Notifieid Body 204 in accordance of decision ÚNMZ č. 1/2003
Branch Plzeň

REPORT ABOUT SUERVISORY

Over the certified product

In accordance of government order no.163/2002 of Collection of the Laws of the Czech Republic

č. 030 – 029 580

name of the product

fireclay of common use

classifying sign in accordance of ČSN 72 61 06 SUE

c classyfing sign in accordance of ČSN EN 12475-1: LF 10

applicant:

Schiedel , joint stock company

Identity number: 251 57 922
address: 373 44 Zliv, Nádražní ul. 738

manufacturer: Schiedel, a.s.
identity number: 251 57 922
adress: 250 81 Nehvizdy, Horoušanská ul. 286

production shop: Schiedel, a.s.
identity number: 251 57 922
address: 373 44 Zliv, Nádražní ul. 738

order: Z030000295

Number of certification: **03 – 13256**

Number of pages, title page including: 8 Number of pages of amendments: 0

Person in charge of content of this page: **Ing. Jaroslav Kotora**
The main critic

Person in charge of correction of this page:

Technický a zkušební ústav stavební Praha, s. p., Pobočka 0300 - Plzeň, Zahradní 15, 326 00 Plzeň, Česká republika
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Plzeň

Ing. Alexander Trinner

Stamp of notified person

deputyof head of nitified person

1 Common data

1.1 Data about procucer

Schiedel, a.s.
Identity number 251 57 922
address: 250 81 Nehvizdy, Horoušanská ul. 286

prodiuction shop: 373 44 Zliv, Nádražní ul. 738

IN accordance of report from manufacturer there was made a change inorganization structure, when Schiedel company was changed into joint stock company with headquarters in Nehvizdy(see above).

1.2 Data about product

Fireclay of common use SUE (classifying sign in accordance ČSN 72 6106) is suitable for liningstill 1100 grades of Celsia, one-sidedly or for short time till 1200 grades of Celsia. , strongly loaded by abrasion and high pressure, exposed to chemical influences or melts. The fact is that thefirecaly SUE is frost resistance and it is possible to use it even for linings periodicly working devices which are exposed to weather conditions , for example for buildings of chimeneys.

In accordance of ammendment 2 NV no.163/2002 Sb. Is filed to schedule 2 ,serila number 4 and the way of its critic of corcondance is equal with §5 of tihis NV.

1.3 The list of the used basis and technical specifications, technical instructions

- Building technical certification no.. 03 – 13 254 firecaly of common use issued , vy TZÚS Praha, s.p. branch in Plzeň day 21. 7. 2000, valid till 31.7.2005.
- **ČSN EN 993-1** Testing methods for refractory products shaped compact – Part 1: Determination of thermal capacity weight,virtual porsity and real porosity .
- **ČSN EN 993-5** Testing methods for refractory products shaped compact – Part 5: Determination of strength in pressure in cold
- **ČSN EN 993-8** Testing methods for refractory products – Part 8: Determination of berring in fire
- **ČSN EN 993-10** Testing methods for refractory products shaped copmact – Part 10: Determination of permanent changes in length in fire
-
- **ČSN EN 955-2 Chemical analysisof refractory materials** – Part 2:Materials containing SiO2 or Al2O3 (wet way).
- **ČSN P ENV 955-4** Chemical analysis of refractory meterials – Partt 4: Materials containing SiO2 or Al2O3 . Fire analysis of atomic absorb spectrometry and atomic **A**bsorb spectrography with inductive coonnected plazma
- **ČSN EN 12475-1** Classificcation of refractory products shaped compact – Part 1: aluminium-silicon products
- **ČSN ISO 5022** Refractory products shaped. Taking of samples and overtaking exams
- **ČSN 72 2605** Testing of bricks products. Determination of mechanical properties
- **ČSN 72 2606** Testing of bricks products. Testing of frost resistance
- **ČSN 72 6106** Fireclay of common use . Common regulation

1.4 Information oabout previous supervisory

It is the first supervisory over the certified product

2 The course of supervisory

2.1 The way and extant of supervisory

The supervisory was carried out bz taking set of samples of certified product.

