CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

Bologna, 09/05/2017

LINCO BAXO industrie Refrattari S.p.A.
Via Caravaggi
24040 Levante (BG)

ATCHEMICAL LABORATORY

TEST REPORT N° 545/17

Requested by:	*LINCO BAXO industrie Refrattari S.p.A.* *Via Caravaggi* *24040 Levante (BG)*
On (date):	10/04/2017
For the sample marked:	"SIRMA 95 AT"

The results reported relate only to the samples tested.

No responsibility is taken for the accuracy of the sampling unless it is done under our own supervision.

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This test report consists of 3 **pages this cover included.**

Description of the sample:	Refractory bricks marked "SIRMA 95 AT" see photo 1
Manufacturer:	----------
Sampling details	
- Where:	----------
- Date:	----------
- By whom:	COSTUMER
- How (methods):	----------
Date of receipt in laboratory:	10/04/2017

TEST PERFORMED:

			Data inizio	Data fine
X	UNI EN ISO 21587-1: 2007 UNI EN ISO 21587-3: 2007	CHEMICAL ANALYSIS	27/04/17	08/05/17

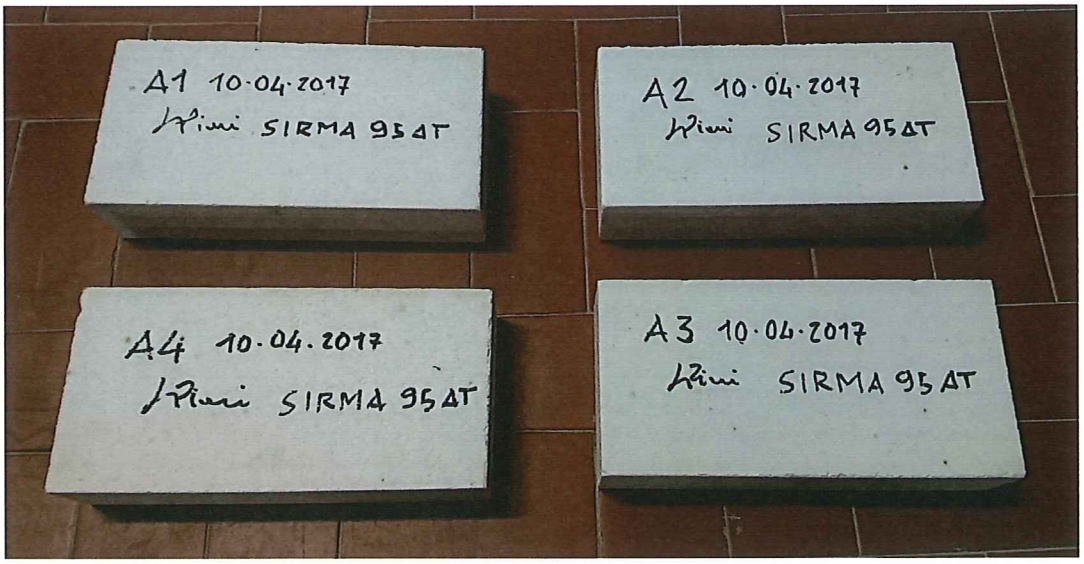


photo 1

CHEMICAL ANALYSIS

Sample	"SIRMA 95 AT"
	%
SiO_2	4
Al_2O_3	95
TiO_2	0.01
Fe_2O_3	<0.01
CaO	0.01
MgO	< 0.01
K_2O	0.02
Na_2O	0.04

The analyst
Dr. Adelia Albertazzi
(n° A 1091 Ordine Interprovinciale dei Chimici dell'Emilia-Romagna)

The Director
Prof.ssa Maria Chiara Bignozzi

Centro Ricerca Sperimentazione per l'Industria Ceramica
CENTRO CERAMICO BOLOGNA

CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

Bologna, 04/05/2017

LINCO BAXO Industrie
Refrattari S.p.A.
Via Caravaggi
24040 Levate (BG)

TEST LABORATORY

TEST REPORT No. 3953/17

concerning refractory

Requested by:	LINCO BAXO Industrie Refrattari S.p.A. Via Caravaggi 24040 Levate (BG)
On (date):	10/04/17
For the sample marked:	"SIRMA 95 AT".

