ZONMAN FURNITURE LIMITED
2ND INDUSTRIAL ZONE, HECHENG TOWN, HESHAN CITY, GUANGDONG, CHINA

The following sample(s) was / were submitted and identified on behalf of the client as:

Sample Description	:	OFFICE CHAIR 1
Supplier Item No.	:	MS7003GA
Manufacturer	:	ZONMAN FURNITURE LIMITED
Supplier	:	ZONMAN FURNITURE LIMITED
Sample Receiving Date	:	Dec.26, 2018
Sample Resubmission Date	:	Feb.27, 2019
Test Performing Date	:	Dec.29, 2018 to Mar.08, 2019

Test Result Summary

Test(s) Requested	Result(s)
EN 1335-2: 2018, excluding the information for use.	PASS

Summary:

1. For further details, please refer to the following page(s).

Signed for and on behalf of
Shunde Branch
SGS-CSTC Co., Ltd.

SDHL1812029443FT

Bill Wang
Approved signatory

TESTS AND RESULTS

Test Conducted:
EN 1335-2: 2018, excluding the information for use.

No. of Sample:
1 piece (Sample 1). For more sample information and pictures, please refer to the following page.

Test and Requirements	Test Results
4 Safety requirements	
4.1 General The chair shall be so designed as to minimise the risk of injury to the user. All parts of the chair with which the user comes into contact during intended use, shall be so designed that physical injury and damage to property are avoided. These requirements are fulfilled when: a) the edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair are rounded with minimum 2 mm radius; b) the edges of handles are rounded or chamfered in the direction of the force applied; c) all other edges and corners are free from burrs and rounded or chamfered; d) the ends of accessible hollow components are closed or capped. Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided. It shall be possible to operate the adjusting devices from sitting position in the chair. It shall not be possible for any load bearing part of the chair to come loose unintentionally.	PASS
4.2 Shear and squeeze points	
4.2.1 Shear and squeeze points under influence of powered mechanisms There shall be no accessible shear and squeeze points created by parts of the chair operated by powered mechanisms, i.e. springs, gas lifts and motorized systems.	PASS
4.2.2 Shear and squeeze points during use There shall be no accessible shear and squeeze points created by loads applied during normal use. Shear and squeeze points are not acceptable if there is a risk of injury created by the weight of the user during normal movements and actions, e.g. manipulating levers and crank handles.	PASS
4.3 Sequence of testing All applicable tests shall be carried out on the same sample. The chair shall be tested for stability according to EN 1022:2018, 7.3 and in the order of Table 1. The chair shall be tested for strength and durability according to EN 1728:2012, Clause 7 and in the order of Table 2. With the exception of the armrest downward static load test – central test, which shall be performed before and after the stability test according to Table 1, the chair shall be tested for stability after the strength and durability tests according to Table 2.	
4.4 Stability tests and requirements When tested according to Table 1, the seating shall not overturn.	

Test and Requirements	Test Results
EN 1022: 2018, 7.3.3 Corner stability test This test is only applicable on seating where it is possible to apply the stability loading pad at the specified position. Where features such as arms prevent the loading pad from being applied at the specified position, the test is not applicable. Position the seating on the floor surface with two adjacent supporting points on the front, or base restrained by stops. The loading point shall be defined as the point 60 mm from the edge of the load bearing structure on a line that passes through the seat loading point and the intersection of lines parallel to the transverse and median planes, projected from the most forward point of the load bearing structure and the side edges of the load bearing structure of the seat at the widest point on the seat at, or in front of, the transverse plane. For seating with a single seat apply a force of 300 N vertically by means of the loading pad acting at the loading point X. For seating with multiple seats apply a force of 300 N at the loading point X on one outside seating position.	PASS
EN 1022: 2018, 7.3.1 Forwards overbalancing, all seating Position the seating on the floor surface with two adjacent supporting points on the front or base restrained by stops. Apply a force of 600 N vertically (for multiple sitting places to a maximum of 2 places, simultaneously) by means of the loading pad acting at those points 60 mm behind the front edge of the load bearing structure most likely to result in overturning. At each loaded position apply a force of 20 N for at least 5 s horizontally outwards along a horizontal line extended forward from the point where the base of the loading pad meets the upper surface of the seat. For items of seating with a leg rest attached to the structure of the item, and where the leg rest is designed to support the weight of the user, the test procedure shall be repeated with the leg rest fully extended and the force of 600 N vertically by means of the loading pad acting at the point on the centre line of the leg rest 60 mm behind the front edge of the load bearing structure. For items of seating with a leg rest not designed to support the weight of the user the test is not applicable to the leg rest.	PASS
EN 1022: 2018, 7.3.2 Forwards overturning for seating with footrest For seating with foot rests of tubular construction, or where the foot rest depth is less than 120 mm, repeat the procedure in 7.3.1 applying the vertical force of 1100 N for swivelling seats and 600 N for all other seating respectively at the most onerous point along the centre line of the tube, or the middle of the foot rest surface, by any suitable means. For all other seating with foot rests apply the vertical force of 600 N at the most onerous point 60 mm from the edge of the foot rest by means of the local loading pad. For foot rests apply a force of 20 N horizontally outwards along a horizontal line extended forward from the point where the base of the loading pad meets the upper surface of the foot rest.	N/A

