

KERAMISCH -TECHNOLOGISCHES BAUSTOFFLABORATORIUM HAMBURG e.V

Staatlich anerkannte Prüfstelle

PRÜFUNG

UNTERSUCHUNG

BEGUTACHTUNG

BERATUNG

KERAMLABOR, Unter den Linden 2, 21465 Reinbek

Telefon 040/ 7 11 822-0
Telefax 040/ 7 11 822-33

CRH Stradalit GmbH
z. Hd. Herm Kreth
Unter den Eichen 13

Sparkasse Holstein,
Kto. 230 001 159 (BIZ 213 522 40)

q, Juni 20m

Postbank Hal11burg
Kto, 244 72 201 (BIZ 20010020)

31226 Peine

21465 REINBEK
Unter den Linden 2

L

28. Mai 2010 Tw / Lu

Factory production control and use of recycled materials

Dear Mr. Kreth,

In the framework of factory production control is the work of STR Lions regularly over-monitored. In this context, we confirm that the work of STR products, which are the break or not to enter the sale, and collected by an outside company at the site are broken and fractionated.

This recycled material in the manufacture of new products with up to 20 % by mass of raw mixture added.

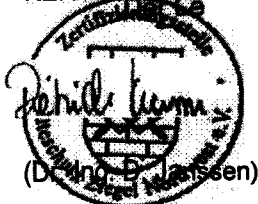
The amount of recycled material in the operating mixture depends on the characteristics of the product and is different for facing bricks and paving bricks.

Through the use of previously burned material in the manufacturing process of ~ CO2 emissions is reduced.

For further inquiries, we are happy to assist you.

Yours sincerely

KERAMLABOR



KERAMISCH-TECHNOLOGISCHES BAUSTOFFLABORATORIUM HAMBURG *

Staatlich anerkannte Prüfstelle

21465 REINBEK • UNTER DEN LINDEN 2 • TELEFON (040) 71 1 822-0

Erstmals anerkannt für die Gasanfertigung der Erzeugnisse der Ziegelindustrie durch Erlaß des Ministers für Arbeit, Soziales und Vertriebswege des Landes Schleswig-Holstein vom 30.09.1954 (Amtsblatt Schl.-H. 1954 Nr. 43 S. 440),



Type Test Report Nr. **011-07-36267/2007** vom 25, April 2008

Applicants: AKA STRADALIT Pflasterklinkerwerke GmbH & Co KG Postfach 1430 49464 Ibbenbüren

Sampling date: 08,04.2008

Sampling: KERAMLABOR - im Auftrag des Güteschutz Ziegel Nordwest e.V.

Inhalt des Antrages: Typprüfung von Pflasterziegeln nach DIN EN 1344 / Juli 2002 und DIN 18503/062.2003

Taking place: Stock

Title of the samples: Red Clay Pavers with Chamfer Size: 200 x 100 x 45 mm

Productname.: „Red“

Deklaration: Klasse R1 / FP 100 / T4 / A3 / U3

The implementation of the tests carried out in accordance with DIN EN 1344 / July 2002 and DIN 18 503 / Dec 03 The individual results from the full Certificate No. 33 999 for details.

Property	Requirement	Measurement	Requirement met
Requirements according to DIN 1344 / July 2002			
Dimensional average	Lenght < 6 mm	1 mm	yes
	width < 4 mm	1 mm	yes
	heigth < 3 mm	0 mm	yes
Dimension, Class R1	Länge < 8mm	1,5 mm	yes
	Breite < 6 mm	2,0mm	yes
	Höhe > 4 mm	1,0 mm	yes
Chamferwidth; Chamferdeep	s 7 mm	3 mm	yes
Freeze-dew resistance	100 freeze-thaw change without changes	No change	yes
Bending breaking load, class T4 the smallest single value	> 64 N/mm	142 N/mm	yes
Average number	> 80 N/mm	179 N/mm	yes
Abrasion resistance, Class A3 average	< 450 mm ³	120 mm ³	yes
Sliding and slip resistance, class U3 average	> 55 (USRV)	71 (USRV)	yes
Requirement with DIN 18 503 / Dez. 03			
Waterabsorption, average	< 6 M-%	2,0 M-%	yes
Clay Density, Average	> 2,00 g/cm ³	2,41 g/cm ³	yes

The factory production control system meets the requirements of DIN EN 1344th

The authorization to use the CE mark is hereby confirmed.

26008 Oldenburg, den 25. April 2008
Manager of the Certification Office



Overall rating:
Requirements according to DIN EN 1344 / July 2002 and DIN 18 503 / Dec 2003 met.



