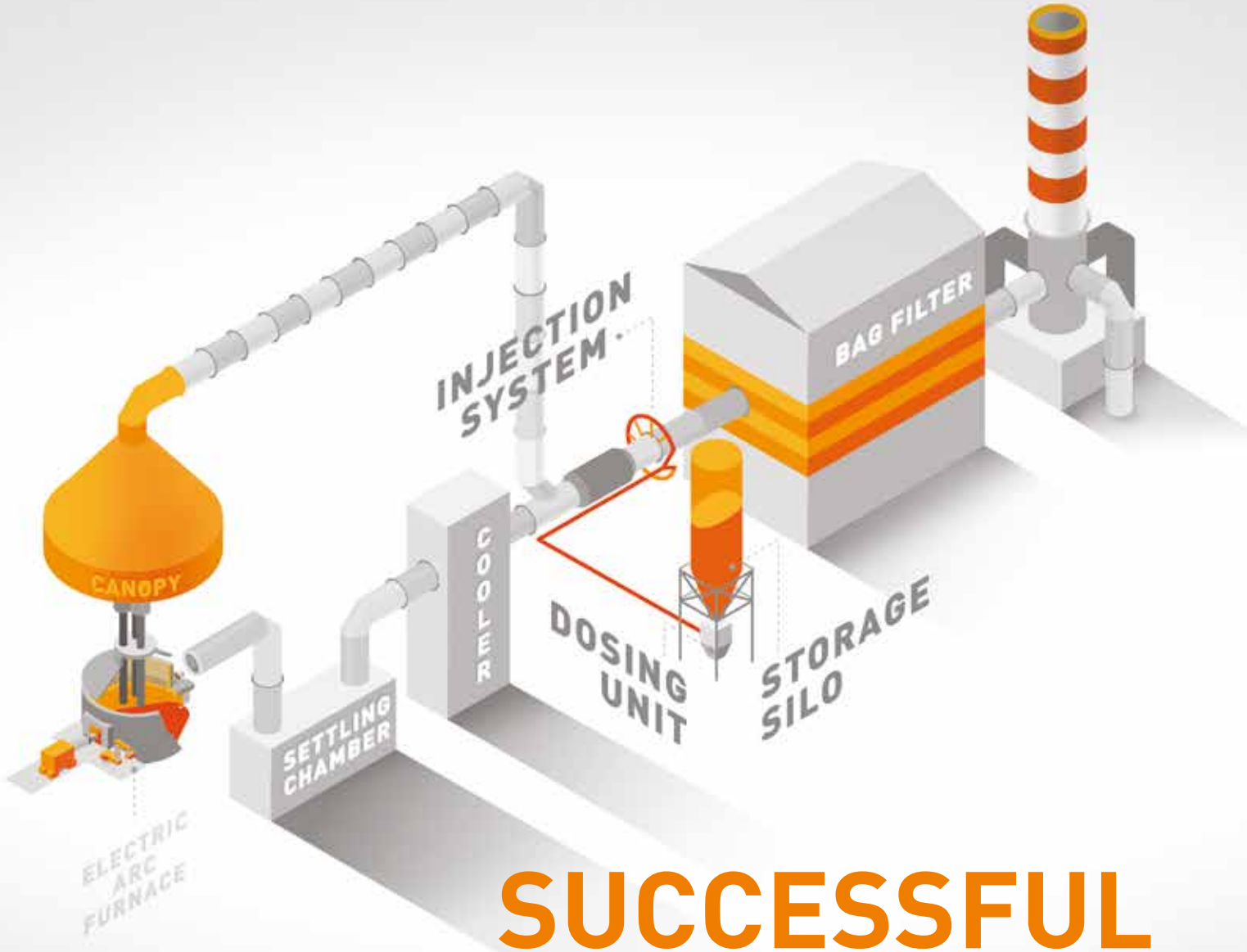
NOVEMBER 2016

07

MORE HIGHLIGHTS

NEWS FROM THE STEELMAKING WORLD



SUCCESSFUL INSTALLATION of DAS

DIOXINS ABATEMENT SYSTEM

ACCIAIERIE BERTOLI SAFAU

- ITALY-

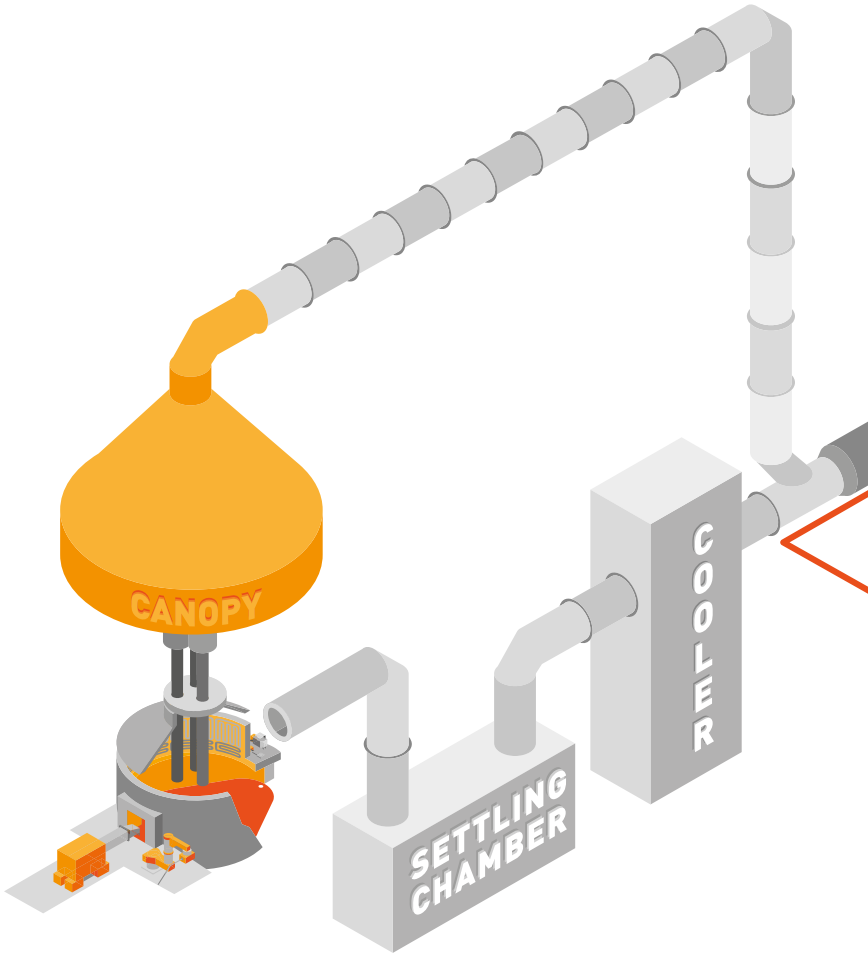
DANIELI ENVIRONMENT and MORE announces the successful installation of a turnkey Dioxins Abatement System (DAS) to control dioxins emissions at Acciaierie Bertoli Safau (A.B.S.) fume treatment plant.

BACKGROUND

A.B.S. produces one of the widest ranges of engineering special steels in Europe, in terms of both quality and dimension. The plant is equipped with two melting lines: the first one is composed of a 100t AC electric furnace whereas the second one features a 100t DC electric furnace.

THE "DAS" TECHNOLOGY

The turnkey project included: **two storage silos each of 65m³** (**ref.a**) with **independent dosing units** (**ref.b**), **two injection systems** installed on board of each exhaust fume line (**ref. c**), automation, piping, modification of the existing FTP and installation. The activated carbon injection system and its installed components complied with ATEX directives. To predict the absorbents abatement efficiency, based on the previous absorption steps, a specific Computational Fluid Dynamics (CFD) analysis has been performed.



BEST AVAILABLE TECHNIQUE BY THE EUROPEAN GUIDELINE (2010/75/EU)

The European guideline (2010/75/EU) has identified the use of activated carbon injection system upstream the bag filters as the best available technique of controlling the emissions of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in fumes sampled at the stack.

-A-

Storage Silo of 65 m³ (2,295 ft³)

-B-

Dosing Unit

-C-

Injection System

DANIELI ENVIRONMENT

MORE
INNOVATION IN STEELMAKING

A PROVEN APPROACH TO REDUCE DIOXINS AND MERCURY EMISSIONS