Test and Requirements	Test Results
EN 1022: 2018, 7.3.4 Sideways overbalancing, all seating without arms This test is applicable to all seating where the top edge of the seat on the transverse plane is 50 mm or less above the height of the loaded seat loading point. The transverse plane shall pass through the seat loading point. Position the seating on the floor surface with two adjacent supporting points on one side, or base restrained by stops. Apply a force of 600 N vertically by means of the loading pad at a point 60 mm behind the edge of the load bearing structure on the side nearest the stopped feet and on the transverse plane of the seat. In the transverse plane, apply a sideways force of 20 N horizontally outwards along a line from the point where the base of the loading pad meets the upper surface of the seat.	N/A
EN 1022: 2018, 7.3.5 Sideways overturning, all other seating ***7.3.5.1 General*** This test is applicable to all seating with arms, or where the top edge of the seat on the transverse plane is more than 50 mm above the height of the seat loading point (A). ***7.3.5.2 Seating with arm rests*** Position the seating on the floor surface with two adjacent supporting points on one side, or base restrained by stops. Apply a force of 250 N vertically by means of any suitable device, at a point 100 mm to the side of the fore and aft centre line of the seat which is nearest the stopped feet and on the transverse plane. Apply a force of 350 N vertically by any suitable device, at a position on the centre line of the arm up to a maximum 40 mm inwards from the outside edge of the arm structure at the intersection of the arm rest and the transverse plane, but not less than 40 mm from the front or rear edge of the arm structure. If the transverse plane does not intersect with the arm rest, apply the force of 350 N 40 mm from the point at the front or rear of the arm rest structure that is nearest the transverse plane. Apply a horizontal force of 20 N outwards, and perpendicular to the line joining the stopped feet, for at least 5s, at the upper surface of the seat or arm rest in line with the vertical force of 350 N and on the side with stopped feet.	PASS

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Test and Requirements	Test Results
EN 1022: 2018, 7.3.6 Rearwards overturning all seating with back rests The test is not applicable to seating that has adjustable back rest inclination that cannot be locked in position. For seating that has an adjustable back rest inclination that can be locked in position, it shall be locked in the most upright position. When an independent lumbar adjustment is fitted it shall be set in the most adverse configuration. Position the seating on the floor surface with the rear legs, two adjacent supporting points on the back, or base restrained by stops. Apply a vertical force of 600N to the seat by means of the loading pad at the seat loading point (A). Apply the force F_2 horizontally in a rearward direction to the back of the seating at the back loading point, B, or at the top edge of the back rest, whichever is the lower. When the seating has more than one sitting place, carry out the procedure on two most adverse sitting places simultaneously. If the back rest pad is pivoting around a horizontal axis above the height of the seat and is free to move, the horizontal force shall be applied on the axis. If the back rest is height adjustable, the axis shall be set as close as possible to 300 mm above the seat loading point (A).	PASS
***EN 1022: 2018,* 7.4.2 Tilting chairs** The test method applies to all values of θ ≥ 10° and values of γ between 90° and 170°. If the seating has a locking system it shall be disabled. Load the seat with the 13 loading discs so that the discs are firmly settled against the back rest. If the height of the stack of discs exceeds the height of the back rest, or if support is needed, prevent the discs from sliding off by the use of the support.	N/A
4.5 Structural safety requirements The structural safety requirements are met when the requirements according to 5.2 are fulfilled. ***5.2 Requirements*** The strength and durability requirements are fulfilled when, after testing in accordance with Table 2: a) there are no fractures of any member, joint or component; b) there is no loosening of joints intended to be rigid; and c) the chair fulfils its functions after removal of the test loads.	
EN 1728: 2012, 7.3 Combined seat and back static load test Prevent the chair from moving rearwards by placing stops behind two adjacent supporting points at the rear of the chair. Chairs with a locking device(s) for seat and/or back rest angle movements shall be tested first with the device(s) locked for half of the cycles and then with the device(s) unlocked for the other half of the cycles. For the first half of the cycles the back rest shall be in the upright position. Apply a vertical force of 1600 N through the seat loading pad at point A. Keep the seat loaded and apply a force of 560 N through the centre of the back loading pad at point B. When fully loaded the force shall act at (90 ± 10)° to the back rest plane. If the chair tends to overturn, reduce the back rest force and report the actual force. Remove the back force and then the seat force. Repeat the test for 10 cycles.	PASS
EN 1728: 2012, 7.4 Seat front edge static load test Position the smaller seat loading pad at loading point F or J. Apply a vertical downward force of 1600 N for 10 cycles through the centre of the loading pad.	PASS

