

Test Report

Testing of tower in accordance with BS EN 1004-1:2020

Client: Ferral, Ruas dos Sobrais, 655 - Zona Industrial sul, Apartado 70, 3885-307, Cortegaca, Ovar, Portugal.

Product: APEX 200

Date(s) of testing: 08/01/2026 to 24/02/2026

Scope of testing: BS EN 1004-1:2020
Mobile access and working towers made of prefabricated elements
Part 1: Materials, dimensions, design loads, safety and performance requirements.

Test result: Sample assessed met requirements

Authorised by:



John Darby
General Manager

T&R reference: S1187

Test report No: T1386-01

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Summary of findings

BS EN 1004-1:2020

Within UKAS Accreditation

Clause No	Clause	Pass/Fail
1	Scope	Pass
4	Classification	Pass
5	Designation	Pass
6	Materials	Pass
7	General requirements	Pass*
8	Requirements for structural design	Pass*
9	Structural design	Pass
10	Tests	Pass
11	Instruction manual	Pass
12	Marking	Pass
Annex A	Stiffness test	Pass



BS EN 1004-2:2021

Outside UKAS Accreditation

Clause No	Clause	Pass/Fail
1	Scope	Pass
3	Instruction manual	Pass
4	General	Pass
5	Identification of the components in the structure	Pass
6	Assembly, alteration and dismantling	Pass
7	Stability	Pass
8	Application and moving	Pass
9	Inspection, care and maintenance	Pass
10	Designation	Pass

* Evidence of conformity for some sub-clauses provided by client.

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF communiqué dated April 2017).

Test Report - Section 1			
Test Report ID:	T1386-01	Service Order:	S1187
Client Details			
Client:	Ferral, Ruas dos Sobrais, 655 - Zona Industrial sul, Apartado 70, 3885-307, Cortegaca, Ovar, Portugal.		
Client Reference:	C1055		
Test specification			
Test specification:	BS EN 1004-1:2020	Mobile access and working towers made of prefabricated elements Part 1: Materials, dimensions, design loads, safety and performance requirements.	
Test method:	Work Instruction: TRC-W03		
Test laboratory:	The Test & Research Centre, 34 Regal Drive, Soham, Cambridgeshire, CB7 5BE.		
Comments:			
Product Details			
Product Name:	APEX 200		
Product Description:	Mobile access and working tower		
Product condition:	New		
Component codes:	Various - see manual		
Date of receipt:	19/12/2025	Sample no:	1
Test Details			
Start:	08/01/2026	Finish:	24/02/2026
	Evaluation by		Authorised by
Date:	24/02/2026		24/02/2026
Name:	J. Darby		J. Darby
Position:	Test Engineer		General Manager
Signature:			
Report revision:	1	Date of issue:	24/02/2026
Comments			
Sample assessed met requirements			

Legend	
P(ass) = passed test specification	N/A = not applicable # = Opinion or interpretation made based on competence of T&R staff (Not within UKAS accreditation)
F(ail) = failed test specification	N/T = not tested * = Information provided by the client
All dimensions in mm unless stated otherwise	

Decision Rule
Decision rule (based on ILAC G8-09/2019) - Binary statement with guard band: Pass – acceptance based on guard band; the measurement being below the acceptance limit, AL = TL-w Fail – rejection based on guard band; if the measurement result is above the acceptance limit, AL = TL-w

DISCLAIMER
The results contained in this test report relate only to the product tested as supplied. Without permission of the Test & Research Centre, this test report is not permitted to be duplicated in extracts. This test report on its own does not entitle the product to carry any test mark.

Test Report - Section 1

Test Report No:	T1386-01	
List of equipment used		
Equipment Name	Equipment Number	Used (Y/N)
150mm steel rule	TE180067	Y
300mm steel rule	TE180068	
3m steel tape	TE180046	
8m steel tape	TE180047	Y
150mm digital vernier calliper	TE180071	Y
1000mm digital vernier calliper	TE180072	Y
Digital Protractor	TE180066	
Digital Laser Measure	TE190015	Y
Stopwatch	TE180070	
25mm Digital plunger indicator	TE200009	
1000mm steel rule	TE200015	Y
50mm Digital plunger indicator	TE200016	
100mm Digital plunger indicator	TE200017	Y
600mm digital vernier calliper	TE220001	

Information supplied by the client

Item	Description	Document ID	Date/Rev
1	Instruction Manual - APEX 200	-	-
2	APEX 200 - Structural Integrity Report	-	-
3	Castor test report - TUV No.	AK 50332834 0001	23/02/2016
4	Risk assesment - Mobile towers (Prestige / Apex)	-	17/12/2026
5	File of material certificates	-	-
6	Instruction Manual - APEX 200 Light	-	-
7			
8			
9			
10			

Components evaluated

Item	Code	Description
1	-	Platform unit
2	-	Guardrail frame
3		
4		
5		
6		
7		
8		
9		
10		

Test Report - Section 2

Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
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Clause	Requirement	Remark	Result
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1	Scope		
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	<p>This document applies to the design of mobile access and working towers made of prefabricated elements with dimensions which are fixed by the design and with a height up to 12 m (indoors) and up to 8 m (outdoors). This document applies to mobile access and working towers used as temporary work equipment. This document:</p> <ul style="list-style-type: none"> — gives guidelines for the choice of the main dimensions and stabilizing methods, — gives safety and performance requirements, and — gives information on complete towers. <p>This product standard does not apply to scaffolds according to EN 12810-1 and EN 12811-1.</p>	Product is within scope.	P
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2	Normative references	See standard	
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3	Terms and definitions	See standard	
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4	Classification		
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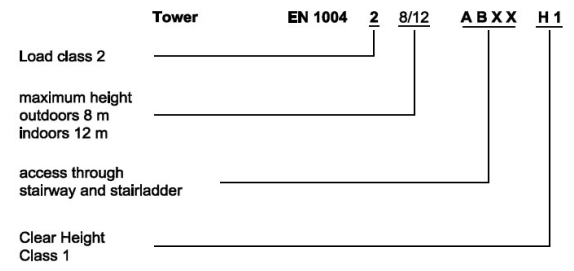
4.1	Load Classes		
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	<p style="text-align: center;">Table 1 — Classes of uniformly distributed load</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Load class</th> <th style="text-align: center;">Uniformly distributed load q kN/m²</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1,50</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">2,00</td> </tr> </tbody> </table>	Load class	Uniformly distributed load q kN/m ²	2	1,50	3	2,00	Load class 3 Ref doc. No. 1 - Instruction manual	
Load class	Uniformly distributed load q kN/m ²								
2	1,50								
3	2,00								