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Description of the sample:	Refractory bricks marked "SIRMA 95 AT" see photo 1.
Manufacturer:	----------
Sampling details	
- Where:	----------
- Date:	----------
- By whom:	CUSTOMER
- How (methods):	----------
Date of receipt in laboratory:	10/04/17

TESTS PERFORMED :

			Date of starting	Date of ending
X	UNI EN 993-1:1998	Determination of bulk density, apparent porosity and true porosity	20/04/17	26/04/17

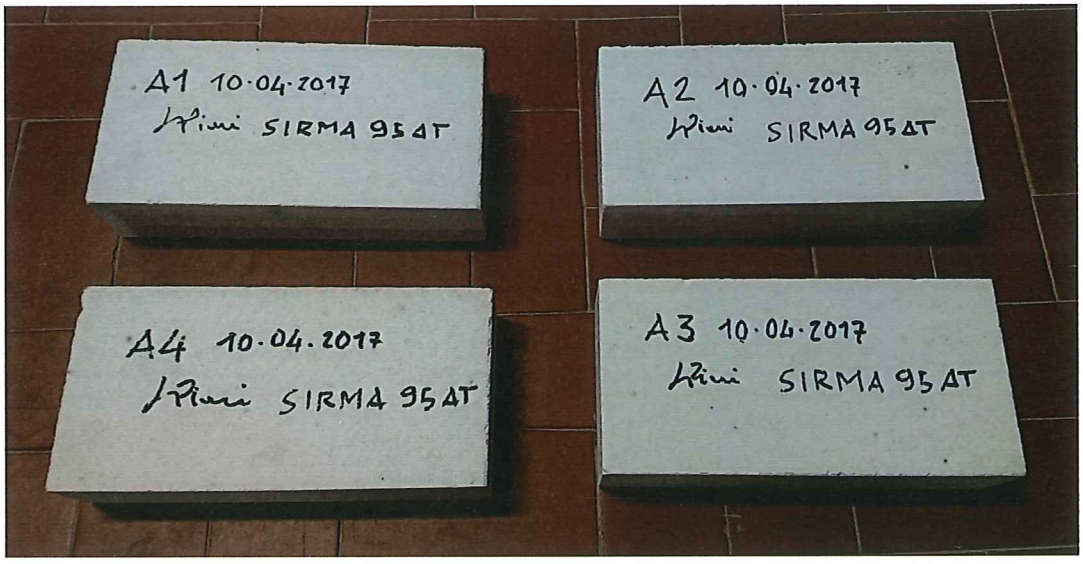


photo 1

UNI EN 993-1:1998 - Determination of bulk density, apparent porosity and true porosity.

RESULTS:

Residual pressure in the vacuum chamber < 2500 Pa
Liquid used: distilled water

Determination of bulk density

SAMPLE	Number of SPECIMENS	Bulk Density (g/cm3)
A1	1	3.12
A2	1	3.08
A3	1	3.07
A4	1	3.08
Average (ρb)		**3.09**

Determination of apparent porosity

SAMPLE	Number of SPECIMENS	Apparent porosity (%)
A1	1	16.7
A2	1	17.6
A3	1	18.1
A4	1	17.8
Average (πa)		**17.5**

