

Report

Applicant:

Manufacturer:

Test Laboratory: TUV Asia Pacific Ltd. Taiwan Branch, Taichung Laboratory
4F., No. 8, Huasin Street, North District, Taichung 404, Taiwan, R.O.C.

Report No.: TWR1506012 001

Test Object: Mini trampoline, foldable mini trampoline

Type Designation:

Incoming Date: 23.06.2015

Incoming No.: N/A

Test specification: In accordance with client's specification of partial clauses of EN71-14:2014 and GS test program M12/13

Classification: Mini trampoline
Maximum user's weight: 100 kg

Test Scope: According to the client's request the above-mentioned equipment with EN71-14:2014 and GS test program M12/13 partial clauses have been conducted.

- a) Stability ---according to the EN71-14:2014, clause 4.12 and 6.2.2
- b) Bed deflection and strength ---according to the EN71-14:2014, clause 4.13.2, 6.3.2 and 4.14
- c) Testing the strength of the safety mat --- according to the GS test program M12/13 part 2 clause 4.10
- d) Connection strength of the legs --- according to the GS test program M12/13 part 2 clause 4.11

Other aspects: Report 3 page
Appendix of photo documentation 8 pages.

Tested by:

23.06.2015 Caspar Chiang


Date Name Signature

Reviewed by:

26.06.2015 George Shih


Date Name Signature

Test Report No.: TWR1506012 001
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Measuring Equipment

Property No.	Equipment	Manufacturer	Specification	Next Calibration
M016	Stop Watch	CATIGA	0.01S	Mar. 2017
A11703	Digital weighter	Blue Arrow	5 T	Nov. 2015
Z001	Tape measurer	Gorila	5 m	Nov. 2015
M108	Push-Pull gauge	Algol	50kg	Aug. 2015

Test Report No.: TWR1506012 001
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a) Stability

Requirement: Trampolines supplied with anchors which, according to the manufacturer's instructions, are intended to be permanently fixed (e.g. in concrete) when in use, shall not be subjected to stability tests.
Trampolines supplied with removable ground anchors or others removable means shall be tested with anchors fixed to the standing surface according to the manufacturer's instructions.
Trampolines not supplied with anchors shall be subjected to stability tested.
The trampoline shall not tip over when tested according to 6.2.2 (frame strength and stability test).

Test method: Assembly the trampoline on a hard horizontal surface according to the manufacturer's instructions. Position the test load on a 33 cm diameter rigid disc at the most onerous position of the bed. Preload the frame at the most onerous position with a mass of $(30 \pm 0,5)$ kg for 1 min, increase the load to 1.5 times the indicated maximum user weight, with a tolerance of 50+ %.
Maintain the load for 5 min. Ensure that the trampoline does not tip over during the test.
Check whether the frame meets the requirements

Result: The trampoline didn't tip over when 150 kg loading in the test.

Remark: Please refer to the photo documentation for reference.

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b) Bed deflection and strength

Requirement: the trampoline shall be designed so that during bouncing no part of the bed can touch the frame or legs.
Furthermore, the height of the bed from the ground or floor shall be sufficient to prevent the bed from contacting the ground or floor while the user is bouncing.
When tested according to 6.2.3 (bed deflecting and strength test) the bed deflecting (d) shall be not more than 80% of the height of the bed (h)
The bed material, any sewn, welded or glued joints, and subsidiary attachment items (usually but not exclusively triangular or ,D'-shaped metal rings) shall show not sign of tearing, splitting or cracking when tested according to 6.2.3 (bed deflecting and strength test).

Test method: Assembly the trampoline on a horizontal surface according to the manufacturer's instructions. Measure, to the nearest 5 mm, the height of the bed from the hard surface (h)
Calculate the test load (t) according to the following formula (1):

$$t(\text{kg}) = 2.5 \times \text{maximum user weight (kg)} \quad (1)$$

After 10 min, measure the deflection of the bed (d) to the nearest 5 mm. Calculate the percentage deflection (D) from the following formula (2):

$$D(\%) = 100 \times d / h \quad (2)$$

Inspect the bed material, its joints and subsidiary attachment items for signs of traring, splitting or cracking, and determine whether the requirements.

When loaded with the maximum user weight (as defined by the manufacturer) x 2.5 the maximum deflection (see d in Figure 4) shall not exceed 80% of the distance between the bed (at rest) and the ground.

Result: The initial height is 25 cm from the ground.
 $T = 2.5 \times 100 \text{ kg} = 250 \text{ kg}$
The bed height is 12 cm when applied the 250 kg.
 $D = 100 \times (25 - 12) / 25 = 52 \%$
The bed deflection is 52 %
No tearing, splitting or crack of bed material or decrease of functionality of the trampoline detected.

Remark: Please refer to the photo documentation for reference.

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**c) Testing the strength
of the safety mat**

Requirement: When loaded with 5 times of max. user's weight, the jump mat shall not be damaged. Determine whether the jumping mat of fractures or cracks shall not occur, and the construct strength shall be meet the requirement.

Test method: Assembly the trampoline on a horizontal surface according to the manufacturer's instructions. Apply 5 times user's max. weight = 5 X 100 kg = 500 kg on the center of the jumping mat.