4.2	Access Classes	See 7.6	
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4.3	Height Classes	See 7.2	
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5	Designation		
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	<p>The following data are required for the designation of all prefabricated mobile access and working towers:</p> <p>a) class of uniformly distributed load (see 4.1); b) maximum height outdoors/indoors; c) access classes (see 4.2); d) clear height classes (see 4.3).</p> <div style="margin-top: 10px;"> <p style="text-align: center;">Tower EN 1004 2 8/12 A B X X H 1</p>  </div>		
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6	Materials		
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	<p>Materials shall fulfil the requirements given in European standards, where design data are provided. If European standards do not exist, ISO standards can be applied.</p> <p>Materials shall be sufficiently robust and durable to withstand normal working conditions.</p>	<p>Ref doc. No. 5 - Material certificates Materials are 6060 or 6063 grade.</p> <p>Materials and connections considered to be robust and durable.</p>	P
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Test Report - Section 2

Test Report No: T1386-01 Test Specification BS EN 1004-1:2020

Clause	Requirement	Remark	Result
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	<p>Additional requirements for some materials are given in EN 12811-2.</p> <p>When materials are used, whose properties in relation to the intended application (e.g. temperature, ageing, UV-degradation) are not given in any available standard an adequate assessment is required.</p> <p>Steel shall be protected by one of the methods given in EN 12811-2, or zinc plated to the level required for the design service environment stated in EN ISO 2081.</p>		
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7 General Requirements

7.1 General

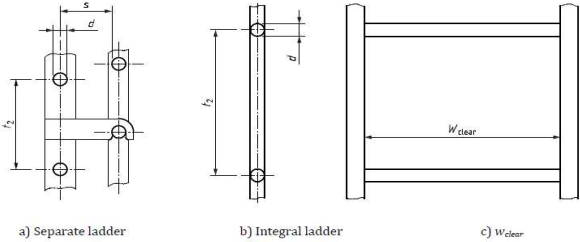
<p>A mobile access and working tower shall only consist of a single-bay structure.</p> <p>The mobile access and working tower shall be designed such that it can be assembled, altered and dismantled without the need for personal fall protection equipment.</p> <p>Only one platform shall be a working platform at one time.</p> <p>The mobile access and working tower shall be designed in such a way that the uppermost platform is a working platform and lower platforms are intermediate platforms.</p> <p>The vertical distance between platforms shall be no greater than 2,25 m.</p> <p>The vertical distance between the ground and the first platform shall be no greater than 3,40 m.</p> <p>However, if a platform is placed $\leq 0,6$ m from the ground, it is allowed to have a vertical distance no greater than 3,40 m between that platform and the next platform. See Figure 2.</p> <p>If the mobile access and working tower cannot be entered from the inside of the structure, the requirements of 7.11 shall apply.</p>	<p>Tower is a single bay structure.</p> <p style="text-align: right;">PASS</p>	P
	<p>Tower can be built without personal fall protection equipment.</p> <p style="text-align: right;">PASS</p>	
	<p>Uppermost platform is working platform.</p> <p style="text-align: right;">PASS</p>	
	<p>Uppermost platform is working platform.</p> <p style="text-align: right;">PASS</p>	
	<p>Clear height 2097.07 PASS</p> <p style="text-align: right;">Measurement uncertainty (\pm mm) 1.44</p>	
	<p>Clear height 2360.07 PASS</p> <p style="text-align: right;">Measurement uncertainty (\pm mm) 1.46</p>	
	<p>N/A</p>	
	<p>N/A</p>	
	<p>Key $x \leq 0,6$ m $y \leq 3,40$ m $z \leq 2,25$ m 1 first platform 2 second platform</p> <p>NOTE Stabilizers are omitted from this figure for clarity.</p> <p>Figure 2 — Maximum distance between platforms</p>	

Test Report - Section 2

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Clause	Requirement	Remark	Result								
7.2	Dimensions										
	<p>The minimum width, w, of the platform shall be 0.60 m and the minimum length, l, shall be 1.00 m. See Figure 1.</p> <p>The minimum clear width between the toe boards shall be 0.5 m.</p> <p>The minimum clear height between platforms H shall be in accordance with Table 2.</p> <table border="1"> <caption>Table 2 — Clear height classes</caption> <thead> <tr> <th>Clear height class</th> <th>Minimum clear height H in m</th> </tr> </thead> <tbody> <tr> <td>H1</td> <td>1.85</td> </tr> <tr> <td>H2</td> <td>1.90</td> </tr> </tbody> </table>	Clear height class	Minimum clear height H in m	H1	1.85	H2	1.90	<p>Width 1254.00 PASS Measurement uncertainty (\pm mm) 1.72</p> <p>Length 2003.34 PASS Measurement uncertainty (\pm mm) 1.77</p> <p>Width 1240.33 PASS Measurement uncertainty (\pm mm) 2.07</p> <p>Class <table border="1"><tr><td>H2</td></tr></table> Maximum <table border="1"><tr><td>1900</td></tr></table></p> <p>Height 2027.43 PASS Measurement uncertainty (\pm mm) 1.27</p>	H2	1900	P
Clear height class	Minimum clear height H in m										
H1	1.85										
H2	1.90										
H2											
1900											
7.3	Openings within platforms										
7.3.1	Access openings										
	<p>Access openings in platforms through which the user will climb shall have a minimum clear opening of 0.40 m wide \times 0.60 m long.</p> <p>Access openings in platforms shall be provided with a means to prevent falling through. The trapdoor shall be fastenable in the closed position.</p>	<p>Gauge fit? PASS</p> <p>If measured:</p> <p>Width 532.18 PASS Measurement uncertainty (\pm mm) 0.25</p> <p>Length 600.28 PASS Measurement uncertainty (\pm mm) 0.27</p> <p>Access opening has trap door with lock in the closed position PASS</p>	P								
7.3.2	Apertures										
	Apertures in platforms or between platform units shall not exceed 25 mm in width. This does not apply to apertures like hand holes in hatches.	Not present.	N/A								
7.4	Side Protection										
7.4.1	General										
	<p>Dimensions for side protection shall be in accordance with Figure 3.</p> <p>Figure 3 — Dimensions for side protection</p> <p>Side protection is composed of a principal guardrail, intermediate side protection and a toe board. The principal guardrail, intermediate side protection, and toe-board may be combined.</p> <p>Side protection components shall be incapable of removal except by direct intentional action.</p>	<p>Outside toe-board to outside guardrail: N/A</p> <p>Outside platform to inside guardrail: 39.00 PASS Measurement uncertainty (\pm mm) 0.56</p> <p>Side protection only removable by direct action. PASS</p>	P								

