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E.prot DVA-2014-0024583 del 24/07/2014

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ILVA SPA





S. P. A. - TARANTO

Taranto: 16/07/2014
Ns. Rif.: Dir.309/2014

Oggetto Decreto DVA-DEC-2012-0000547 del 26/10/2012 di Riesame dell'Autorizzazione Integrata Ambientale (AIA) DVA-DEC-2011-0000450 del 04/08/2011 (pubblicato sulla G.U. n° 252 del 27 ottobre 2012), per l'esercizio dello stabilimento siderurgico della Società ILVA S.P.A. ubicato nei comuni di Taranto e Statte. -Informativa.

Si invia il protocollo operativo, redatto dalla società Kappa, in cui vengono definite le attività di monitoraggio sperimentale per verificare l'eventuale polverosità diffusa derivante dalla parte superiore delle cappe (non aspirate) installate sul raffreddatore circolare delle linee D ed E dell'agglomerato.

Sarà nostra cura comunicare con congruo anticipo la data di avvio delle suddette attività.

Distinti saluti.

ILVA S.P.A.
Stabilimento di Taranto
Il Direttore
Ing. Antonio Lupoli

ILVA S.P.A.
Il Commissario straordinario
Dott. Piero Gnudi

ILVA S.P.A.



Measurement plan

Project:	Measurement of dust emissions at 2 sinter coolers at ILVA steel plant in Taranto
client:	ILVA
objectives:	Sinter cooler D and E
location (GPS – UTM):	Cooler plant D: 40°30'32.5"N 17°13'05.2"E Cooler plant E: 40°30'30.0"N 17°13'07.5"E
Version:	12.06.2014
author:	Mr. Huber, Helmut and Mr. Aschauer, Dominik
Project Nr.:	AN12342

Revision index

Revision	description	Date	Author
(-)	first edition	June 2014	ad/hu

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1. General information

Location:	ILVA Taranto
Objectives:	Sinter cooler D and E
Measurement:	KAPPA Filtersystems GmbH Im Stadtgut A1 A-4407 Steyr-Gleink
Plant operator:	ILVA Taranto
Modernisation of the sinter cooler:	2014
Used measurement equipment:	<ul style="list-style-type: none"> - Dust measurement according to EN 13284-1 - “MK10” Aerosol Spectrometer Grimm Model 1.108 - “MK4” (GSP) <p>Further Kappa measuring equipment:</p> <ul style="list-style-type: none"> - “MK 21” (Testo 480; high-temperature measuring equipment; Prandtlpipe 500mm), - “MK14” (Testo 445, Vane can be used up to 60m / s to 140 ° C), - Surface temperature gauge (Infrared gun) - “WK 3” (tool case)
reference projects	measurement of dust emissions at the sinter cooler at the voestalpine Linz steel plant (Linz – Austria)

2. Description of the measurements

2.1. Tasks

- Measurement of dust emission at 2 existing sinter-coolers of the sinter-plants "D" and "E" in Taranto
- Performing of measurements at the area of the cooler where the highest dust emissions can be expected after modernisation* (end of the first 30% of the cooler area → axis 9-10)
- Performing of measurements at the area of the cooler where lower dust emissions will be expected (axis 13-14)
- Performing of measurements at the area of the cooler where lower dust emissions will be expected (axis 18-19)

*modernisation 2014 already finished: Covering of open section of the cooler with a hood

2.2. Measurement equipment

- Dust measurement according to EN 13284-1
- "MK10" Aerosol Spectrometer Grimm Model 1.108
- "MK 21" (Testo 480; high-temperature measuring equipment; Prandtlpipe 500mm),
- "MK14" (Testo 445, Vane can be used up to 60m / s to 140 ° C),
- Surface temperature gauge (Infrared gun)
- "WK 3" (tool case)

2.3. Measurement method

- Adaption of the measurement devices to cope with the high gas temperatures. (Estimation: over ~300°C at the entering section of the sinter cooler.)
- Kappa executes the measurements with two different kinds of measurement equipment: Gravimetric measurement device according to standard EN 13284-1 edition 2002-03-01
- Portable laser aerosolspektrometer and dust monitor
- The laser aerosolspektrometer provides a particle size distribution over time. With the gravimetric measurement device a correlation factor can be calculated to get absolute concentration values (e.g. in the unit mg/m³)

2.4. Measurement parameter

- Gravimetric measurement performed at the top of the cooler with total dust sampler device to determine a representative total dust concentration
- Measurement of
 - Temperature
 - representative flow-velocity
 - dust particle monitoring

