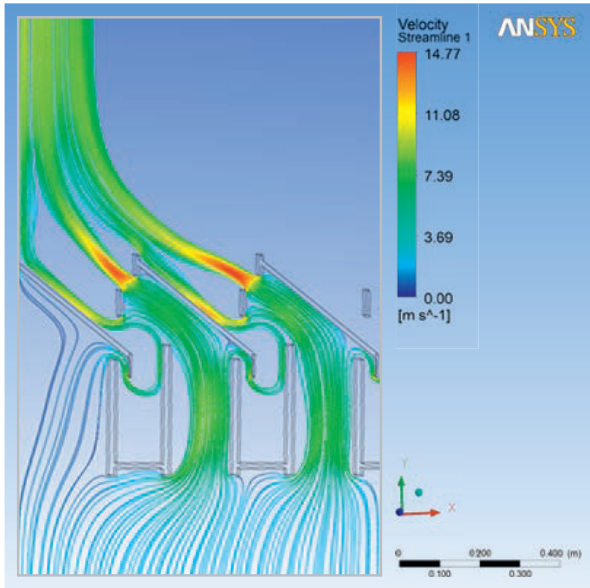


# Simulation process for fluid dynamics

Additionally to the measurements of the test facilities we are offering simulating calculations for the optimization of column internals in regard to pressure drop and throughput.



An ANSYS simulation result.

## ANSYS (Computational Fluid Dynamics CFD)

The calculations are executed with the software ANSYS (Computational Fluid Dynamics CFD).

# Test facilities and pilot plants at your service

RVT operates different test facilities for the further development of their own products:

- Test columns for random and structured packing
- Test columns for mass transfer trays
- Mobile burner system
- Mobile multi-purpose plant
- Test facility for liquid distributors
- Simulation process for fluid dynamics

These test facilities can be used as well for test runs on customers demand.



RVT's multi-purpose plant

## Multi-purpose plant

For test runs on customer's site we offer the application of a mobile multi-purpose plant.

The unit installed inside a 40 ft-container can be used as a device for ammonia recovery from liquid wastes as well as a gas scrubber for waste gas cleaning processes. The separation of elemental halogens, hydrogenated halogens and sulfur dioxide can be tested.

The plant is mainly used for test runs with the media really occurring on customer's site in order to get all the basic data necessary for planning a large-scale plant.

## RVT Process Equipment GmbH Range of products



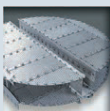
Tower packings for mass and heat transfer



Structured packings for mass and heat transfer



Column internals



Mass transfer trays



Waste gas scrubbing plants



Ammonia recovery processes



Combustion plants for the disposal of exhaust air, waste gases and liquid media

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# Test facilities and pilot plants to know your product before installation

The information in this leaflet are generally correct, however it is not possible to lay claim to liability or guarantee

## Test facility for liquid distributors

The unit is useable for the determination of the liquid level, the load range and the uniformity of liquid distribution.



### Permanent test facility for large-scale internals

The maximum diameter of the distributors is 6,000 mm while the maximum liquid throughput is 1,200 m<sup>3</sup>/h.



### Mobile burner system

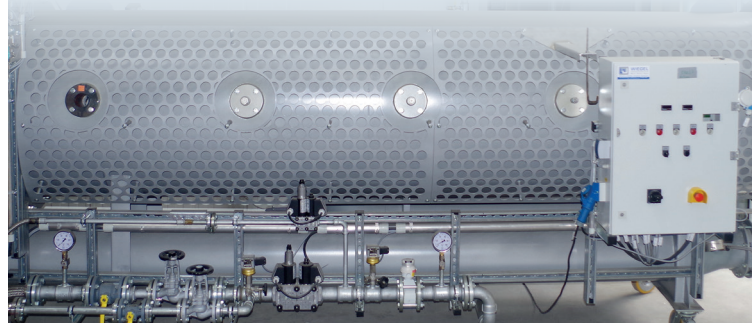
Since 2015, RVT has had a mobile 400 kW pilot plant which can be operated with both natural gas and light fuel oil (EL). The system operates according to **DIN EN 746-2** and is designed for **a maximum temperature of 1,100 °C**.

A second gas line can be used to simulate the task of high calorific waste gases in the combustion air through natural gas. There is also the possibility of replicating large inert gas streams through the use of nitrogen.

In liquid mode, the behavior of the burner with different fuels can be investigated. By using a liquid lance, which is introduced centrally into the burner, it is possible to simulate both liquid high-calorie residues, operation with oil as fuel and cooling by water.

Experiments with the substances to be disposed of can already be carried out in the concept phase in order to collect valuable information. Thanks to its **mobility and standard-compliant design**, the test facility can also be set up and operated directly on site for test purposes.

Before the delivery of the key component of the burner presettings and first ignition attempts can be carried out. Consequently, the **commissioning times incurred can be reduced to a minimum**, since any problems that may arise can be detected and remedied early.



## Test columns for random and structured packing

The pressure drop of random and structured packing can be determined with two test columns with diameters of 450 mm and 600 mm and a packing height of 2,000 mm.

Both columns are made of transparent PVC.



The relevant parameters determined with these plants are the

- pressure drop at different gas factors,
- liquid loads and the
- flooding point of the packing.

The operating media are mainly water and air.

## Test columns for mass transfer trays

Another three transparent columns are ready to test the operating performance of mass transfer trays.

The diameters of these units are:

- 900 mm,
- 1,200 mm,
- 1,500 mm,
- and 2,200 mm.

Each of these columns is equipped with three trays and one gas distributor tray.

The measuring parameters are the pressure drop of the trays, the liquid entrainment and the residence time of the liquid.

Potentially existing inert sections of the trays can be determined additionally.

