



# FIRELAB

<b>TITLE</b>	:	Evaluation of the Basic Fire Properties of the <b>Nowa Tech PVC Composite Decking</b> material
<b>REQUESTED BY</b>	:	<b>Nowa Tech (Pty) Ltd</b> Postnet Suite 616 Private Bag X9 <b>BENMORE</b> 2010
<b>CONTRACT No</b>	:	FTC 22/094
<b>ISSUE No</b>	:	1
<b>DATE</b>	:	22 August 2022

Copyright is vested with **FIRELAB cc** Reg no: 2005/087037/23

The use of this report is subject to the condition that it will only be published in full, an abridged version can only be approved by **FIRELAB**

## SCOPE

This report evaluates the Basic Fire Properties of the **Nowa Tech PVC Composite Decking** when tested in accordance with **SANS 10177 – 9** test protocol.

**Section 1:** Product information and photographic identification

**Section 2:** Test method used for evaluation

**Section 3:** Test results and observations

**Section 4:** Conclusion and Recommendation

**Annexure “A”:** Company information

**Annexure “B”:** Product information supplied by **Nowa Tech**

## TABLE OF CONTENTS

LIST OF FIGURES AND TABLES .....	1
1. PRODUCT DESCRIPTION .....	2
2. BASIC FIRE PROPERTIES: <b>SANS 10177 – PART 9:2006</b> .....	3
2.1. TEST PROCEDURE .....	3
2.2. TEST EQUIPMENT .....	3
3. TEST RESULTS .....	4
4. CONCLUSION AND RECOMMENDATION .....	5
ANNEXURE “A” .....	6
ANNEXURE “B” .....	7

## LIST OF FIGURES AND TABLES

Figure 1.1: Identification of the specimen received for testing.....	2
Figure 3.1: <b>SANS 10177 – 9</b> test results .....	4

## 1. PRODUCT DESCRIPTION

The product has the following characteristics:

### Product information:

<i>Product name:</i>	Nowa Tech PVC WPC decking plank
<i>Product code:</i>	NowaDeck150
<i>Manufacturer:</i>	Nowa Tech (Pty) Ltd
<i>Manufacturing date:</i>	May 2022
<i>Batch number:</i>	Not Provided

### Physical Properties:

<i>Mass:</i>	21 890	g/m <sup>2</sup>
<i>*Thickness:</i>	Approx.	25 mm
<i>Width:</i>	150	mm
<i>Length:</i>	4 000	mm

### Product Composition:

<i>Layer 1:</i>	Polyethylene lubricating wax
<i>Layer 2:</i>	PVC WPC

### Intended application or use:

*Decking and cladding for exterior use*

\*The thickness of the specimen was measured by **FIRELAB**



Figure 1.1: Identification of the specimen received for testing

## 2. BASIC FIRE PROPERTIES: SANS 10177 – PART 9:2006

### 2.1. TEST PROCEDURE





A specimen of 1 500 mm long by 150 mm wide was secured in the vertical test frame. The specimen was secured in the vertical test frame. The frame was suspended in a 300 mm x 300 mm x 2.1 m high metal chimney along its length approximately 65 mm above the Bunsen burner.

A Bunsen burner with an oxidizing flame length of 200 mm was applied at an angle of 30° 100 mm below the bottom edge of the specimen for a period of 10 minutes. The self-extinguishing properties of the material are determined by removing the Bunsen burner at 12 and 24 seconds respectively.

The temperature near the top of the chimney was recorded with a single K-type thermocouple. This temperature was used to determine the heat contribution of the test specimen in comparison to the plot obtained from a “blank” run.

Other observations related to the presence of flaming droplets, the propensity to self-extinguish upon removal of the burner and rate of flame spread along the height of the specimen were also noted.

### 2.2. TEST EQUIPMENT

-  Temperature recorder – Multi-meter
-  Stopwatch
-  Type K thermocouple
-  **SANS 10177 – 9** Test Facility chimney

### 3. TEST RESULTS

#### Nowa Tech – Nowa Tech PVC Composite Decking

	Specimen 1	Specimen 2	Specimen 3
Time to Ignition/Flaming (mm:ss)	00:04	00:04	00:03
Specimen burning after removal of burner at 12 seconds	No	No	No
Specimen burning after removal of burner at 24 seconds	No	No	No
Molten/Flaming droplets	No	No	No
Time to burn over entire length	-	-	-
Length of flame spread	107 mm	115 mm	95 mm
Length of heat damage	267 mm	275 mm	301 mm
Calibration temperature	9.0 °C	9.0 °C	9.0 °C
Heat Contribution over 10-minute period	0.34 °C/min	0.36 °C/min	0.32 °C/min
Maximum temperature in chimney (above calibration temperature)	3.4 °C	3.6 °C	3.2 °C

#### Additional Observations:

The specimens ignited within 4 seconds. The flame exposed areas of the specimens deformed and green flames were occasionally witnessed during the test.

