



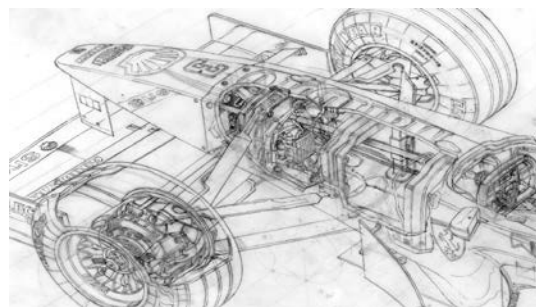
EnggDesign

ANALYSE DESIGN & DELIVER

EnggDesign Overview Brochure 2019

Who is EnggDesign?

EnggDesign is a multidisciplinary entity derived from the comprehensive experience of research, design, manufacturing, quality assurance and management. EnggDesign is a consulting engineering firm that offers leading technical expertise and provides cost effective solutions to customers' needs.



Why EnggDesign?



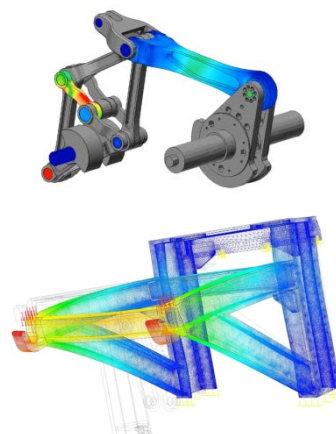
It is less practical for many companies to maintain in house multidisciplinary experts, especially design and engineering team. That is where we come in to picture. Whenever you need us, either for one-time project, or for recurring engineering and management services. With strong academics, diverse experience and understanding of codes and standards, we can offer a range of services for mechanical industry.

What services do we provide?

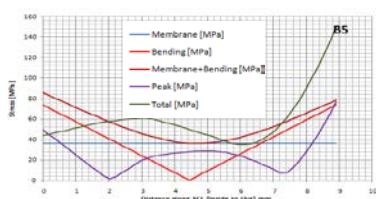
Innovation & New Product Development

We convert idea or concept into final product including all aspects of product life cycle management i.e. load, geometry, material, manufacturing processes, environment, operation and maintenance. Some of the areas in which we offer dedicated services are:

- Design of heavy engineering equipment
- Design of welded structures
- Product design using composite materials
- Mechanical testing and material characterization
- Reverse engineering and retrofitting



Design of Pressure Vessels as per ASME Section VIII -1, Section VIII-2 and EN - 13445

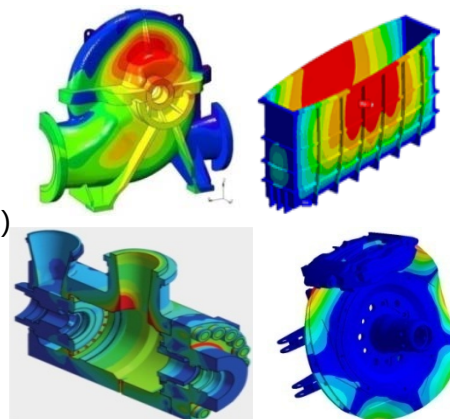


- ASME VIII-1 (Design by rule)
- PV-Elite, Metastack and Excel calculations
- ASME VIII-2 (Design by analysis)-Detailed analysis including stress linearization and stress evaluation against respective categories
- Fatigue life estimation (ASME VIII-2)
- Creep and creep fatigue interaction (API-579)
- Fitness for Service (FFS) evaluation as per API -579-2 and ASME FFS-2 (this will help client to take run-repair-replace decisions and to decide whether pressurized equipment containing flaws can continue to operate safely for desired time)

