

## News-Letter - November 1991

I have pulled myself together and written this News-Letter which as usual is very extensive, but once a year I feel that you should know what has happened in our company during the year just about to finish, as it has indeed been quite a turbulent one in the company's 7 years of existence.

Mid this year we sent you a News-Letter about our established partnership with The Morgan Crucible Company Plc. in Windsor, UK, as from May 1st, 1991, and the subsequent close co-operation with the Thermal Ceramic Group worldwide.

However, a few other things have happened in the company, and below we brief you on what has been going on and what we think might be of interest to you.

### Family

My first grandchild, Sara, is now 1½ year old. I never ever dreamt of it, how wonderful it is to have such a little human being in the family. When she comes and takes grandfather's hand and we take a walk, you are absolutely melting away. It is the most fantastic feeling, and both Tove and I love her very much. We enjoy seeing her and follow, how she develops very rapidly and how funny she is. I would never have imagined that we would ever accept to have such a mess in the house after she has been around. However, when it is Sara - it just does not matter - she can do nearly anything. I think that many of my friends among you, who are grandfathers yourselves, know how it is, and isn't it just great?

### Staff

Unfortunately, Lene Ellingsøe has now completed her two years' education in our company. She has been a fantastic help for us and has had an excellent contact to our suppliers as well as our clients. She left the company on November 1, 1991, in order to go to an Oil trading company in Vejle in the Southern part of Denmark. We will definitely be missing her.

However, no one is indispensable, and we feel very confident that our new employee

Susanne Mortensen

who started in the company on the 1st of October, 1991, will be just as good a support and colleague for us as Lene was, and the difference between her and Lene is that Susanne is not in the company in order to be trained. She has been trained in an international trading company. She speaks English and German and she is 24 years old. We hope that we can keep Susanne for many years to come.

Lisbeth Høltzermann is now doing mainly the daily bookkeeping, but also all the reporting to our partners, Morgan Crucible. As you may imagine there is quite some reporting to do, when a relatively small staff in Windsor UK is running some 130 companies worldwide. It is only a question of falling into line. It took some time and some changes in our computer systems, but this should be working alright at least as from January 1st, 1991.

## AIME - 1991

The AIME-meeting 1991 took place in New Orleans, and Klaus, Morten and I participated. We had many good meetings with business friends, and after meetings held in New Orleans, we succeeded in securing nice orders for both insulating bricks, block insulation, and last but not least cathode blocks.

It is always nice to see all your friends once a year at these AIME meetings which I find are the best meeting place when you want to see people from all over the world.

In spite of the tough times in the aluminum industry these days due to the low prices, which we shall comment on later in this letter, we hope that many smelters will send some of their employees to the next AIME-meeting, as we think that it is very important even in tough times to meet business friends, follow what goes on in the industry and prepare ourselves for the better times which will definitely come, and may they come very soon!

## AIME - San Diego - 1992

Living in Denmark is a beautiful thing. It is a fantastic country, clean and nice, but pretty nasty during the winter months. It is therefore most welcome that the AIME end February/early March 1992 will take place in San Diego in the Southern part of California. What a pleasure to go to this place at that time of the year. It is by the way always very nice to visit America.

In 1992 Klaus, Morten and I are as usual going to the AIME conference. We think that a personal relationship between us and our business friends, who have also in many cases become personal friends, is very important, and we all look forward to seeing those of you participating in the AIME meeting in San Diego and having a great time together.

## INSULITE 1900

Insulite 1900 has become a well accepted product for insulation of the bottom of cathodes, when calcium silicate slabs are required for this purpose. We have had quite some problems during 1991 in producing calcium silicate blocks above 65 mm (2.5") and also in producing slabs enough, because the installation of the new huge press weighing about 250 tons has created more problems than anyone ever imagined.



We have been trying to make sure that, even though we were late in producing, our clients were not let down. Cape Boards Siborit GmbH and we have been spending quite a lot of money making sure that the deliveries reached our clients in time, as we were short of production capacity, and we therefore had to airfreight a lot of blocks to some clients whose orders would otherwise have been delayed too much. But the problems are behind us, and we can produce any quantity now.

## **Heavy Calcium Silicate Boards**

Since our last News-Letter the production of the heavy calcium silicate boards produced by Cape Boards Siborit GmbH in Lüneburg has also reached a very high quality level. These heavy calcium silicate boards are marketed by us on various markets, and we shall start a marketing campaign of these boards in the near future on the markets where we have been granted the exclusive sales rights.