Result: No involuntarily, displacement or decrease of functionality of the trampoline detected.

Remark: Please refer to the photo documentation for reference.

Test Report No.: TWR1506012 001
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d) Connection
strength of the legs

Requirement: The frame and the legs shall be constructed to withstand the simultaneously appearing with heavy jumps off center horizontal and vertical stresses cause permanent damage. The trampoline shall not tilt.

Test method: The trampoline is placed on a horizontal plane. One pillar is fixed with a prefixed bar at the bottom to prevent trampoline slipping. In the test, the vertical force is applied with a rigid disk of a diameter of 330 mm directly on the fabric padding on the test direction. The disc is like to be tested on the leg.

Vertical test load = 2.5 times the max. user's weight

At the same time applied at a horizontal force on the frame above the support leg under tested. The horizontal test load is applied within 5 s and held for a period of 10 s. The procedure is repeat 10 times in the same place. Determine whether a deformation, crack or fracture in the area of the frame. Suggestion for the introduction of the vertical load: Strap from the opposite end of the force contribution on the 33-cm disc (placed tangentially to the jumping mat) vertically downward.

Result: Vertical test load = $2.5 \times 100 \text{ kg} = 250 \text{ kg}$
Horizontal test load = $0.25 \times 100 \text{ kg} = 25 \text{ kg}$
After testing, No any deformation, crack or fracture occur.

Remark: Please refer to the photo documentation for reference.

Model:



Picture 1 : Bed deflection and strength test



Picture 2 : Bed deflection and strength test

Model:



Picture 3 : Bed deflection and strength test

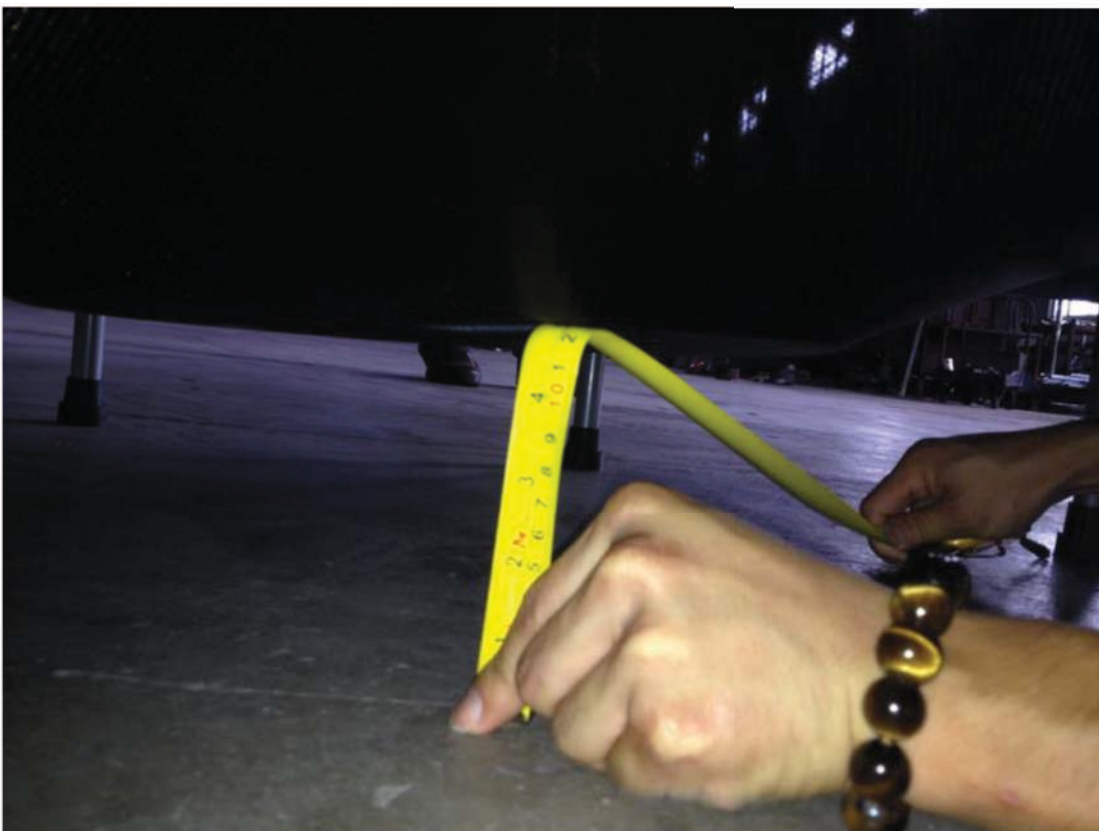


Picture 4 : Bed deflection and strength test

Model:



Picture 5 : initial mat height is 25 cm



Picture 6 : the height is 12 cm when loading.

Model:



Picture 7 : stability test



Picture 8 : stability test

Model:



Picture 9 : stability test



Picture 10 : connection strength of the legs test

Model:



Picture 11 : connection strength of the legs test



Picture 12 : connection strength of the legs test

Model:



Picture 13 : testing the strength of the safety mat



Picture 14 : testing the strength of the safety mat

Model:



Picture 15 : testing the strength of the safety mat



Picture 16 : testing the strength of the safety mat