

DPNS 2086:2010

Furniture - Monobloc chairs for children - Specification

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1 Scope

- 1.1** This standard specifies the requirements for monobloc chairs for children.
- 1.2** This standard also describes the test methods for determining the strength, durability and stability of monobloc chairs.
- 1.3** Assessment of ageing and degradation is not included.
- 1.4** The tests are designed to be applied to an article of furniture that is fully assembled and ready for use.
- 1.5** Forces and dimensions in the tests are applicable to monobloc chairs intended for children ages 1-12 years old and weighing not more than 60 kg.
- 1.6** The tests consist of the application, to various parts of the item, of loads or forces simulating normal functional use, as well as misuse that might reasonably be expected to occur.
- 1.7** In case of designs not catered for in the test procedures, the test shall be carried out as far as possible as described, and deviations from the test procedure recorded in the test report.
- 1.8** Tests carried out on monobloc chairs are intended to demonstrate the ability of the item to give satisfactory service in its intended environment. It should be understood that such tests do not ensure that structural failure will not eventually occur as a result of habitual misuse or after an excessively long period of service, or more than occasional use by children ages.

2 References

The titles of the standards publications referred to in this standard are listed in the inside back cover.

3 Definitions

For the purpose of this standard the following definitions apply:

3.1**durability test**

test simulating the repeated movement of components occurring during long-term use and assessing the strength of the article under such conditions.

3.2**fatigue loading**

the often-repeated, but also steadily and gradually applied subjection of the article to the reiterated application of that level of loading which is likely to occur most frequently.

3.3

impact test

test to assess the strength of the article under the rapid rates of loading that occasionally occur.

3.4

monobloc furniture

furniture made from one mould injected as one whole piece of furniture.

3.5

stability

ability to withstand forces that tend to cause the article to overturn.

3.6

static test

test consisting of heavy loads being applied a few times to ensure that the furniture has sufficient strength to perform its function under the highest levels of loading that might reasonably be expected to occur.

4 Requirements

4.1 Construction

Monobloc chairs shall be of rigid construction. When tested in accordance with the relevant test methods, no part of any unit shall develop any fracture or any deformation that will affect the functionality or appearance (or both) of the unit. Stackable units shall remain functional after the relevant test have been completed. The design shall minimize damage by abrasion between the units as a result of stacking.

4.2 Finish

All furniture shall be solidly constructed and shall have a neat appearance. Surfaces shall have a smooth, even and uniform finish. There shall be no cracks and chips, that may affect the appearance or serviceability of the furniture. Acceptable and well-proven moulding techniques shall be applied in order to eliminate possible defects and stresses. There shall be no sharp edges.

4.3 Strength, stability and durability of monobloc chairs

Monobloc chairs shall be designed and constructed such that each article tested shall conform to the requirements for each test specified in FIRA/FRQG C002 and shall not show any defects that will affect the serviceability of the chair and shall meet the test requirements in table 1.

4.4 Safety requirements

The monobloc chairs shall meet the safety requirements in FIRA / FRQG C001.

5 Sampling

Monobloc chairs shall be sampled in accordance with PNS ISO 2859-1 and shall be representative of the production model.

6 Test method

The strength, stability and durability of monobloc chairs shall be tested in accordance with FIRA / FRQG C002.

7 Marking

The furniture shall be marked with the following information:

- 7.1** Complete name and address of manufacturer/distributor or importer
- 7.2** Registered tradename or brandname
- 7.3** Capacity in kg
- 7.4** Usage indoor or outdoor
- 7.5** Additional marking on proper handling / stacking and correct usage
- 7.6** The words “Made in the Philippines” or “Country of origin” if imported.

Table 1 - Tests

| NO. | Test | Test Description | Loading | Test Level | |
|-----|-----------------------------|-------------------------------------|--|------------------|------------------|
| | | | | 1 | 2 |
| 1. | PNS BS EN 1022 6.2 & 6.3 | Forwards overturning | Seat load: N Horizontal force: N | 250 20 | 500 20 |
| 2. | PNS BS EN 1022 6.4 | Sideways stability without arms | Seat load: N Horizontal force: N | 250 20 | 500 20 |
| 3. | PNS BS EN 1022 6.5 | Sideways stability with arms | Arm load: N Seat load: N Horizontal force: N | 150 110 20 | 300 210 20 |
| 4. | PNS BS EN 1022 6.6 | Rearwards stability | Seat load: N Back force: N | 250 70 | 500 130 |
| 5. | EN 1728, 6.2.1 6.3 | Seat and back static load test | Seat: force N Back: force N 10 times | 750 200 | 1000 250 |
| 6. | EN 1728, 6.2.2 | Seat front edge static load test | Force, N 10 times | 750 | 1000 |
| 7. | EN 1728, 6.4 | Footrail static load test | Force, N 10 times | 750 | 1000 |
| 8. | EN 1728, 6.5 | Arm sideways static load test | Force, N 10 times | 250 | 350 |
| 9. | EN 1728, 6.6 | Arm downwards static load test | Force, N 10 times | 250 | 350 |
| 10. | EN 1728, 6.7 & 6.9 | Seat and back fatigue test | Cycles Seat: 750 N Back: 250 N | - | 10000 |
| 11. | EN 1728, 6.8 | Seat front edge fatigue test | Cycles Force: 750 N | - | 5000 |
| 12. | EN 1728, 6.10 | Arm fatigue test | Cycles Force: 200 N | - | 5000 |
| 13. | EN 1728, 6.12 | Leg forward static load test | Force, N (max.) Seat load, N 10 times | 180 750 | 300 750 |
| 14. | EN 1728, 6.13 | Leg sideways static load test | Force, N (max.) Seat load, N 10 times | 180 750 | 250 750 |
| 15. | EN 1728, 6.15 | Seat impact test | Drop height, mm, 10 times | 140 | 140 |
| 16. | Annex A | Additional seat impact test | Drop height, mm, 10 times | 100 | 100 |
| 17. | EN 1728, 6.16 | Back impact test | Height of fall, mm 10 times | 70 | 120 |
| 18. | BS 4875-1 Annex C | Drop Test | Drop height 10 times | 100 | 150 |

References

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The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

PNS 2859:2004 (ISO published 1999) – Philippine National Standard – Sampling procedure for inspection by attributes – Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection

PNS BS EN 1022:2009 – Domestic furniture – Seating – Determination of stability

FIRA / FRQG C001:2008 – Furniture – Children’s Domestic Furniture – General Safety Requirements

FIRA / FRQG C002:2008 – Furniture – Children’s Domestic Furniture – Seating-Requirements for strength, stability and durability

Abbreviations:

PNS - Philippine National Standard

ISO - International Organization for Standardization

BS EN - British Standard

FIRA / FRQG - Furniture Industry Research Association / Furniture Retail Quality Group

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9 Victor G. Revilleza
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6 Rosalie B. Raymundo
Department of Education

Invitees:

10 Teresita C. Belgica
Allied Moulding

11 Ruel Quintana
Jernald Mabuti
COFTA

Project Officer

12 Ledilla G. Papa
Bureau of Product Standards