



## Santiago II

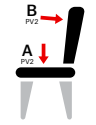
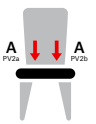
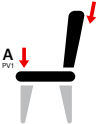
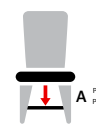
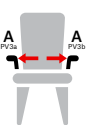
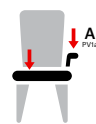
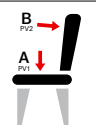
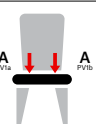
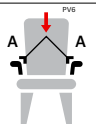
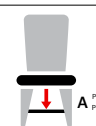
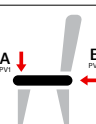
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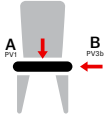
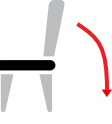


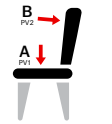
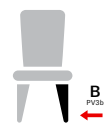




Meets (level): II.

Created (by whom): Petra Říhová

Approved (date): 14. 6. 2018

TON products are tested carefully throughout the entire manufacturing process to ensure compliance with international standards for quality, safety and durability. The tests are carried out in TON's in-house laboratory, where chairs undergo repeated levels of prescribed stress on individual components.

Standard	Test No.	Test Type	Load Level		Result	Description	Image
			I.	II.			
EN 1728, 6.4	1.	static load test of the seat and backrest	A load seat: 1 600 N B load backrest: 560 N cycles: 10×	A load seat: 2 000 N B load backrest: 700 N cycles: 10×	Level II	Static pressure is exerted on the seat and the backrest.	
EN 1728, 6.5	2.	static load test of the front edge of the seat	A load: 1 300 N cycles: 10×	A load: 1 600 N cycles: 10×	Level II	Static loads are alternately exerted on two points on the front edge of the seat, as near as possible to the side edges.	
EN 1728, 6.6	3.	vertical load test on the backrest	A load placed on seat: 1300 N B load: 600 N cycles: 10×	A load placed on seat: 1 800 N B load: 900 N cycles: 10×	Level II	Pressure is applied from the top to the centre of the upper edge of the backrest.	
EN 1728, 6.8, 6.9	4.	static load test of the footrest	A load: 1 300 N cycles: 10×	A load: 1 600 N cycles: 10×	not tested	Static pressure is applied to the footrest to simulate a person rising from the chair with the help of the footrest.	
EN 1728, 6.10	5.	lateral static load test of the armrests	A load: 400 N cycles: 10×	A load: 900 N cycles: 10×	Level II	Static pressure is applied laterally to the armrests in an outward direction.	
EN 1728, 6.11	6.	vertical static load test of the armrests	A load: 750 N cycles: 5×	A load: 900 N cycles: 5×	Level II	Repeated static pressure is applied from the top to the front edge of the armrests, simulating the load exerted on the armrests when used as a support for getting up from the chair.	
EN 1728, 6.17	7.	durability test of the seat and backrest	A load seat: 1 000 N B load backrest: 300 N cycles: 100 000×	A load seat: 1 000 N B load backrest: 300 N cycles: 200 000×	Level II	Repeated pressure is applied to the seat and the backrest over a large cycle period, simulating repetitive load during long-term use.	
EN 1728, 6.18	8.	durability test of the front edge of the seat	A load seat: 800 N cycles: 50 000×	A load seat: 800 N cycles: 100 000×	Level II	Pressure is applied alternately on two points on the front edge of the seat, as near as possible to the side edges.	
EN 1728, 6.20	9.	durability test of the armrests	A load: 400 N cycles: 30 000×	A load: 400 N cycles: 60 000×	Level II	Repeated pressure is applied to the armrests simultaneously at an angle of 10° to simulate long-term use.	
EN 1728, 6.21	10.	durability test of the footrest	A load: 1 000 N cycles: 50 000×	A load: 1 000 N cycles: 100 000×	not tested	Repeated pressure is applied to the footrest over a large cycle period to simulate long-term use.	
EN 1728, 6.15	11.	forward static load test of the legs	A load placed on seat: 1 000 N B load: 500 N cycles: 10×	A load placed on seat: 1 800 N B load: 620 N cycles: 10×	Level II	Static pressure is applied to the centre of the rear edge of the seat in a forward direction. The front legs must be secured to prevent forward movement.	

