

TROY DUALAM INC.

Leaders in Fiberglass & Dual-Laminate Composite Equipment



QUALITY

INTEGRITY

ENGINEERED SOLUTIONS

TRACK RECORD

MATERIALS TECHNOLOGY

Proud to uphold the tradition of
CPF Dualam® & Troy Manufacturing



ENGINEERED COMPOSITES

- CORROSIVE APPLICATIONS
- MATERIAL SELECTION
- DESIGN
- ENGINEERING
- FABRICATION
- TESTING



CORROSIVE APPLICATIONS

Troy Dualam® is a leader in the fabrication of corrosion resistant FRP (Fiberglass Reinforced Plastic) and Dualam® (thermoplastic lined FRP) equipment. Troy Dualam® is the result of the acquisition of CPF Dualam® and Troy Manufacturing. We offer a complete supply of Towers, Scrubbers, Tanks, Hoods, Piping, Duct and custom equipment. Manufactured to your specifications and delivered on time. No project is too small or too big.

Our FRP & Dualam® equipment service some of the most corrosive applications found in the following industries:

- ◆ Chlor-Alkali plants
- ◆ Bleach plants
- ◆ Chemical processing
- ◆ Metal & mineral refining
- ◆ Flue Gas Desulfurization (FDG)
- ◆ Pharmaceuticals
- ◆ High Purity Chemicals
- ◆ Water & Wastewater treatment
- ◆ Odor control
- ◆ Fertilizer plants
- ◆ FDA industry
- ◆ Other highly corrosive materials and harsh operating environments

PRODUCTS

Tanks, Scrubbers & Towers

- ◆ Up to 35' diameter
- ◆ Insulated & heat traced
- ◆ Engineered, designed & fabricated to meet customer specifications & industry standards
- ◆ RTP-1 design & Q.A. system

Pipe, Fittings & ducting

- ◆ 1" to 35'
- ◆ Full radius, smooth flow elbows
- ◆ Integral flanges & branches (for headers)
- ◆ Pipe support & hangers can be designed, fabricated & installed

Advantages:

- ◆ Low maintenance costs
- ◆ Long service life
- ◆ Lightweight
- ◆ High degree of abrasion resistance
- ◆ Low installation costs
- ◆ Very complex shapes
- ◆ Natural insulation properties of polymer composites
- ◆ Resistant to a broad range of corrosive materials.

DUAL-LAMINATES

A cost effective alternative to lined steel and expensive metal alloys. Several types of thermoplastics can be used in fabrication process including PVC, PP, CPVC, PVDF, ECTFE, ETFE and Teflon® FEP & PFA. A thermoset bonding layer provides mechanical or chemical bond and electrically conductive material allowing for spark testing or liner leak detection, a CPF Dualam® patented system.

TOWERS



Advantages:

- ◆ Optimum resistance to corrosive chemicals
- ◆ Lightweight: Dual laminate pipe weighs approximately 75% less than lined steel
- ◆ Versatile: Dual laminate piping can be used in full vacuum.
- ◆ Safe: Dual laminate pipe will not externally corrode in industrial environments.
- ◆ Reliable: Dual laminate pipe is not de-rated with temperature increase unlike thermoplastic pipe.
- ◆ High purity materials for food & drugs industry.

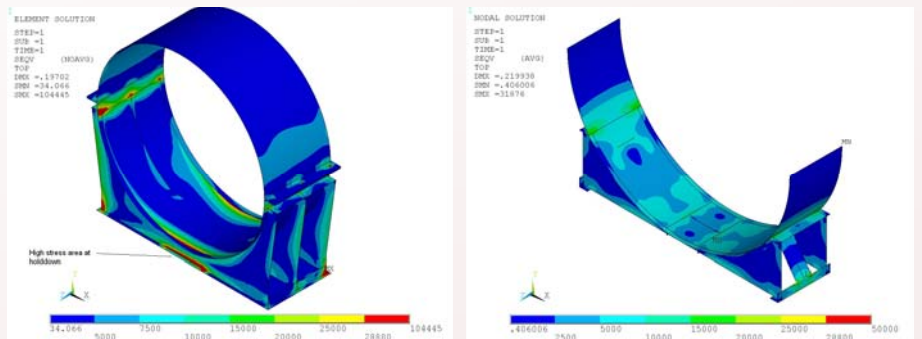
DESIGN & ENGINEERING

We offer in-house P. Eng. stamped drawings and calculations. We have 3D design capabilities using SolidWorks® solid modeling software which provides AutoCAD® drawing compatibility. Benefits:

- ◆ 3D design coordinate data
- ◆ Ability to use “reality modeling” (point cloud) data
- ◆ 3D laser scanning and “comparative” analysis
- ◆ Ability to perform Pipe Stress Analysis
- ◆ Finite Element Analysis (FEA)
- ◆ Support design



HOODS & DUCTS



ORTHOWINDING

Ortho winding is a highly efficient process for creating tank structures using a 2 axis numerically controlled winder. The hoop winding is approximately 89°. At the same time, axial reinforcement is applied using unidirectional glass. TROY has been building long lasting, highly reliable tanks with this method since 1998. Optimum strength is provided by oriented glass fibers. 71% in the hoop direction and 29% in the axial direction, although actual results may vary slightly.

INDUSTRY STANDARDS

- > C.G.S.B. 41-GP-22 & PS15-69 - FRP Process Equipment
- > DIN 16965 / DIN 16966 - Wound Glass Reinforced Polyester Resin Pipes & Fittings
- > British Standard - BS4994 & BS6464 for Reinforced Plastic Tanks & Piping.
- > Fiberglass Reinforced Plastics Institute (“FRPI”): Certificate #FRPI-003
- > ASME RTP-1 - Reinforced Thermoset Plastic Corrosion Resistant Equipment



SHOP FABRICATION
EQUIPMENT INSTALLATION
INSPECTION SERVICES
ENGINEERING SUPPORT

PIPE & FITTINGS

TESTING

- ◆ Barcol Hardness
- ◆ Acetone Sensitivity
- ◆ Loss on Ignition (LOI) testing
- ◆ Full vacuum and pressure testing
- ◆ Acoustic emission testing
- ◆ Strain gauge measurements
- ◆ Spark testing
- ◆ Laminate coupon testing

Throughout the fabrication process, all aspects are continually monitored and must pass rigorous quality assurance criteria.



FIELD SERVICE & INSTALLATION

- ◆ Installation services
- ◆ Repairs & preventative maintenance

CONSULTING SERVICES

- ◆ Onsite evaluation
- ◆ Onsite supervision
- ◆ Inspection
- ◆ Engineering
- ◆ Materials recommendation

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Industry Affiliations

- ◆ ASTM
- ◆ NACE
- ◆ FRPI
- ◆ ACMA
- ◆ Founding member of DLFA