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Assistive products—Commode chairs

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

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Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public or utility model right which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public or utility model right which have the said technical properties.

Assistive products—Commode chairs

1 Scope

This Japanese Industrial Standard specifies the commode chairs equipped with the tank for sewage storage used in the place other than the lavatory. Those having the function of water supply and drainage are excluded.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS K 6253 *Rubber, vulcanized or thermoplastic—Determination of hardness*

JIS T 0102 *Glossary of terms used in assistive products for persons with disabilities*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in JIS T 0102, and the following terms and definitions apply.

3.1 backrest

component to support the human body, which is the plane sustaining the force horizontally acting on it

3.2 armrest

component to support the arm

3.3 seat

component to support the human body, which is the plane sustaining the force vertically acting on it during the period other than excretion

3.4 toilet seat

component to support the human body, which is the plane sustaining the force vertically acting on it mainly during excretion

3.5 sewage storage tank

component to storage the sewage

3.6 lid

component to cover the toilet seat

3.7 leg

component constructed to sustain the forces acting on toilet seat, seat and backrest

3.8 lifting jig

rigid plate without sharp edges (example: a steel plate covered with rubber and the like)

3.9 rated capacity

mass of 90 % that the mass of empty sewage storage tank is subtracted from the mass of the sewage storage tank in full capacity state

3.10 full capacity state

state in which a synthetic monofilament yarn is stretched on both rims of sewage storage tank by attaching weights to both ends of the yarn and it touches the water, or the state in which the water is spilled out from holes which are made for the handle, notch, etc. of the sewage storage tank

4 Name of each part

The name of each part shall be in accordance with figure 1.

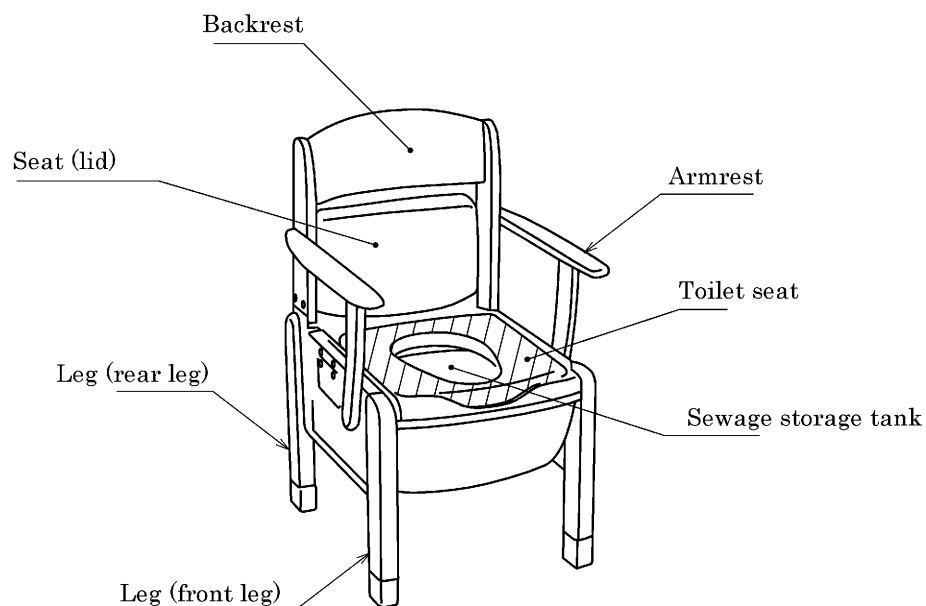


Figure 1 Name of each part of commode chair

5 Design, appearance and construction according to risk management

5.1 Design according to risk management

The design according to the risk management shall be conducted on the risk of the finger and the tow trapped in the gap and it shall be conducted by the manufacturer or the distributor. The procedures and the results thereof shall be documented and maintained. Also, examples listed in Annex A should be taken in consideration.

5.2 Appearance

The appearances shall be as follows.

- a) Finishing of appearance shall be good, and there shall be no flaw, warp, removing of connection and so on, which may affect the function.
- b) There shall be no protrusions, sharp corners, fine splits etc. on the part coming into contact with the human body including the tip of bolt and nut appearing outside, which may cause hurts when of touched.
- c) The face side of painted surface shall be uniform in gloss and colour tone, and free from uneven painting, sagging, etc.

5.3 Construction

The construction shall be as follows. When the corresponding components or parts do not exist, the item shall not be applied.

- a) When woods are used for commode chairs, the construction shall be so that the defects detrimental to use and such as fissures, warps do not easily appear after assembling.
- b) The jointing, assembling, etc. of each part shall be good, and there shall be no looseness, play, deformation, etc.
- c) The detachable parts and components shall be constructed so as to be fixed surely.
- d) When the height adjustment mechanism is provided, the construction shall be so that the height is adjusted easily and the mechanism is not loosen easily during in use.
- e) The construction shall be so that the finger or the like is not trapped in the gap of the seat and the armrest. The distance of entrapment prevention for finger shall be under 5 mm or over 25 mm. When the occurrence of risk factor corresponding to the hole size and the gap between fixed parts is inevitable, warning and instruction on the safety operation of this equipment shall be listed in the instruction manual prepared by the manufacturer to satisfy the normal usage purpose of this equipment.
- f) When assembled by using screws and other metal fittings, the construction shall be so that the jointing part does not loosen easily.
- g) The construction shall be so that heels can be placed behind the tip of the toilet seat.
- h) For the commode chairs using the commercial power supply, electrical components, etc. thereof shall comply with the Electrical Appliances and Materials Safety Act.

6 Performance

The performance shall comply with the requirements of table 1 when tested in accordance with 8.2 to 8.8.