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Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
Clause	Requirement	Remark	Result
	It shall be possible to erect protection at platform edges comprising: a) both a principal guardrail and intermediate side protection; b) toe-board. Toe boards may be omitted on intermediate platforms.	Side protection formed of advance guard rail frame with principle and intermediate rails, and separate toe boards. PASS	
7.4.2	Principle guardrail		
	The principal guardrail shall be fixed so that its uppermost surface is a minimum of 1000 mm above the uppermost surface of the platform it is protecting, measured vertically (dimension h_{GR} in Figure 3). A minus tolerance of 50 mm is acceptable.	Principle guardrail height: 1021.00 Measurement uncertainty (\pm mm) 1.70 PASS	P
7.4.3	Intermediate Side Protection		
	Intermediate side protection shall be fixed between the principal guardrail and the toe-board. Intermediate side protection may consist of: — one or more intermediate guardrails, or — a frame, or — a frame of which the principal guardrail forms the top edge, or a fencing structure. Openings in the side protection shall be so dimensioned so that a sphere with a diameter of more than 470 mm will not pass through them.	Intermediate side protection part of side frame. PASS Gauge check (TE180014) PASS If measured: Principle to intermediate gap: 469.22 PASS Measurement uncertainty (\pm mm) 0.23 Intermediate to toe-board gap: 453.32 PASS Measurement uncertainty (\pm mm) 0.22	P
7.4.4	Toe-Board		
	It shall be possible to fix a solid toe-board such that its top edge is at least 150 mm above the adjacent platform level. Apertures in toe boards shall not exceed 25 mm in width. This does not apply to apertures like hand holes.	Toe-board height (ends): 155.50 Measurement uncertainty (\pm mm) 0.56 PASS Toe-board apertures: N/A	P
7.5	Castor Wheels	* Ref Doc No. 3 - Castor certificate	P
7.6	Access to Platforms		
7.6.1	General		
7.6.2	General requirements		
	Access to the platforms \geq 2 m height in an assembled tower shall be within the main structural supports using one of the access methods specified in 7.6.1 and shall: — be secured against unintentional loosening; — not rest on the ground;	Access type: Type A Type B Type C Type D Integral to frame. Does not rest on ground.	 PASS PASS

Test Report - Section 2			
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
Clause	Requirement	Remark	Result
	<p>— have a distance from the ground to the first step or rung of 400 mm maximum taking into account adjustable legs. If the first step is a platform, 600 mm is allowable;</p> <p>— have steps/rungs with constant spacing and a slip resistant surface.</p>	<p>First step height (Adj. legs at minimum):</p> <p>389.89 PASS</p> <p>Measurement uncertainty (\pm mm) 0.21</p> <p>Slip resistant surface:</p> <p>Tubes have extruded ribs. PASS</p> <p>Spacing:</p> <p>Rungs spaced within +/- 2mm. PASS</p>	P
7.6.3	Additional requirements		
7.6.3.1	Stairway and stairladder		N/A
7.6.3.2	Access type A - stairway (see Figure 4)		N/A
7.6.3.3	Access type B - stairladder (see Figure 5)		N/A
7.6.3.4	Access type C - inclined ladder (see Figure 6)		N/A
7.6.3.5	Access type D -vertical ladder (see Figure 7)		
	<p>Vertical ladders shall conform with the following geometric requirements:</p> <p>From the front edge of the step or from the centre of the rung to any obstacle behind the stairway/ladder there shall be a horizontal distance of $s = 150$ mm minimum (see Figure 7).</p> <p>Rung spacing t_2 $230 \leq t_2 \leq 300$</p> <p>Rung depth or diameter d $20 \leq d \leq 51$</p> <p>Minimum clear width W_{clear} $W_{clear} = 280$</p> <p>Vertical ladders shall be designed in accordance with 8.3.5.</p>  <p style="text-align: center;">Figure 7 — Dimensions of vertical ladder</p>	<p>N/A</p> <p>299.53 PASS</p> <p>Measurement uncertainty (\pm mm) 0.18</p> <p>49.72 PASS</p> <p>Measurement uncertainty (\pm mm) 0.10</p> <p>1299.37 PASS</p> <p>Measurement uncertainty (\pm mm) 0.51</p> <p>See 8.3.5</p>	P
7.7	Means for stabilizing		
7.7.1	Stabilizers and outriggers		
	The stabilizers and outriggers of a tower shall be designed as components of the main structure and shall provide means of adjustment to ensure contact with the ground.	Stabilisers are a component of the tower and can be adjusted to make contact with the ground.	

