



GAS PLANT SOLUTIONS

EXTENDING OR ENHANCING THE LIFE OF YOUR GAS PLANT

PRIMETALS TECHNOLOGIES DIRTY GAS SYSTEMS

Primetals Technologies is dedicated to excellence in the field of blast furnace technology. Our experience, capability and resources allow us to provide tailor made equipment solutions incorporating the latest automation developments to meet the exact needs of the customer.

Our innovative portfolio which provides the key to the future success and longevity of furnace operational profitability includes:

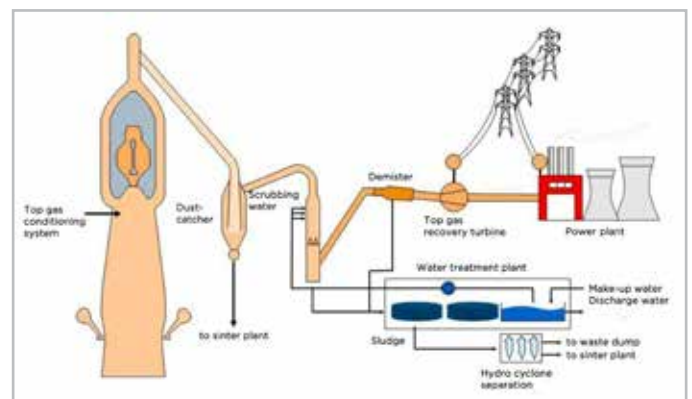
- Gravity dustcatcher
- Patented single and triple tangential inlet cyclones with optimized bypass system
- Single and triple Davy cone scrubbers
- Options for both internal and external demisters with all scrubber variants
- Opportunity to retrofit Primetals Technologies solutions into existing vessels

YOUR CHALLENGE

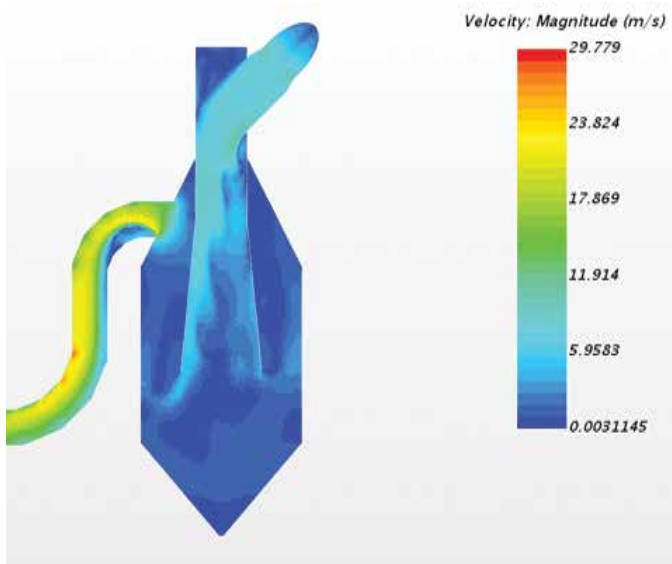
The ironmaking industry is constantly faced with the challenge of achieving higher productivity whilst satisfying the challenges posed by ever tightening operating margins and stricter environmental controls.

Primetals Technologies recognizes the need to minimize the capital expenditure necessary for the maintenance and/or replacement of aged plant and equipment throughout the industry. Ironmakers are typically faced with the following challenges:

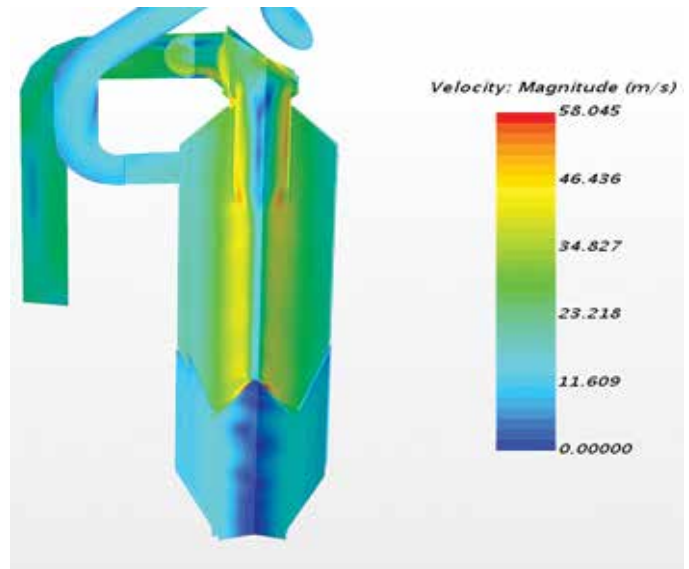
- Mechanical integrity and safe working life of the plant is unknown
- Plant that does not comply with the latest design standards and legislation
- Frequent shut downs caused by inefficient operation or premature failure of equipment
- Problems on start up and shut down
- Poor performance and water carryover



Blast furnace wet gas cleaning system schematic



Existing dustcatcher



Reference Tri-Ax cyclone

OUR SOLUTION

Primetals Technologies are able to offer you a variety of comprehensive gas plant studies and health check investigations to ultimately enhance your plant performance, leading to better operations, lower fuel costs and better productivity from your blast furnace. Expert analysis techniques allow us to determine the condition of your plant and equipment and therefore the limits of operation for your process. The results of the survey give us the knowledge needed to generate tailor-made solutions offering a competitive and reliable performance for your plant, based on our successful track record worldwide with minimal capital expenditure.

Our investigative and analysis tools and packages include:

- **'Fitness for service'** evaluation of existing gas system against latest design standards
- **Finite element (FE) analysis** of existing vessels and mains from furnace off takes to clean gas main
- **Computational fluid dynamics** performance analysis of gas system equipment
- **System benchmarking** of the current and future process operation against proven design standards and Primetals Technologies' extensive list of reference plants

Implementing design solutions requires extensive experience in the following areas:

- SHEP/HAZOP studies
- Hazardous area classification
- Safety integrity level assessments
- Compliance with equipment directives
- Pressure equipment and machinery

A TYPICAL DIRTY GAS SYSTEM STUDY WILL COMPRISE:

- A comprehensive survey of existing dirty gas system and equipment
- Engineering solutions tailored to minimize your capital expenditure
- Plant upgrades that are reviewed against the latest legislation and standards
- Mechanical inspection and analysis of plant including FE analysis
- Root cause determination of process problems
- All of the above backed up by knowledge and experience acquired over many years in the blast furnace industry

Primetals Technologies

A joint venture of Mitsubishi Heavy Industries and partners

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