Most of these heavy boards come from the same suppliers of which there are only two of some importance in the world, and I think that I am very close to the truth when I say that our supplier in Lüneburg is making the best heavy calcium silicate boards and in larger quantities than any other supplier in this field.

Do not hesitate to let us have your inquiries for these products which we shall be happy to quote you in flat boards and in special shapes. Our standard shapes are

1220 x 1500 mm and  
1220 x 3000 mm

## **Heavy Vermiculite Boards**

As per our last Christmas' News-Letter we had problems in producing our Pro-Lite heavy vermiculite boards and had stopped the production. It is better not to market a product which is not up to the requested standards, so we made this very sad decision. However, during the past year we have been working intensively together with Kramer GmbH in Düsseldorf on developing a new heavy vermiculite board. We have now got so far that we can supply a heavy vermiculite board which is up to the requested standards, and data sheets are available upon request. This product has got the new name

PROLITE SM 13

in order to show you that there is a difference between this quality and the former Pro-Lite quality, which we produced a few years ago.

## **MOSCONI - MSB Bricks**

For some years we have been introducing the Mosconi double sized bricks in the quality MSB-450.

Being the only supplier capable of supplying double bricks shows that we try to be ahead of the development and always to be at least "one horse-head ahead" of our competitors. The Mosconi double sized bricks are supplied to many smelters worldwide, as they are very economical to lay, and they are very competitive in pricing compared to other insulating bricks available in the market place.

The pricing is a very important factor these years and due to the fact that the Mosconi bricks are price competitive we have achieved a sales in 1991 as never before. We have very good prospects also for the years to come and are about to agree on long term contracts with some very large smelters.

The double bricks are now also being machined on 5 faces to exact sizing, and the reports we get back from our various clients for the standard sized as well as double sized bricks concerning the checking of the dimensional tolerances are fantastic. Also, there is practically no breakage in the supplies of Mosconi bricks, and as the bricks are very similar in thermal conductivities to the other products available on the market, we have got a nice market share which will increase, and we will of course work on selling more and more of these bricks.

We have lately had our Mosconi bricks tested for thermal conductivities and will distribute a new data sheet for the bricks within a short time. This will automatically be sent to all our clients using insulating bricks.

### Isolite Insulating Bricks, Quality: JAI, from Japan

During 1991 we have been successful in getting a strong foothold in various smelters worldwide for these outstanding diatomaceous bricks, like insulating molar bricks, made from the finest Japanese raw material.

The appearance and the quality of these bricks are absolutely second-to-none, and you do not find any better insulating diatomaceous brick on the market today.

All clients who have placed orders for these bricks have only been praising both the appearance, the accuracy of the bricks and the good condition in which the bricks arrive. Generally, no bricks are damaged during transportation due to an excellent packing.

The Japanese are cautious providing first-class qualities, and their quality control is outstanding. We feel convinced that also in the years to come our market shares for insulating bricks will be increasing due to us having Isolite, one of the leading suppliers of insulating materials worldwide, as suppliers for Simonsen & Sons.

### Insulating Firebricks

After we entered the Thermal Ceramics Group we have the two best suppliers of insulating firebricks behind us, namely insulating firebricks sold under the brand name TS and coming from



THERMAL CERAMICS  
P.O.Box 923  
Augusta  
GA 30903  
U.S.A.

and the insulating firebricks marketed under the name ITS and produced by

THERMAL CERAMICS  
Via Della Rogge  
20071 Casalpusterlengo (MI)  
ITALY

Also for the Italian IFBs we enclose a data sheet for your guidance, and irrespectively of it where you live in the world, we can supply the best quality from one of the above two producers, who are today producing some 65% of the world's production of insulating firebricks. This high sales have only been achieved through research and development as well as through constant improvement of the quality and a steady quality control.

#### Low Cement Castable

In our last News-Letter we informed about an established co-operation with National Refractories in the USA, who's product Kricon 28 was going to be marketed by us.

However, when you become partners with a large group like Thermal Ceramics, certain suppliers, or suppliers to be, get "cold feet" and do not want to cooperate with you for competitive reasons etc. So therefore the co-operation which we intended to establish with National Refractories was called off.

On the other hand there are many, many advantages of being partners with a very large group which is always on the outlook for new products to produce and market. Therefore our friends in Casalpusterlengo in Italy have developed a special low cement castable which we are now marketing under the name

#### SUPERCAST 3X-V

Data sheets are being made and the smelters interested in this product will get data sheets mailed directly when these are available. This low cement castable is a first-class product and is competitive in prices, and with this excellent product we expect and hope to gain a certain share of the market, preferably the largest one!

