STREAMLINE
PIPELINE ENGINEERING

CFD & FEM
Analysis

SIMULATIONS
CONSULTING
DESIGN

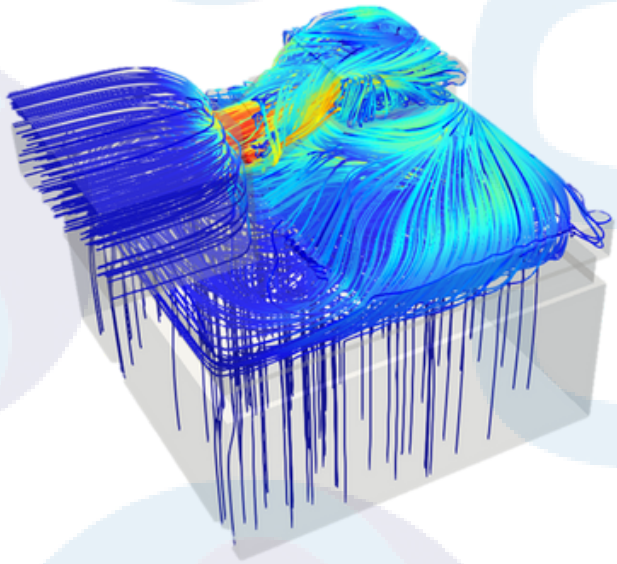
OUR SERVICES

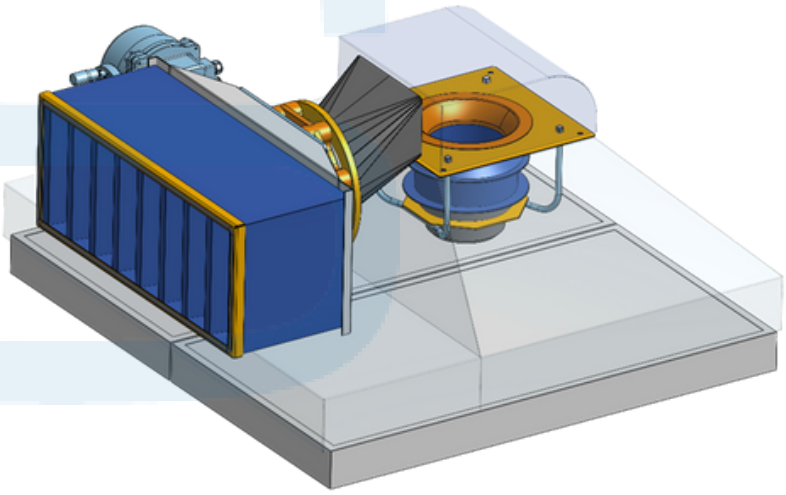
Our team of qualified engineers collaborate to deliver **advanced solutions** to our clients by giving them full support through both Conceptual and Detailed Design phases.
We have developed complex projects using **CFD & FEM** capabilities to finalize the Product Design or to solve a wide range of specific problems.

Health, Safety & Environment

CFD turns out to be a powerful tool, able to simulate complex scenarios defined by statistical studies on major accidents, otherwise impossible to reproduced with experiments in situation at high risk or simply to be evaluated with analytical approach. Typical applications in HSE area, studied by means of CFD, are:

- Indoor-outdoor **pollutant dispersion**
- **Risk analysis** of heat source in industrial plant
- **Gas storage** and **gas transport** system behaviour



