

## MULTIPAS

### description

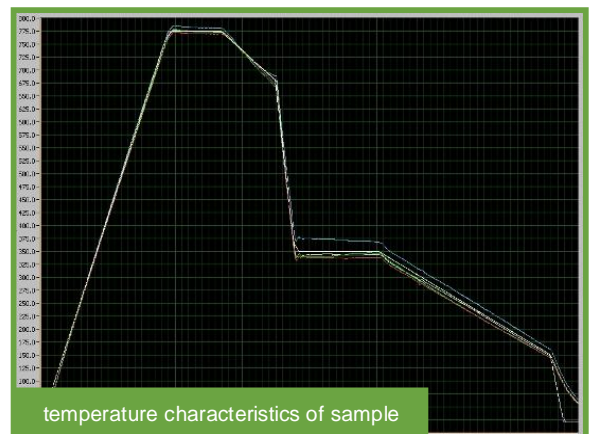
Mechanical-technological steel properties (hardness, tensile strength, etc.) are determined by chemical analysis of the basic material and by means of heat treatment. The annealing simulator enables examination of the effects of various heat treatments on steel properties in the laboratory, thus saving time and costs in the development of new grades when compared to development in an operational plant.

The specimen is brought to necessary temperature by means of electrical resistance heating. The connection to the sample is done by water-cooled clamping jaws. The sample is cooled by a gas jet, air mist, as well as by the hot/cold-water cooling system. A cooling rate from re-crystallization temperature to over aging temperature up to 100K/s can be attained with a specimen thickness measuring 0.8 mm. Higher cooling rates of up to 1000K/s can be achieved with the immersion tank.

An annealing simulator with an inert-gas atmosphere ( $N_2$ ,  $H_2$ , ...) is optional (CALSIM).

### characteristics

- § max. specimen dimension 500 x 300 x 5mm
- § strip tensile strength 0÷10kN programmable
- § max. annealing temperature: 1000°C
- § max. heating rate: 50K/s (sample thickness of 0.8mm)
- § max. cooling rate: 1000K/s (water cooling)
- § simple operator interface
- § online control of trial and documentation



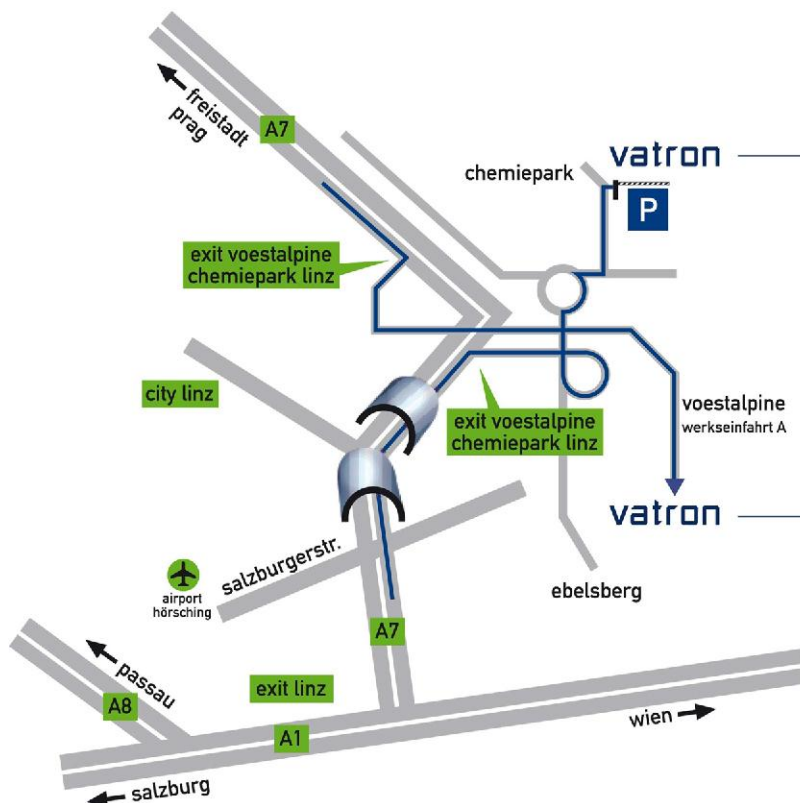
### ADVANTAGES

- § material development without interruption of the production plant
- § any heat treatment possible for continuous annealing as well as hot-dip galvanizing lines
- § enormous time and cost savings in materials development
- § sample size sufficient for tensile trials in three main directions
- § high rate of specimens (approx. 30 samples/shift)

## Products & services

- automatic test centers
- commissioning, training, services
- control systems
- development of measuring methods and systems
- engineering, documentation
- engineering, manufacture and operation of simulators, models and prototypes
- gas analyzing systems
- inspection equipment
- measuring devices
- monitoring and forecasting equipment for production facilities
- numerical simulation of control circuits
- operational measurements

## Driving directions & contacts



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