Test and Requirements	Test Results
EN 1728: 2012, 7.8 Foot rest static load test Apply the specified downward force to the seat at the seat loading point. Apply a vertical force of 1300 N by means of the local loading pad for 10 cycles acting 80 mm from front edge of the load bearing structure of the foot rest at those points most likely to cause failure. For round cross section ring shaped footrests, the force shall be applied through the centre of the ring cross section. If the seating tends to overturn, increase the load on seat to a magnitude that just prevents overturning and record the load used.	N/A
EN 1728: 2012, 7.9 Seat and back durability The upper part of the chair shall be positioned so that the centre of the back rest is midway between two adjacent supporting points of the base with stops against these supporting points. The seat load shall be applied vertically using the seat loading pad in positions A and C, and using the smaller seat loading pad in positions D, F, G and J. The back rest force shall be applied at an angle of (90 ± 10)° to the back rest when fully loaded using the back loading pad. All chairs shall be tested to steps 1 to 5. Chairs with a locking device(s) for seat and/or back rest angle movements shall be tested in step 2, first with the device(s) locked for half of the cycles and then with the device(s) unlocked for the other half of the cycles. For the first half of the cycles, the back rest shall be in the upright position. In steps 3, 4 and 5 the mechanism shall be set free to move. One cycle shall consist of the application and removal of the force(s) at the respective loading point(s). Each step shall be completed before going to the next. First the seat force shall be applied and maintained while the back rest force is applied. If the back rest pad is pivoting around a horizontal axis above the height of the seat and is free to move, the horizontal force shall be applied on the axis. If height adjustable, the axis shall be set as close as possible to 300 mm above point A. If the axis cannot be adjusted to 300 mm, adjust the force to produce the same bending moment.	PASS

Step	Force	Number of cycles
A	1500	120000
C B	1200 320	80000
J E	1200 320	20000
F H	1200 320	20000
D G	1100 1100	20000

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Test and Requirements	Test Results
EN 1728: 2012, 7.10 Arm rest durability Place the chair on the test floor with stops against the outside of the legs, feet or castors. The test forces shall be applied simultaneously on each arm rest, at the point most likely to cause failure, but not less than 100 mm from the front or rear edge of the arm rest length and through the centre of the width of the arm rest, but not more than 100 mm from the inner edge of the arm rest. Using the arm rest durability test apparatus, adjust the apparatus so that with no load applied to arm rests the angle of load application arms is (10 ± 1)° to the vertical and the distance between the low friction pivots and the horizontal surface of the arm loading devices is (600 ± 10) mm. With the apparatus set as above, apply the load of 400 N for 60000 cycles to both arm rests simultaneously for seating with only one seating position and to one arm rest only for seating with multiple seating positions.	PASS
EN 1728: 2012, 7.5 Arm rest downward static load test – central The arm rests shall be loaded vertically with 750 N before the stability tests and 900 N after the stability test respectively, by means of the local loading pads for 5 cycles. The loading points shall be at the mid point of the arm rest length and centred side to side. In the case of an arm rest which is not horizontal, or which is curved, the length is measured in a horizontal plane 20 mm below the highest point of the arm rest. Apply the force to both arm rests simultaneously.	PASS
5.3 Rolling resistance test and requirements The rolling resistance test shall be carried out after the stability (according to Table 1) and after the strength and durability tests (according to Table 2). The unloaded chair shall be tested for rolling resistance according to EN 1728:2012, 6.30 and shall fulfil the following requirements: a) the castors shall be of identical construction; b) the rolling resistance shall be ≥ 12 N. ***EN 1728: 2012,* 6.30 Rolling resistance of the unloaded chair** The chair shall be placed on the test floor and shall be pushed or pulled over a distance of at least 550 mm. A speed of (50 ± 5) mm/s shall be maintained over the measuring distance. The force shall be applied at a height of (200 ± 50) mm above the test surface. Record the force used to push or to pull the chair over the distance from 250 mm to 500 mm as the rolling resistance.	PASS
6 Information for use Information for use shall be available in the language of the country in which the product will be available to the end user. It shall contain at least the following details: a) information regarding the intended use; b) information regarding possible adjustments; c) instruction for operating the adjusting mechanisms; d) instruction for the care and maintenance of the chair; e) information for chairs with seat height adjustments with energy accumulators that only trained personnel may replace or repair seat height adjustment components with energy accumulators; f) information on the choice of castors in relation to the floor surface.	N/R
Annex A Tests included in Table A.1 are not safety tests but may be useful for testing functions of the chair. If the functional tests listed in Table A.1 of Annex A (informative) are carried out, they can be carried out on a separated sample.	

