

SCHEDULE TO THE AGREEMENT

INTERNATIONAL GRP MIRRORS

An International GRP Mirror shall be constructed in accordance with the following requirements:

GRP Panels

Glass fibre reinforcement shall be E-Glass fibre chopped strand matt or woven or biaxial stitched fabric. Resin shall be polyester or vinylester (Epicryn) or epoxy. A "tie coat" may be used to create a better bond between a polyester gel coat and epoxy resin.

The following are **minimum** specifications for GRP panels and all glass weights are for nominal weights (GRP skins may comprise one or more layers of glass reinforcement):

Bottom Panels

- Optional layer of gel coat or paint.
- Optional layer tissue
- 380g/m² glass fibre reinforcement
- PVC foam core nominal thickness 6mm to 10mm and minimum density 70kg/m³
- 190g/m² glass fibre reinforcement

Plus for cockpit floor, add
190g/m² glass fibre reinforcement

Side Panels and Transoms

- Optional layer of gel coat or paint.
- Optional layer tissue
- 750g/m² glass fibre reinforcement

Or sandwich panel to deck panel requirements (except nominal thickness of foam may be 2mm to 8mm) or combination

Deck Panels

- Optional layer of gel coat or paint.
- Optional layer tissue
- 280g/m² glass fibre reinforcement
- PVC foam core nominal thickness 6mm to 8mm and minimum density 70kg/m³ over at least 75% of the area or 'coremat' or similar material as approved by the ISAF
- 190g/m² glass fibre reinforcement

Side Tank Sides and Bulkheads

- Optional layer of gel coat or paint.
- Optional layer of tissue
- 750g/m² glass fibre reinforcement

Or

280g/m² glass fibre reinforcement

PVC foam core nominal thickness 6mm to 8mm and minimum density 45kg/m³ over at least 75% of the area or 'coremat' or similar material as approved by the ISAF.

190g/m² glass fibre reinforcement

Buoyancy tank bulkheads

As per hull bulkheads (above)

Or

plywood or foam, which may be sheathed

Construction Details

1. Panels

All panels shall be GRP in accordance with the specifications above, with the exception of the tank tops, side tank sides and bulkheads which may be of plywood in accordance with the specification for wooden boats parts (see below).

2. Gunwales - bow shapes and quarter knees

Optional wood or GRP or GRP "wrap over" construction omitting bow shapes and quarter knees (dimensions of mouldings to be as close as practically possible to wood boats - a double top side construction is permitted)

3. Thwart and centreboard case

Optional wood or GRP. GRP outer case moulding permitted.

4. Floor Battens and Stringer (footrest)

Optional wood or GRP (to be moulded to approximate dimensions of wood battens), or may be omitted.

5. Skeg, bilge keels, stem post

Optional wood or GRP. The stem post may be omitted and plywood, metal plates or filler in lieu of foam core and optional additional glass fibre reinforcement used locally instead.

6. Shroud Plates

Optional wood or GRP (approximately to wood dimensions) or these may be omitted and plywood, metal plates or filler in lieu of foam core and optional additional glass fibre reinforcement used locally instead.

7. Keelbands

Non-ferrous metal or GRP (moulded to Class Rule dimensions)

8. Buoyancy

Either:

- (i) 4 separate tanks (bow, stern and two side tanks) that meet current buoyancy rules, or
- (ii) 2 separate tanks (bow tank, stern and two side tanks combined) that meet current buoyancy rules, or

- (iii) Single buoyancy tank (ie no internal bulkheads or non-watertight internal bulkheads), with not less than 120 liters of additional foam buoyancy arranged to enable boat to float level and to minimise surge of the water within tanks.

Additional foam buoyancy may be added to any tank and may be sheathed.

9. Plywood reinforcement, metal plates or filler in lieu of foam core and optional additional glass fibre reinforcement is permitted in lieu of foam core in highly stressed areas, eg under centreboard case, in the mast web, in the stowage bulkhead.
10. Aft transom above deck shall be built to required thickness, of either wood or foam encapsulated in GRP.
11. In order to ensure that manufacturers of foils are able to supply a standard item that will fit at least all GRP Mirror dinghies, the following standard dimensions have been adopted;
- Distance between Aft Measurement Point and bearing surface of lower rudder fitting on transom = 70mm.
 - Distance between bearing surfaces of the rudder fittings on the transom = 205mm.
 - Depth of centreboard case as defined in CR 1.4.14 in centre of case = 295mm

Wooden Parts

Wooden materials and dimensions shall be in accordance with International Mirror Class Plans 1 to 5 and the following:

