

Reaction to fire classification report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Classification standard: EN 13501-1: 2018

Report owner(s): Protec International Limited

Product(s): "IMPCTBRDTRANS6MM"

Report number: 531526

Version: 1

Quality management

Version	Date	Summary of amendments including reasons		
1	1 June 2023	Description	Initial issue	
			Prepared by	Reviewed by
		Name	Michael Walford	Claire Lawrence
		Signature		
				Authorised by
				Stacey Deeming
				
		*Signed for and on behalf of Warringtonfire Testing and Certification Limited		

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1. Introduction

This classification report defines the classification assigned to "IMPCTBRDTRANS6MM", in line with the procedures given in EN 13501-1: 2018.

Warringtonfire Testing and Certification Limited (Warringtonfire) issued the classification report at the request of the report owner listed in Table 1.

Table 1 Report owner details

Entity	Address
Report owner	
Protec International Limited	Construction House, Adlington Estate, Adlington, Cheshire, SK10 4NL, United Kingdom

2. Details of classified product

2.1 General

The product(s), "IMPCTBRDTRANS6MM", are defined as being suitable for flooring applications.

2.2 Product description

The product(s), "IMPCTBRDTRANS6MM", are described in Table 2 and in the test reports listed in Section 3.1.

Table 2 Product description

Item	Detail
General description / Generic type	Twin walled polypropylene sheet
Product reference	"IMPCTBRDTRANS6MM"
Detailed description / composition details	Twinwall polypropylene sheet with circular flutes
Name of manufacturer	Polycorr Limited
Thickness	6mm (stated by sponsor) 6.19mm (determined by Warringtonfire)
Weight per unit area	2500 g/m ² (stated by sponsor) 2520.67 g/m ² (determined by Warringtonfire)
Colour	Translucent
Gap Width	1.2mm
Pitch Width	5mm
Flame retardant details	See Note 1 below
Brief description of manufacturing process	Hollow profile extrusion

Note 1 – The sponsor was unwilling to provide this information

3. Test reports and test results in support of classification

3.1 Test reports

Table 3 details the test reports that have been used in support of classification.

Table 3 Test reports

Name of laboratory	Name of sponsor(s)	Test report no.	Test date	Test and extended application standard
Warringtonfire	Protec International Limited	531078	24 April 2023	EN ISO 9239-1: 2010
Warringtonfire	Protec International Limited	531079	24 April 2023	EN ISO 11925-2: 2020

3.2 Test results

3.2.1 Official test results used for the classification

Table 4 details the test results that have been used in support of classification. The fire performance parameters for class C_{FL} - s1 can be found in Table 6.

Table 4 Test data

Test method Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN ISO 9239-1: 2010 531078	Critical heat flux, (kW/m ²)	4	6.6	-
	Average smoke development, (%.min)		241	-
EN ISO 11925-2: 2020 (15s exposure - Surface) 531079	F _s ≤ 150 mm within 20 s	6	-	Compliant
	N/A		-	Compliant
EN ISO 11925-2: 2020 (15s exposure - Edge) 531079	F _s ≤ 150 mm within 20 s	6	-	Compliant
	N/A		-	Compliant

Note: '-' symbol confirms this parameter is not applicable.

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with EN 13501-1:2018.

4.2 Classification

The product "IMPCTBRDTRANS6MM" in relation to its reaction to fire behavior is classified as:

C_{FL}

The additional classification in relation to smoke production is:

s1

The format of the reaction to fire classification for flooring applications products is:

Fire behaviour		Smoke production	
C_{FL}	-	s	1

Alternatively shown:

Reaction to fire classification: C_{FL} - s1

4.3 Field of application

The classification for the product described in Section 2.2 of this report is valid for end-use applications described in Table 5.

