



## Firm Overview/Capabilities Statement



Encorus Group is a professional engineering, testing and inspection services firm headquartered in Buffalo, NY. The firm was founded in 1996 and has a staff of over 70 full-time employees. This includes licensed Professional Engineers in all major disciplines, a registered architect and field personnel to support our established and accredited civil materials testing laboratory. Additionally, Encorus Group is verified as a Service-Disabled Veteran-Owned Small Business (SDVOSB) at both the Federal and New York State levels.

### Engineering/Architectural Services

Encorus Group's design team includes a registered architect, multi-state licensed Professional Engineers, junior engineers, drafters, and administrative personnel. The group spans many disciplines including architecture, civil, structural, mechanical, electrical, process controls, and fire protection engineering, as well as litigation support and forensic engineering services. This allows us the breadth of experience typically found only in larger firms. Encorus also has an audited and approved ASME NQA-1 Quality Assurance Program in place.

### Civil Materials and Non-Destructive Examination Services

Encorus Group operates an accredited civil materials testing laboratory. This division provides field inspection of concrete, masonry, soils, asphalt, structural steel, and other construction related materials, as well as the associated laboratory testing required to meet rigorous specifications and standards. Non-destructive testing services include welding inspections, ultrasonic, magnetic, particle, liquid penetrant, and radiographic testing. Our field and laboratory technicians and inspectors are trained and certified to a variety of standards including ACI, CWI, and NICET.

### Inspection Services

Encorus provides a complete range of inspection services, including field inspections, data evaluation, detailed reporting, fitness for service evaluations and development of repair procedures as necessary. Our staff is certified in a variety of disciplines including API 510 pressure vessel inspections, API 653 Storage Tank inspections, API 570 Process Piping inspections, and includes Certified Welding inspectors, Steel Tank Institute SPO01 inspectors, and ASNT-TC-1A and NBIC qualified inspectors.

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### Applicable NAICS Codes

541310: Architectural Services  
541330: Engineering Services  
541340: Drafting Services  
541380: Testing Laboratories

### Engineering/Architecture Services

- Civil
- Electrical
- I+C Engineering
- Fire Protection
- Forensic/Expert Witness
- Mechanical
- Process
- Structural
- Architecture

### Testing, Inspection and NDE Services

- Civil Materials
- Concrete, Soils, Asphalt and Structural Steel
- Mechanical Integrity Asset Management
- Non-Destructive Examinations
- Pressure Vessel Design and Analysis



## Master Services List

### Services Overview:

#### Our Engineering/Architecture Services:

- Civil Engineering
- Electrical Engineering
- I+C Engineering
- Fire Protection Engineering
- Forensic Engineering/Expert Witness
- Mechanical Engineering
- Process Engineering
- Structural Engineering
- Architecture

#### Our Testing & Inspection Services:

- Civil Materials Testing & Inspection
- Field & Laboratory Testing Services for Concrete, Soils, Asphalt & Structural Steel
- Mechanical Integrity Asset Management
- Non-Destructive Examinations
- Pressure Vessel Design and Analysis

### Services in Detail:

#### Engineering Design

##### Civil Engineering:

- Drainage Design
- Pumping station design
- Land development
- Radiological Waste Handling
- Design/Build support
- Civil Materials Testing Oversight
- Construction Support
- Dams/Ponds
- Sanitary Sewer Collection/treatment
- Potable Water Source Development, treatment/distribution
- Stormwater/SWPP Plans/Inspection
- Hydraulics/Hydrology
- Environmental Documentation Support

##### Structural Engineering:

- Seismic Design
- Feasibility Studies
- Crane Design:
  - Monorail
  - Gantry
  - Modifications
- Shipping Container Evaluations
- Seismic Evaluations
- Finite Element Analysis
- Independent Reviews
- Forensic Engineering
- Existing Structure Evaluation/Repair

##### Electrical Engineering:

- Single Line Drawing Development with P.E Stamping
- Power Distribution Design
- Power Equipment Sizing and Specification
- Service Entrance and Building System Designs
- Raceway Systems
- Ground Grid Systems

- Lightning System/Protection Design
- Protective Device Coordination Studies
- Load Flow, Short-Circuit and Arc Flash Analysis
- Efficiency Studies
- Cost Estimation
- Field Support
- Solar System Evaluation & Design
- Substation/Switchgear Design
- M.C.C. Design
- Low and Medium Voltage Power Distribution Design

##### I+C Engineering:

- PLC and HMI Software Programming Control System Design
- Control Panel Design
- SCADA System Design & Integration
- DCS (PlantPAx)
- Instrumentation sizing and specification
- Coordination for process integration and upgrades
- Modicon
- Instrument and Equipment Tagging
- Cost Estimation
- Field Support
- Network Design
- Audio System Design
- Allen Bradley Certified Service Integrator
- SIL & SIF Evaluations
- Safety System Design