Centro Ricerca Sperimentazione Ceramica CENTRO CERAMICO BOLOGNA per l'industria

Pietro Bruzzi
Technical verification

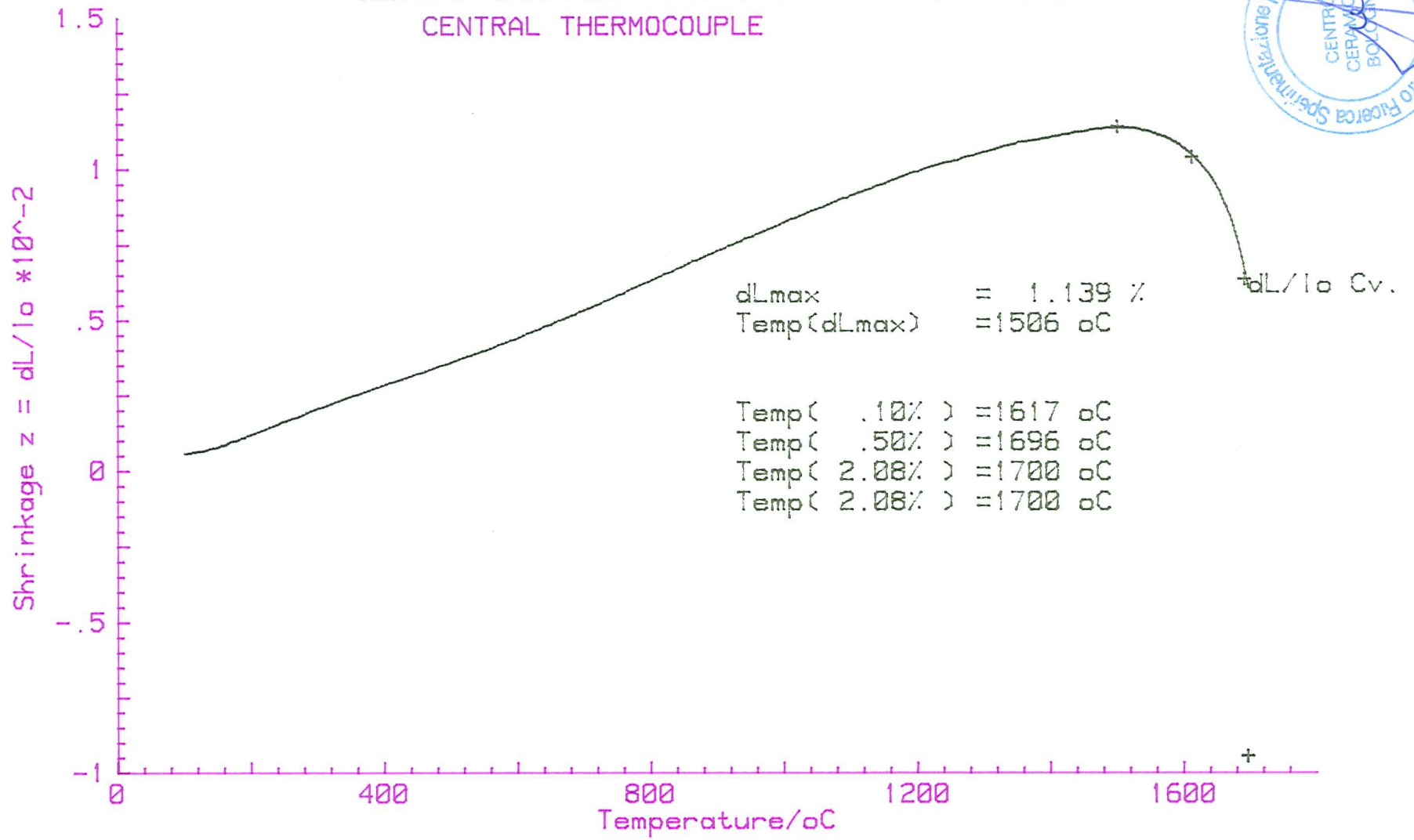
Prof. Maria Chiara Bignozzi
Director

CENTRO CERAMICO - BOLOGNA

Annex N. 1 *Test report N.* 3954/17 *Date* 20/04/17

CENTRO CERAMICO BOLOGNA SEZ. CER. IND

CENTRAL THERMOCOUPLE



IDENTITY No.	17/269/T1	SAMPLE	REFRATTARIO	Correctionmode	Cv.
DATE	20 apr 2017	SAMPLE LENGTH	43.4 mm	Calculationmode	Norm
OPERATOR	SANSEVERINO	LOAD	.2 N/mm^2	dL	20000 um
N E T Z S C H 421		TYPE OF EXPERIM.	R.U.L.	20 oC/ 5.00/1750 oC	

CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

Bologna, 20/04/2017

LINCO BAXO Industrie
Refrattari S.p.A.
Via Caravaggi
24040 Levate (BG)

TEST LABORATORY

TEST REPORT No. 3954/17

concerning refractory

Requested by:	LINCO BAXO Industrie Refrattari S.p.A. Via Caravaggi 24040 Levate (BG)
On (date):	10/04/17
For the sample marked:	"SIRMA 95 AT".

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Description of the sample:	Refractory bricks marked "SIRMA 95 AT" see photo 1.
Manufacturer:	----------
Sampling details	
- Where:	----------
- Date:	----------
- By whom:	CUSTOMER
- How (methods):	----------
Date of receipt in laboratory:	10/04/17

TESTS PERFORMED :

			Date of starting	Date of ending
X	EN ISO 1893:2008	Refractory products. Determination of refractoriness under load. Differential method with rising temperature	20/04/17	20/04/17

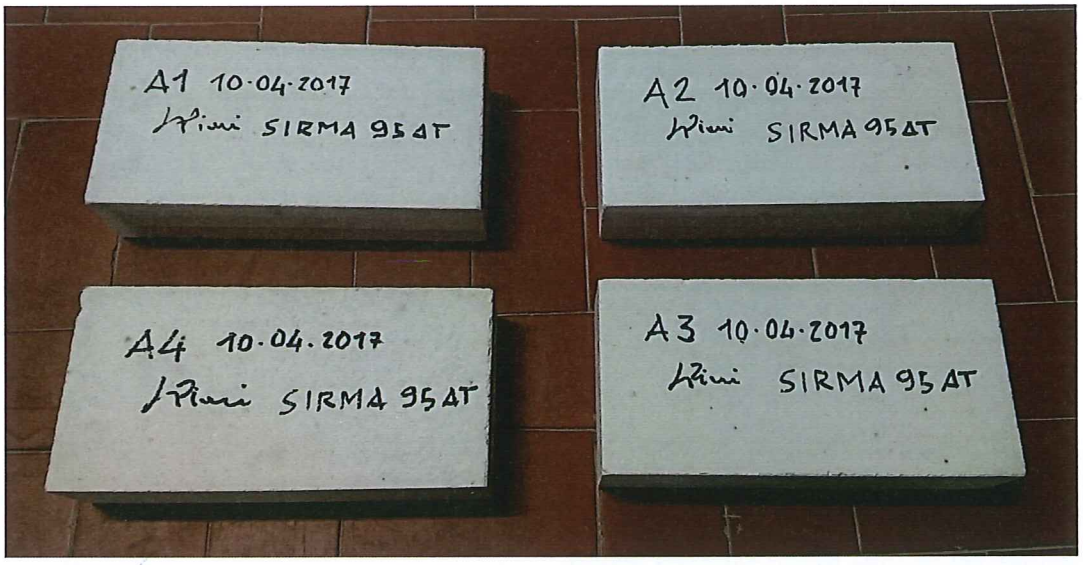


photo 1

EN ISO 1893:2008 - Refractory products. Determination of refractoriness under load. Differential method with rising temperature

TEST SAMPLES:

Preparation method:

A cylindrical test piece was obtained by wet cutting starting from the short size of the refractory element. It was bored centrally and in parallel to the axis of the test body. The final base surfaces were ground by wet cutting so that they are flat and parallel to each other and at right angles to the axis.
Before the test, the sample was dried to up to constant weight in a ventilated stove at 110 ± 5 ° C.