Table 5 End-use applications

End use	Description	Origin
Substrate	Any substrate with a density equal to or greater than 1350 kg/m ³ , a minimum thickness of 6 mm and a fire performance of A2 _{FL} -s1, d0 or better.	As per EN 13238: 2010, clause 5.2 and EGOLF recommendation 045-2018.
Airgap	No air gap allowed	N/A
Joints	No joints permitted	N/A

This classification is valid for the following product parameters:

- Thickness: No variation allowed
- Weight per unit area: No variation allowed
- Colour: No variation allowed
- Gap width: No variation allowed
- Pitch width: No variation allowed
- Construction: No variation allowed
- Composition: No variation allowed

4.4 Fire performance parameters for C_{FL} - s1

All the products described in Section 2.2 and within the field of application defined in Section 4.3 comply with the fire performance parameters shown in Table 6. The test results can be found in Section 3.2.

Table 6 Fire performance parameters for C_{FL} - s1

Test method	Parameter	Continuous parameters	Compliance with parameters
EN ISO 9239-1: 2010	Critical heat flux, (kW/m ²)	CHF ≥ 4,5 kW/m ²	-
	Average smoke development, (%.min)	Smoke ≤ 750 %.min	-
EN ISO 11925-2: 2020 (15s exposure)	Extent of flame spread	-	Fs ≤ 150 mm within 20 s
	Flaming droplets / particles that ignite filter paper	-	N/A

Note: ‘-’ symbol confirms this parameter is not applicable.

5. Restrictions

At the time the standard EN 13501-1: 2018 was published, no decision was made about the duration of validity of a classification report.

When this report is used to support UKCA marking under the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and/or ‘CE+UK(NI)’ marking for Northern Ireland under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011, the provisions of those regulations prevail over any conflicting provisions in the designated/harmonised standards and technical specifications.

6. Limitations

According to the information mentioned by the sponsor on the technical information sheet there was no harmonised product standard for UKCA or CE+UK(NI) marking available at the time the classification report for the tested material/product was drafted. When such a product standard is published, this report may be submitted again to the laboratory to evaluate the adequacy of the report for UKCA or CE+UK(NI) marking.

The test laboratory played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide evidence for the traceability of the samples tested.

7. Validity

This document is the original version of this classification report and is written in English. In case of doubt the original version prevails over a translation.

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The classification results relate to the behaviour of a product under the particular conditions of the test(s); they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use, nor can the classification results be extrapolated and applied to other products, or imply suitability for use in configurations not specifically detailed in the classification report. The classification is based on the information available to Warringtonfire at the time of the report. Should conflicting or contradictory evidence become available, Warringtonfire reserves the right to unconditionally withdraw the classification report forthwith upon giving written notice of the same.

Reports are statements of fact prepared in accordance with the referenced version of the standards stated in Section 3 of this report. Test, classification and extended application are based upon the information provided to Warringtonfire. Warringtonfire takes no responsibility for the accuracy or completeness of such information.

The results stated in this classification report apply to the test specimens as received and/or specified in the referenced/supporting test reports. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test and classification results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the report owner. The report owner should then obtain appropriate documentary evidence of compliance from Warringtonfire or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test specimens that were tested.

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The report is issued for the benefit of Warringtonfire's direct customer only, and may not be relied upon by any third parties without Warringtonfire's express written consent.

This document does not represent type approval or certification of the product. Warringtonfire does not give an opinion nor is it Warringtonfire's responsibility to determine or state whether the product meets any particular fire or life safety standards as set out in the Building Regulations or any other appropriate document.



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Reaction to fire test report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Test standard: EN ISO 11925-2: 2020

Test sponsor(s): Protec International Limited

Product(s): IMPCTBRDTRANS6MM

Report number: 531079

Version: 1

Warringtonfire Testing and Certification Limited , accredited for compliance with ISO/IEC 17025:2017 – Testing



Quality management

Version	Date	Summary of amendments including reasons	
1	11 May 2023	Description	Initial issue
		Name	Prepared by
		Signature	Authorised by
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			Chris Jacques
			<i>H Harper</i>
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1. Introduction

This report documents the findings of the reaction to fire test of "IMPCTBRDTRANS6MM" in accordance with EN ISO 11925-2: 2020.

Warringtonfire Testing and Certification Limited (Warringtonfire) performed the test on 24 April 2023 at the request of the test sponsor listed in Table 1.

