

REQUIREMENTS FOR PROTOTYPE APPROVAL OF COMMERCIAL VESSELS

INTRODUCTION

These notes are intended to assist persons who wish to have a vessel design prototype approved for commercial operation in New South Wales.

Commercial vessels are defined as vessels that are used for any type of business, trade or commerce. They can include Fishing vessels, Tourist/Charter boats, Work boats, Ferries, Water taxis, Dive boats, Hire and Drive, etc. All commercial vessels are assessed in accordance with the Uniform Shipping Laws (USL) Code or equivalent standards.

Prototype approval is a process of plan and stability approval, and surveyor inspections for a series of vessels entering NSW Survey. At the completion of this process the vessel design is granted Prototype Approval and an associated Prototype Approval number. The benefits of Prototype Approval include:-

- Eliminating the need to submit plans for each vessel.
- Eliminating the wait for plan approval of each vessel.
- Streamlined survey procedures for vessels less than 10 metres in length.
- Clear control over ownership of a design.
- Enhanced marketing appeal as a “Prototype Approved” vessel.
- Reduced costs for a series of vessels. The ‘break even point’ should be 2-3 vessels.

PROTOTYPE APPROVAL

APPLICATION FOR PROTOTYPE APPROVAL

The enclosed APPLICATION FOR PROTOTYPE APPROVAL OF A COMMERCIAL VESSEL form is to be completed and returned to NSW Maritime together with the prescribed fee. This fee only covers duties completed by NSW Maritime and does not include the cost of consultants engaged in preparing plans, stability, etc. for approval by NSW Maritime.

SUBMISSION OF THE FEE, PLANS AND SPECIFICATIONS

DESIGN APPROVAL.

A minimum of 3 sets of plans are to be forwarded to NSW Maritime for approval, together with the required fee. See Appendix A for Plan Requirements.

The size and class of the vessel will determine the extent of plans and information required. These will be indicated on the quotation issued for Prototype Approval.

In general **plans are required** for these components:-

- Construction drawings.
- Engineering drawings and specifications
- General Arrangement Drawings.
- Stability submissions.

A submission may cover up to three variants or categories of service, provided that separate arrangement drawings and stability information are submitted **for each variant** together with appropriate details of the variations.

Where modifications to submissions are required, the applicant needs to resubmit the revised information. Only when all submissions can be approved without modifications, will they be marked **PROTOTYPE APPROVED**. The Prototype approval is valid for 5 years without limit to the number of vessels built.

INSPECTIONS, TRIALS OF THE 1st VESSEL

SURVEY DURING CONSTRUCTION

NSW Maritime surveyors will inspect the 1st vessel at various stages during construction, in particular:

- Framework completed and ready for plating, or at each layer of reinforcement after setting of resin in GRP construction
- Hull plating and stiffening completed, or completion of framing in GRP construction.
- Installation of machinery, propulsion system, piping systems, electrical systems, fuel tanks, etc.
- Checking of lines plan, bulkheads, arrangement, draft marks etc
- Witnessing of the appropriate stability test

NOTE: The particular survey program for the vessel should be discussed with the surveyor responsible for the prototype approval.

TRIALS ACCEPTANCE

NSW Maritime surveyor will witness and approve load and power capacity tests. The provision of testing facilities and the prototype vessel is the responsibility of the applicant. Where appropriate, the applicant is to submit calculations showing compliance with the relevant requirements.

STABILITY APPROVAL

After the witnessing of an inclining experiment stability test by a NSW Maritime surveyor, 3 copies of a stability report should be forwarded to NSW Maritime for approval. The stability report shall at the very least include a lightship derivation and hydrostatic tables.

The stability report can be complex and may require the services of a consultant naval architect for preparation.

Note: The owner of the Prototype Approval is advised to negotiate with the producer of the approved stability book for unlimited rights to use the stability information for future vessels.

ISSUE OF A PROTOTYPE APPROVAL

On satisfactory completion of all plan approval, stability approval and inspections, the vessel design will be issued with a NSW Maritime Prototype Approval valid in most cases for 5 years.

INITIAL SURVEY PROCEDURE FOR VESSELS BUILT TO A PROTOTYPE APPROVED DESIGN.

APPLICATION FOR INITIAL SURVEY

An APPLICATION FOR INITIAL SURVEY OF A PROTOTYPE APPROVED COMMERCIAL VESSEL form is to be completed and returned to NSW Maritime. **THIS APPLICATION FORM MUST BE SIGNED BY THE OWNER OF THE APPROPRIATE PROTOTYPE APPROVED DESIGN.** Details of any variation from the prototype approval are to be included with the application. The builder must inform NSW Maritime of any proposed modification before building commences. The prescribed fee should be included with the application form.

SUBMISSION OF FEES

Before commencement of any new vessel construction the prescribed fee is to be forwarded to NSW Maritime. Provided the vessel is to be built in accordance with the Prototype Approval, NSW Maritime will acknowledge each application upon receipt of fees as having been approved and issue a unique folio number for each vessel.

SUBMISSION OF PLANS SHOWING VARIATIONS FROM THE PROTOTYPE

Any variations from the Prototype Approval may require submission of information and subsequent approval. The builder must inform NSW Maritime of any proposed alterations before starting building. The required plans or information will be detailed in an acknowledgment letter.

SURVEY DURING CONSTRUCTION

GENERAL

When the design has been acknowledged as being approved, or when any variations have been approved, a NSW Maritime surveyor will inspect the vessel at various stages during construction, in particular

- Framework completed and ready for plating, or at each layer of reinforcement after setting of resin in GRP construction
- Hull plating and stiffening completed, or completion of framing in GRP construction.
- Installation of machinery, propulsion system, piping systems, electrical systems, fuel tanks, etc.
- Checking of lines plan, bulkheads, arrangement, draft marks etc
- Witnessing of the appropriate stability test

NOTE: The particular survey program for the vessel should be discussed with the surveyor responsible for the prototype approval.

