

SPECIFICATION —

MARINE PLYWOOD FOR AIRCRAFT USE

EFFECTIVE: Forthwith

SUBSECTIONS

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| 1 — Definitions | 4 — Limits on Accidental Damage |
| 2 — Dimensions and Tolerances | 5 — Testing |
| 3 — Quality of Face Veneers | Appendixes I and II |

1 — DEFINITIONS

- 1.1** — ‘Type or Grade A — High Strength plywood’, means plywood which:
- (a) is manufactured to Australian Standard 2272-1979;
 - (b) is wholly made of coachwood (*Ceratopetalum Apetalum*) veneers; and
 - (c) conforms to the additional requirements of sub-sections 2, 3, 4 and 5 of this section.
- 1.2** — ‘Type or Grade B — Medium or Low Strength plywood’, means plywood which:
- (a) is manufactured to Australian Standard 2272-1979; and
 - (b) conforms to the additional requirements of sub-sections 2, 3 and 4 of this section.

2 — DIMENSIONS AND TOLERANCES

- 2.1** — The dimensions referred to in this section are the nominal dimensions of the finished sheet.
- 2.2** — The actual dimensions of the finished sheet shall not differ from the nominal dimensions by more than the dimensional tolerances specified in Appendix 1.
- 2.3** — Sheets may be sanded or unsanded. Only light even sanding of both face veneers is permitted and after sanding the sheets shall comply with the requirements of paragraph 2.2.

3 — QUALITY OF FACE VENEERS

- 3.1** — The face veneers shall:
- (a) present a solid surface free from open defects;
 - (b) be free from knots other than sound pin knots of maximum diameter 1.6 mm, of which there shall be not more than six in any one area 300 millimetres square and not more than an average of 2 per 300 millimetres square over the whole sheet; and
 - (c) be reasonably free from irregular grain. Isolated pin holes of maximum diameter 1.6 mm not along the face of the veneer and occasional closed splits are permissible.

3.2 — The maximum permissible slope of grain shall be I in 8.

Note: *Cross-grain through the plane of the veneer is identified by raised grain on the face of the veneer and is cause for rejection of the sheet.*

4 — LIMITS ON ACCIDENTAL DAMAGE

4.1 — Localised damage which has occurred in handling or in storage shall be cause for rejection of the sheet unless it is within the limits specified in Table 3 of Appendix 1.

5 — TESTING

5.1 — Each sheet of Type or Grade A — High Strength plywood shall be tested for tensile strength using 2 specimens, I longitudinal and I transverse to the direction of the face grain.

5.2 — Test specimens shall conform dimensionally to Appendix II and be taken from the sheet not closer than 150 mm to any of the 4 edges.

5.3 — The ultimate tensile strengths, including the sum of the two, shall be not less than those stated in Appendix II.

AUTHORITY

This Air Navigation Order is made under the authority of the Secretary to the Department of Aviation in pursuance of the powers vested in him by the Air Navigation Regulations.

APPENDIX I

1 — DIMENSIONAL TOLERANCES

1.1 — General. The dimension along the grain of the face veneers shall be quoted first.

1.2 — Length and width. Actual length or width of a sheet shall not be less than the nominal dimension nor more than 6.5 mm greater than the nominal dimension.

1.3 — Squareness. The lengths of the diagonals of a sheet shall not differ by more than 0.25 percent.

1.4 — Finished sheet thickness. Tolerances on finished sheet thickness are given in Table 1.

TABLE 1. TOLERANCES ON NOMINAL THICKNESS OF FINISHED SHEET

Nominal Thickness	Tolerance
Up to and including 3 mm	± 10 percent
Over 3 mm up to and including 10 mm	±5 percent
Over 10 mm	±2.5 percent

1.5 — Thickness of veneers. The thickness of veneers in the finished sheet shall be within the limits specified in Table 2.

TABLE 2. THICKNESS OF VENEERS

Plywood Type	Tolerance Applicability	Tolerance
Three-ply	Each face veneer	Not more than 1/3 or less than 1/4 of thickness of finished sheet.
Multi-ply	Combined thickness of both face veneers and core veneers parallel to face veneers.	Not less than 2/5 and not more than 2/3 of thickness of finished sheet


2 — ACCIDENTAL DEFECTS

TABLE 3. ACCEPTABILITY LIMITS

Nature of Defect	Limitation
(i) Contamination by water, hydrocarbons, other chemicals or fungi	Not acceptable
(ii) Warpage	A sheet that can be laid onto a plane surface by hand pressure without buckling is acceptable.
(iii) Mechanical damage	Any such defect which affects the integrity or thickness of face veneers is unacceptable.*

* *Note: Use can be made of the undamaged part of a sheet.*

APPENDIX II

TENSILE STRENGTH OF PLYWOOD		DIMENSIONS OF TEST SPECIMENS
LONGITUDINAL TO FACE GRAIN	TRANSVERSE TO FACE GRAIN	
63.6 MPa (700 kg/cm ²)	44.1 MPa (450 kg/cm ²)	<p>FOR PLYWOOD SHEETS UP TO 4 mm THICKNESS</p>  <p>FOR PLYWOOD SHEETS OVER 4 mm THICKNESS</p> 