Deck Panels, Side Tank sides, Bulkheads and Bow shapes	Plywood specification equivalent to DIN No. 688705 or BS 6566 Gaboon. Dimensions shall be as drawn on Plans 1 to 5 within a manufacturing tolerance of not more than 2mm.
All other wooden parts including spars	All parts shall comply with the Class Rules. Where no dimensions are specified in the Class Rules the plans shall be considered to define the nominal size of the part

Interior Design

Two options for the design of the interior of the boat are available. These are;

- Mark 2 Introduced in the mid sixties starting with sail number 701, features stowage compartments either side of the mast under the foredeck. Designed for construction in ply, this interior was used on GRP composite and the first successful foam sandwich Mirror dinghies.
- Mark 3 Introduced in 2007 to allow easier construction in GRP by reducing the number of moulds required to a minimum of 2. This design has no

stowage compartments (but builders can introduce stowage options, such as bins, into the stowage bulkhead), wrap over gunwale design, no shroud blocks, no stem post, dished fore and aft decks, raised mast step mounting surface, chamfer on side tank edges which extends into fore and aft decks, optional centre mainsheet jammer mounting.

The design of these interiors is documented as follows;

Mark 2

Since this is based on the plywood Mark 2 interior, the plans of the plywood Mark 2 panels, International Mirror Class Plans 1 to 5 document this design.

Mark 3

The following drawings document this design.

Mirror Mk 3.dwg

Drawings of hull panels in International Mirror Class Plans 1 to 5

The Mirror Mk 3.dwg computer file contains the design in a CAD format so additional details can be extracted by the builder.

Foils

Manufacturers of foils are optional, but foils shall be in accordance with the Class Rules.

Spars

Manufacturers of spars are optional, but shall be in accordance with the Class Rules.

Fittings

Manufacturer of fittings is optional. Part numbers for Holt Allen fittings are listed below (for gunter rigged boat with no spinnaker) Additional fittings may be supplied but shall be in accordance with the Class Rules.

Gaff band	1	HA/4032
Lacing eye for tiller	1	
Gooseneck (boom fitting)	1	HA/4314
Lacing eye for sail tack	1	
Drain sockets	7	HA/123
Rudder retaining clip	1	HA/21 and fixing screws
Bow plate	1	HA/3
Shroud anchorages	4	HA/3
Halyard cleats	2	HA/130
Mast sheave and axle	1	HA/150
Kicking strap anchorage	1	HA/88
Mainsheet pulleys and shackle	2	
Tiller cleat	1	HA/146
Rowlock plates	2	HA/392
Rowlocks	2	HA/390
Rudder gudgeon	1	HA/4106
Rudder pintle	1	HA/4317
Transom pintle	1	HA/4019
Transom gudgeon	1	HA/4020
Length of keel band	1	1372mm x 12mm x 3mm brass
Lengths of keel band	2	396mm x 12mm x 3mm brass

Length of keel band	1	1300mm x 12mm x 3mm brass
Rudder blade pivot bolt	1	50mm x 5mm st. steel
Tiller extension bolt	1	60mm x 6mm st. steel
Jib halyard pulley block	1	HA/178

Rigging

Manufacturer and specification of sheets, halyards, and other running rigging is optional. The following indicates recommended basic specifications for a gunter rigged boat with no spinnaker:

Shrouds	2	3mm wire x 3110mm with 65mm dia. soft eye (for mast) and 10mm hard eye and shackle
Forestay	1	3mm wire x 3075mm with 65mm dia. soft eye (for mast) and 10mm hard eye with 900mm lanyard spliced on
Main Halyard	1	7m x 6mm 3-strand polyester pre-stretched and/or 2mm wire and shackle
Jib Halyard	1	7m x 6mm 3-strand polyester pre-stretched and/or 2mm wire and shackle
Jib Halyard Strop	1	3mm wire 160mm long with 40mm dia. soft eye (for mast) and 10mm hard eye (for jib halyard pulley block)
Mainsheet	1	7m x 10mm 8-plait matt polyester
Jib sheet	1	6m x 10mm 8-plait matt polyester
Kicking strap rope	1	2.3m x 6mm 3-strand polyester
Rudder uphaul lanyard	1	1.2m x 4mm 3-strand polyester
Centreboard elastic	1	300mm x 6mm with 2 end eyes plus fixing screws and washers
Gaff elastic	1	150mm x 5mm and 1 end eye
Tiller retaining pin with lanyard	1	50mm x 4mm with 150mm x 2mm braid lanyard
Gooseneck retaining pin	1	50mm x 4mm pin
Rudder down haul elastic	1	250mm x 5mm with 1 eye and fixing screw and 3 x 15mm brass nails

Sails

Manufacturer of sails is optional (boats may be supplied without sails).

NOTE: All parts included with the boat shall be in accordance with the International Mirror Class Rules. All GRP Mirrors shall be built and supplied in accordance with the International Mirror Class Rules.