

FORM Q-108

RECOMMENDED FORM FOR QUALIFYING THE VESSEL DESIGN AND THE PROCEDURE SPECIFICATION USED IN FABRICATING CONTACT-MOLDED, FIBER-REINFORCED PLASTIC PRESSURE VESSELS (CLASS I)

(Revision D — 2023)

(A change in any of the essential variables denoted by an asterisk below requires a new Procedure Specification.)

I. Procedure Specification Number _____

II. Vessel or Vessel Part Identification _____ (Use separate sheet for each separate part or component)

III. Materials for Vessel/Vessel Part or Secondary Overlay _____

Table with 5 columns: Reinforcements, *Fiber Type, *Fiber Form, *Manufacturer, *Manufacturing No. Rows 1-4 for Material No. 1-4.

Table with 4 columns: Resin System, Material Type, Manufacturer, Manufacturing No. Rows *1-3 for Resin, Catalyst, Promoter.

IV. Laminate Construction for Vessel or Vessel Part (Use separate sheet for each part)

*Total Number of Plies _____ Total Thickness _____

*Ply Sequence and Orientation (Ply No. 1 next to process)

Table with 4 columns: Ply No., Fiber Material No., Fiber Orientation, Reference Axis. Multiple rows for data entry.

(Use additional sheets if necessary)

*Cure Method _____ *Post Cure _____ (Temperature) _____ hr

*Design Barcol Hardness _____ +/- _____

*Design Fiber by Weight _____ % +/- _____ %

V. Assembly of Vessel Parts _____

Bond to Join Vessel Part A _____ to Vessel Part B _____ (Use separate sheet for each Joint)

*Method of Surface Preparation for Secondary Overlay _____

*Distance of S.P. From Mating Joint: Part A _____ (Length) Part B _____ (Length)

Overlay Construction — Interior Surface (if applicable)

*Number of Plies _____ Thickness _____ *Overlay Length _____

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*Ply Sequence and Orientation (Ply No. 1 next to joined parts)

<u>Ply No.</u>	<u>Fiber Material No.</u>	<u>Fiber Orientation</u>	<u>Reference Axis</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Use additional sheets if necessary)

*Cure Method _____ *Post Cure _____ hr
(Temperature)

*Design Barcol Hardness _____ +/- _____

*Design Fiber by Weight _____ % +/- _____ %

Overlay Construction — Exterior Surface

*Number of Plies _____ Thickness _____ *Overlay Length _____

*Ply Sequence and Orientation (Ply No. 1 next to joined parts)

<u>Ply No.</u>	<u>Fiber Material No.</u>	<u>Fiber Orientation</u>	<u>Reference Axis</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Use additional sheets if necessary)

*Cure Method _____ *Post Cure _____ hr
(Temperature)

*Design Barcol Hardness _____ +/- _____

*Design Fiber by Weight _____ % +/- _____ %

VI. Summary

Component/Part Fabrication

<u>No.</u>	<u>Part Identification</u>	<u>Procedure Specification</u>
<u>1</u>	_____	_____
<u>2</u>	_____	_____
<u>3</u>	_____	_____
<u>4</u>	_____	_____
<u>5</u>	_____	_____
<u>6</u>	_____	_____

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Component/Part Assembly

<u>No.</u>	<u>Part A</u>	<u>To</u>	<u>Part B</u>	<u>Specification Number and Revision</u>
<u>1</u>	_____	_____	_____	_____
<u>2</u>	_____	_____	_____	_____
<u>3</u>	_____	_____	_____	_____
<u>4</u>	_____	_____	_____	_____
<u>5</u>	_____	_____	_____	_____
<u>6</u>	_____	_____	_____	_____

*Vessel Volumetric Expansion _____
(Volume)

*Vessel Weight _____

Qualification

Vessel(s) Serial Number(s) _____

Design Report Number and Revision _____

Test Report Number _____

ASME Section X _____
Edition Year _____ Code Case No. _____

CERTIFICATION OF QUALIFICATION OF DESIGN AND FABRICATION PROCEDURE

We certify that the statements made in this Specification are correct.

Qualification Vessel by _____ at _____
(Fabricator) (Location)

Date _____ Signature _____

Our Certificate of Authorization No. _____ To use the Certificate Mark with RP Designator expires _____

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by _____ of _____ have witnessed the tests by which the design of the vessel(s) and the fabrication procedure have been qualified and state that, to the best of my knowledge and belief, these tests of the prototype vessel(s) and the fabrication procedure employed in constructing the vessel(s) satisfy the requirements of Section X of the ASME BOILER AND PRESSURE VESSEL CODE, Fiber-Reinforced Plastic Pressure Vessels.

By signing this certificate, neither the Inspector nor the Inspector's employer makes any warranty, expressed or implied, concerning the design or procedure covered by the Fabricator's Design Report. Furthermore, neither the Inspector nor Inspector's employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date _____ Commission _____
(National Board Authorized Inspector Number)

(Authorized Inspector's Signature)