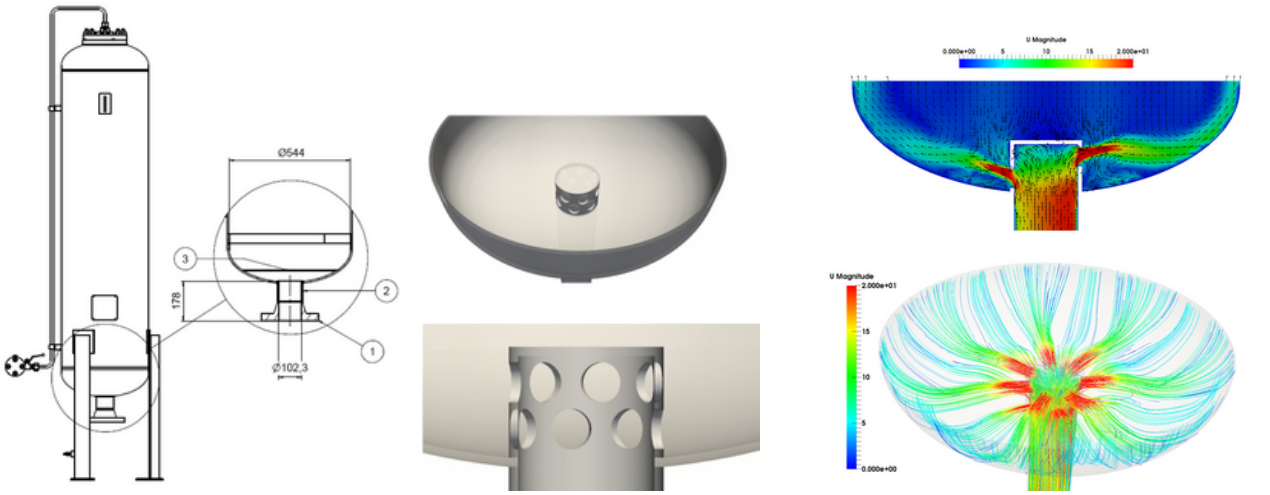


System and Equipment Design & Optimization

The engineering application of CFD and FEM software gives high-relevant support to the client, thanks to its characteristic flexibility and the ability to answer effectively a diverse variety of requirements. This approach is taking off for its ability of producing both a comprehensive analysis of a new product idea and to deeply inspect an individual feature of a product already present in the market, all in a cost-effective manner.

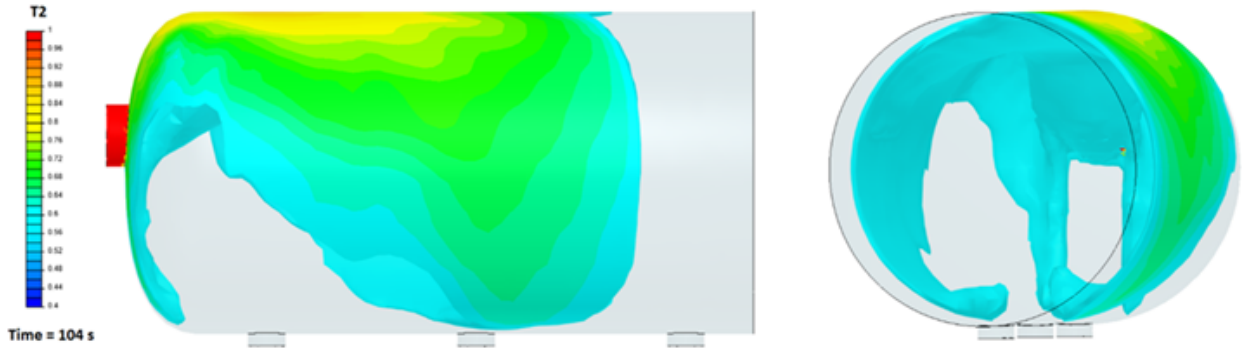
We gained expertise in the modelling and optimization of several devices:

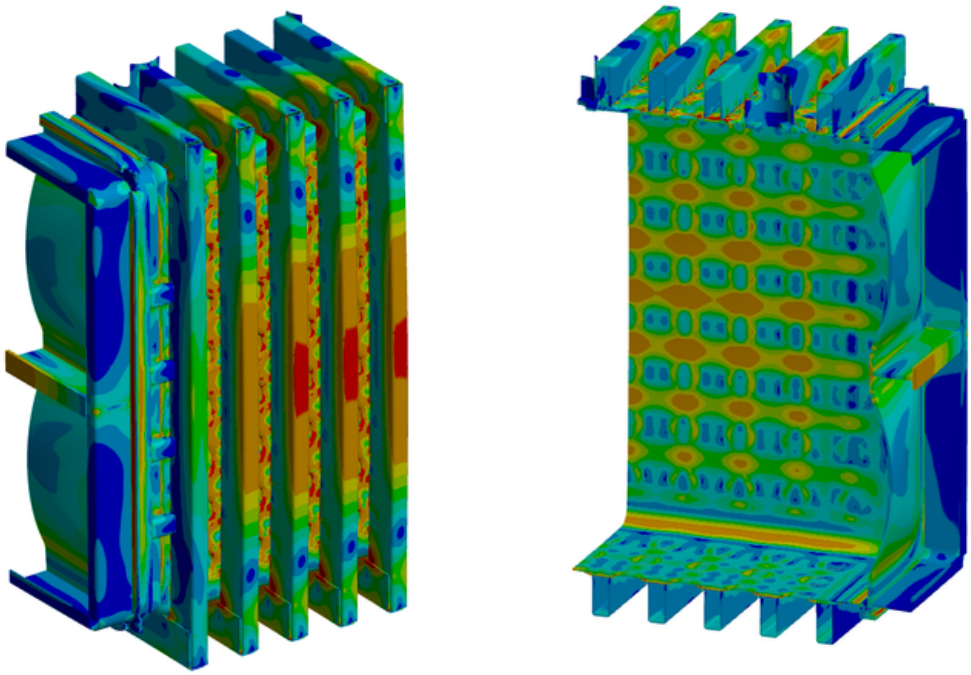
- **Control Valves** and **General Fittings**
- **Heat Exchangers**
- **Tanks** and **Pressure Vessels**
- **Rotating Machinery** (Fans and Pumps)