Test Report - Section 2																																	
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020																														
Clause	Requirement	Remark	Result																														
	The method of fixing the stabilizer or outrigger to the tower shall have adequate strength and shall be such that the reaction loads in the stabilizer or outrigger are transferred to the tower without slip, rotation, or other movement of the stabilizer or outrigger.	Stabiliser is part of the tower and forms part of the structural assessment (Ref Doc No. 2)	P																														
7.7.2	Ballast		N/A																														
7.8	Connections																																
7.8.1	General																																
	Each connection device shall be effective, easy to monitor and the components shall be easy to assemble. The securing of components forming part of the structure of the mobile access and working tower and side protection components shall make them incapable of removal except by direct intentional action.	# Connections are effective, can be visually monitored and considered easy to assemble. Components of the system have features to make them incapable of removal, unless by direct intentional action, e.g. guardrail has locking hooks, end frames have interlock pins.	P																														
7.8.2	Vertical spigot and socket connection																																
	When assembled, the horizontal movement (slack or play) between upper and lower components shall not exceed 4 mm or a movement away from the centre line of 2 mm. In all cases it shall not be possible to disconnect an upper component laterally until the upper component has been lifted more than 80 mm. When the spigot and socket connection acts over a distance less than 150 mm, the connection shall be provided with a positive locking device, such as a cross pin, to prevent the upper component from being lifted unintentionally and provide additional structural stiffness. The positive locking device shall be designed in such a way that its positive action can be monitored visually.	<table border="0"> <tr> <td>Spigot</td> <td>44.47</td> <td></td> </tr> <tr> <td> Measurement uncertainty (± mm)</td> <td>0.10</td> <td></td> </tr> <tr> <td>Socket</td> <td>46.06</td> <td></td> </tr> <tr> <td> Measurement uncertainty (± mm)</td> <td>0.10</td> <td></td> </tr> <tr> <td>Slack</td> <td>1.60</td> <td>PASS</td> </tr> <tr> <td> Measurement uncertainty (± mm)</td> <td>0.20</td> <td></td> </tr> <tr> <td>Spigot legnth</td> <td>87.18</td> <td>PASS</td> </tr> <tr> <td> Measurement uncertainty (± mm)</td> <td>0.31</td> <td></td> </tr> <tr> <td>Connection acts over less than 150mm, and is fitted with a locking device to prevent upwards disconnection.</td> <td></td> <td>PASS</td> </tr> <tr> <td>Locking pin can be visually monitored.</td> <td></td> <td>PASS</td> </tr> </table>	Spigot	44.47		Measurement uncertainty (± mm)	0.10		Socket	46.06		Measurement uncertainty (± mm)	0.10		Slack	1.60	PASS	Measurement uncertainty (± mm)	0.20		Spigot legnth	87.18	PASS	Measurement uncertainty (± mm)	0.31		Connection acts over less than 150mm, and is fitted with a locking device to prevent upwards disconnection.		PASS	Locking pin can be visually monitored.		PASS	P
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Connection acts over less than 150mm, and is fitted with a locking device to prevent upwards disconnection.		PASS																															
Locking pin can be visually monitored.		PASS																															
7.8.3	Other vertical connections		N/A																														
7.9	Working and access platform units																																
	Components of platforms shall be durable and shall have a slip-resistant surface. Platform units shall be secured at both ends so that turning or removal by wind is not possible.	Platform surface has embossed pattern and considered slip resistant. Platform units have locking devices at both ends.	P																														
7.10	Erection and dismantling																																
	The tower shall remain stable and resist all loads imposed on the components during erection and dismantling.	# Tower is considered stable as instructions state stabilisers to be fitted at earliest opportunity.	P																														
7.11	Requirements for mobile access towers less than 2 m working platform height		N/A																														

Test Report - Section 2			
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
Clause	Requirement	Remark	Result
8.0	Requirements for structural design		
8.1	General	* Ref Doc No. 2 - Structural report	P
8.2	Characteristic actions on the complete structure including its parts	* Ref Doc No. 2 - Structural report	P
8.3	Characteristic actions on parts of the structure		
8.3.1	Loads on platform units		
	Platforms and supporting structure shall be designed for concentrated loads in the most unfavourable position on a platform area of: – 0,50m x 0,50m 1,5 kN; – 0,20m x 0,20m 1,0 kN. In addition uniformly distributed load shall also be considered (see 8.2.1.2). The above requirements may be fulfilled separately.	<i>Information to the designer - tested at 8.4.1</i>	
8.3.2	Load on side protection		
8.3.2.1	Downward load		
	Any principal guardrail or intermediate guardrail, regardless of its method of support, shall be able to resist a point load of 1.25 kN. This also applies to any other side protection component, such as a fencing structure, which has a potential foothold of 50 mm wide or greater. This load shall be considered as an accidental load and applied in the most unfavourable position in a downward direction within a sector of $\pm 10^\circ$ from the vertical.	Withstand load: PASS <i>Deflection limit from 9.3.3.4:</i> Max deflection (mm) 300.00 Deflection under load 7.50 Measurement uncertainty (\pm mm) 0.19 PASS	P
8.3.2.2	Horizontal load		
	All components of the side protection, except toe-boards, shall be able to resist a horizontal load of 0.3 kN in each case in the most unfavourable position. This load may be distributed over an area of 300 mm x 300 mm, for example when applied to the grid of a fencing structure. For toe-boards, the horizontal load is 0.15 kN.	Withstand load: PASS <i>See 8.4.2 for deflection limits</i>	P
8.3.3	Load on stairways and stairladders		N/A
8.3.4	Load on inclined ladders		N/A
8.3.5	Load on Vertical ladder		
	Vertical ladder shall be verified either by: - structural analysis for the following characteristic vertical load, always acting in the most adverse position of $F_{1,k} = 1.5\text{kN}$ action on 200mm, or - in accordance with the test for torsion and vertical load on rungs in EN 131-2	* Ref doc. No. 2 - Structural assessment report	P