2.2 Taking of samples

The samples were taken 6.9. 2004.

2.3 The results of testing of the product

The results of testing are written down in the protocol no . 030 - 029 578 about testing of fireclay of common use – C25 issued TZÚS Praha, s. p., branch in Plzeň 20.10. 2004.

2.4 The results of supervisory over the systém of managing of production

The manufacturer is suppose to keep permanent quality of certified products.Classification of systém of the production with supervisory over the certified pproduct is included inreport no. 030-029 579 issued TZÚS Praha, s. p., branch in Plzeň on 20. 10. 2004. There are no facts which can change conclusions written down in this report.

3 Classification of results of supervisory

3.1 Classifcation of results of testing products

The certified product noticed in item 1.2 meets the technical specifications included in item 1.3.

Results of classification can be found in the following charts:

Fireclay of common use SUE
geometric accuracy and quality of the surface

Classified property	Regulation	Allowed number of non-satisfactories from 8 testing	The found number of non-satisfactories	Testing protocoll	Classification
Length	STO 03 – 13254	1	0	030-029 578	Meets regulation
Width		1	0		Meets regulation
Thickness		1	0		Meets regulation
Departure from right angle		1	0		Meets regulation

Deformation		1	0		Meets regulation
Damage of edges and corns		1	0		Meets regulation
Surface cracks		1	0		Meets regulation

Fireclay of common use
physical parameters

Classified property	Regulation	Technical regulation	Result of classification	Testing protocol	Classification
Content Al_2O_3	STO 03 - 13 254	Min 28,0 %	32,10 %	030-029 578	Meets regulation
Contant Fe_2O_3		max 3,5 %	3,12 %		Meets regulation
Virtual porosity		max 20,0 %	13,8 %		Meets regulation
Strength in pressure		min 40,0 MPa	46,1 MPa		Meets regulation
Bearing in fire		min 1100 °C	1237 °C		Meets regulation
Permanent changes in length in fire after burning1100Gr.Celsia		max –0,4 %	-0,01 %		Meets regulation
Frost resistance		Max 20 %decrease of strength inpressure after 25 cycles	Decrease of strength in pressure -18 %		Meets regulation

There are only avarages found measures. Each of results are in protocol about testing

In classification in accordance ČSN EN 12475-1 carried out on the base of limiting values (min.28%Al2O3) it is a product of class LF 10(content Al2O3 between 10 and 30%). But in classification of realy found values itis a product of FC 10 (content AL2O3 between 30 and 35 %).

3.2 Classification of supervisory over the systém of managing production

Classification of supervisory over the systém of production is included in item 2.4 and valid under given circumstances.

Classification of supervisory over the way of control of products (by importer) is included in item 2.4 and valid under given circumstances.

3.3 Classification of keeping other conditions of validity of certificate

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4.Conclusion

- During the supervisory over theproduct was found that: the product meets the technical specification included in item 1.3- in accordance of this item the certification of product was carried out
- Systém of managing production meets the technical documentation. And ensures that the products on the market meets the technical documentation..

During supervisory was found that the product meets regulation §5 of goverment order no. 163/2002 Sb.

4 Ammendments

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E N D O F R E P O R T

Notified person 204 in accordanceof decision ÚNMZ č. 1/2003
Branch 0300 – Plzeň

REPORT

About result of classification of managing production

In accordance §5goverment order no.163/2002 of Collection of Lawas of the Czech Republic

č. 030 – 029 579

name of the product:

fireclay of common use

classifyong sign in accordance ČSN 726106: SUE
classifying sign in accordance ČSN EN 12475-1: LF 10

applicant:

Schiedel , joint stock company.

Identity number: 251 57 922
address: 373 44 Zliv, Nádražní ul. 738
manufacturer: Schiedel, a.s.
identity number: 251 57 922
address: 250 81 Nehvizdy, Horoušanská ul. 286
production shop: Schiedel, a.s.
Identity number: 251 57 922
address: 373 44 Zliv, Nádražní ul. 738
order Z030000295

Number of pages title page including: 1

Basis for classification:.