Table 1 Test sponsor details

Entity	Address
Test sponsor	
Protec International Limited	Construction House, Adlington Estate, Adlington, Cheshire, SK10 4NL

2. Test specimens

The description of the test specimens is detailed in Table 2. Unless otherwise specified:

- The information including measurements was provided by the test sponsor.
- All measurements taken by Warringtonfire are clearly identified.

Table 2 Test specimen description

Item	Detail
General description / generic type	Twin walled polypropylene sheet
Product reference	"IMPCTBRDTRANS6MM"
Detailed description / composition details	Twinwall polypropylene sheet with circular flutes
Name of manufacturer	Polycorr Limited
Thickness	6mm (stated by the sponsor) 6.19mm (determined by Warringtonfire)
Weight per unit area	2500g/m ² (stated by sponsor) 2520.67g/m ² (determined by Warringtonfire)
Colour	Translucent
Gap width	1.2mm
Pitch width	5mm
Flame retardant details	See Note 1 below
Brief description of manufacturing process	Hollow profile extrusion

Note 1: The sponsor was unwilling to provide this information.

3. Test procedure

Table 3 details the test procedure for this reaction to fire test.

Table 3 Test procedure

Item	Detail
Test standard	The test was performed in accordance with EN ISO 11925-2: 2020.
Supplementary standard	EN 13501-1: 2018
Deviations from the test standard	None
Product standard and/or EAD	The client did not provide an instruction to work in accordance with a product standard.
EGOLF agreements and/or recommendations	N/A
Pre-test conditioning	The test specimens were received on 23 March 2023. Before testing, the test specimens were conditioned in accordance with the requirements of EN 13238: 2010 at a temperature of 23 ± 2 °C and a relative humidity of $50 \pm 5\%$ for a minimum period of 48 hours, until constant mass was achieved.
Sampling / specimen selection	The test specimens were supplied by the test sponsor. Warringtonfire was not involved in any selection or sampling procedure.
Substrate	The specimens were tested with an 8mm thick cement board substrate (as specified in EN 13238:2010) present.
Test face	The decorative face of the specimen was exposed to the heating conditions of the test when the specimens were mounted in the test position.
Number of replicate tests	Six specimens were tested, each of which were subjected to surface exposure to flame with the decorative face exposed. Six specimens were tested, each of which were subjected to edge exposure to flame with the decorative face exposed.
Flame application time	15 s
Test duration	20 s
Intended application	Impact board
Condition of specimen edges	Homogeneous product

4. Test results and observations

4.1 Test results

Table 4 shows a summary of the results for the test specimens. A fully detailed overview of the measurements is given in the laboratory record sheet (see Appendix).

Table 4 Test results

Exposure condition	Did flame front exceed 150mm above the flame application point?	Were flaming droplets/particles produced that ignited the filter paper?
Surface	No	No
Edge	No	No

4.2 Test observations

No significant observations were noted during the course of testing (according to section 8.2.d of the test standard).

5. Application of test results

5.1 Validity

This document is the original version of this test report and is written in English. In case of doubt the original version prevails over a translation.

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The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use, nor can the results be extrapolated and applied to other products.

Test reports are statements of fact prepared in accordance with the referenced version of the standards stated in Section 3 of this report. Test reports are based upon the information provided to Warringtonfire. Warringtonfire takes no responsibility for the accuracy or completeness of such information.

The results stated in this report apply to the sample as received. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the test sponsor. The test sponsor should then obtain appropriate documentary evidence of compliance from Warringtonfire or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test sample as received.

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5.2 Uncertainty of measurement

The uncertainty of measurement values determined for EN ISO 11925-2: 2020 are as follows:

Surface application, maximum flame height: $\pm 1.7\text{mm}$.

Edge application, maximum flame height: $\pm 0.8\text{mm}$

Edge application with specimen turned at 90° from its vertical axis, maximum flame height: $\pm 0.8\text{mm}$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Appendix A Test data

A.1 Laboratory record sheet – Surface Application

Centre line of the specimen, 40 mm above the bottom edge (see figure 11 of the standard).