CFD studies involved the **characterization** and **improvement** of **internal flows**, fluid circulation and heat exchange efficiency and according to different specifications, by evaluating the effect of additional elements like baffles, the introduction of oriented jet-mixing systems or a simple geometric rearrangement of existing elements. **Multiphase interactions** or phase change phenomena has been analysed as well.

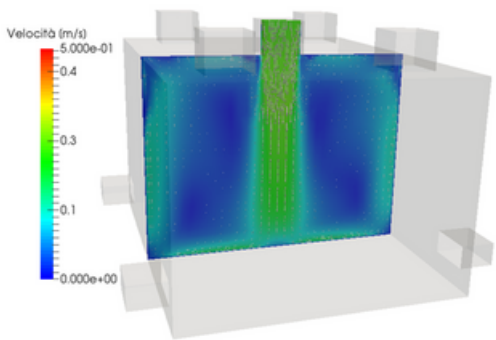
FEM tools predict the component stress-deformation state under mechanical and thermal load in several constrains conditions accelerating design phases. This kind of approach is able to answer our customer needs for the design and verification of **pressure vessels**, according to **ASME VIII** Standard, and for the validation of **support structures** at high-temperature as in chemical reactors.

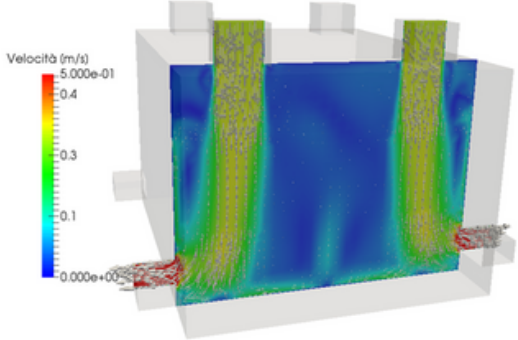




Cleanroom Design

Optimization of cleanroom in **pharmaceutical** and **manufacturing application** can be easily carried out with CFD analysis. Through the evaluation of the ventilation system and the modification of the room design, simulations can predict air change effectiveness, contaminant distribution and air flow speed efficiency.





Streamline Engineering is equipped with leading professional CAE software (ANSYS Fluent, ANSYS Mechanical and Simscale) able to face a wide range of industrial problems and to win the competition by accelerating products Time to Market.

CFD simulations

- Steady and Transient
- Laminar and Turbulent
- Compressible and Incompressible Fluid
- Heat Exchange
- Turbomachinery
- Single and Multiphase
- Conjugate Heat Transfer

FEM simulations

- Steady and Transient
- Thermo-Mechanical
- Fatigue Analysis
- Modal Studies
- Linear and Non-Linear

Software

Ansys

It is a software platform, able to treat advanced and complex simulations in different engineering fields. The main software concern fluid dynamics modeling CFD and thermo-mechanical analysis FEM.

SIMSCALE

It is a full-cloud CAE software that helps you perform simulations of CAD models.

onshape

It is a computer-aid design software system. The platform that delivers full-featured CAD, integrated PDM and enterprise analytics.

Operational Office:
Via Alessandro Milesi 5/7
20133 Milano (MI)
Phone: +39 02 39845576
Mail: info@stream-line.it

Registro Imprese di Milano
Cod. Fiscale e P.Iva 06700860965

TÜVRheinland CERTIFIED
Management System
ISO 9001:2015
www.tuv.com
ID 9108647785

www.stream-line.it