

# Certificate

**Certificate No: 52921/4**

**Issue No: 1**

**Date of issue: 23 July 2009**

This is to certify that

**BSRIA Limited**

Has tested a sample of the product described below in accordance with the test methods contained within EN 13181 : 2001 and have determined the item met the detailed classification shown on pages 3 and 4 of this certificate. For further details of the test item see Page 2 of this certificate

**Manufacturer/Agent** Beijing JangHo Curtain wall Co.,Ltd

No. 5, Nihui North 5th Street  
Shunyi District  
Beijing, Prc

**Product** JH-STL-02

**Test location** BSRIA  
Old Bracknell West  
Bracknell  
Berkshire RG12 7AH

**Date of test** 29 June 2009

**Expiry date** 23 July 2012

**Test engineer** A Coulson

**Quality approved** Phil Stonard  
Laboratory Manager  
MicroClimate & Test

This certificate must not be reproduced except in full without the written approval of an executive director of BSRIA. It is only intended to be used within the context described in the text.

**BSRIA Limited**

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**TEST ITEM INFORMATION**

**Contract** 52921A  
**Date** 02/07/2009  
**Manufacturer** Beijing JangHo Curtain wall Co.,Ltd  
**Louvre Model** JH-STL-02  
**Material** Aluminium  
**Painted** No  
**Blade Height** 1000 mm  
**Blade Width** 1033 mm  
**Blade Depth** 175 mm  
**Frame Depth** 175 mm  
**No. of blade types** 3

<b>Blade position</b>	Front
<b>Blade Orientation</b>	Horizontal
<b>No.of Blades</b>	13
<b>Blade Pitch</b>	73 mm
<b>Blade Angle</b>	45 Degrees
<b>Blade position</b>	Middle
<b>Blade Orientation</b>	Vertical
<b>No.of Blades</b>	6
<b>Blade Pitch</b>	67.5 mm
<b>Blade Angle</b>	N/A Degrees
<b>Blade position</b>	Rear
<b>Blade Orientation</b>	Vertical
<b>No.of Blades</b>	7
<b>Blade Pitch</b>	67.5
<b>Blade Angle</b>	N/A Degrees

**Distance between middle and rear blades** 40 mm

**Guard Type** None  
**Guard Spacing** N/A  
**Side Channels** No  
**Water Drip Tray** Yes

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SAND REJECTION

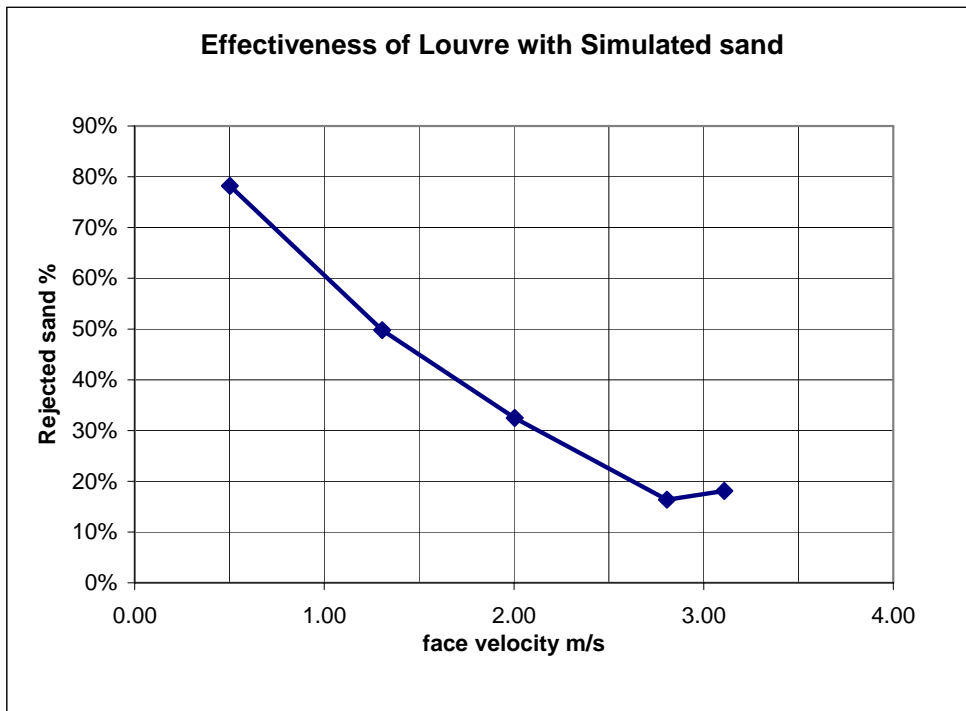
Certification test

MANUFACTURER J H Curtain Wall  
 MODEL JH-STL-02

Date 24/06/2009  
 Contract 52921A

louvre height 1033 mm  
 louvre width 1000 mm  
 louvre area 1.033 m<sup>2</sup>

VENTILATION RATE		SAND MASS		Effectiveness
Volume m <sup>3</sup> /s	Velocity m/s	Injected kg	Rejected kg	
0.52	0.50	1.0	0.8	78.2%
1.35	1.31	1.0	0.5	49.8%
2.07	2.00	2.0	0.7	32.5%
2.90	2.81	2.0	0.3	16.4%
3.21	3.11	2.0	0.4	18.1%



