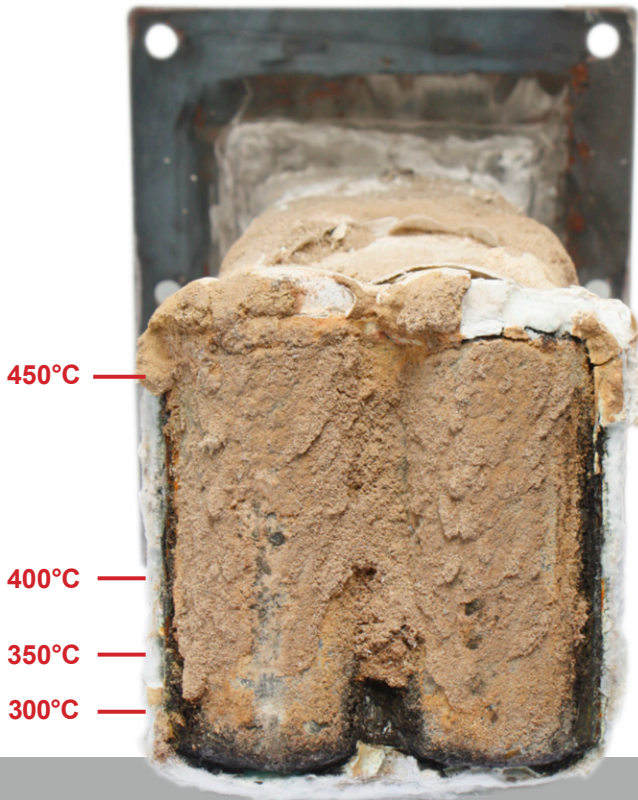


Temperature-Range-Probe

▶ Tube Wall



▶ Identify Potentials

Early and individual use related to building components, material, fuel and mode of operation.

▶ Reduce Corrosion and Fouling

Recognize the opportunities provided by the boiler design, optimize material and protective layer, change the mode of operation and fuel as required.

▶ Avoid Corrosion and Fouling

Evaluate effects of unavoidable changes in the working process in a timely manner.

▶ Assessment

◦ Morphological Evaluation

Visual evaluation of corrosion phenomena

Typical application: discover temperature thresholds for dew points, selection of suitable materials or protective layers

◦ Determination of Corrosion Rate

Corrosion rate related to temperature and position

Typical application: test series with several probes and various protective layers/materials

◦ Evaluation of Deposit Characteristics

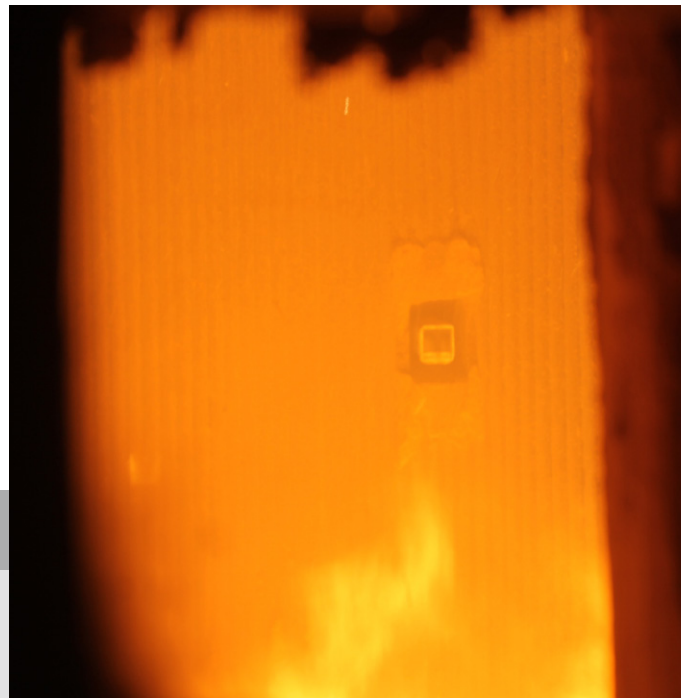
Deposition of "fresh" deposits in order to examine deposit characteristics

