

International Standard



4170

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Interline air cargo pallet nets

Filets de palettes pour le transport aérien

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4170 was developed by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and was circulated to the member bodies in August 1978.

It has been approved by the member bodies of the following countries :

Australia	France	Mexico
Austria	India	Netherlands
Belgium	Ireland	Romania
Canada	Italy	Spain
China	Japan	USA
Czechoslovakia	Korea, Rep. of	USSR

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Germany, F. R.
United Kingdom

Interline air cargo pallet nets

1 Scope and field of application

This International Standard establishes dimensional, structural and environmental requirements for nets used to secure cargo on aircraft pallets meeting the requirements of ISO 4171.

2 References

ISO 4171, *Interline air cargo pallets*.¹⁾

NAS²⁾ 3610, prepared by : *Aerospace Industries Association of America, Inc.*, 1725 DeSales Street, N.W., Washington, D.C. 20036, USA.³⁾

IATA Unit load devices manual, *International Air Transport Association*, Geneva, Switzerland.³⁾

3 Dimensions

3.1 Nominal sizes

The three nominal sizes are related to the sizes of the pallets on which the nets are intended to restrain loads, as follows :

NAS 3610 size code	IATA size code	Pallet size (ISO 4171)
A	1	2 235 mm × 3 175 mm (88 in × 125 in)
B	2	2 235 mm × 2 743 mm (88 in × 108 in)
M	6	2 438 mm × 3 175 mm (96 in × 125 in)

3.2 Basic net configuration

3.2.1 Contours

Nets shall restrain a load with the approved IATA cargo and igloo contours (see Section III of IATA Unit load devices manual).

Net mesh and hardware shall not extend outward more than 25 mm (1 in) beyond these contours, except for a zone between 150 to 760 mm (6 and 30 in) above the pallet, where a 50 mm (2 in) extension of the contour is permitted (see the figure).

3.2.2 Adjustment

Nets used over bulk cargo shall be adjustable for variable heights from 610 mm (24 in) up to the limits of the contours defined in 3.2.1.

3.2.3 Adjustment of nets used only over igloos

Nets used only over igloos shall have minimum adjusting hardware which allows a minimum range of 150 mm (6 in) takeup.

4 Construction

4.1 General

The net assembly shall include netting, adjustment hardware, and pallet attachment fittings. The attachment locations and details shall be in accordance with the requirements of NAS 3610.

1) At present at the stage of draft.

2) National Aerospace Standard.

3) Or similar, until such time as International Standards are made available.

4.2 Mesh configuration

Net design shall be such as to minimize installation time and to provide a configuration which minimizes the possibility of improper installation.

The net shall be constructed in such a manner than entanglement during installation and storage is minimized.

Nets shall be adequately treated to minimize shrinkage.

4.3 Materials

The material to be used for netting shall meet the appropriate regulatory standards.

4.4 Hardware and tensioning

The net hardware shall be so designed and constructed that it can be easily operated in confined areas.

All hardware shall be securely sewn or otherwise attached to preclude loss. Loose ends that pass through adjusting buckles shall be equipped with stops.

Provision shall be made to enable the net to be tensioned evenly over the cargo. If a mechanical advantage facility is provided to achieve this tension, the release of the tensile force shall be achieved by an operating force not greater than 16 % of the tension force.

4.5 Pallet attachment fittings

All net fittings shall incorporate tie-down stud(s) for attachment to pallets, and shall resist a force of at least 8,9 kN * per stud in all directions horizontally to a vertical force of 11,1 kN. The force application point shall be 21 mm (0.83 in) or less from the head of the stud.

4.6 Colour

Colour of the material is optional. However, contrasting colours may be used to distinguish net components for simplifying the installation of the net to the pallet.

4.7 Special marking (see also clause 7)

The net shall be clearly marked to facilitate rigging on the pallet. If the net operation is not omnidirectional, top and bottom, inside and outside shall be indicated. Character marking or colour coding may be used to facilitate rapid attachment of net fittings to the pallet.

4.8 Treatment of net ends

All net ends shall be treated to prevent fraying.

5 Design loads

5.1 Table of loads

The net shall be able to restrain the loads listed below :

NAS 3610 size code	Maximum gross mass of load
A	6 033 kg (13 300 lb)
B	3 629 kg (8 000 lb)
M	6 804 kg (15 000 lb)

5.2 Load retention

The net assembly shall be so constructed that it adequately encompasses the pallet load with all fittings attached to the pallet in the locations specified in 4.1.

5.3 NAS 3610 requirements

The net shall meet the critical performance design and test requirements in accordance with NAS 3610 for Class II systems defined therein.

5.4 Allowance for deterioration

Allowance shall be made for deterioration in the performance capability during the service life of the net appropriate to the material from which it is constructed.

6 Environmental criteria

6.1 Serviceability

The net assembly shall be designed and constructed using materials which will provide maximum serviceability under intended environmental conditions.

6.2 Temperature resistance

The net assembly shall maintain its structural and operational integrity in a temperature range from -54 °C to + 71 °C.

* 1 N $\approx$ 0,1 kgf $\approx$ 0.225 lbf
1 kN = 10³ N