2.5. Technical information to the sinter cooler

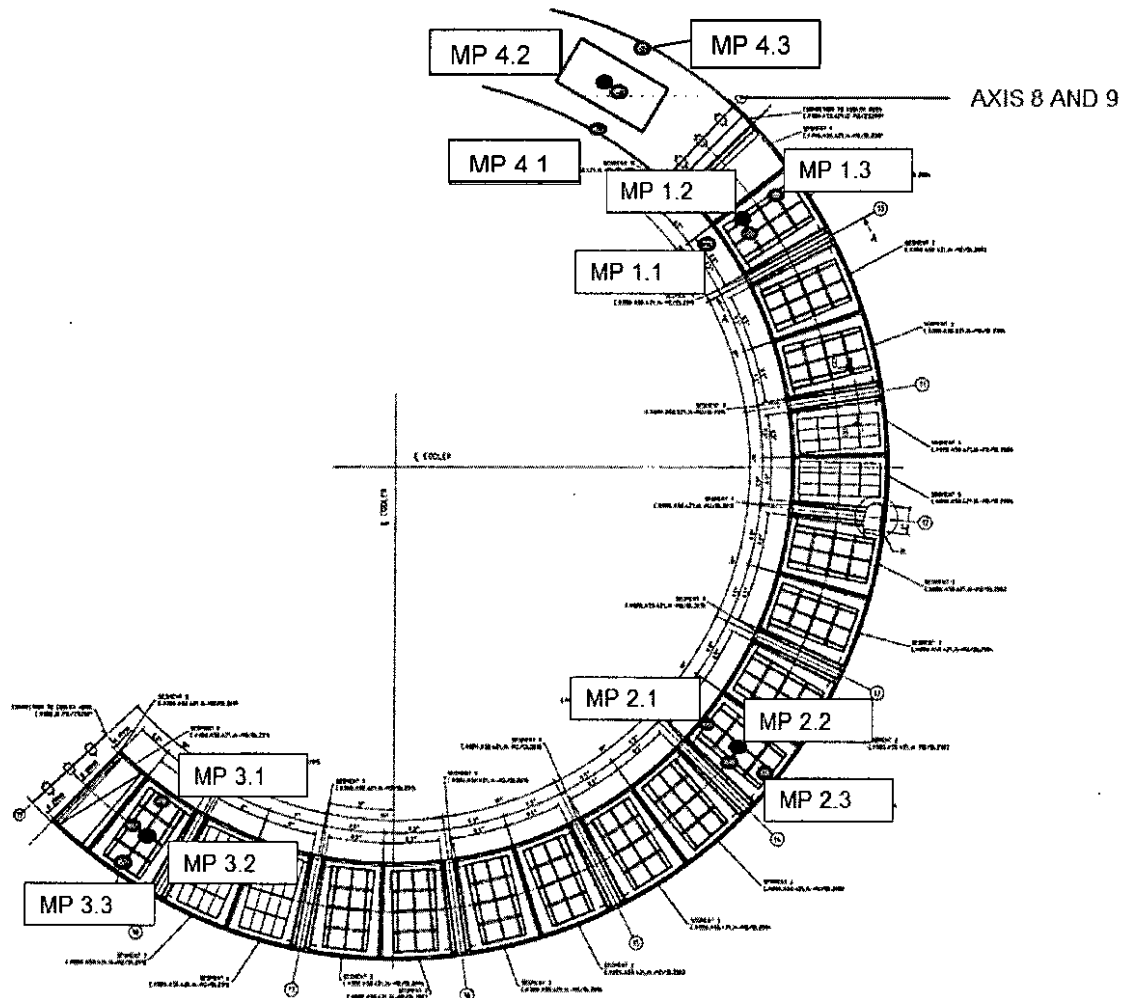
- prospective vertical air velocity above the sinter cooler: ~1-5m/s
(assumption, dependent on temperature)

- prospective surface temperature: ~ max. 300 °C (assumption)

layer thickness:	~ 3500 mm (to the top of the hood)
diameter:	~ 40 m (to the center of the cooler)
cooling surface	~ 426 m ² (width of 4,12 m)
bulk density of the material:	~ 1700 kg/m ³
top level of the enclosure:	~ 9,4 m
temperature of the material at the material charge:	~ 400 - 450°C
temperature of the material at the material drop:	~ 60 (max. 100)°C
material loading of the sinter cooler:	~ 800 – 1.000 t/h
usual cooling duration:	90 min (0,7 U/h)
cooling method:	air throughput by air fans, each 400.000 Bm ³ /h
pressure of the fans:	1.200 Pa

3. Measuring points

3.1. measurement points at the sinter cooler (identical construction of cooler D and E)



Gravimetric measurements performed at the top of the cooler with total dust sampler device to determine a representative total dust concentration

Duration/measurement point: minimum 90min.

setup time/measurement point: ~ 30 min.

