

ACCURATE TEMPERATURE MEASUREMENTS IN ALUMINUM EXTRUSION FOR INCREASED PRODUCTIVITY, QUALITY AND ENERGY SAVINGS

By Tuvia Kornfeld.

ADVANTAGES OF USING 3T SYSTEMS FOR MEASURING PRECISE TEMPERATURE IN ALUMINUM EXTRUSION LINES

Productivity – Allows for increased extrusion speed;

- Quality – Better profiles reduce amount of scrap produced;
- Energy – Saves gas or electricity at die furnace, billet furnace and container electrical element.

UNIQUE SYSTEMS OPERATE UNDER THE HARSHTEST CONDITIONS

3T pyrometer systems are unique because they are insensitive to changes in emissivity or other target parameters, including profile shape and alloys, roughness and reflection, and are not affected by intermediate conditions such as smoke, dust and water vapor. This makes 3T's pyrometers the only products available today capable of handling the unstable targets and intermediate conditions commonly found in the aluminum, steel and other metals industries.

The 3T pyrometer system is calibrated upon installation. Following this initial calibration, the system requires no further setup and is capable of measuring all aluminum profiles.

3T PRODUCT APPLICATIONS

Several different pyrometer product lines are available, depending upon the individual needs of the company:

Aluminum Extrusion:

- 1) Pyrometer system for measuring precise temperatures ranging between 300°-1000°C of aluminum profiles at the press exit;
- 2) Pyrometer system for measuring precise temperatures ranging between 300°-1000°C of aluminum billets installed at the furnace exit or before the billet loader;
- 3) Pyrometer system for measuring precise temperatures ranging between 200°-400°C of aluminum profiles on the cooling table.

Aluminum Rolling Mill Process:

A new 3T pyrometer system is now available for continuous and non-continuous aluminum rolling mill processes. This unique system can measure temperatures of 200°-1000°C and is the first pyrometer system that can measure *all parameters and can check all variable alloys* during continuous and non-continuous aluminum rolling mill processes. End products of the continuous and non-continuous process include cables, rods, aluminum and/or copper strips and aluminum sheets respectively.

Forging Process:

Pyrometer systems are also available for the forging process, often used in the aerospace industry, coil manufacturing, automotive industry for the manufacture of wheels and engine parts, and in the primary and secondary casting of nonferrous ingots and billets respectively.

REAL RESULTS, REAL SAVINGS

Today, 3T pyrometers are proven in their ability to produce real results for

manufacturers using them. By accurately measuring surface temperatures within an error range of $\pm 1\%$, manufactures can provide better quality, increased productivity and significant energy savings. Together, these factors mean an immediate payback on the company's investment while insuring precise control of the mechanical properties of the process.