STACK EMISSIONS MEASUREMENTS

Bowater Doors

Courtaulds Way, Coventry

Polyfill machine extraction system

Carried out on
4th May 2012

Report written by:

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11th June 2012

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Sira Certification Service

ENVIRONMENT AGENCY

MCERTS

The personnel carrying out the monitoring work for this exercise are qualified under the MCERTS scheme as follows:

1. Steve Lockwood

Senior Consultant

MCERTS Registration No MM 03 407

Level 2 (team leader)

Technical Endorsements held:
TE1 (Particulate monitoring by isokinetic sampling techniques)
TE4 (Gases / Vapours by instrumental techniques)

Certificate Number: Sira MP 04 217
Date of certification: 12 October 2004
Date of re-certification: 28 September 2009
Renewal date: 12 October 2014

2. Steve Cletheroe

Senior Site Engineer

MCERTS Registration No MM 03 408

Level 1 (technician)

Technical Endorsements held:
TE1 (Particulate monitoring by isokinetic sampling techniques)

Certificate Number: Sira MP 04 226
Date of certification: 12 October 2004
Date of re-certification: 28 September 2009
Renewal date: 12 October 2014

The MCERTS scheme is operated by SIRA Certification Service on behalf of the Environment Agency.

The scheme involves written examinations and interviews and was introduced to ensure that stack monitoring work is carried out to the required standards by suitably qualified personnel.

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1.0 Introduction

1.1 This exercise consisted of the following test carried out on the Polyfill Machine extraction system.

(a) Measurement of isocyanate emissions using MDHS 25 method.

1.3 The tests were carried out in order to comply with the Permit issued by the Local Authority under the Environmental Protection Act. This report describes the methods used and the test results found.

2.0 Summary of results

2.1 The monitoring exercise returned the following result:

Polyfill Machine	Result	Units
Isocyanates	< 0.0016	mg/m^3

The result is expressed corrected to the following reference conditions :-

273 °K, 101.3 Kpa

3.0 Emission limits and comments on results

3.1 The test result in the table above may be directly compared with any emission limit which the local authority may have set.

3.2 We have not been advised of the emission limit and so cannot offer any comment on the result.

4.0 AIR SAMPLE DATA

Area	Polyfill Machine	Date	12th April 2011

No	Subject	Area	Time ON	Time OFF	Period minutes	Start flow	End flow	Volume litres	Filter Ref	Analyte	µg in sample	Result mg/m³
1	Exhaust Stack Emissions	Polyfill Machine	10:02	12:04	122	1.0	1.0	122	WHS 120401	Isocyanates	< 0.2	< 0.0016

Breaks

The sample ran continuously.

Sample description

This was a sample of the air exhausted to the external atmosphere from the Polyfill Machine extraction system. The sample was taken using method MDHS 25, using a combination of an absorbing solution in series with a treated filter. Normal filling activities took place throughout the two hour sampling period.

Comments

A "less than" figure (shown as < 0.2 in the above table) is quoted when the laboratory are unable to find any isocyanate on the sample. The value quoted shows the minimum concentration which could be detected by the method used. This is dependent on the duration of the sample and the detection limit of the analysis method used by the laboratory. Although no isocyanate was detected on the sample, it is not possible to state that the airborne concentration was zero, but simply that it must be less than the minimum detectable level quoted.

5.0 Monitoring method - Isocyanates

5.1 The test method used for this exercise was as described in HSE document MDHS 25. This specifies two options, one which uses a pre-treated filter to absorb the isocyanates, and one which uses an absorbing solution. The pre-treated filter method will absorb isocyanates in both the vapour and particulate phases; however, the efficiency of capture of the particulate phase isocyanate is reduced in cases where very small particles are likely to be present. The absorbing solution is efficient for particulates of all sizes, but is less efficient at capturing the vapour phase isocyanates. If both vapour and particulate phases are present, with the possibility of small size particles being present, then a combination of the filter and solution can be used.

5.2 It was decided that the combination of filter and solution should be used for this test.

5.3 An SKC sample pump calibrated to run at 1.0 litres per minute is used to draw a sample of air from the exhaust duct. This air is bubbled through the absorbing solution and then passed through the pre-treated absorbing filter. At the end of the test the solution and the filter are placed together in a sample bottle and submitted to an approved laboratory for analysis. The result obtained is therefore the total of all particulate and vapour phase isocyanates

5.4 The result quoted shows the overall emission level averaged over the sampling period, which in this case was two hours.

Site/Location	System Description	SCHEMATIC LAYOUT OF SYSTEM
WHS Halo (Bowater Doors) Coventry	Polyfill Machine