- MP 1.2 at the center of the cooler between axis 9 and 10
- MP 2.2 at the center of the cooler between axis 13 and 14
- MP 3.2 at the center of the cooler between axis 18 and 19
- MP 4.2 at the center of the cooler between axis 8 and 9

- Further measurements with the aerosol spectrometer to determine the particle size distribution.

Additionally the following values will be measured simultaneously to the dust concentration measurements:

- gas temperature
- representative vertical flow velocity
- particle size distribution

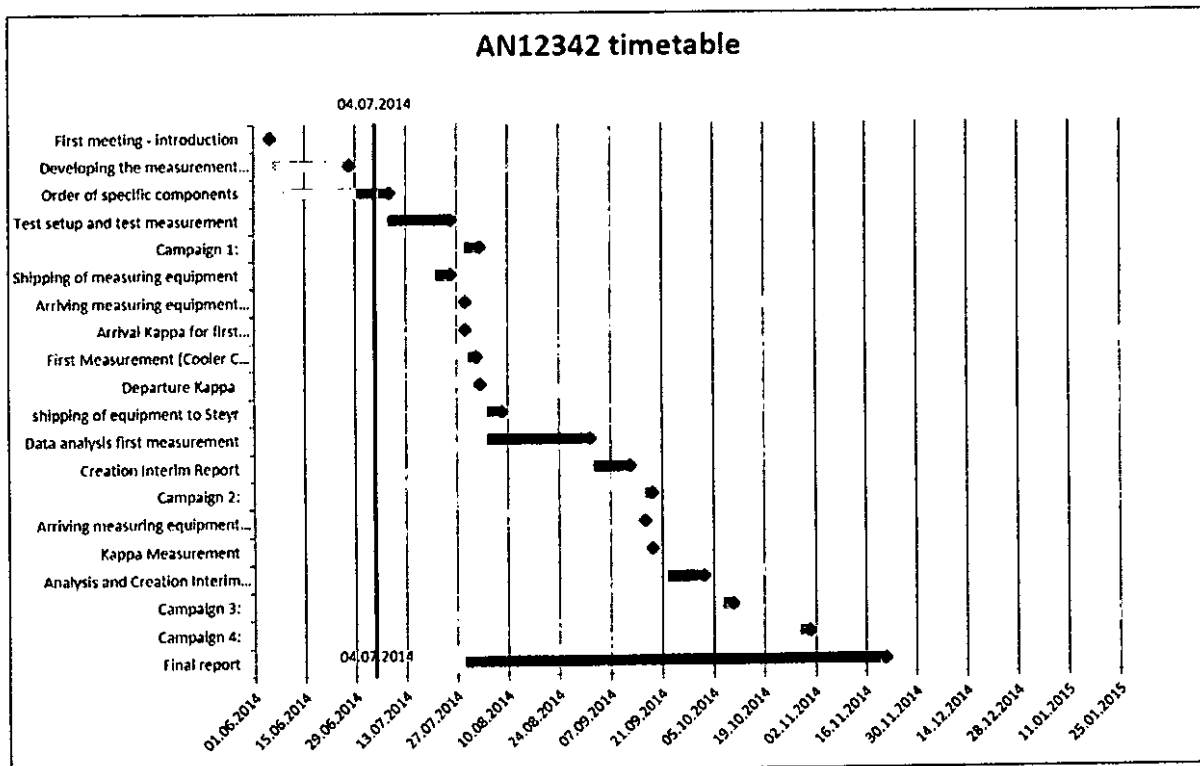
Duration/measurement point: minimum 20min.

setup time/measurement point: ~ 10 min.

