

Annex No. 1 – technical specifications

1. Delivery of a sensor for measuring hydrogen in the furnace

System for measuring and monitoring the atmosphere in industrial furnaces - measurement of H₂, hydrogen and humidity

Technical parameters:

- Real-time measurement of hydrogen content in the atmosphere of an industrial furnace for heating molds in the hot stamping process
- Measurement of humidity in the furnace atmosphere in real time
- Monitor hydrogen concentration continuously or sequentially
- Ability to save results to the database
- Hydrogen concentration analysis
- Alarms when thresholds are exceeded

Performance properties:

- Industrial use, housing resistant to high temperatures and dust
- Interface: computer application for data recording and analysis

Requirements:

- Brand new, with a 24-month warranty
 - PL or EN instructions, CE certificate
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2. Delivery of a sensor for measuring hydrogen in the extruded detail

Non-invasive measurement of diffusive hydrogen content in metals using a heated probe

Technical parameters:

- Thickness range of the tested sheet metal: up to 2mm
- Measurement surface dimensions: minimum 45×45mm
- Repeatability accuracy: low deviation – e.g. for 0.48ppmw: ±0.09ppmw, compatible with the TDA method
- User interface: control via a PC panel with a dedicated application and the possibility of remote access and calibration updates
- Measurement without removing the AlSi coating,
- Measurement of sheets of the following grades: Usibor2000 Usibor 1500, MBW 1500, MBW 1900

- Automatic holding of the probe on the surface of the sheet metal being measured
- Measurement report: H₂ content in ppmw, including statistical analysis of measurement results. (mean, deviation)
- Measurement of atomic hydrogen in less than 40 seconds
- Ceramic sensor with a heated probe at a temperature of 100 degrees Celsius
- Measurement using the non-destructive method
- Measurement in accordance with CEN 17794:2021

Requirements:

- Brand new, min. 24 months warranty
- PL or EN instructions, CE certificate