Test Report - Section 2			
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
Clause	Requirement	Remark	Result
8.4	Deflections		
8.4.1	Elastic deflection of platform components		
	When subjected to the concentrated loads specified in Table 4, line 1.2, the elastic deflection of any platform component shall not exceed 0.01 of the span of that platform component. In addition, in the case of platform components with spans of 2.5 m or greater, when the appropriate concentrated load is applied, the maximum difference in levels between adjacent loaded and unloaded platform components shall not exceed 25 mm.	Platform span (mm) 2004.08 Measurement uncertainty (\pm mm) 1.47 Max deflection (mm) 20.04 Deflection under load 7.31 Measurement uncertainty (\pm mm) 0.11 PASS	P
8.4.2	Elastic deflection of side protection		
	When subjected to the load specified in Table 4, line 2.2, the maximum deflection of any principle or intermediate guardrail, regardless of its span, shall not exceed 35 mm. When subjected to the load specified in Table 4; line 3, the maximum deflection of any toe-board, regardless of its span shall not exceed 35 mm. These are measured with reference to the supports at the points where they are connected.	Side protection Component: Advance guardrail - mid rail Deflection under load 12.44 Measurement uncertainty (\pm mm) 0.35 PASS <i>Note: intermediate most onerous position.</i> Toe board Component: Side Deflection under load 28.83 Measurement uncertainty (\pm mm) 0.11 PASS Component: End Deflection under load 8.36 Measurement uncertainty (\pm mm) 0.18 PASS	P
9	Structural Design	* Ref Doc No. 2 - Structural report	P
10	Tests		
	Being part of the structural design additional stiffness tests of a complete tower shall be made. These tests shall be carried out in accordance with Annex A.	See Annex A below	P
11	Instruction manual		
	For each type of prefabricated equipment the manufacturer shall produce an instruction manual for use on site. The instruction manual shall include at least the data according to EN 1298.	See Section 3 - EN1004-2	P
12	Marking		
12.1	Components		
	Each component shall be marked with: a) a symbol or letters to identify the mobile access and working tower and its manufacturer; b) the year of manufacture, using the last two digits. Alternatively, a code for tracing the year of manufacturer may be used.	Examples of component labels provided. Found PASS Found PASS	P

Test Report - Section 2			
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
Clause	Requirement	Remark	Result
	Marking shall be so arranged that it will remain legible for the life of the component. The size of the lettering may take account of the size of the component.		
12.2	Manufacturers label		
	<p>A manufacturer's label showing the information below shall be displayed and visible from the ground level on all mobile access and working towers:</p> <p>a) manufacturer's name; b) designation; c) "Read the instruction manual", which can be shown as a symbol in accordance with EN ISO 7010, or text written in the official languages of the country where the product is placed on the market.</p>	<p>Found Found Found</p>	<p>PASS PASS PASS</p> <p>P</p>

Test Report - Section 2											
Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020								
Clause	Requirement	Remark	Result								
Annex A	Stiffness test on complete tower structure										
A.1	General requirements	<i>See standard</i>									
A.2	Test structure										
	<p>The tests shall be carried out on complete tower structures with a minimum height of 6,0 m. The tower shall be built in accordance with the manufacturers manual instructions. When the self weight of the structure is insufficient to prevent overturning during the test, sufficient ballast may be added to the base to prevent this</p> <p>If the maximum platform height, in accordance with the manufacturer's instructions, is less than 6.0 m the test structure shall be erected to at least 6.0 m height with additional components as prescribed by the manufacturer. This extra height will enable d_1 to be measured. The stiffness may not be adversely affected by doing this. Tests shall be carried out in the arrangement envisaged by the manufacturer, which is:</p> <ul style="list-style-type: none"> - either: with or without stabilizers; - or: with or without outriggers. <p>As the stiffness of the tower is not affected by ballast only one test is necessary, where ballast is the only means of stability.</p> <p>Adjustable legs, if fitted, shall be extended to 50 % of their maximum extension. Castor wheels shall be turned in their most unfavourable orientation and shall be locked.</p> <p>As adjustable legs are normally fitted to level the tower, this represents a working condition.</p>	<p>Test carried out on tower in excess of 6m platform height.</p> <p>Adjustable legs set to 50% of extension.</p>									
A.3	Test method										
	<p>The horizontal test load shall be 500 N.</p> <p>It shall be applied at the first convenient node point above 6.0 m level. It may be adjusted to give equivalent moment above the base level of the tower because of this.</p> <p>The load shall be applied perpendicular to one face of the tower and acting through the centroid. The load shall be applied in one direction and then the opposite direction, and the total displacement d_1 (in mm) shall be measured at the exact height of 6.0 m (see Figure A.1).</p> <p>This test shall be repeated at 90° to the first face (see Figure A.1).</p>	<table> <tr> <td>Load application height (mm)</td> <td>6259.87</td> </tr> <tr> <td>Test Load</td> <td></td> </tr> <tr> <td>Target moment (Nm)</td> <td>3000</td> </tr> <tr> <td>Test Load (N) =</td> <td>479</td> </tr> </table>	Load application height (mm)	6259.87	Test Load		Target moment (Nm)	3000	Test Load (N) =	479	
Load application height (mm)	6259.87										
Test Load											
Target moment (Nm)	3000										
Test Load (N) =	479										

Test Report - Section 2

Test Report No:	T1386-01	Test Specification	BS EN 1004-1:2020
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Clause	Requirement	Remark	Result
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A.4 Result of test

The total displacement measured as described in the above test shall be correlated by linear calculation to give a value of displacement d_2 for the maximum permitted platform height of the tower, with or without stabilizers, outriggers or ballast. This total displacement d_2 shall not exceed 200 mm and may limit the maximum platform height.

The maximum height of platform, limited by stiffness, is given in Equation (A.1):

$$h_1 = \frac{6 \times D_2}{D_1} = \frac{6 \times 200}{D_1} m$$

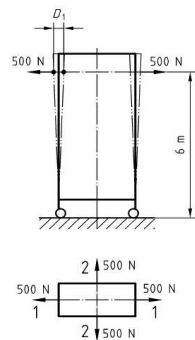
a) if the measured value d_1 is 100 mm, then Equation (A.2) applies:

$$h_1 = \frac{6m \times 200}{100}$$

the maximum permitted platform height $h_1 = 12$ m.

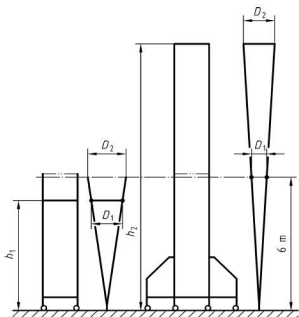
b) if the measured value D_1 is 300 mm, then the maximum permitted platform height $h_1 = 4$ m.

The linear formula is not precisely correct but over the range of towers that this document covers, calculations and practical tests have shown that a linear relationship is acceptable.