..... (Dr.-Ing D.Janssen)

KERAMISCH-TECHNOLOGISCHES BAUSTOFFLABORATORIUM HAMBURG *

Staatlich anerkannte Prüfstelle

21465 REINBEK • UNTER DEN LINDEN 2 • TELEFON (040) 71 1 822-0

Erstmals anerkannt für die Gewässerung der Erzeugnisse <te: Ziegelindustrie durch Erlass des Ministers für Arbeit, Soziales und Vertriebs des Landes Schleswig-Holstein vom 30.09.1954 (Amtsblatt Schl. -H- 1954 Nr. 43 S. 440),



Type Test Report Nr. 33 999 Ü vom 12, Mai 2004

Applicants: AKA STRADALIT Pflasterklinkerwerke GmbH & Co KG Postfach 1430 49464 Ibbenbüren

Sampling date: 08,04.2004

Sampling: KERAMLABOR - im Auftrag des Güteschutz Ziegel Nordwest e.V.

Inhalt des Antrages: Typprüfung von Pflasterziegelin nach DIN EN 1344 / Juli 2002 und DIN 18503/062.2003

Taking place: Stock

Title of the samples: Red Clay Pavers with Chamfer Size: 200 x 100 x 52 mm

Productname.: „Bonn“

Deklaration: Klasse R1 / FP 100 / T4 / A3 / U3

The implementation of the tests carried out in accordance with DIN EN 1344 / July 2002 and DIN 18 503 / Dec 03 The individual results from the full Certificate No. 33 999 for details.

Property	Requirement	Measurement	Requirement met
Requirements according to DIN EN 1344 / July 2002			
Dimensional average	Lenght < 6 mm	1 mm	yes
	width < 4 mm	1 mm	yes
	heigth < 3 mm	0 mm	yes
Dimension, Class R1	Länge < 8mm	1,5 mm	yes
	Breite < 6 mm	2,0mm	yes
	Höhe > 4 mm	1,0 mm	yes
Chamferwidth; Chamferdeep	s 7 mm	3 mm	yes
Freeze-dew resistance	100 freeze-thaw change without changes	No change	yes
Bending breaking load, class T4 the smallest single value	> 64 N/mm	142 N/mm	yes
Average number	> 80 N/mm	179 N/mm	yes
Abrasion resistance, Class A3 average	< 450 mm ³	204 mm ³	yes
Sliding and slip resistance, class U3 average	> 55 (USRV)	73 (USRV)	yes
Requirement with DIN 18 503 / Dez. 03			
Waterabsorption, average	< 6 M-%	2,3 M-%	yes
Clay Density, Average	> 2,00 g/cm ³	2,40 g/cm ³	yes

The factory production control system meets the requirements of DIN EN 1344th

The authorization to use the CE mark is hereby confirmed.

Overall rating:
Requirements according to DIN EN 1344 / July 2002 and DIN 18 503 / Dec 2003 met.

26008 Oldenburg, den 28. May 2004
Manager of the Certification Office



l. (Dr.-Ing D. Janssen)

Test Certificate
Determination of Compressive Strength of Clay Pavers
[Based on DIN 18503]

Date of issue : 11-08-2006
Page 1 of 1 page(s)

Castco LRN : HC260729-2

Details as supplied by client

Client : Drago Verde Trading Ltd.

Client's Ref. No. : KK/F/1810

Job Title : --

Contract No. : --

Sample Description :- --

Nominal size : 200 mm x 100 mm x 80 mm (Length x Width x Thickness)

Type : Clay Paver

Brand : --

Manufacturer : --

Laboratory test results

Date sample received : 29-07-2006

Date of test started : 31-07-2006

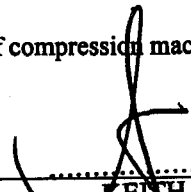
Date of test completed : 10-08-2006

Specimen I.D.		1	2	3	4	5	6	7	8	9	10
Length (mm)	Top	200	199	200	200	200	200	201	202	202	201
	Bottom	200	199	200	200	200	200	201	202	202	201
	Mean	200	199	200	200	200	200	201	202	202	201
Width (mm)	Top	99	99	100	101	100	101	101	101	100	101
	Bottom	99	100	100	101	100	101	101	101	100	101
	Mean	99	100	100	101	100	101	101	101	100	101
Thickness (mm)	Left	79	79	79	81	79	80	80	80	81	81
	Right	79	79	80	81	79	80	81	80	81	81
	Mean	79	79	80	81	79	80	81	80	81	81
Maximum Load (kN)		3859	3831	3826	3851	3849	3899	3831	3829	3810	3840
Compressive Strength (N/mm ²)		194.9	192.5	191.3	190.6	192.5	193.0	188.7	187.7	188.6	189.2
Compressive Strength Mean		190.9									

Remark :

1. Test results relate only to the specimens tested.
2. No failure was found on specimens tested. Test maximum load was exceeded the capacity of compression machine.