Basis given by applicant were used for filling the application form „Testing of systém of managing production.

Conclusion: The systém of managing production meets the technocal regulations and ensures that the products on the market meets the technical documentation

Person in charge of content of thi report:

Plzeň 20. 10. 2004

Stamp of notified person 204

Ing. Jaroslav Kotora
main critic

Technický a zkušební ústav stavební Praha, s. p., Pobočka 0300 - Plzeň, Zahradní 15, 326 00 Plzeň, Česká republika
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Bankovní spojení (Bank): KB Praha 1 Czech Republic, ú.č.: 1501-931/0100 IČ: 000 15679 DIČ/VAT: CZ00015679

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Constructions Prague
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Certifikační orgán, Inspekční orgán
Accredited Test Laboratory, Authorised Body, Certification Body, Inspection Body

Branch 0300 Plzeň – testing laboratory

PROTOCOL

no. 030- 029 578

about testing of fireclay of common use – C25

Applicant: SCHIEDEL, joint stock company
Závod Zliv
Nádražní 738
373 44 ZLIV
Request of performing of activity AO 204 no. 295/00 from 18.5.2000

Order number.:Z030000295

Ammendments: 2 × bearing in fire in accordance of ČSN EN 993-8

This protocol was madein two copies. The first criginal belongs to applicant , the second one is filed archive TZÚS in Plzeň.

The testinglaboratory ensures systém of quality documentated in booklet of quality and connected internal regulations. Metrological sequence of used measures and testing devicesis documentedin Metrological regulations of laboratory (0300A041.All used measures were notified and calibrated.

Person in charge of contentof this protocol:

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Ing. Richard Švarc
Author of protocol

:Person in charge of correction of this protocol:

Plzeň 20.10. 2004

Stamp of testing laboratory

Ing. Vlasta Hlaváčová
head of testing laboratory

Prohlášení:
1) *Výsledky zkoušek se týkají jen zkoušených předmětů (vzorků).*
2) *Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.*

1Specification of object oftestin (sample)

8 pieces of fittings C 25 (250x123x65 mm) made from fireclay of common use.
Tests were finished: 20. 10. 2004.

1 Taking of sample

Date of taking: 6. 9. 2004
Place of taking: expedition store of manufacturer
Person : deputy of applicant
Way of sampling: random
Way of transport: delivery service – Transportexpres ČSAD JIHOTRANS
For TZÚS took overl: Ing. J. Kotora
Date of overtaking: 6. 9. 2004
Registration number of sample: 1710

2 Results of testing

2.1 Parameters and surface defects

Determination was made in accordance of testing process :

ČSN ISO 12678-1 Refractory products – Measure of parameters and external defects of refractory shaped products –Part 1:
Parameters and accordance with drawings

ČSN ISO 12678-2 Refractory products- Measure of parameters and external defects of refractory shaped products- Part 2
Damage of edges and corns and other surf

Number of fitting	Length [mm]	Width [mm]	Thickness [mm]	Departure from the right angle [A/N]	Deformation [A/N]	Damage of edges and corns [A/N]	Ccracks [A/N]
1	249,7 A	121,7 A	64,6 A	A	A	A	A
2	249,4 A	121,8 A	65,6 A	A	A	A	A
3	250,4 A	121,7 A	67,3 A	A	A	A	A
4	252,3 A	122,4 A	66,0 A	A	A	A	A
5	251,0 A	121,9 A	67,0 A	A	A	A	A
6	251,4 A	122,0 A	65,5 A	A	A	A	A
7	250,3 A	121,8 A	68,1 A	A	A	A	A
8	252,3 A	122,8 A	68,0 A	A	A	A	A
∅	**250,9**	**122,0**	**66,5**	-	-	-	-
Number of items which doesn´t meet regulation:							
	0	**0**	**0**	**0**	**0**	**0**	**0**

explanation: „A“ = meets regulation, „N“ = doesn ´t meet regulation

2.2 Chemical analysis

Determination was made in accordance of testing process:

ENV 955-4 Chemical analysis of refractory materilas – Part 4: Materials containing SiO2 and AL23O Fire analysisatomic absorb spectography (FAAS) and atomic absorb spectography with inductive connected plazma (ICP).

