

Product

Alku table 499A with A type legs

Table top	1600x800 mm
Top material	beech veneered MDF
Legs	steel tube 40x40 mm
Brackett	die cast aluminium
height adjustment	PA6+GF30%
surface finishing	powder coating



Test method

Determination of dimensional, mechanical safety requirements, stability and mechanical strength of an office work desk according to:

EN527-1:2011 Office furniture - Work tables and desks - Part 1: Dimensions

EN 527-2: 2002 Office furniture - Worktables and desks – Part 2: Mechanical safety requirements

EN 527-3: 2003 Office furniture - Worktables and desks – Part 3: Methods of test for determination of the stability and mechanical strength of the structure

The test specimen was selected by Martela and arrived at Research center October 8, 2012.

Tests were carried out 8.11.2012 - 13.11.2012 in temperature $23 \pm 2^{\circ}\text{C}$.

Results

Detailed testing program and results are presented in the tables 1,2 and 3.

Assessment of the results

Alku table 160x80 cm with A-legs meets the dimensional, mechanical safety, strength and durability requirements presented in the tables 1-3.

The test result is valid also for other Alku table sizes due to nature of similar structure with following defects. Tables with 60 cm deep top don't fulfill minimum legroom depth and minimum desk top dimensional requirement of EN527-1:2011.

The test result is only valid to the specimen tested and no other.

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Martela research Center

Nummela, January 16, 2013

Approved by:



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Tested by:



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Test report No. 1051

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Table1. EN527-1:2011 Office furniture - Work tables and desks - Part 1: Dimensions

Dimensions			Work table/desk type	Measured dimensions	Results/notices N/A=not applicable
			Type B		
			Fully selectable		
h1	Height of the work surface	Sitting only	Minimum range 650 - 850 ^a	625-870	OK
t1 and t2	Maximum desk top thickness	At the front, t1	55 ^b	22	OK
		At 500mm from the front edge, t2	90 ^b	62	OK
k1	Minimum height of knee clearance for standing position only	Applies only to tables with a height more than 850 mm	700 ^d	N/A	N/A
k2	Minimum depth of knee clearance for standing position only		80	N/A	N/A
k3	Depth of foot clearance for standing position only		150	N/A	N/A
f1 and f2	Minimum height of minimum foot clearance	Sitting only and sit/stand From 600mm to 800mm from the front edge, f1	120	619	OK
		Standing only From front edge to 150mm, f2	120	N/A	N/A
g1	Minimum legroom depth c	Sitting only and sit/stand	800	800	OK
D	Minimum desk top depth g		800	800	OK
W	Minimum legroom width	Sitting only and sit/stand	1000	1452	OK

Type of work table is B (fully selectable)

Dimensional requirements are met with 80 cm deep tables, but 60 cm deep tables don't fulfill minimum legroom depth and minimum desk top requirement

	200	180	160	140	120
60					
80					

^a Maximum increment of 20 mm
^b Only applies to sitting and sit/stand work tables/desks
^c The construction of the product shall ensure the minimum legroom depth
^d Measured from the floor
^e The minimum and maximum values shall be obtained
^f 600 mm can in some situations be acceptable, e.g. when 17" or smaller flat screens are used, providing that the work surface is not against the wall and that two people are not sitting one in front of each other. Information about these limitations shall be provided with the product
^g The dimension D is measured as the smallest dimension at the work area

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Table 2. EN 527-2: 2002 Office furniture- Worktables and desks- Part 2: Mechanical safety requirements

	Requirement	Record	RESULT
(3) GENERAL DESIGN REQUIREMENTS	- all edges and corners are free from burrs and rounded or chamfered	Record weather the requirements are filled	Passed
	- in order to avoid points of high pressure under the forearms, during prolonged contact with work tops, the edges and corners of the top surfaces are rounded with a radius of not less than 2 mm;		Passed
	- movable and adjustable parts are designed to minimize the risk of injuries and inadvertent operation or release;		Passed
	- the safety distance between accessible movable parts is either £ 8 mm or ³ 25 mm in any position during movement. This applies to any elements moving relative to each other, with the exception of doors (including hinges) and extension elements (including runners);		Passed
	- the handles are designed so that they cannot trap fingers during intended use;		Passed
	- the ends of feet and hollow components are closed or capped.		Passed
(4) STRUCTURAL SAFETY REQUIREMENTS	The table shall be tested in the following sequence of tests of EN 527-3: - stability (optional); strength under horizontal force; strength under vertical force; fatigue under horizontal force; fatigue under vertical force; stability; drop test. These requirements are fulfilled when after the tests specified in 5.2 to 5.6 of EN 527-3:2002:	Record weather the requirements are filled	Passed
	- there is no fracture of any member, joint or component;		Passed
	- there is no loosening of joints intended to be rigid;		Passed
	- no major structural element is significantly deformed;		Passed
	- the table fulfils its functions after removal of test loads;		Passed
	- adjusting screws fulfil their functions.		Passed
	(4.3) STABILITY REQUIREMENTS		During the stability test specified in 5.1 of EN 527-3:2002: - the table does not overbalance or rest supported on the drawers and all feet return to the ground when the loads are removed.

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Table 3. Requirements in EN 527-3:2003 Office furniture - Worktables and desks – Part 3: Methods of test for determination of the stability and mechanical strength of the structure

	Cycles	Load, direction	Record	RESULTS
(5.1) STABILITY a) Stability, vertical loading	1	750 N, vertical	Record whether the table overturns	Passed
b) Stability, drawers open				
(5.1 and 5.3) STRENGTH a) vertical load	10	1000N/10sec.	Record any defects	Passed
b) horizontal force	10	450 N/ 10 sec. If tendency to overturn, incline the force downwards	Record any defects	Passed
(5.4 and 5.5) DURABILITY, a) horizontal force	5000 +5000	300N horizontal forces, (reduced if the table tends to lift), + tabletop uniformly loaded with max. 100kg	Record any defects	Passed
b) vertical force	10 000	400 N/ 2 sec	Record any defects	Passed
(5.6) DROP TEST	5		Record any defects	Passed
APPENDIX A (informative) Rigidity index		200 N (a, b, c and d)	Determine the index using the formula $k_l = 100 (d_A + d_B) / 3y$ $k_t = 100 (d_c + d_d) / 3y$, where $y=200$. Proposed in the previous paper that index should be: $k_l \leq 1, k_t \leq 1$	Passed $k_l=1,00$ and $k_t =0,83$
DEFECTS AND OBSERVATIONS AFTER TEST PROCEDURE	Adjusting screws rotated during durability tests (5000+5000 cycles) and height of table changed.			

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