Key
 1 first test in two opposite directions
 2 second test in two opposite directions

Figure A.1 — Horizontal loads for stiffness tests on a complete tower structure



Key
 h_1 maximum permitted height without stabilizers or outriggers
 h_2 maximum permitted height with stabilizers or outriggers
 d_1 measured total displacement on the test height of 6.0 m
 d_2 maximum permitted total displacement on the maximum permitted platform height

Figure A.2 — Measured and permitted displacements of towers

Measurements

	Left (mm)	Right (mm)
Side 1	42.0	34.3
End 1	34.7	22.0
Side 2	22.0	23.7
End 2	23.3	23.0

	D_1	
Averages:	Side (mm)	End (mm)
1	38.2	28.3
2	22.8	23.2

$$h_1 (m) = (6 \times 200) / D_1 \quad (6 \times 200) / D_1$$

$$h_1 (m) = 19.7 \quad 23.3$$

Maximum height limited by deflection (m) = **19.7**

Maximum height in manual = 11.7

PASS

P

Test Report - Section 3

Test Report No:	T1386-01	Test Specification	BS EN 1004-2:2021
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Clause	Requirement	Remark	Result
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1	Scope		
	<p>This document gives rules and guidelines for the preparation of instruction manuals for mobile access and working towers in accordance with EN 1004-1, Mobile access and working towers made of prefabricated elements — Part 1: Materials, dimensions, design loads, safety and performance requirements.</p> <p>This document is intended for all parties involved in the preparation of instructions for use, for example: suppliers, technical writers, technical illustrators, translators or other people engaged in the work of conceiving and drafting such instructions for use.</p>	Product is within scope.	P
2	Normative references	See standard	
3	Terms and definitions	See standard	
4	General		
4.1	Basic requirements		
	<p>The instruction manual shall be written in the official language of the country where the product is placed on the market.</p> <p>The instruction manual shall give information about the use of the mobile access and working tower.</p> <p>The supplier of the mobile access and working towers is responsible for the contents as well as for the supply of an instruction manual. The instruction manual is a part of the product.</p> <p>The instruction manual shall give full information about the identity of the supplier.</p> <p>The instruction manual shall make reference to relevant assessment documentation according to EN 1004-1:2020, Clause 13 held by the supplier.</p> <p>The instructions for use shall state the intended use and contain all information that a user needs to know when using the product.</p> <p>Extensive information on instruction manual content may also be found in IEC/IEEE 82079 (all parts).</p> <p>The instruction manual shall state the following sentences in a prominent position.</p> <p>a) This instruction manual shall be available on the location of use of the mobile access and working tower.</p> <p>b) This mobile access and working tower shall only be used according to this manual without any modification.</p> <p>c) Mobile access and working towers must only be used in accordance with national regulations.</p>	<p>Written in several languages - Portugese, English, French Spanish. Only English reviewed.</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p> <p>Found</p>	<p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p>

Test Report - Section 3

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Clause	Requirement	Remark	Result
	<p>The level of description and details of information should be adapted to the knowledge of users.</p> <p>Instructions for use should ensure the completeness of relevant information at a sufficient level of detail based on the ascertained needs of the users.</p> <p>The instructions shall be separated into sections for use that are clearly and appropriately marked and defined at the beginning of the content.</p> <p>Pictograms of safety information shall be used to supplement text in instruction manuals. Examples are contained in Annex A.</p>	<p>Found PASS</p> <p>Found PASS</p>	
4.2	Risk assessment		
	<p>Instructions for use shall, when followed by the user contribute to reducing the risk of injury to people and risks of any damage.</p> <p>Instructions for use are an integral part of the safe operation and maintenance of a mobile access and working tower.</p> <p>They shall provide information to avoid any unacceptable risk for the user or other parties, damage to the mobile access and working tower itself or other products or materials.</p> <p>Instructions for use shall provide users with the necessary information to allow them to identify and avoid reasonably foreseeable misuse.</p> <p>This requires that the mobile access and working tower supplier ensures that the following are taken into account:</p> <p style="margin-left: 20px;">a) the process of risk analysis for the product as sold;</p> <p style="margin-left: 20px;">b) the result of the risk analysis shall be taken into account in the instructions for use as safety-related information; and</p> <p style="margin-left: 20px;">c) reasonably foreseeable misuse and risks arising from the use of the mobile access and working tower shall be covered.</p> <p>The instruction manual shall give information about hazards to be considered during the use of mobile access and working towers.</p>	<p>Found PASS</p> <p>Found PASS</p> <p>Found PASS</p> <p>Ref doc. No. 4 - Risk assessment PASS</p> <p>Found PASS</p>	P
4.3	Principal guidelines		
	<p>The description of the application of the mobile access and working tower shall give guidelines with respect to:</p> <p>a) the intended means of access to the working platform;</p> <p>b) the load class in accordance with EN 1004-1;</p> <p>c) the permitted uniformly distributed load in kilograms on the working platform;</p> <p>d) a warning that only one platform shall be a working platform at one time;</p>	<p>Found PASS</p> <p>Found PASS</p> <p>Found PASS</p> <p>Found PASS</p>	

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Test Report No:	T1386-01	Test Specification	BS EN 1004-2:2021
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Clause	Requirement	Found	Remark	Result
	e) the maximum number of people permitted on the working platform at one time;	Found	PASS	P
	f) the permitted horizontal force at the working platform;	Found	PASS	
	g) the permissible configurations of the mobile access and working tower with respect to the permitted heights;	Found	PASS	
	h) the importance of selecting the correct platform height in relation to the required working height;	Found	PASS	
	i) the specification of the maximum wind limits:			
	1) when working on the mobile access and working tower is permissible;	Found	PASS	
	2) when the freestanding mobile access and working tower shall be dismantled or made secure.	Found	PASS	
5	Identification of components in the structure			
	The instruction manual shall give information about the total structure of the mobile access and working tower and the individual components needed. It is recommended that this information is given with clear references to the position of individual components in the total structure, such as exploded drawings.	Found	PASS	P
6	Assembly, alteration and dismantling			
6.1	The instruction manual shall include the following information: The instruction manual shall specify that before assembling the mobile access and working tower the location should be checked to identify and prevent hazards during assembly, alteration and dismantling including but not limited to:			P
	a) ground conditions;	Found	PASS	
	b) level and slope;	Found	PASS	
	c) obstructions;	Found	PASS	
	d) weather conditions;	Found	PASS	
	e) electrical hazards.	Found	PASS	
6.2	The instruction manual shall specify that all the components, tools and other necessary equipment for assembling the mobile access and working tower shall be available on site.	Found	PASS	
6.3	The assembly and dismantling methods shall ensure that a person is not required to stand on a platform without principal and intermediate guardrails.	Found	PASS	
6.4	The instruction manual shall specify at least the following information for assembling, altering and dismantling the mobile access and working tower:			
	a) the number of people required for assembly, alteration and dismantling;	Found	PASS	
	b) the listing of components, their weights and the quantities of these components needed for assembly and dismantling the mobile access and working tower to a specified configuration;	Found	PASS	