Average dimensions:

	Number of SPECIMENS	Heigth (mm)	Diameter (mm)	Diameter of the central hole (mm)
SAMPLE A1	1	43.4	50.3	12.2

OPERATING CONDITIONS:

Kiln used: NETSZSCH - TESTER 421
Kiln atmosphere: Air
Kiln heating rate from 20 to 1700 °C: 5.0 °C/min

	Number of SPECIMENS	Whole applied load (N)	Single applied load (N/mm^2)
SAMPLE A1	1	373	0.2

RESULTS:

See attached diagram: Sample 1 – Annex 1

Centro Ricerca Sperimentazione per l'Industria Ceramica CENTRO CERAMICO BOLOGNA

Pietro Bruzzi
Technical verification

Prof. Maria Chiara Bignozzi
Director

CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

Bologna, 04/05/2017

LINCO BAXO Industrie
Refrattari S.p.A.
Via Caravaggi
24040 Levate (BG)

TEST LABORATORY

TEST REPORT No. 3955/17

concerning refractory

Requested by:	LINCO BAXO Industrie Refrattari S.p.A. Via Caravaggi 24040 Levate (BG)
On (date):	10/04/17
For the sample marked:	"SIRMA 95 AT".

The results reported relate only to the samples tested.

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Description of the sample:	Refractory bricks marked "SIRMA 95 AT" see photo 1.
Manufacturer:	----------
Sampling details	
- Where:	----------
- Date:	----------
- By whom:	CUSTOMER
- How (methods):	----------
Date of receipt in laboratory:	10/04/17

TESTS PERFORMED :

			Date of starting	Date of ending
X	UNI EN 993-5:1998	Determination of cold crushing strength	26/04/17	26/04/17

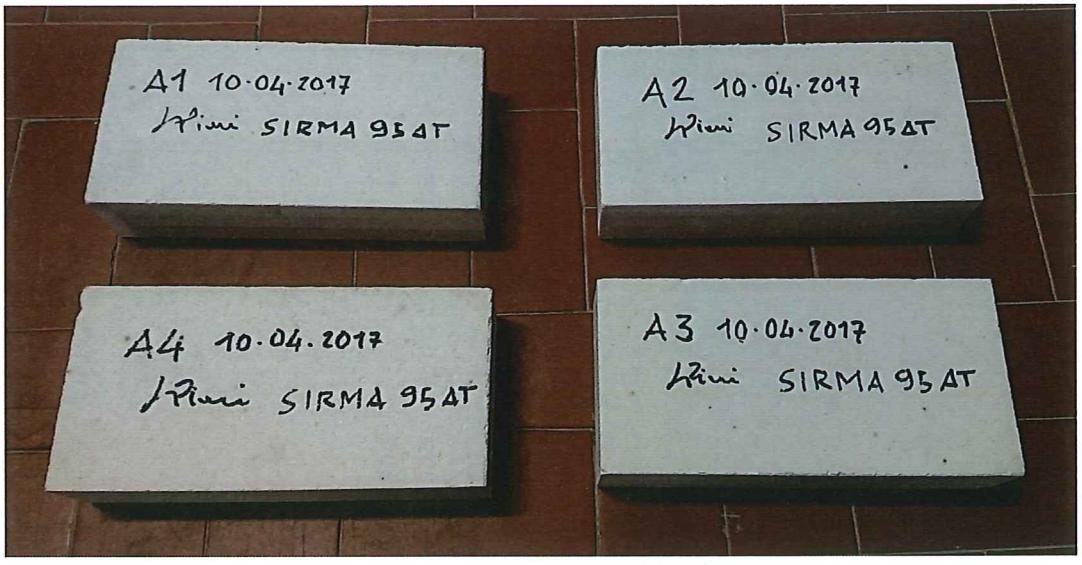


photo 1

UNI EN 993-5:1998 - Determination of cold crushing strength

The test was made on cylindrical/cubic specimens obtained by wet cutting from the sample.

RESULTS:

SAMPLE	Number of SPECIMENS	Diameter Ø (mm)	σ (N/mm^2)
A1	1	50.25	227.5
A2	1	50.25	229.1
A3	1	50.28	207.6
A4	1	50.26	187.4

σ average (N/mm^2): 212.9

Pietro Bruzzi
Technical verification

Prof. Maria Chiara Bignozzi
Director

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