Typical application: investigation into reasons for intense fouling

◦ Evaluation of Mechanisms and Reasons for Corrosion

Preparation of sections at relevant temperature positions and chemical analysis

Typical application: support of process optimization



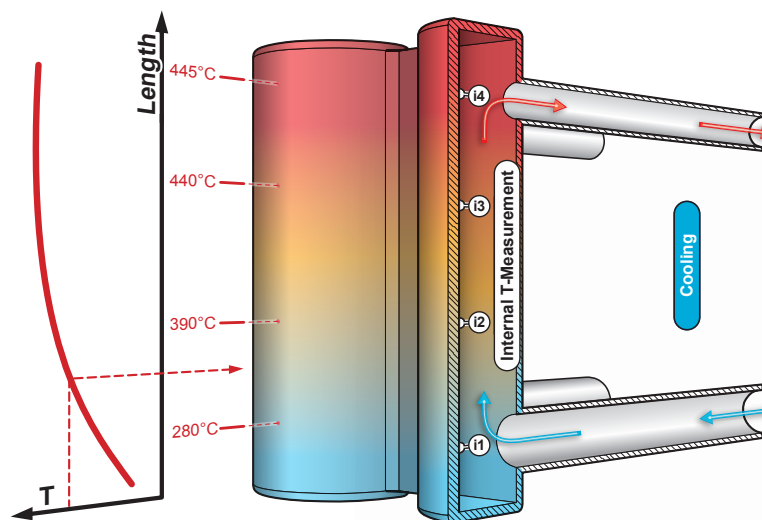
► **Construction of a Probe**

- test tubes (boiler tubes)
- inside tube to conduct cooling air to the probe tip
- inner thermoelements (in most cases 4-10 units)
- control to ensure a constant temperature profile on the probe body
- recording of the temperature signals
- remote monitoring

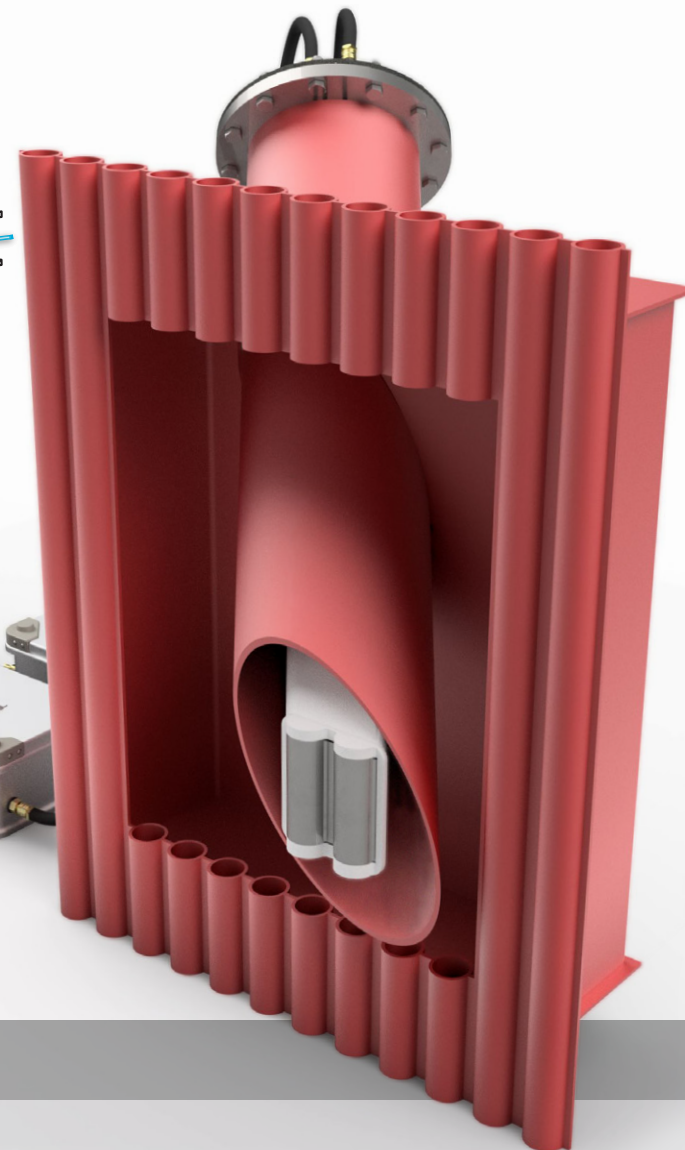
► **Each Probe is Customized**

Adjustment of

- material including applications
- the temperature range
- the number of thermoelements
- place and time of application
- length and diameter of the probe



Temperature frame is kept at a constant level (control), irrespective of fluctuating load



► **Application of the Probe On-site**

Installation and removal during operation or outage

