

Air Products Advanced Low Emission Melting System



Air Products has delivered combustion equipment and technology solutions to the non-ferrous industry for over 50 years. We supply over 500 customers worldwide who produce aluminium, copper, zinc, lead and precious metals. Genuinely interested in what our customers do, we're always looking for new ways to help them do it better.

Our experience

In many melting operations low grade scrap is processed. It is often contaminated with oil, paint and plastics. The melting of this material creates several problems like heavy fumes, flames and combustion in the duct combined with high temperatures and emissions.

Based on years of experience in aluminium melting processes and oxy-fuel technology we have developed a new patent pending burner control system dedicated to support the melting of highly contaminated scrap. Temperature gradient and IR signals are used to measure the degree of contamination which automatically controls the flow of oxygen to ensure more efficient combustion.

Additional controls allow gas flow to be changed instantly to produce optimum stoic ratio. As a result of this, combustion is contained within the furnace and all the additional heat generated can be used for melting. This not only reduces energy costs but also can shorten cycle time.

This system can be retrofitted to existing oxy fuel melting operations or can be integrated into new oxy fuel burner installations. The new features of the Advanced Low Emission Melting system give increased flexibility allowing the system to be tailored to the specific melting requirements.

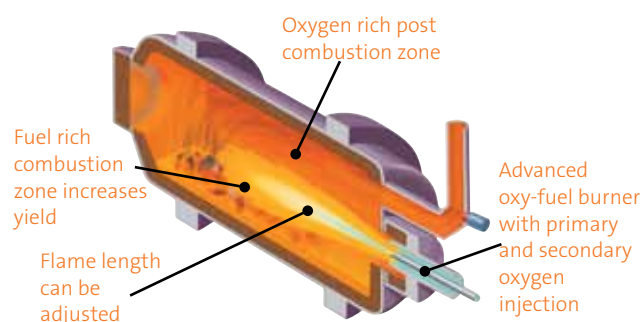
This new technology can be adapted to melting operations of different materials like:

- Aluminium, copper, brass, lead
- Iron and steel

“Since implementing the Advanced Low Emission Melting System on our tilting rotary furnace, we have immediately seen the benefit on the ducting system lifetime due to the lower heat exposure. In addition, the production has increased 7% year on year and there is more flexibility to melt contaminated aluminum scrap.”

Production manager
of Remet s.r.o. Ludek Septun.

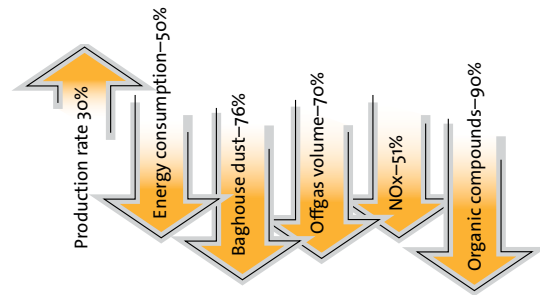
Features of the Advanced Low Emission Melting System



Key features and benefits

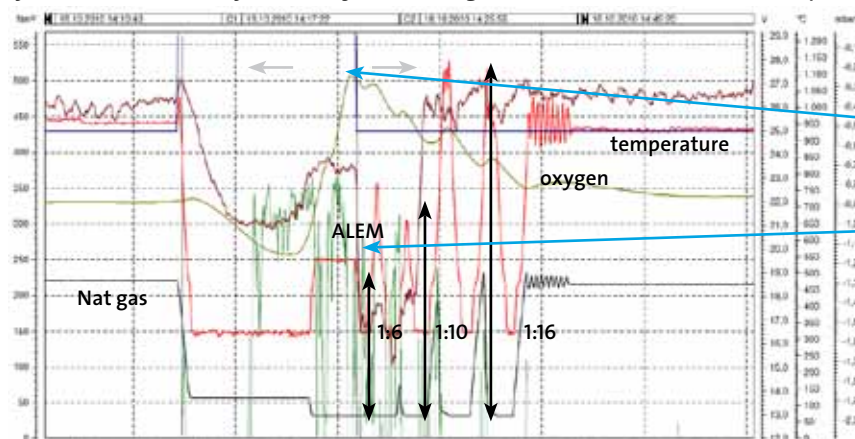
- Allows furnace users to melt aluminium scrap contaminated with oils, plastics, paints, etc. in an environmentally sound manner, whilst at the same time reducing operating costs
- Optimised temperature control and automated algorithm for oxygen injection
- Combines proven oxy-fuel burner technology with a proprietary atmosphere control system and incorporates them into a unique furnace layout which can melt a wide variety of contaminated charge materials
- Combustion of the organic contamination has been shown to further reduce fuel consumption
- System can be retrofitted to existing furnaces or integrated into new furnace installations
- Compared to other oxy-fuel technologies:
 - Energy savings of 5-7%
 - Production increase of 5-7%

Typical performance versus cold air burner system



Example of Advanced Low Emission Melting System in operation

System automatically reduces fuel loading and adds the oxidizer to complete combustion to maximize fuel usage



- Injection of additional oxygen helps to decrease off gas temperature
- IR signal shows completeness of combustion including possible contaminants

tell me more

Contact us now to get one of our combustion specialists to evaluate your process and see if the Advanced Low Emission Melting System can help you:

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