



## CLAIRE

### IN-LINE PLANT FOR WET CHEMICAL SURFACE TREATMENT PRIOR TO COATING

#### Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP

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One main area of work of the Fraunhofer FEP is the development of coatings to provide a wide variety of substrates with new or improved functions. Customized cleaning prior to any coating step is vital in order to ensure the resulting adhesion of the layer systems.

Cleaning is therefore an important step in the value-creation chain and is the basis for minimizing rejects, lowering costs, and manufacturing high-quality products. A wide variety of contaminants, some of

which are at the atomic level, and differing requirements on the surfaces demand a spectrum of cleaning processes in order to achieve optimum results.

CLAIRE, our in-line cleaning plant, brings together a number of wet chemical methods for the optimal cleaning of metal sheets, metal strips, and small components made of metal, glass, and plastic. The cleaning processes are fully automatic, with a cleaning bath and process monitoring system.





## Typical substrates

- metal strips
  - (max. cleaning rate up to 2 m/min)
  - width up to 300 mm
  - thickness up to 1.5 mm
  - weight up to 1000 kg
- sheets and components made of metal, glass, and plastic in transport baskets
  - sheets of size up to 500 mm × 500 mm
  - components of size up to 450 mm × 450 mm × 300 mm and weight up to 50 kg
  - cleaning rate: 2 transport baskets / hour

## Technical specifications

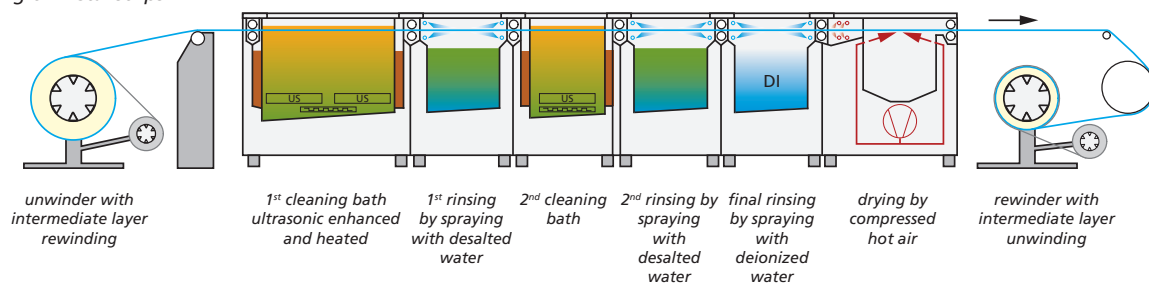
- 2 cleaning baths
- ultrasonically enhanced cleaning
- three-fold rinsing
- nitrogen injection into the rinsing bath
- rinsing by spraying
- hot air drying
- fully automatic cleaning
- on-line process monitoring (automatic bath quality monitoring)
- application of intermediate layers possible for surface protection

## Our offer

- contract cleaning work using an extensive array of cleaning technologies and system parameters for:
  - components, sheets, metal strips
  - samples, individual components, small series
- analysis of cleaning shortcomings
  - determination of causes
  - cleaning tests
  - measures to improve process reliability
- development of cleaning technologies, quality assurance systems, and plant components

### Schematic representation of the CLAIRE plant

#### Cleaning of metal strips



#### Cleaning of sheets and small components