VESSELS 6 TO 10 METRES IN LENGTH

A vessel 6 metres and over but less than 10 metres in measured length which is part of a production series of vessels may be issued with certificate of survey, subject to:-

- the design having NSW Maritime prototype approval for a Commercial Vessel, and any variations from the Prototype Approval being approved by NSW Maritime.
- the first and at least every sixth vessel of the series being surveyed in accordance with the USL Code.
- NSW Maritime receiving a Statutory Declaration from the manufacturer stating that subsequent vessels of the series have been constructed to the Prototype Approved drawings and specification, or approved modifications.
- in the case of a G.R.P. hull, each hull being provided with a permanent identification number and mark as issued by NSW Maritime.
- a compliance report from a NSW Maritime surveyor following an inspection prior to the commencement of fitting out, including,
 - the thickness gauging of each G.R.P. vessel after removal from the mould, and
 - the inspection and testing of a panel, not less than 300mm square, which is laid up in conjunction with each G.R.P. vessel and is representative of the bottom hull laminate.

VESSELS LESS THAN 6 METRES IN LENGTH

A vessel less than 6 metres in measured length which is part of a production series may be issued with a certificate of survey, subject to:-

- the design having NSW Maritime prototype approval for a Commercial Vessel, and any variations from the Prototype Approval being approved by NSW Maritime.
- the prototype vessel of the series being surveyed in accordance with the USL Code.
- NSW Maritime receiving a Statutory Declaration from the manufacturer stating that subsequent vessels of the series have been constructed to the Prototype Approved drawings and specification, or approved modifications.
- in the case of a G.R.P. hull, each hull being provided with a permanent identification number and mark as issued by the NSW Maritime.
- a compliance report from a NSW Maritime surveyor following an inspection of the completed vessel.

STABILITY APPROVAL

GENERAL

After witnessing a draft measurement of the vessel, a stability report shall be forwarded to NSW Maritime for approval. This stability report should consist of, the draft measurement for this vessel, calculations showing sistership compliance with the approved Prototype Lightship condition, and a copy of the stamped approved Prototype Stability report.

Note: The owner of the Prototype Approval is advised to negotiate with the producer of the approved stability book for unlimited rights to use the stability information for future vessels.

VARIATIONS FROM THE PROTOTYPE APPROVED STABILITY

The stability report for a vessel operating under conditions that varies from the Prototype Approved stability, may demonstrate compliance using the hydrostatic information and

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Camperdown NSW 1450

inclining experiment data from the prototype. In this case the new submission shall include, a draft measurement report, and calculations showing sistership compliance with the prototype vessel.

WHO TO CONTACT

For information on the Prototype Approval requirements please telephone (02) 9563 8777 between 8:30 am and 4:30 am Monday to Friday. Alternatively you can address correspondence to the Naval Architect by facsimile on (02) 9563 8788 or mail to:

NSW Maritime Authority
Commercial Vessels Branch
Locked Bag 5100
Camperdown NSW 1450

Note - The enclosed information is not intended to explain all aspects of Prototype Approval. The information provided is designed to inform owners, operators, builders, etc. of the general requirements for Prototype Approval in New South Wales, for additional information please contact NSW Maritime on the above number.

PRESENTATION OF DRAWINGS

Plans should be submitted according to one of the following scales:

1:1, 1:2, 1:5, 1:10, 1:20, 1:25, 1:50, 1:75, 1:100. Imperial scaled drawings are only acceptable for existing designs prepared prior to 1987.

For ease of handling and filing, the plans are to be **folded** to A4 size.

Notes:

- 1. Electrical schematics for systems of 32 volts and higher are required for vessels of all lengths and classes.*
- 2. Fuel tank plans (where the tanks are not portable) are required for vessels of all lengths and classes.*

DETAILS REQUIRED ON PLANS

The minimum level of detail to be provided on plans is as follows:

TYPE OF PLAN (WHEN REQUIRED)	DETAIL REQUIRED
General Arrangement	Tanks, deck openings, seating and berthing, bulkhead locations, accessways, bulwarks & railings, navigation lights, ventilation, ballast, buoyancy material, the intended use of each space, watertight closing appliances.
Lines Plan	Body plan, sheer plan, draft marks and watertight bulkhead locations.
Sail Plan (Sailing vessels only)	Location and size of sails and underwater profile of vessel from keel to truck.
Damage Control Plan (Vessels 35 metres and over)	Boundaries of watertight compartments, openings, and means for closure, arrangements for correcting list.
Structural Drawings	Structural profile and decks, bulkheads, sections, superstructure, engine girders, fastening/welding/layup details, material details, thickness and material of windows and window frames.
Rudder and Steering Gear	Stock and bearings, construction, couplings, emergency steering, and materials used.
Structural Fire Protection	Type and disposition of fire divisions, alternative fire protection systems, locations of escapes.
Machinery Arrangement	Arrangement and function of main and auxiliary machinery.
Piping Schematic	Bilge, fuel, sanitary, venting, exhaust, steam, etc. Valves and overflows.
Electrical Schematic (32 Volts and over)	Electrical equipment, wiring overload, low voltage and other protection devices, emergency power arrangements where necessary.
Shaft Line	Propeller Shafts, brackets, material details, couplings, stern tube and bearings.
Freestanding Fuel Tanks	Construction, Baffles, Support, materials.
Fire Control Plan (Vessels 35 metres and over)	Location and type of life saving appliances, access routes.
Sewage holding tank details	For all vessels operating on Sydney Harbour, Murray River or inland waters.