ENTRY LOSS COEFFICIENT

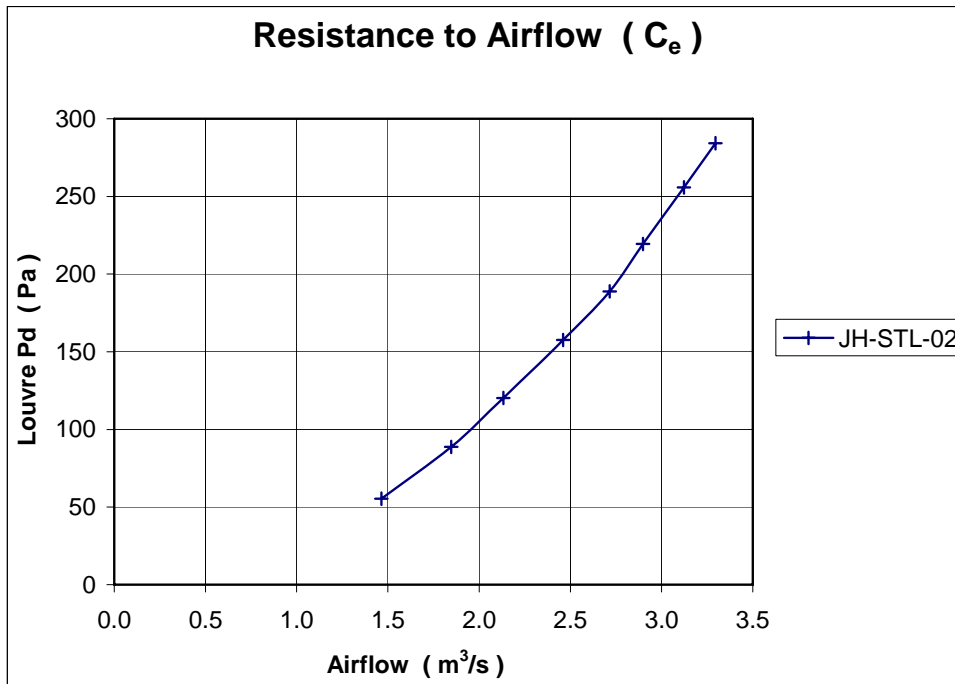
Certification test

MANUFACTURER JH Curtain Wall  
 MODEL JH-STL-02

Date 02/07/2009  
 Contract 52921A2AC

air temperature	29.1 °C	louvre height	1000 mm
barometer	1011 mbar	louvre width	1033 mm
air density	1.161 kg/m <sup>3</sup>	louvre area	1.033 m <sup>2</sup>

louvre pd Pascals	louvre face velocity	air flow rate		coefficient C <sub>e</sub>
	m/s	test m <sup>3</sup> /s	theoretical m <sup>3</sup> /s	
55.3	1.42	1.464	10.088	0.145
88.7	1.79	1.847	12.773	0.145
120.3	2.07	2.133	14.873	0.143
157.6	2.38	2.460	17.022	0.144
188.9	2.63	2.716	18.637	0.146
219.4	2.80	2.897	20.086	0.144
255.8	3.02	3.123	21.688	0.144
284.3	3.19	3.295	22.865	0.144
mean C <sub>e</sub>				0.144



**CLASSIFICATION OF SAND LOUVRES****Entry Loss Coefficient**

The entry loss coefficient shall be determined in accordance with section 9.2 of the test standard.

**Sand rejection Effectiveness**

The sand rejection test is carried out in accordance with section 9.1 of EN13181: 2001.

Table 1 details the core air velocities, weights of sand and sand discharge durations used in the test.

**Table 1 Core air velocities, weights of sand and sand discharge durations**

Quantity	Tolerance	Unit	Values				
Core air velocity	± 5%	ms <sup>-1</sup>	0.5	1.3	2	2.8	3.5
Weight of sand	± 5%	kg	1	1	2	2	2
Discharge duration	± 25%	s	200	75	100	70	60

The grading of test sand conforms with the requirements specified in section 7 of EN13181:2001. Table 2 specifies the mixture requirements for the standard test sand

**Table 2 Requirements for Standard test sand**

Grade size µm	Mass %
>699	0.5
423 to 699	3.0
353 to 422	12.0
251 to 352	30.0
211 to 250	20.0
152	27.0
104 to 151	6.0
76 to 103	1.0
<76	0.5

Where additional sand types have been used they conform to the following requirements:

FINE – sand between 106 and 150 µm

COARSE – sand between 355 and 425 µm