

FORM Q-107
RECOMMENDED FORM FOR QUALIFYING THE VESSEL DESIGN AND THE PROCEDURE
SPECIFICATION USED IN FABRICATING FILAMENT-WOUND FIBER-REINFORCED PLASTIC
PRESSURE VESSELS (CLASS I)
(Revision B — 2011)

Procedure Specification No. _____

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

*Fiber _____
(Manufacturer and Designation)

*Sizing or Finish _____
(Manufacturer and Designation)

*Resin _____
(Type, Manufacturer, and Designation)

*Curing Agent _____
(Type, Manufacturer, and Designation)

Viscosity of Resin System _____ cP (min.) to _____ cP (max.) @ _____ °F (°C)

*Manner of impregnation _____
(Prepreg, Wet Wind, Postpreg)

*Percent Fiber by Weight in Composite _____

***Variables of Winding Process**

Helix Angle _____ (measured on cylinder between axis and band path)

Pattern Description _____

Band Density: Helical _____ end/in. (end/mm) Circumferential _____ end/in. (end/mm)

Bandwidth: Helical _____ in. (mm) Circumferential _____ in. (mm)

Tension: Per Strand (End), Roving, or Band (specify which) _____ lb (N) per _____

Method of Control _____ Program _____

Layer Sequence _____
[Note (1)]

Ratio Hel./Circ. in Cylinder _____

*Curing Schedule _____ °F (°C) for _____ hr _____ min
_____ °F (°C) for _____ hr _____ min
_____ °F (°C) for _____ hr _____ min
_____ °F (°C) for _____ hr _____ min
_____ °F (°C) for _____ hr _____ min

Manner of Measuring Temperature: Oven Air _____ Winding Surface _____

Mandrel _____ Other _____
(Describe)

*Liner _____
(Manufacturer and Designation) (Thickness)

(Method of Installing Liner)

NOTE:

(1) Use X to indicate layer of helical winding

(a) "O" to indicate full layer of circumferential windings (down and back)

(b) "o" to indicate half-layer of circumferential windings (one pass)

Where a range of values or a tolerance applies, state the applicable range or tolerance.

FORM Q-107 (CONT'D)
(Revision B — 2011)

Manner of Reinforcing Openings _____
(Describe)

*Pole Pieces _____
(Material)

(Method of Installing: Wound-in, Bonded, etc.)

(Auxiliary Uses)

Head Contour _____
(Describe)

Type of Mandrel _____
(Describe)

Type of Winding Machine _____
(Describe)

*Weight of Vessel _____

*Barcol Hardnesses and Location _____

*Volumetric Expansion _____

Qualification:

Vessel(s) Serial Number(s) _____

Design Report Number _____

Test Report Number _____

ASME Section X _____

Edition and Addenda (if applicable) Date

Code Case No.

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

Date _____ Signed _____
(Fabricator)

By _____

Certification of Authorization No. _____ Expires _____

CERTIFICATION BY SHOP INSPECTOR
OF QUALIFICATION OF DESIGN AND FABRICATION PROCEDURE

Procedure Specification of _____ at _____
for _____ process of fabricating vessel(s) described in
_____ Design Specification and _____
(User) (Fabricator)
_____ Design Report Number _____

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 his employer makes any warranty, expressed or implied, concerning the design procedure covered by the Fabricator's Design Report. Furthermore, neither the Inspector nor his 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 Number and Endorsement)

(Authorized Inspector's Signature)