Powdered activated coal injection technology is a technically and commercially proven approach to reduce dioxins and mercury emissions in steel and power plants. By dosing and pneumatically injecting powder activated coal (or lignite) inside the fume duct, is it possible to aggregate the dioxins molecules thanks to the high affinity with carbon.During operations, carbon powder acts as a "sponge" to absorb dioxins and other highly volatile heavy metals. Because the affinity of carbon and dioxins is very high, there is no tendency for the dioxin molecules to be released therefore, no re-emissions will take place afterwards. Absorption takes place in three steps:

1. when the stream of absorption agent hits the raw gas flow
2. as the adsorbent-enriched raw gas travels to the filtering device
3. as the gas phase crosses the absorbent-enriched dust coating layer on the filter medium

RESULTS

After the installation, the new system was able to fulfill the guaranteed performance figures, keeping the PCDD-F values permanently below 0,1 ng-TEQ/Nm³ .

TECHNICAL DATA

EAF 1	100 t AC
Charge	100% scrap
Max fumes flow rate	1.200.000 m³/h; 42,377,600 ft³/h
Carbon/lignite adjustable flow rate	10 – 70 kg/h; 22-154 lb/h

EAF 2	100 t DC
Charge	100% scrap
Max fumes flow rate	1.400.000 m³/h; 49,440,533 ft³/h
Carbon/lignite adjustable flow rate	10 – 70 kg/h; 22-154 lb/h

BENEFITS

Efficient dioxins removal

Low capital investment

Low operating and maintenance costs

High availability

Easy to operate

Extended service life

Proven results

Safe disposal of the byproduct

FEATURES

Adjustable dosing flow rate

CFD analysis and modelling to optimize the injection grid design to minimize carbon consumption

Custom design for new or existing fume system plants

"Plug and work" design and manufacturing to minimize installation and connection times

ATEX 94/9/CE compliance

Dust free operations

NELQUADRATO.COM

MORE S.r.l. 33013 Gemona del Friuli (UD) Italy
T +39 0432 973511 **F** + 39 0432 970676
Email: **info@more-oxy.com** **www.more-oxy.com**