Component	Content of component [%]
Loos made by annealing	0,04
SiO_2	59,98
Al_2O_3	32,10
TiO_2	1,31
Fe_2O_3	3,12
CaO	0,13
MgO	0,70
Na_2O	0,13
K_2O	1,86

2.3 Virtual porosity and capacity of weight

Determination was made in accordance of testing process :

ČSN EN 993-1 Testting methods for refractory shaped proucts – Part 1: Determination of capacity of weigh,virtual porosity and real porosity

Number of fitting	Virtual porosity [%]			Capacity of weight [kg·m^{-3}]			Impregnation [%]		
	1.	2.	∅	1.	2.	∅	1.	2.	∅
1	13,8	13,9	13,9	2145	2157	2151	6,4	6,4	6,4
2	13,0	12,7	12,9	2140	2163	2152	6,1	5,9	6,0
3	13,9	14,2	14,1	2143	2149	2146	6,5	6,6	6,6
4	14,2	13,9	14,1	2150	2141	2146	6,6	6,5	6,6
Diameter			**13,8**			**2149**			**6,4**

2.4 Strength in pressure

Determination was made in accordace of testing process:

ČSN EN 993-5 Testing methods for refractory products – Part 5: Determination of strength of pressure in cold

Numbr of fitting	Strength in pressure [MPa]		
	1. items	2. items	Diameter of sample
1	48,7	51,8	50,3
2	41,5	41,1	41,3
3	49,3	43,5	46,4
4	45,0	47,1	46,2
Average:			**46,1**

2.5 Permanent changes in length

Determination was mede in accordanceof testin process:

ČSN EN 993-10 Testing methods for refractory shaped products – Part 10: Determination of of permanent changes in length in heat

Number of fitting	**Permanent changes in length after 1000°C/5h** [%]
1	-0,07
2	+0,03
3	-0,01
4	+0,03
Average:	**-0,01**

2.6 Bearing in heat:

Determination was made in accordance of testing process:

ČSN EN 993-8 Testing methods for refractory shaped products – Part 8: Determination of bearin in heat

Number of tested body	**Bearing in heat $T_{0,5}$** [°C]
2	1222
4	1252
Average:	**1237**

2.7 Heat resistance

Determination was made in accordance of testing process:

ČSN EN 993-12 Testing methods for refractory products shaped – Part 12: Determination of heat resistance

Number of fitting	**Testing of heat resistance** [ISO]			
	Sample no. 1	**Sample no. 2**	**Sample no. č. 3**	**Average**
1	160	160	160	**160**

2.8 Frost resistance

Determination was made in accordance of testing process:

ČSN 72 2605 Testing of brick products
Determination of mechanical properties
ČSN 72 2606 Determination of brick products
Testing of frost resistance

Because there was little number of taken samples the test of frost resistance could be carried out only on less number of samples (2+2 instead of 5+5 samples).The found parameters could be influenced by this fact. (

Frost resistance number tvarovky	**changes** **After test**	**Strength in drawing during flexure**		**Strength in pressure**	
		Not frozen sample.	After 25 cycles	Not frozen sample.	After 25 cycles
		[MPa]	[MPa]	[MPa]	[MPa]
5	No change		2,00		23,2
6	No change		1,41		62,0
7	No change	1,49		42,6	
8	No change	1,79		60,8	
Average value		**1,64**	**1,71**	**51,7**	**42,6**
Change in strength		incease	+ 4 %	Decrease	-18 %
Max.allowed decrease of average strength		20% of strength of not frozen samples			

Notice: testing of strength in pressure were in test of frost resistance made on whole bricks.(in accordance of testing standard) That is the different between testing in accordance ČSN EN 993-5 (testing on test cylinders with diameter and heigth 50 mm). Resusts of this testing are written in item 2.4.

E N D O F P R O T O C O L