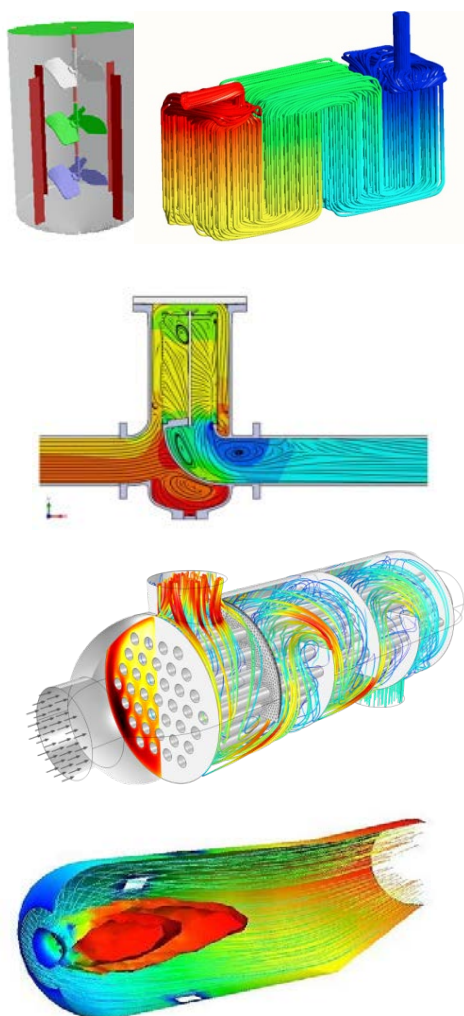
Finite Element Analysis & Simulation Driven Design

We provide our clients with reliable and professional finite element analysis consulting services. With our skilled team of engineers and use of best-in-class analysis and design tools, we assist our clients in their urgent or complex projects of any size and scope. Our industrial and academic experience is diverse and spans many fields from process and heavy engineering equipment to steel structures, automotive components and mechanical machines. Our expertise includes the following :

- Linear Static (component & assembly level) analysis
- Geometric nonlinear (stress stiffening, large strain etc.)
- Material nonlinear (creep, plasticity, viscoelasticity, etc.)
- Contact nonlinear (friction)
- Fatigue analysis (LCF/HCF and damage tolerant models)
- Dynamic analysis / Modal analysis
- Design optimization FEM consulting
- Materials characterization
- Composite materials



Computational Fluid Dynamics (CFD)

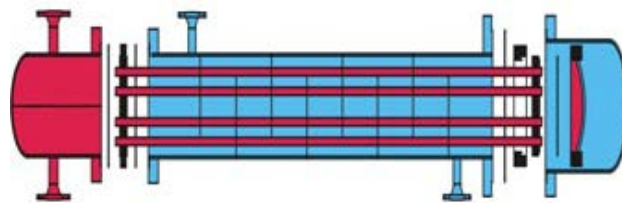


Computational Fluid Dynamics (CFD) analysis uses numerical methods and algorithms to solve governing equations to predict the solutions regarding fluid flows, heat transfer, temperature, velocity, pressure distribution and energy. CFD analysis is a basically a virtual prototyping tool, deployed in the design process to solve the complex fluid flow phenomena, thereby giving us an insight to the physics, help us to modify and predict the effect of such modifications. This will accelerate the overall system development time and avoid complex trial-error experimental route. Our expertise in CFD includes the following :

- Aerodynamics
- Process flow modelling (air and flue gas)
- Heat exchangers
- Oil and gas applications
- Agitators and mixing
- HVAC and data centers
- Combustion and flare modelling
- Flow Control devices and manifolds
- Boiler, steam generator, HRSG
- ESP, Bag filters, SCR & environmental control systems

Design of Heat Exchanger as Per TEMA, ASME and IS:4503 Standards

- Thermal design aspects (Heat transfer coefficient, LMTD and pressure drop)
- PV-Elite, Metastack and Excel calculations
- Mechanical design and structural integrity assessment as per TEMA, ASME or IS : 4503



Design of Storage Tank, Column and Stack



- Design of storage tank (fixed and floating roof type) as per API 650, API 620 and IS :803
- Design of column as per ASME VIII-1 and VIII-2
- Design of stack/chimney as per IS : 6533

Design of Silo and Bulk Solid Storage Systems

- Silo load development as per IS : 9178 or Eurocode
- Structural optimization for desired flow pattern
- Structural integrity assessment as per IS : 9178 or Eurocode
- Design of other structural steel members as per IS : 800



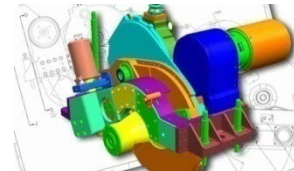
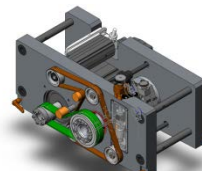
Design of Circular Bellows as Per EJMA Standard



- Design as Per EJMA Standard
- In depth fatigue life assessment
- Design for reliability

Custom Build Engineering solution

- Development of tooling, jigs and fixtures for manufacturing
- Development of SPM