Standard	Test No.	Test Type	Load Level		Result	Description	Image
			I.	II.			
EN 1728, 6.16	12.	lateral static load test of the legs	<b>A</b> load placed on seat: 1 000 N <b>B</b> load: 400 N cycles: 10×	<b>A</b> load placed on seat: 1 800 N <b>B</b> load: 760 N cycles: 10×	Level II	Static pressure is applied to the centre of the side edge of the seat in a lateral direction to the chair. The legs must be secured from the sides to prevent movement.	
EN 1728, 6.27.1, 6.28	13.	fall test	not used	cycles: 50×	Level II	The chair is tipped backwards to its balance point and then released in free fall without any additional force applied. The test is repeated by tipping the chair sideways.	
EN 1728, 6.25	14.	impact test from a hammer on the backrest (6.4 kg)	swing of hammer: 210 mm angle of impact: 38° cycles: 10×	swing of hammer: 330 mm angle of impact: 48° cycles: 10×	Level II	Force of a hammer is repeatedly applied to the rear of the backrest to test its resistance to impact.	
EN 1728, 6.26	15.	impact test from a hammer on the armrests (6.4 kg)	swing of hammer: 210 mm angle of impact: 38° cycles: 10×	swing of hammer: 330 mm angle of impact: 48° cycles: 10×	Level II	Force of a hammer is repeatedly applied to the outer edges of the armrests to test their resistance to impact.	
BIFMA	6.	static strength test of the backrest	<b>B</b> load backrest: 667 N cycles: 10×	<b>B</b> load backrest: 1 112 N cycles: 10×	Level II	The seat is weighed down and static pressure is exerted on the backrest.	
BIFMA	18.	lateral static strength test of the front leg	<b>B</b> load front leg: 334 N cycles: 10×	<b>B</b> load front leg: 503 N cycles: 10×	Level II	Static pressure is exerted laterally on the front leg. The chair must be weighed down to prevent movement.	
BIFMA	18.	frontal static strength test of the front leg	<b>B</b> load front leg: 334 N cycles: 10×	<b>B</b> load front leg: 503 N cycles: 10×	Level II	Static pressure is applied to the front leg from the front. The chair must be weighed down to prevent movement.	
BIFMA	11. 3. 1.	impact resistance test		test weight: 57 kg drop height: 30 mm cycles: 100 000×	Level II	Weight is dropped repeatedly from specified height on to the centre of the seat to test its resistance to repeated impact.	
BIFMA	8.	single impact test	test weight: 102 kg drop height: 152 mm cycles: 1×	test weight: 136 kg drop height: 152 mm cycles: 1×	Level II	Weight is dropped from specified height on to the centre of the seat to test its resistance to a single large impact.	
JIS S 7.13		free fall leg test – front and back legs		fall height: 100 mm cycles: 10×	Level II	The chair is dropped from specified height onto one leg to test its strength and durability. The test is done on both the front and back legs.	

Our products are shipped to more than 60 countries and are regularly tested against European standards (EN 16139) as well as the American BIFMA and the Japanese JIS S 1203 standards.

## EN 16139 Standard

This European standard provides guidelines for the strength, durability and safety of all types of non-residential furniture for adults weighing up to 110 kg. The standard is tested through methods outlined in specific parts of the standard EN 1728.

## Japanese Standard JIS S 1203

This Japanese standard sets the parameters for the strength and service life of seating furniture.

## American Standard ANSI/BIFMA X5.1

The American standard developed by the Business and Institutional Furniture Manufacturers Association (BIFMA) provides guidelines for the safety and durability of seating furniture.

## Testing Methods

A sample of every seating furniture produced by TON undergoes strength, durability and safety testing according to the parameters outlined in this document:

Level	Type of Use	Extent of Use
I.	general use	Places where seating furniture is usually intended for short-term use and where the load placed on the furniture is light to heavy. Examples include: public buildings, cafes, restaurants, canteens, banks and bars.
II.	extreme use	Places where seating furniture is sometimes or repeatedly exposed to extremely high loads due to specific types of use or incorrect use. Examples include: nightclubs, police stations, public transport stations, changing rooms, prisons and barracks.

We test TON products at both levels of use and always endeavour to attain Level II.