Test and Requirements	Test Results
EN 1728: 2012, 7.6 Arm rest downward static load test – front The arm rests shall be loaded vertically with 450 N by means of the local loading pads for 5 cycles. The loading points shall be 75 mm from the front edge and centred side to side. Apply the force to both arm rests simultaneously.	PASS
EN 1728: 2012, 7.7 Arm rest sideways static load test For seating with one arm rest, apply an outward force of 400 N to the arm rest at the point along the arm rest most likely to cause failure, but not less than 100 mm from the end of the arm rest structure. Apply the force for 10 cycles using the local loading pad . If the item tends to overturn, apply a load on the side of the seat opposite to the arm rest under test large enough to prevent the item from overturning. For seating with two arm rests, apply an outward force of 400 N to each arm rest of the unit simultaneously at the point along the arm rests most likely to cause failure, but not less than 100 mm from either end of the arm rest structure, (see Figure 13). Apply the force for 10 cycles using the local loading pad. For seating with three or more arm rests, carry out the test on one pair of adjacent arm rests. All different arm rest designs shall be tested.	PASS
EN 1728: 2012, 7.11 Swivel test The base of the chair shall be secured on a rotating table with a test surface so that the rotating axis of the chair coincides with the rotating axis of the table. The upper part of the chair shall be loosely fixed in such a way as not to hinder the rotation of the base. Load the seat in loading point A with 60 kg and in loading point C with 35 kg, or any equivalent loading which will result in the same downwards force and bending moment on the chair. The angle of rotation shall be 360° at a rate of (10 ± 5) cycles/minute. Change direction after each rotation. Repeat the test for 120000 cycles.	PASS
EN 1728: 2012, 7.12 Foot rest durability Apply the specified downward force to the seat at the seat loading point. Apply a vertical force of 900 N by means of the local loading pad acting 80 mm from front edge of the load bearing structure of the foot rest at those points most likely to cause failure. For round cross section ring shaped footrests, the force shall be applied through the centre of the ring cross section. If the seating tends to overturn, increase the load on seat to a magnitude that just prevents overturning and record the load used. Repeat the test for 50000 cycles.	N/A

Test and Requirements	Test Results
EN 1728: 2012, 7.13 Castor and chair base durability This test does not apply to chairs with castors which are braked when the chair is loaded. The chair shall be placed on a rotating table with a test surface so that the rotating axis of the chair coincides with the rotating axis of the table. Load the seat at point A with the load of 110 kg. The base shall be loosely fixed in such a way that there is no rotation of the base but that the natural movements of the castors during testing are not prevented. The castors shall be left free to swivel and the table shall be rotated with a rate of six cycles per minute. The angle of rotation shall be from 0° to 180° and back. One rotation forward and one rotation backward constitutes one cycle. Alternatively attach the chair to a device that provides a linear movement of (1 000 ± 250) mm and a test surface. Load the seat at point A with the load of 110 kg. The base shall be loosely fixed in such a way that there is no rotation of the base but that the natural movements of the castors during testing are not prevented. The castors shall be left free to swivel and the device shall move with a rate of six cycles per minute. One movement forward and one movement backward constitutes one cycle. For both alternatives it is recommended to perform the test with a speed as slow as possible with a short break when the device changes direction. Repeat the test for 36000 cycles.	PASS

Remark:
1. N/A – Not applicable; N/R – Not Requested; N/P – Not provided.
2. For the sample information and pictures, please refer to the following page.

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SAMPLE INFORMATION AND PICTURES

Weight: 10.75 kg

Overall Dimensions: 660 mm W x 650 mm D x (835~920) mm H

Other Dimensions: Upper frame: 605 mm W x 580 mm D, base radius: 315 mm.

Sample as Received

View 1

View 2

View 3

View 4

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View 5

End of Report

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