Checked by :  **M. L. LAM**

Certified by : 
KENH CHOI
C.Eng., MHKIE MICE
Laboratory Engineer

Test Certificate

Determination of Water Absorption Properties of Masonry Units and Segmental Pavers

(AS/NZS 4456.14 : 1997)

Date of issue: 13-03-2006

Page 1 of 1 page

Castco LRN: HC260304-5

Details as supplied by client

Client: Drago Verde Trading Ltd

Client's Ref. No.: HK12/02

Contract No.: HK12/02

Job Title: Central Reclamation Phase III

Sample Type: Clay Paver (WISMAR)

Date Cast: --

Sample Size: 200mm x 100mm x 80mm

Source: --

Location of Sampling: --

Date of Sampling: --

Laboratory Test Result

Date Received: 04-03-2006

Date Tested: 09-03-2006

Specimen no.	1	2	3	4	5	6	7	8	9	10
Cold water immersion water absorption (%)	0.4	0.4	0.5	0.5	0.6	0.3	0.6	0.4	0.5	0.3
Average cold water immersion water absorption (%)	0.5									
Boiling water absorption (%)										
Average boiling water absorption (%)										


Remark:

1. Test result relate to the specimen tested only.

Checked by :

**M. L. LAM**

Certified by :

**K. YEO**
Technical Manager

Form No. H_CON AS4456_T1 dd 27/06/2002

Test Certificate
Determination of Compressive Strength of Clay Pavers
[Based on DIN 18503]

Date of issue : 24-07-2006
 Page 1 of 1 page(s)

Castco LRN : HC260710-4

Details as supplied by client

Client : Drago Verde Trading Ltd.

Client's Ref. No. : DI/F/1807

Job Title : --

Contract No. : --

Sample Description :- --

Nominal size : 200 mm x 100 mm x 62 mm (Length x Width x Thickness)

Type : Clay Paver

Brand : --

Manufacturer : --

Laboratory test results

Date sample received : 10-07-2006

Date of test started : 12-07-2006

Date of test completed : 21-07-2006

Specimen I.D.		1	2	3	4	5	6	7	8	9	10
Length (mm)	Top	197	197	198	198	197	198	197	198	197	197
	Bottom	197	197	197	198	197	198	198	197	198	197
	Mean	197	197	198	198	197	198	198	198	198	197
Width (mm)	Top	99	99	100	100	99	99	99	99	100	100
	Bottom	99	99	100	100	99	99	99	99	99	99
	Mean	99	99	100	100	99	99	99	99	100	100
Thickness (mm)	Left	62	63	63	62	62	62	62	62	62	62
	Right	63	62	62	62	62	62	62	63	63	62
	Mean	63	63	63	62	62	62	62	63	63	62
Maximum Load	(kN)	3902	3852	3836	3834	3832	3827	3833	3829	3827	3836
Compressive Strength	(N/mm ²)	200.1	197.5	193.7	193.6	196.5	195.2	195.5	195.3	193.3	194.7
	Mean	195.5									

Remark :

1. Test results relate only to the specimens tested.
2. No failure was found on specimens tested. Test maximum load was exceeded the capacity of compression machine.

Checked by :



M. L. LAM

Certified by :



.....
KEITH CHOI
C.Eng., MHKIE MICE
Laboratory Engineer

Test Certificate

Determination of Water Absorption Properties of Masonry Units and Segmental Pavers

(AS/NZS 4456.14 : 1997)

Date of issue: 13-03-2006

Page 1 of 1 page

Castco LRN: HC260304-6

Details as supplied by client

Client: Drago Verde Trading Ltd

Client's Ref. No.: HK12/02

Contract No.: HK12/02

Job Title: Central Reclamation Phase III

Sample Type: Clay Paver (WISMAR)

Date Cast: --

Sample Size: 200mm x 100mm x 62mm

Source: --

Location of Sampling: --

Date of Sampling: --

Laboratory Test Result

Date Received: 04-03-2006

Date Tested: 09-03-2006

Specimen no.	1	2	3	4	5	6	7	8	9	10
Cold water immersion water absorption (%)	0.7	0.5	0.8	0.8	0.6	0.8	0.4	0.8	0.7	0.4
Average cold water immersion water absorption (%)	0.7									
Boiling water absorption (%)	/									
Average boiling water absorption (%)	/									

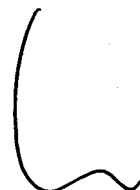
Remark:

1. Test result relate to the specimen tested only.

Checked by :

**M. L. LAM**

Certified by :

**K. YEO**
Technical Manager

Form No. H_CON AS4456_T1 dd 27/06/2002