MP 1.1	at the inner circle of the cooler between axis 9 and 10
MP 1.2	at the center of the cooler between axis 9 and 10
MP 1.3	at the outer circle of the cooler between axis 9 and 10
MP 2.1	at the inner circle of the cooler between axis 13 and 14
MP 2.2	at the center of the cooler between axis 13 and 14
MP 2.3	at the outer circle of the cooler between axis 13 and 14
MP 3.1	at the inner circle of the cooler between axis 18 and 19
MP 3.2	at the center of the cooler between axis 18 and 19
MP 3.3	at the outer circle of the cooler between axis 18 and 19
MP 4.1	at the inner circle of the cooler between axis 8 and 9
MP 4.2	at the center of the cooler between axis 8 and 9
MP 4.3	at the outer circle of the cooler between axis 8 and 9

Projektname	AN12342 timetable
Verantwortlich:	ad/hu

	Start	Erlodigt	Nicht Erlodigt	Dauer	Ende	% Erlodigt
First meeting - introduction	04.06.2014	1	0	1	05.06.2014	100%
Developing the measurement plan	06.06.2014	21	0	21	27.06.2014	100%
Order of specific components	09.06.2014	20	9	29	08.07.2014	70%
Test setup and test measurement	08.07.2014	0	17	17	25.07.2014	0%
Campaign 1:	29.07.2014	0	4	4	02.08.2014	0%
Shipping of measuring equipment	21.07.2014	0	4	4	25.07.2014	0%
Arriving measuring equipment in Taranto	29.07.2014	0	0	0	29.07.2014	0%
Arrival Kappa for first measurement	29.07.2014	0	0	0	29.07.2014	0%
First Measurement (Cooler D and E)	30.07.2014	0	2	2	01.08.2014	0%
Departure Kappa	02.08.2014	0	0	0	02.08.2014	0%
shipping of equipment to Steyr	04.08.2014	0	4	4	08.08.2014	0%
Data analysis first measurement	04.08.2014	0	28	28	01.09.2014	0%
Creation Interim Report	02.09.2014	0	10	10	12.09.2014	0%
Campaign 2:	16.09.2014	0	2	2	18.09.2014	0%
Arriving measuring equipment in Taranto	16.09.2014	0	0	0	16.09.2014	0%
Kappa Measurement	17.09.2014	0	1	1	18.09.2014	0%
Analysis and Creation Interim Report	22.09.2014	0	10	10	02.10.2014	0%
Campaign 3:	07.10.2014	0	3	3	10.10.2014	0%
Campaign 4:	28.10.2014	0	3	3	31.10.2014	0%
Final report	29.07.2014	0	115	115	21.11.2014	0%



4. Measurement method & responsibilities:

The measurement campaign will be carried out and coordinated by company Kappa Filter Systems GmbH.

On-site tasks will be supported by ILVA S.p.A.

Also the communication with off-site stakeholders e.g. local authorities will be coordinated by ILVA S.p.A.

The operating data (operating record) corresponding to the measurement period will be provided by ILVA S.p.A.

4.1. gas temperature measurements

- temperature profiling above the sinter cooler → KAPPA

4.2. measurements to the vertical air velocity and air quantity:

- air volume profiling above the sinter cooler → KAPPA

4.3. dust measurements:

- dust concentration above the sinter cooler → KAPPA

4.4. particle size distribution measurements:

- particle size profiling → KAPPA

4.5. operating data

- all relevant information corresponding to the measurement period (operating record of the sinter cooler, cooling air fans, etc.) → ILVA

4.6. Conclusion

- 12 measurement points above the sinter cooler for the determination of the dust concentration
- Additional simultaneous measurement of following parameters:
 - temperature, particle size distribution, vertical air velocity

- 4 measurement points at the center of the sinter cooler
 - measurement of temperature and air quantity
- Expected repetition of the measurement procedure twice (3 cycles in total) in monthly offset.
- Similar execution of the measurement procedure for sinter cooler D and E.
 - standard operating conditions during the measurements
 - operation of the cooling air fans at maximum power
 - For the evaluation of the worst case-scenario the sinter cooler must be operated in full-load operation
- Die Prozessdaten der Anlage werden elektronisch aufgezeichnet und an Kappa zur Einarbeitung in den Bericht in englischer Sprache übermittelt.

5. Aim of the measurements

Measurement of the dust emission of the sinter coolers.

Evaluation of the effectivity of the enclosure of the sinter cooler as a constructive method of environmental protection.

DGpostacertificata

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Allegati: Dir 309 2014.pdf; Dir 309_ Protocollo operativo Kappa.pdf

Priorità: Alta

Si invia in allegato quanto indicato in oggetto.

Cordiali saluti

ILVA S.p.A.
Il Commissario Straordinario
Dott. Piero Gnudi

ILVA S.p.A.
Stabilimento di Taranto
Il Direttore
Ing. Antonio Lupoli