Test Report - Section 3

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Clause	Requirement	Remark	Result
	c) the listing of specific tools or other equipment, if required;	Found	PASS
	d) if specific training is required;	Found	PASS
	e) the procedure for assembling the mobile access and working tower, describing the correct sequence of actions. This description shall include illustrations and, if necessary, add text to the illustrations;	Found	PASS
	f) the method for vertical alignment of the mobile access and working tower within an inclination of 1%;	Found	PASS
	g) detailed information about the way connections shall be attached and disconnected;	Found	PASS
	h) a description of the use and fixing of stabilizers, outriggers and/or ballast;	Found	PASS
	i) a description of the recommended method of lifting the components for assembling the upper sections;	Found	PASS
	j) the correct location of connections for braces, outriggers or stabilizers and ballast shall be clearly shown;	Found	PASS
	k) a description of the use and fixing of stair or ladder access;	N/A	
	l) a description of the use and fixing of guardrails and toe boards;	Found	PASS
	m) the procedure for dismantling the mobile access and working tower (if applicable with reference to the assembly procedure).	Found	PASS
6.4.1	The instruction manual shall state the following text;		
	a) User training courses cannot be a substitute for instruction manuals but only complement them;	Found	PASS
	b) Only the original [manufacturers name] components specified in this manual shall be used;	Found	PASS
	c) Damaged or incorrect components shall not be used;	Found	PASS
	d) This product shall only be used according to the instruction manual;	Found	PASS
	e) Mobile access and working towers designed in accordance with EN 1004-1 are not anchor points for personal fall arrest equipment;	Found	PASS
	f) Working is only permitted on a platform with a complete side protection including guardrails and	Found	PASS
6.4.2	After assembly or alteration the following minimum information shall be displayed on the mobile access and working tower and be clearly visible from the ground (e.g. on a tag):		
	a) the name and contact details of the responsible person;	Found	PASS
	b) if the tower is ready for application or not;	Found	PASS
	c) the load class and the uniformly distributed load;	Found	PASS

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Clause	Requirement	Remark	Result	
	d) if the mobile access and working tower is intended for indoors use only; and	Found	PASS	
	e) the date of assembly.	Found	PASS	
7	Stability			
	The instruction manual shall include:			P
	a) instructions for the use of stabilizers, outriggers and/or ballast for all configuration and conditions that the mobile access and working tower is intended to be used in;	Found	PASS	
	b) a warning about horizontal and vertical loads which contribute to overturning of the mobile access and working tower, such as:	Found	PASS	
	1) horizontal loads caused by use, for example as a result of work on an adjacent structure;			
	2) additional wind loads (tunnelling effect of open-ended buildings, un-clad buildings and at the corners of buildings);			
	c) measures to be taken for securing the mobile access and working tower when left unattended; and	Found	PASS	
	d) the wind speed at which the tower must be dismantled or made secure which shall be expressed in commonly used units such as; metres per second, miles per hour, kilometres per hour or Beaufort scale grade.	Found	PASS	
	Mobile towers are designed to be stable in a free-standing condition at a maximum wind pressure of 0.1 kN per square metre. The manufacturer should propose a maximum wind speed depending on local and national conditions.			
8	Application and moving			
8.1	The instruction manual shall give at least the following information regarding what should be checked before each application of the mobile access and working tower as an addition to the checks made during the assembly procedure:			
	a) that the mobile access and working tower is vertical or needs readjustment;	Found	PASS	
	b) that the castors are locked by the brakes;	Found	PASS	
	c) whether the mobile access and working tower is still correct and complete;	Found	PASS	
	d) that no environmental changes influence safe use of the mobile access tower; and	Found	PASS	
	e) the stabilizers, outriggers and/or ballast are in accordance with the instruction manual.			
8.2	The instruction manual shall give guidelines for the safe application of the mobile access and working tower. It must also take national or local regulations into account.	Found	PASS	

Test Report - Section 3

Test Report No: T1386-01	Test Specification: BS EN 1004-2:2021
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Clause	Requirement	Remark	Result
8.3	The instruction manual shall give information regarding the means of access to the mobile access and working tower.	Found	PASS
8.4	The instruction manual shall give guidelines for the lifting of tools and materials to the working platform of the mobile access and working tower within the limits of the permitted load and stability.	Found	PASS
8.5	The instruction manual shall detail the procedure for moving the mobile access and working tower, including:		
	a) the maximum wind condition for moving the mobile access and working tower;	Found	PASS
	b) the way to release and lock the castor brakes;	Found	PASS
	c) the way to move the mobile access and working tower;		
	d) the way to use the leg adjustment to level the mobile access and working tower within the inclination of 1 % after movement;	Found	PASS
	e) instructions to check the effective support of the stabilizers and outriggers;	Found	PASS
	f) the maximum height and inclination of the tower when it is being moved; and	Found	PASS
8.6	g) a warning to be careful of overhead obstacles including power lines when moving a mobile access and working tower.	Found	PASS
	The instruction manual shall state at least the following safety information;		
	a) It is not allowed to extend the height of the platform by the use of ladders, boxes or other devices;	Found	PASS
	b) Do not climb the outside of the mobile access and working tower (except where this is permitted in accordance with EN 1004-1);	Found	PASS
	c) Mobile access and working towers in accordance with EN 1004-1 are not designed to be lifted or suspended;	Found	PASS
	d) Mobile access and working towers shall never be moved with loose materials or persons on it;	Found	PASS
	e) Mobile access and working towers shall only be moved using manual effort not exceeding normal walking speed;	Found	PASS
	f) Mobile access and working towers shall only be moved on flat and solid ground without obstacles and stating the maximum permitted slope;	Found	PASS
	g) Mobile access and working towers are not designed to be sheeted;	Found	PASS
	h) Mobile access and working towers in accordance with EN 1004-1 are not designed to be used as a means to enter or exit other structures, e.g. as a stair tower;	Found	PASS
	i) Mobile access and working towers in accordance with EN 1004-1 are not designed to be used as a means of	Found	PASS