Specimen number	Test date	Ignition	Time from start of test for flame to reach 150 mm	Extent of flame spread	Flaming droplets / particles that ignite filter paper
(-)	(-)	(-)	(sec)	(mm)	(-)
Specimen 1	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite
Specimen 2	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite
Specimen 3	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite
Specimen 4	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite
Specimen 5	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite
Specimen 6	24/04/2023	No	Did not ignite	Did not ignite	Did not ignite

A.2 Laboratory record sheet – Edge Application

At the mid point on the bottom edge of the test specimen (see figure 8a of the standard).

Centre of the width of the bottom edge of the test specimen 1,5 mm behind the surface (see figure 8b of the standard).

Specimen number	Test date	Ignition	Time from start of test for flame to reach 150 mm	Extent of flame spread	Flaming droplets / particles that ignite filter paper
(-)	(-)	(-)	(sec)	(mm)	(-)
Specimen 1	24/04/2023	Yes	Did not reach	10	Filter paper not ignited
Specimen 2	24/04/2023	Yes	Did not reach	10	Filter paper not ignited
Specimen 3	24/04/2023	Yes	Did not reach	10	Filter paper not ignited
Specimen 4	24/04/2023	Yes	Did not reach	5	Filter paper not ignited
Specimen 5	24/04/2023	Yes	Did not reach	10	Filter paper not ignited
Specimen 6	24/04/2023	Yes	Did not reach	10	Filter paper not ignited



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Reaction to fire test report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Test standard: EN ISO 9239-1: 2010
Test sponsor(s): Protec International Limited
Product(s): IMPCTBRDTRANS6MM
Report number: 531078
Version: 1

Warringtonfire Testing and Certification Limited , accredited for compliance with ISO/IEC 17025:2017 – Testing



Quality management

Version	Date	Summary of amendments including reasons	
1	4 May 2023	Description	Initial issue
			Prepared by
		Name	Authorised by
		Signature	
			Hannah Harper
			Chris Jacques
			
			
		*Signed for and on behalf of Warringtonfire Testing and Certification Limited	

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1. Introduction

This report documents the findings of the reaction to fire test of "IMPCTBRDTRANS6MM" in accordance with EN ISO 9239-1: 2010.

Warringtonfire Testing and Certification Limited (Warringtonfire) performed the test on 24 April 2023 at the request of the test sponsor listed in Table 1.

Table 1 Test sponsor details

Entity	Address
Test sponsor	
Protec International Limited	Construction House, Adlington Estate, Adlington, Cheshire, SK10 4NL

2. Test specimens

The description of the test specimens is detailed in Table 2. Unless otherwise specified:

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- All measurements taken by Warringtonfire are clearly identified.

Table 2 Test specimen description

Item	Detail
General description / generic type	Twin walled polypropylene sheet
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Weight per unit area	2500g/m ² (stated by sponsor) 2520.67g/m ² (determined by Warringtonfire)
Colour	Translucent
Gap width	1.2mm
Pitch width	5mm
Flame retardant details	See Note 1 below
Brief description of manufacturing process	Hollow profile extrusion

Note 1: The sponsor was unwilling to provide this information.

3. Test procedure

Table 3 details the test procedure for this reaction to fire test.

Table 3 Test procedure

Item	Detail
Test standard	The test was performed in accordance with EN ISO 9239-1: 2010.
Supplementary standard	EN 13501-1: 2018
Deviations from the test standard	None
Product standard and/or EAD	The client did not provide an instruction to work in accordance with a product standard.
EGOLF agreements and/or recommendations	N/A
Pre-test conditioning	The test specimens were received on 23 March 2023.
	Before testing, the test specimens were conditioned in accordance with the requirements of EN 13238: 2010 at a temperature of 23 ± 2 °C and a relative humidity of $50 \pm 5\%$ for a minimum period of 48 hours, until constant mass was achieved.
Sampling / specimen selection	The test specimens were supplied by the test sponsor. Warringtonfire was not involved in any selection or sampling procedure.
Substrate	The specimens were tested with an 8mm thick cement board substrate (as specified in EN 13238:2010) present.
Test face	The decorative face of the specimen(s) was exposed to the heating conditions of the test when the specimen(s) were mounted in the test position.
Number of replicate tests	Four
	The test specimens had a directional quality. Initial tests were carried out on one test specimen in the production direction and one test specimen in a direction perpendicular to that direction to establish the worst case condition. The formal test was then completed with the test specimens in that worst case direction as detailed in Table 4.

