source 2)</p>	<p>4.2 d) Escalating combustion behavior rendered the test unsafe to continue and required forcible extinction          4.2 e) Flaming essentially consumed the test specimen within the duration of the test          4.2 f) Flaming reached the extremities of the test specimen (other than the top of the vertical part of the specimen) within the duration of the test</p>												
<p>†Schedule 1 Part 1 of the Furniture &amp; Furnishings (Fire) (Safety) Regulations 1988 (As Amended)          BS 5852: Part 2: 1982 (Ignition Source 5)</p>	<p>*NOTE Schedule 1 Part 1 of the 1988 regulations (polyurethane foam in slab or cushion form) states that:          If failure against the criteria of clause 4 of BS 5852: Part 2 has occurred but only by way of damage exceeding the limits defined in clauses 4.1(e), 4.1(f) and 4.2(f) and provided that the resultant mass loss (initial mass less final mass) is less than 60 g the foam passes the ignitability test.</p>												
<p>†BS 7177: 2008 + A1: 2011 Low Hazard Specification for Resistance to Ignition of Mattresses, Mattress Pads, Divans and Bed Bases.</p>	<p>The sample was subjected to conditioning for at least 72 hours in ambient indoor conditions followed by a minimum of 24 hours at a temperature of (23±2°C) and a relative humidity of (50±5%).          The test result only relates to the ignitability of the combination of materials under the particular conditions of test. It is not intended as a means of assessing the full potential fire hazard of the mattress, mattress pad or upholstered bed base in use          Butane Gas flowing at 45±2ml/min @ 25°C for 15±1 seconds          A – Smouldering Criteria          B – Flaming Criteria</p>												
<p>†TB 117 – 2013 (Section 1-Cover Fabric)</p>	<p>Ignition source: SRM 1196 Cigarette (see below for further information)</p>												
<p>†TB 117 – 2013 (Section 4-Decking)</p>	<p>Ignition source: SRM 1196 Cigarette (see below for further information)</p>												
<p>†16 CFR Part 1610 Standard for Flammability of Clothing Textiles (General Wearing Apparel)</p>	<p>The time of flame spread is measured from flame application to the severance of a trip thread.</p> <table border="1" data-bbox="502 1310 1476 1579"> <thead> <tr> <th>CLASS</th> <th>Plain Surface textile fabric</th> <th>Raised Surface textile fabric</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1) There are no burn times; or Burn time is 3.5 seconds or more – <b>ACCEPTABLE</b> (3.5 Sec is a pass)</td> <td>1) There are no burn times; or 2) Burn time is greater than 7.0 seconds; or Burn time is 0 – 7 seconds with no base burns (SFBB) Exhibits rapid surface flash only – <b>ACCEPTABLE</b></td> </tr> <tr> <td>2</td> <td>Class 2 is not applicable to plain surface textile fabrics</td> <td>Burn time is 4 – 7 seconds (inclusive) with base burn (SFBB) – <b>ACCEPTABLE</b></td> </tr> <tr> <td>3</td> <td>Burn time is less than 3.5 seconds – <b>NOT ACCEPTABLE</b></td> <td>Burn time is less than 4.0 seconds with base burn (SFBB) – <b>NOT ACCEPTABLE</b></td> </tr> </tbody> </table> <p><b>FOR PLAIN SURFACE TEXTILE FABRICS ONLY</b>          DNI = DID NOT IGNITE          IBE = IGNITED, BUT EXTINGUISHED</p> <p><b>FOR RAISED SURFACE TEXTILE FABRICS ONLY</b>          SF uc = Surface flash, under the stop thread but does not break          SF pw = Surface flash, part way. Did not reach stop thread          SF poi = Surface flash, point of impingement only (Same as DNI)          SF only = Time in sec &amp; SF only. No damage to base fabric          SFBB = Time in sec &amp; SF base burn starting other than poi          SFBB poi = Time in sec &amp; SFBB starting at the poi</p>	CLASS	Plain Surface textile fabric	Raised Surface textile fabric	1	1) There are no burn times; or Burn time is 3.5 seconds or more – <b>ACCEPTABLE</b> (3.5 Sec is a pass)	1) There are no burn times; or 2) Burn time is greater than 7.0 seconds; or Burn time is 0 – 7 seconds with no base burns (SFBB) Exhibits rapid surface flash only – <b>ACCEPTABLE</b>	2	Class 2 is not applicable to plain surface textile fabrics	Burn time is 4 – 7 seconds (inclusive) with base burn (SFBB) – <b>ACCEPTABLE</b>	3	Burn time is less than 3.5 seconds – <b>NOT ACCEPTABLE</b>	Burn time is less than 4.0 seconds with base burn (SFBB) – <b>NOT ACCEPTABLE</b>
CLASS	Plain Surface textile fabric	Raised Surface textile fabric											
1	1) There are no burn times; or Burn time is 3.5 seconds or more – <b>ACCEPTABLE</b> (3.5 Sec is a pass)	1) There are no burn times; or 2) Burn time is greater than 7.0 seconds; or Burn time is 0 – 7 seconds with no base burns (SFBB) Exhibits rapid surface flash only – <b>ACCEPTABLE</b>											
2	Class 2 is not applicable to plain surface textile fabrics	Burn time is 4 – 7 seconds (inclusive) with base burn (SFBB) – <b>ACCEPTABLE</b>											
3	Burn time is less than 3.5 seconds – <b>NOT ACCEPTABLE</b>	Burn time is less than 4.0 seconds with base burn (SFBB) – <b>NOT ACCEPTABLE</b>											