Table 1 Performance

Item		Performance	Test clause
Stability	Forward stability	No overturn.	8.2 a)
	Sideward stability (when armrest is not provided)	State where leg is lifted is not deemed as overturn.	8.2 b)
	Sideward stability (when armrest is provided)		8.2 c)
	Backward stability (when backrest is not provided)		8.2 d)
	Backward stability (when backrest is provided)		8.2 e)
Static strength	Vertical load on toilet seat	No damage, deformation, looseness and disconnection detrimental to use.	8.3 a)
	Vertical load on seat (lid) (when seat is provided or lid is capable of being seated)		8.3 b)
	Horizontal load on backrest (when backrest is provided)		8.3 c)
	Horizontal load on armrest (when armrest is provided)		8.3 d)
	Vertical load on armrest (when armrest is provided)		8.3 e)
	Strength of handle of sewage storage tank		8.3 f)
Impact resistance	Impact resistance of toilet seat		8.4 a)
	Impact resistance of seat (lid) (when seat is provided or lid is capable of being seated)		8.4 b)
	Impact resistance of armrest (when armrest is provided)		8.4 c)
	Impact resistance of backrest (when backrest is provided)		8.4 d)
Durability	Durability of toilet seat		8.5 a)
	Durability of backrest (when backrest is provided)		8.5 b)
	Durability of armrest (horizontal direction) (when armrest is provided)		8.5 c)
	Durability of armrest (vertical direction) (when armrest is provided)		8.5 d)
Drop impact resistance			8.6
Slippage resistance		Do not move.	8.7
Check for prevention of neck part from trapped (when backrest and armrest are provided)		No insertion of jig for test into a gap between backrest and armrest, having 120 mm or under of clearance and V-shape opening.	8.8

7 Test conditions

7.1 Environment of laboratory

As for the environment of laboratory, the temperature shall be 5 °C to 35 °C, and the relative humidity shall be (65 ± 20) %.

7.2 Test apparatus

The test apparatus shall be as follows.

- a) **Test floor** The test floor shall be rigid, flat, smooth and horizontal plane. For the drop impact resistance test of 8.6, the test rubber of 2 mm in thickness shall be placed on the floor of high rigidity (concrete floor, steel platform, etc.).

The test rubber shall be of $A85 \pm 5$ in hardness measured by using Type A durometer specified in JIS K 6253.

- b) **Wear plate** The wear plate shall be the plate having sufficient strength whose surface is hard, flat and smooth, and shall be as follows.

When the wear plate is used, foaming material shall be placed between the wear plate and the specimen.

- 1) **Wear plate for seat** A flat rigid plate capable of covering whole of the seat or toilet seat.
 - 2) **Wear plate for loading** A rigid disk of 100 mm in diameter, the surface shall be flat, and the edge shall be rounded to 12 mm in radius.
 - 3) **Wear plate for backrest** A rigid rectangular of 200 mm in height and 250 mm in width whose surface shall be cylindrical of 450 mm in radius to the width direction of the wear plate, and the edge shall be rounded to 12 mm in radius.
- c) **Stopper** A stopper shall be designed to prevent the specimen from moving, and not to prevent it from overturn. The height of stopper shall be 12 mm or under. In the case where a stopper taller than 12 mm is required because of the construction of the specimen, it shall be the minimum height required to prevent the specimen from moving.
- d) **Sandbag for seat** A sandbag for seat shall be the cylindrical sandbag of 300 mm $\pm$ 10 mm in bottom diameter and 25 kg $\pm$ 0.5 kg in mass.
- e) **Sandbag for impact** A sandbag for impact shall be the cylindrical sandbag of 200 mm $\pm$ 10 mm in bottom diameter and 20 kg $\pm$ 0.5 kg in mass.
- f) **Foaming material** A foaming material shall be the soft urethane foam of 10 mm to 20 mm in thickness, and 20 kg/m³ $\pm$ 5 kg/m³ in apparent density. The test shall be conducted by placing it between the specimen and the wear plate.

When the dimensions are not designated, the size shall be almost the same as that of the wear plate to be used.

- g) **Weight for overturn prevention** A weight for overturn prevention shall be the weight used for preventing the specimen from overturning in such a case where the horizontal force is applied to the backrest. It shall not be so excessive as that the test would be affected.

7.3 Tolerances

Unless otherwise specified, the tolerances of force shall be $\pm 5 \%$, the tolerances of

mass shall be $\pm 0.5 \%$, and the tolerances of dimensions shall be $\pm 0.5 \text{ mm}$.

8 Test

8.1 General

General conditions for the test shall be as follows.

- a) In the stability test and the static strength test, the constant force shall be applied or the force shall be increased gradually. When applying the constant force, a weight may be used as the device itself.

In the static strength test, the force shall be applied slowly to prevent the dynamic force from generating.

- b) When the wear plate is used for testing, the mass thereof shall be taken into account for the test value of loading.
- c) When the distance from the edge is designated, the position of centre of force, weight, etc. shall be that of the designated position.
- d) For the specimen that has a dimension adjustment mechanism, the specimen shall be adjusted to the maximum usage dimension beforehand for testing.

8.2 Stability test

The stability test shall be as follows.

For the weight used in this test, the weight of balance may be used for the vertical force relating to the stability test; however in this case, the wear plate for seat shall not be used.

a) Forward stability test

- 1) The specimen shall be placed still on the test floor, the stopper shall be applied to the front legs, and the wear plate for seat [7.2 b) 1)] shall be mounted.
- 2) The weight of 60 kg in mass shall be put at the position 50 mm backward from the centre of front edge of the toilet seat, and the horizontal force of 60 N shall be applied to the same position in forward direction (see figure 2).