

# ***stazione sperimentale del vetro***

Protocollo 4893

03/07/2008

## **PERFORMANCE TEST**

**FILTRATION STATION  
"SYSTEMLIFE – MODEL CITTA"**

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## **1) FOREWORD**

Object of the test was verify the abatement performance of total dust using the filtration station "SYSTEM LIFE . MOD. CITTA"

## **2) DEVICE**

Filtration station to removal the dust in outdoor or indoor place. The device is composed of this system:

- Fabric filter with large mesh
- Fabric filter with thin mesh
- Carbon cartridge filter
- Elettrostatic precipitator

## **3) DATE**

The test was carried out on the 27-28 march 2008.

## **4) SPECIFIC OF THE TEST**

During the test two measurements of total dust were carried out before and after the filtration system. The measurements were made along two specific tubes, installed for the purpose before and after the filtration system (see the picture enclosed). On each sampling point two sampling of 24 hours were carried out (two samples before the system and two samples after the system). During the same test the measurements of air velocity flow were also made on the tube.

During the test the concentration of the dust was voluntarily increased before the filter, to simulate the performance of the system in the worse operational condition.

## **5) METHODS**

For the measurements these methods were used:

UNI 10169:2001: determination of velocity and flow rate in conveyed gas flow by Pitot tube  
UNI EN 13284-1:2003: determination of low range mass concentration of dust. Manual gravimetric method

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## **6) RESULTS OF THE TEST:**

Physical parameters:

Temperature of the flow	(average value)	8.5 °C
DP	(average value)	6.12 mmH <sub>2</sub> O
Velocity of the flow	(average value)	9,78 m/sec
Flow rate	(average value)	9957 m <sup>3</sup> /h
Flow rate at 20 °C	(average value)	10364 m <sup>3</sup> /h

Dust

before filtration system	(average of two sampling)	699 * µg/m <sup>3</sup>
after filtration system	(average of two sampling)	21 µg/m <sup>3</sup>

\* as described on chapter 4, during the test the concentration of the dust was voluntarily increased before the filter, to simulate the performance of the system in the worse operational condition.

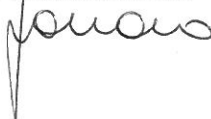
## **7) CONCLUSIONS**

On the specific condition of the test the abatement performance of the system was of 97 %

Murano, 03/07/2008

*The Head of Laboratory*

Dr Nicola Favaro



*The General Director*

Dr Antonio Tucci



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**Picture 1: filtration system with the tubes for the sampling**