##### Fire Protection Engineering:

- Lightning Protection Assessments
- Custom Fire Detection Design and Special Detection Applications
- Special Hazards Suppression System Design
- Glovebox, Hot Cell, Lab Hood Fire Suppression Design
- Life Safety Code Evaluations and Assessments
- Emergency Planning and Hazards Assessments
- Fire Barrier Design, Repair and Management
- Code Interpretation/Application

##### Forensic Engineering:

- Origin and Cause Determination
- Expert Witness
- Litigation Support
- Code Compliance
- Risk Avoidance Evaluations
- Finite Element Analysis
- Examination & Evaluation of:
  - Electrical Systems
  - Drainage Systems
  - Fire Protection Compliance
  - Mechanical Equipment
  - Pressure Vessel Components
  - Equipment Modifications

##### Architecture:

- Planning and Design
- Building Assessments
- Construction Administration
- Design-Build Support
- Non-Destructive Exterior Envelope Surveys
- Roof Assessment and Design



## Master Services List

### Mechanical Engineering:

- Pressure Vessel Design and Analysis
- Computer Aided Engineering
- HVAC
- Containment Structures
- Decontamination & Decommissioning
- 3D Modeling
- Finite Element Analysis

### Process Engineering:

- Evaluation of new and existing process for optimization
- Heat and Mass Balance (HMB) Calculations
- Process flow Diagrams (PFD's)/Block Diagrams
- Piping & Instrumentation Diagrams (P&ID's)
- Process Safety Management (PSM) Assistance
- Process Hazard Analysis (PHA)
- Area Classification Studies
- Pressure Safety Valve (PSV) and Pressure Relief Valve (PRV) Sizing
- Equipment Sizing and Selection
- Code reviews
- Construction Services
- Commissioning Services

### Procurement Engineering:

- NQA-1 Commercial Grade Item Dedication (CGID)
- Basic procurements
- Electrical, Mechanical, Civil, Fire Protection components procured, or full systems.

### Project Management:

- Complete project management from inception through completion
- Development of cost estimates, schedules, and project scope documentation
- Development of Project Risk Management Plans
- Application of Earned Value Management processes
- Development of Work Breakdown Structures (WBS)
- Development of Estimates at Completion (EAC), etc.
- Assistance in standardizing project tools and processes

### Operations and Maintenance:

- Field Engineering Support
- Testing, Start-Up, Operation and Maintenance Procedures
- Specifications for new and replacement equipment/ systems

### Civil Materials Testing

#### Field Testing/Inspections:

- Concrete Field Inspections
- Floor Flatness Testing
- In-Place Density Testing
- Fireproofing/Fire Stopping Inspections
- Certified Welding Inspections
- ICC Special Inspections
- Asphalt Field Testing
- Wood Framing Inspections
- EIFS Inspections
- Masonry Inspection
- Structural Steel Inspection
- Anchor Bolt Pull Testing
- Dynamic Cone Penetrometer Testing

### Laboratory Testing:

- Compressive Strength Testing
- Concrete Mix Design Verifications
- Grain Size Analysis
- Atterberg Limits Testing
- Hydrometer Analysis
- Asphalt Testing
- USCS Soils Classification
- Specific Gravity Testing
- Standard/Modified Proctors
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### Non-Destructive Testing:

#### SNT-TC-1A Compliant Non-Destructive Testing:

- Ultrasonic Shearwave Testing
- Ultrasonic Thickness Testing
- Magnetic Particle Testing
- Liquid Penetrant Testing
- Visual Testing
- Radiographic Testing
- Phased Array

### Additional Services:

- Positive Materials Identification
- Hardness Testing
- Remote Visual Inspection
- Leak Testing
- NACE Coatings Inspections
- Metallurgical & Lab Testing
- Vacuum Box Testing
- Welder Qualification Testing:
  - PQR/WPS/WPQ

### Mechanical Integrity Services

- API 510 Pressure Vessel Inspections
- API 570 Process Piping Inspections
- API 653 Storage Tank Inspections
- NBIC Inspections
- Steel Tank Institute SPO01 Inspections
- Pennsylvania DEP Tank Inspections
- NACE Coatings Inspections/ Specifications
- Certified Welding Inspector - CWI
- Ground Penetrating Radar
- Repair Procedure Development
- API Risk Based Inspection Programs
- Fitness for Service/Failure Analysis Investigations
- Vendor Surveillance
- NYS DEC Chemical Bulk Storage Inspections
  - Five Year Inspections
  - Annual Inspections
  - Spill Prevention Reports
  - Professional Engineer Review and Sign Off
  - New Installation compliance documentation
- NYS DEC Petroleum Bulk Storage
  - Aboveground/underground tank inspections
  - Operator Training for Underground Tank Systems
- EPA Spill Prevention Control and Countermeasure Plans
- P&ID Field Walk downs and Verification
- Field Drafting – Equipment Drawings /Piping Isometrics
- Pressure Relief and Vent System Design Basis
- Inspection Management Services – Program Development/Turnaround Planning