4. Test results and observations

4.1 Test results

Table 4 shows a summary of the results for the test specimens. A fully detailed overview of the measurements is given in the laboratory record sheet (see Appendix).

Table 4 Test results

Parameter	Unit	Results - per specimen				
		Specimen 1	Specimen 2	Specimen 3	Specimen 4	Mean
Test date	-	24/04/2023	24/04/2023	24/04/2023	24/04/2023	-
Orientation of test specimens	-	Production direction (↑)	90° to production direction (→)	Production direction (↑)	Production direction (↑)	Production direction (↑)
Maximum flame front distance	cm	31	29	30	39	33
Critical Heat Flux	kW/m ²	7.0	7.5	7.3	5.4	6.6
Average Smoke Development	%.min	228	143	192	304	241

4.2 Test observations

No significant observations were noted during the course of testing (according to section 8.2.4 of the test standard).

5. Application of test results

5.1 Validity

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5.2 Uncertainty of measurement

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurements obtained from a reaction to fire test, it is not possible to provide a stated degree of accuracy of the result.

Appendix A Test data

A.1 Laboratory record sheet

Specimen no.	1	2	3	4
Orientation	↑	→	↑	↑
Distance (cm)	Time to travel indicated distance (seconds)			
5	147	150	147	165
10	228	228	213	228
15	324	387	327	384
20	465	705	483	462
25	597	1305	708	591
30	723	-	1773	684
35	-	-	-	882
40	-	-	-	-
45	-	-	-	-
50	-	-	-	-
55	-	-	-	-
60	-	-	-	-
65	-	-	-	-
70	-	-	-	-
75	-	-	-	-
80	-	-	-	-
85	-	-	-	-
90	-	-	-	-
95	-	-	-	-
100	-	-	-	-
Flame extinguishment (seconds)	1194	DNE	DNE	1560
Maximum flame front distance (cm)	31	29	30	39
Critical heat flux at extinguishment, CHF (kW/m ²)	7.0	7.5	7.3	5.4
Smoke Development (%.min)	228	143	192	304
Flame front distance at 10 min (cm)	25	17	22	25
Flame front distance at 20 min (cm)	0	22	26	38
Flame front distance at 30 min (cm)	0	0	30	0
Heat flux at 10 min, HF-10 (kW/m ²)	8.4	10.0	9.0	8.4
Heat flux at 20 min, HF-20 (kW/m ²)	≥ 11	9.0	8.1	5.6
Heat flux at 30 min, HF-30 (kW/m ²)	≥ 11	≥ 11	7.3	≥ 11
DNE - The test specimen was flaming at the end of the 30 minutes test duration and was, therefore, extinguished by the operator.				