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Test Report - Section 3			
Test Report No:	T1386-01	Test Specification	BS EN 1004-2:2021
Clause	Requirement	Remark	Result
	edge protection j) Distance between platforms shall not exceed 2,25m. Except the distance to the first platform: max. 3,40m. It is recommended that safety information is marked on or attached to the product. Example of pictograms of safety information are contained in Annex A.	Found	PASS
9	Inspection, care and maintenance		
	The instruction manual shall include information regarding the inspection, care, maintenance and repair of the components of the mobile access and working tower, taking into account: <ul style="list-style-type: none"> a) the specific features of the components with respect to their safe and correct functioning; b) guidelines for handling, transport and storage. It must also take national regulations into account. Additionally, the instruction manual shall specify; <ul style="list-style-type: none"> c) maintenance that can be performed; d) the procedure for dealing with damaged parts (replacement, repair or destruction). 	Found Found Found Found	PASS PASS PASS PASS
10	Designation		
	The designation of an instruction manual which fulfils the requirements of this document shall be: Instruction Manual EN 1004-2 - en x de x fr x it. The designation shall be stated in the instruction manual. Language versions with code for name of language in accordance with ISO 639-1. Symbols shall be separated by an "x" if there is more than one language, e.g. in English, German, French and Italian.	Found	PASS

Test Report - Section 4

Test Report No: T1386-01

Photographs



Product sample



EN 1004-1 - 8.3.2.1. Downwards load

Test Report - Section 4

Test Report No:	T1386-01	
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Photographs



EN 1004-1 - 8.4.1. Elastic deflection of platform components

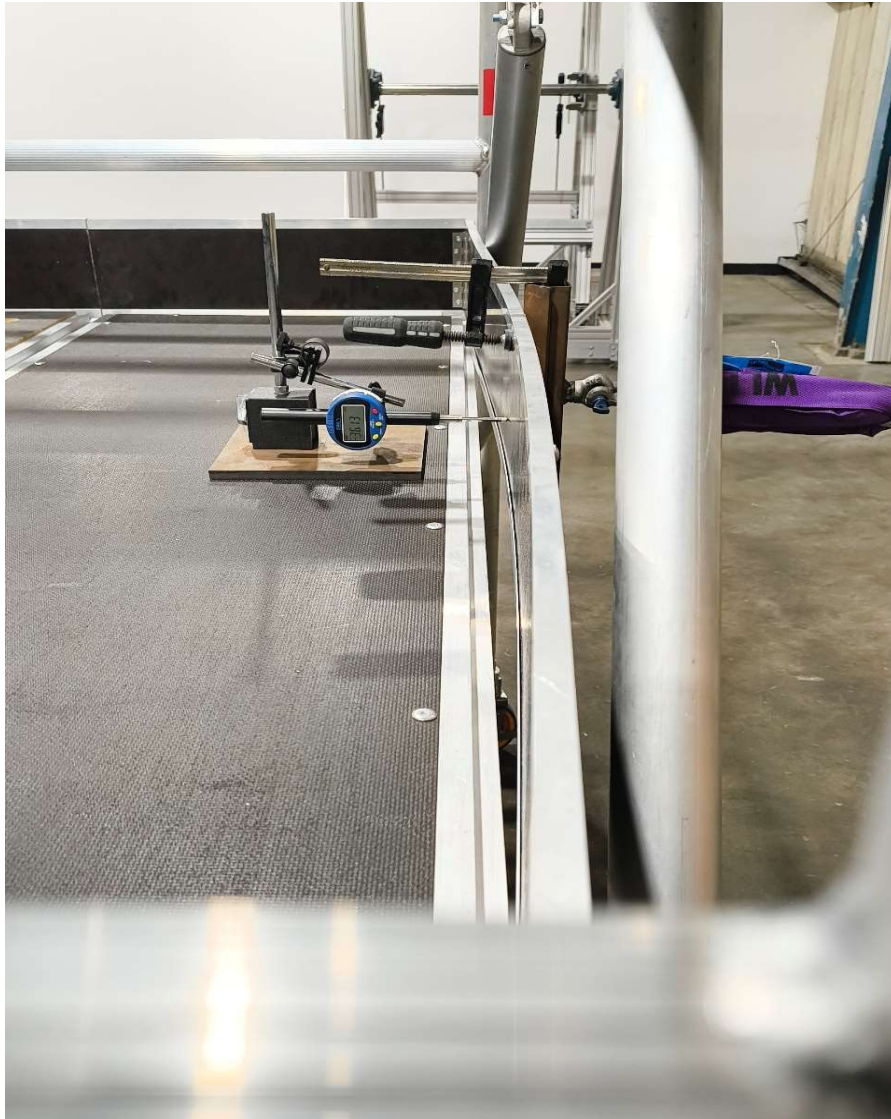


EN 1004-1 - 8.4.2. Elastic deflection of side protection

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Photographs



EN 1004-1 - 8.4.2. Elastic deflection of side protection (toeboard)

Test Report - Section 4

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Photographs



End



Side

Annex A Stiffness test

Test Report - Section 4





Test Report No:	T1386-01	
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Photographs

















EN 1004-2

APEX200.12.12.2025


Tower EN1004 3 8/12 XXXD H2




APEX 200



Ferral - José Luis & Ca. Lda.
Rua dos Sobris 655
Zona Industrial Sul - Apartado 70
3885-307 Cortegaça OVAR - Portugal



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APEX 200





Ferral - José Luis & Ca. Lda.
Rua dos Sobris 655
Zona Industrial Sul - Apartado 70
3885-307 Cortegaça OVAR - Portugal



EN 1004-1 -12 Markings

END OF TEST REPORT