	SFBB poi* = Time in sec & SFBB starting possibly at poi * means there is a question to origin of base burn
Ignitability Testing to †BS 5852: Part 1:1979 as specified in Schedule 4, Part 2 and Schedule 5, Part 3 of the Furniture and Furnishings (Fire)(Safety) Regulations 1988 and The Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations 1989	<p>The test results only relate to the ignitability of the combinations of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use</p> <p>Smouldering cigarette test – Filling type: VP45 Non FR modified foam with a density of 20-22 Kg/m<sup>3</sup> Butane flame test - Filling type: Combustion modified foam with a density of 24-26 Kg/m<sup>3</sup></p>

TB 117 – 2013 (Section 1-Cover Fabric)	
Pass/Fail/Repeat criteria: A material is considered to pass or fail based on following criteria according to technical Bulletin 117-2013, Section 1, item 3.4:	
1	A single mock up- test specimen fails to meet the requirements of this test procedure if any of the following criteria occurs: a) The mock-up test specimen continues to smoulder after the 45 minute test duration; b) A vertical char length of more than 1.8 inches (45mm) develops on the cover fabric. c) The mock-up test transitions to open flaming.
2	The cover fabric passes the test if three initial mock-up specimens pass the test, i.e, the cigarettes burn their entire length and the mock-ups are no longer smouldering.
3	If more than one initial specimen fails, the cover fabric fails the test.
4	If any of the three initial specimen fails, repeat the test on additional three specimens.
5	If all three additional specimens pass the test, the cover fabric passes the test. If any one of the additional three specimens fails, the cover fabric fails the test.

TB 117 – 2013 (Section 4-Decking Material)	
Pass/Fail/Repeat criteria: A material is considered to pass or fail based on following criteria according to technical Bulletin 117-2013, Section 4, item 4.4:	
1	A single mock up- test specimen fails to meet the requirements of this test procedure if any of the following criteria occurs: a) The mock-up test specimen continues to smoulder after the 45 minute test duration; b) A char length of more than 1.5 inches (38 mm) develops c) The mock-up test transitions to open flaming.
2	The decking material passes the test if three initial mock-up specimens pass the test, i.e., the cigarettes burn their full length and the mock-ups are no longer smouldering.
3	If more than one initial specimen fails, the decking material fails the test
4	If any of the three initial specimen fails, repeat the test on additional three specimens.
5	If all three additional specimens pass the test, the decking material passes the test. If any one of the additional three specimens fails, the decking material fails the test.

Amendment: Crib V test removed