Upon burner removal at 10 minutes, the specimens were still releasing smoke and glowing. At 30 minutes smoke release was still observed and glowing has increased. The test was terminated by extinguishing the specimens with water spray.

**Specimen 1:** Tested on 03/08/2022, ambient temperature prior to testing = 19.3 °C

**Specimen 2:** Tested on 03/08/2022, ambient temperature prior to testing = 19.9 °C



**Specimen 3:** Tested on 03/08/2022, ambient temperature prior to testing = 20.2 °C

Figure 3.1: SANS 10177 – 9 test results

## 4. CONCLUSION AND RECOMMENDATION

The **Nowa Tech PVC Composite Decking** supplied by **Nowa Tech** was evaluated, using the **SANS 10177 – 9** test protocol.

Results of evaluation:

 <b>Flaming/Molten Droplets:</b>	None
 <b>Maximum Flame Propagation:</b>	115 mm
 <b>Maximum Heat Damage:</b>	301 mm
 <b>Maximum Heat Contribution:</b>	0.36 °C/min

To be able to use the product in practice, a **SANS 10177 – 10** test will have to be conducted to determine the fire properties on a large scale. An assessment will also have to be done to determine the method and limitation of the product's application.




.....  
Compiled by: **T.H. Swart**




.....  
Approved by: **J.S. Strydom**

This copy has been produced from a .pdf format electronic file that has been provided by **FIRELAB** to the sponsor of the report and may only be reproduced in full. Extracts or abridgments of reports must not be published without permission of **FIRELAB**. The original signed paper version of this report is the sole authentic version. Only original paper versions of this report bear authentic signatures of the responsible **FIRELAB** staff.

<b>– Company Information –</b>		 <b>FIRELAB</b>
<b>Company Name:</b>	Nowa Tech (Pty) Ltd	
<b>Company Trading Name:</b>		
<b>Company Registration Nr.:</b>	2010/004669/07	
<b>Company VAT Nr.:</b>	4830255941	
<b>Core Business Activities:</b>	Manufacture of PVC WPC products	
<b>Postal Address:</b>	Postnet Suite 616 Private Bag X9 Benmore 2010	
<b>Physical Address:</b>	8 Sentraal Street Modimolle Limpopo 0510	
<b>Company contact number:</b>	+27 87 610 0866	
<b>Direct Contact Details</b>		
Technical (name):	Cheryl Guldenpfennig	
Cell phone number:	084 960 0312	
Email address:	<a href="mailto:cheryl@nowatech.green">cheryl@nowatech.green</a>	
Financial (name):	Ghalib Janmohamed	
Cell phone number:	083 284 5554	
Email address:	ghalib@nowatech.green	
<b>– Test &amp; Sample Information –</b>		
<b>Test Required:</b>	SANS 10177 – 9 Basic fire properties	
<b>Sample/Product name:</b>	Nowa Tech PVC composite decking	
<b>Intended Use:</b>	Decking and cladding for exterior use	
<b>Sample/Product Description:</b>	150x25x1500mm PVC WPC decking plank comprised out of PVC K57 and powdered wood with trace amounts of calcium stearate, stearic acid, calcium carbonate, carbon black and UV stabiliser.	
<i>(Short description of sample or product submitted for testing, and type of material to be tested)</i>		



– SANS 10177 – Part 9 & NES 713 (TOX) – – Product Description –		 <b>FIRELAB</b>
<b>Product description:</b>		
Product name:	Nowa Tech PVC WPC decking plank	
Generic Identification:	Uncapped hollow board	
Proposed Application:	Decking and cladding for external use	
Product Manufacturer:	Nowa Tech (Pty) Ltd	
Manufacturing Date:	May 2022	
Product Code No.:	NowaDeck150	
Batch No.:		
<b>Physical description:</b>		
Actual Mass (g/m <sup>2</sup> ):	21890	
Thickness (mm):	25	
Width (mm):	150	
Length (mm):	4000	
<b>Product composition:</b>		
Layer 1:	Polyethylene lubricating wax	
Layer 2:	PVC WPC	
Layer 3:		
Layer 4:		
Layer 5:		
<b>Additional Information:</b> (MSDS to be sent separately for all Toxicity tests)		
Layer 2 comprised of: PVC K57 and powdered wood with minute traces of the following additives: Calcium Stearate, stearic acid, calcium carbonate, carbon black and UV stabiliser.		