Project Management Consultancy



- Expert advice on design, planning and management of mechanical engineering projects
- Project feasibility study & preparation of the project report based on customer requirements with detailed scope, design basis, process scheme, technical details, layout, PFD, Technical performance parameters, feasibility study based on cost, training and warranty
- Technology upgradation and retrofitting
- Turnkey plants & EPC projects
- Technical audit & stagewise inspection based on customer requirements
- Procurement and supply chain management
- Process improvement, lean management and six sigma

Process Design and Engineering



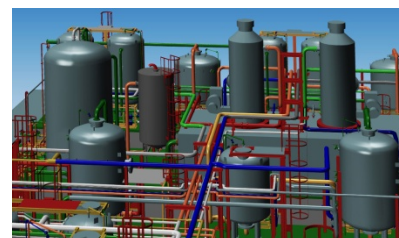
We provide consultancy in process plant design and engineering, Process trouble shooting and modernization of existing plants.

- Cane juice, molasses, multi grain-based distillery
- Ethanol dehydration plant
- Solvent recovery plant for various chemical and pharma Industries
- Evaporation plant, ZLD plant,
- Water treatment plant
- Effluent treatment plant.

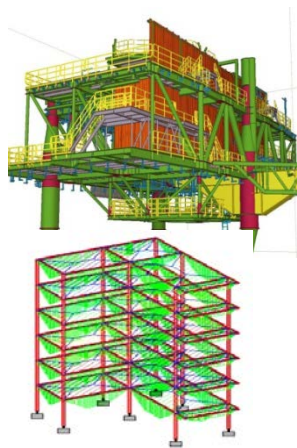
Piping Engineering

Our piping and detailing team has thorough understanding of International design codes and standards like ASME, API, WRC, NEMA, SNT, DNV used across domains like oil and gas, power, chemical, petroleum and fertilizer. We are proficient in following piping design activities:

- Plant designing and piping layout
- Piping stress analysis
- Material and pipe support for critical piping systems
- Modelling of equipment & piping systems viz. compressor, steam turbine, pump, heat exchanger, pressure vessel, storage tank, separator, columns, AFC layout and drums
- GAD and isometric drawings preparations
- expertise in the oil and gas, onshore, chemical, natural gas, LNG, petrochemical, refinery, offshore floating production storage, tension leg platforms and fixed platforms.
- Software proficiency involves CADWORX, CAESAR-II, Auto Pipe, PDMS, SP3D, Navisworks, SPR and PV-elite



Structural Design and Engineering



Our services covers complete civil/structural engineering with detailed construction and fabrication drawings. Our technical team has understanding of codes like BS, IS, AISC, ASCE, API & AWS along with expertise in software like STAAD-Pro, Tekla and Revit structures.

We provide design and engineering support across variety of domains viz. process plants, power plants, oil and gas platforms, refineries, chemical plants, steel plants, waste water treatment plants, sugar factories, structures like steel/RCC chimneys, boiler supporting structures, turbogenerator foundation design, offshore platforms, material handling structures like conveyor galleries, trestles, transfer points and crusher house

Pressure Equipment Manufacturing

We provide manufacturing, supply and commissioning of following process equipments

- Heat exchanger
- Quick opening closures
- Distillation columns
- Storage vessels
- Storage tanks
- Agitators , drums and bottles
- Reactors and stack



Training

- Pressure vessel engineering course - foundation course covering fundamental aspects of pressure vessel design using ASME Section VIII, div-1 and div-2
- Simulation driven design - covers all aspects in product development using CAE.
- Welding technology course (Welding processes, inspection and metallurgy) as per API 577



Analyze, Design and Deliver



Continual learning and excellence in transforming ideas into reality is our way to solve engineering problems. We are well prepared to handle the challenges in today's competitive market. Our major focus is on customer satisfaction achieved through proactive response, positive relationships and quality consciousness. You can count on us for all your engineering needs, with promise from our side for reliability and promptness in Analyze, Design and Deliver...!

About US

EnggDesign was established in 2017 with an approach to create an integrated module and one stop solutions for mechanical engineering systems. Promoters of the organization have excellent academics and diverse collective experience in design, engineering & project management across variety of domains viz. automotive, aerospace, energy systems, power plants, chemical, pharmaceutical, petrochemical, refinery, manufacturing and process industries.

Promoters

- Eshwar Pawar, B.E. Mech (COEP), MBA (Mktg)