A.2 Total light attenuation

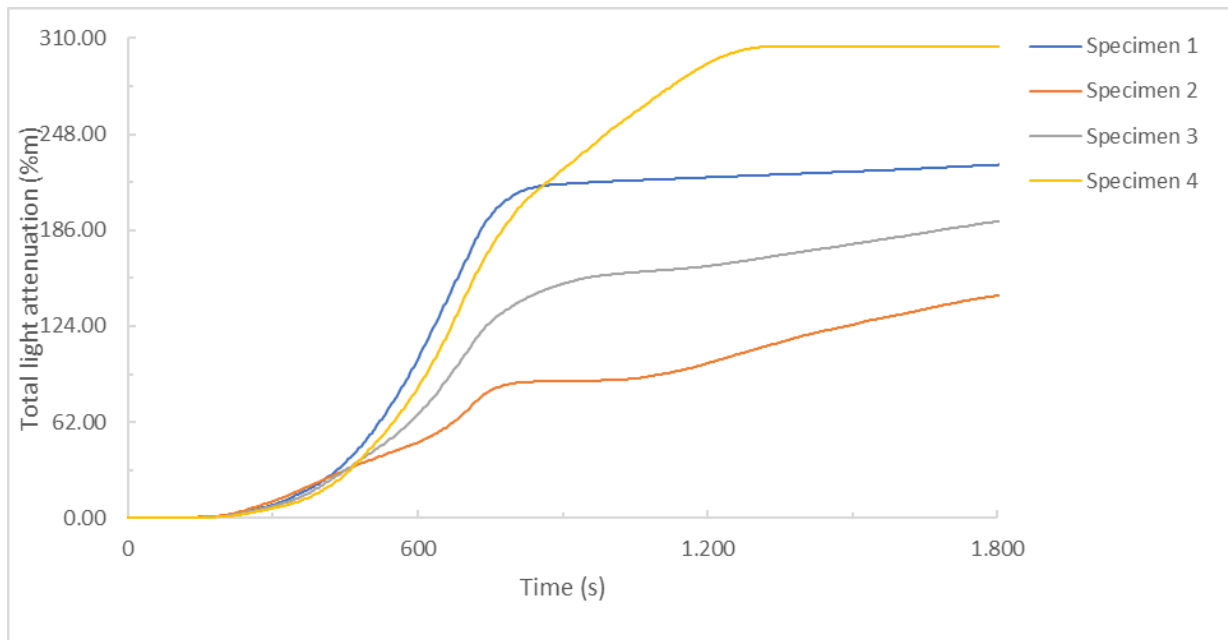


Figure 1 Total light attenuation vs time

A.3 Light attenuation

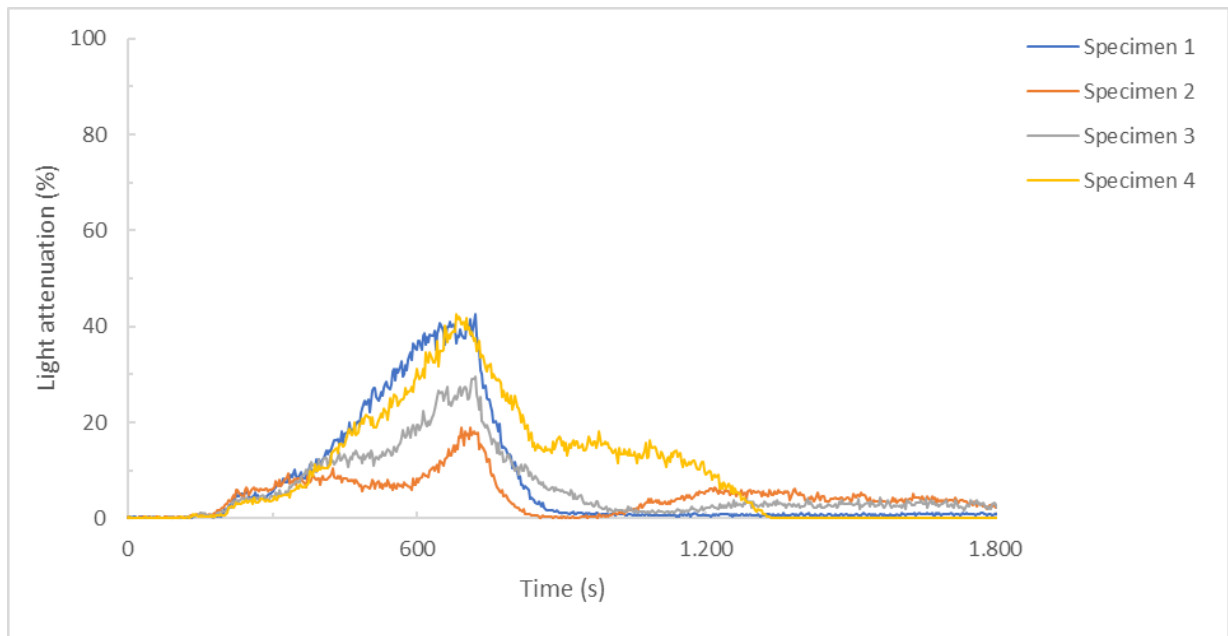


Figure 2 Light attenuation vs time



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Location of performance of laboratory activities:

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