#### Cathode Blocks

As informed you in our last News-Letter a producer in Nowy Sacz, Poland, has become our supplier of cathode blocks to certain markets. The company has changed name as from this spring to

POLGRAPH SA  
ul. Wegierska 188  
P.O.Box 152  
33-300 Nowy Sacz  
POLAND

Unfortunately, we could not market Polgraph's blocks on all markets, and therefore we have also established a co-operation with the alternative producer of cathode blocks in Poland, who's products we are representing on the markets where we cannot sell Polgraph's blocks.

This new producer

Z.E.W.  
Zaklady Elektrod Węglowych "1 Maja"  
ul Piastowska 29  
47-400 Racibórz  
POLAND

we are also dealing with directly, and they are able to produce not only gas calcined but also electrically calcined cathode blocks. They have a production of some 15,000 tons a year. Due to the need for alternative suppliers of cathode blocks made from outstanding raw materials of a very constant quality from Russia, plus the fact that the Poles seem to be very competitive in their pricing, what is an important factor for the aluminum industry today, we expect within one or two years to have many trial pots running around the world with our Polish cathode blocks being supplied by either Polgraph or ZEW.

#### ISO-Standards

The demand from clients all over the world for products being quality controlled according to the ISO-9000 standards has become more and more widespread, and most of the suppliers have to live up to the clients' demands in that respect.

We are doing the same and can inform you that before the end of 1992 Cape Boards Siborit GmbH in Germany, our suppliers of light and heavy calcium silicate boards, is quality controlling and producing the products according to the ISO-9000 Standards. We can also inform you that Mosconi is working on introducing the same system, and we expect Mosconi to be approved according to the ISO-9000 standards around mid 1992.

Our supplier of insulating firebricks is "on the same track" and the same of course goes for our other suppliers, even though it is difficult for cathode blocks producers to fall into line, as there are not really any firm standards for quality controlling and testing of cathode blocks, and each producer seems to have developed his own system. I assume that the cathode block producers will, and will have to, fall into line too.



So in this respect we are again ahead of the development in order to make sure that the products we supply are up to the standards, and maybe even above, and in order to make sure that our clients can be a hundred per cent confident that products purchased from our company are first class. This means that no testing and quality controlling should be necessary upon receipt of the products we supply, as in the future we aim at letting any order and delivery be accompanied by a test certificate.

## ISO-9000

As indicated above all our various producers are now about to introduce quality control and produce their products according to ISO-9000. It is not an easy thing, and there is a lot of manuals to be made out so that each producer can follow the standard procedure. This will ensure that identical procedures are followed concerning raw materials, the production, the mixing of the various products, the firing time and the control.

We keep pushing our various suppliers all we can, and rest assured that we shall succeed, and we shall of course keep you informed about the development in that respect. However, one thing is for sure, we are already now ahead of the development within the refractory producers supplying the aluminum industry, and we intend to remain the leaders, as we have been it within other areas in the past.

## Bank Account - New York

A lot of mergers have taken place between the Danish banks. In fact there are only a few large banks left, and these mergers have created some problems for the banks' clients.

Therefore we have not been advising our clients, especially in The States, to transfer payments via our usual bank account in New York, as things did not work. However, the banks have had to, and have succeeded in getting their acts together, so in the future any client in South America, North America, Middle America and Canada can transfer their payments to us through our bankers in New York, which are the following

DEN DANSKE BANK  
New York Branch  
280 Park Avenue  
New York 10017  
U.S.A.

Tel.: Int. +1 212 984 84 00  
Fax : Int. +1 212 370 92 39  
Tlx.: 680 1420 ddbny

FEDWIRE ABA No.: 026003719  
CHIPS ABA No.: 371

Account No.: 4000/1808265

Some of our Australian clients also pay via our American bank, and of course everyone is welcome to use this bank if it fits better into the individual clients' transfer systems.

## Improvement of Quality Control of Calcium Silicate Slabs

In order to make sure that the products we supply, the INSULITE 1900 slabs, are up to international standard we have again had our products tested at an internationally approved laboratory in Clausthal-Zellerfeld in Germany, and the thermal conductivities determined by this laboratory in August this year, are the ones which have been inserted in our newly printed data.

You will see that the calcium silicate blocks are tested according to the hot-wire method, and in the future we will have all our various products tested according to this method.

The test data for products tested according to the hot-wire method cannot be compared to any other data, as there are always variations. If you compare thermal conductivities of different products, remember to make sure that they have been made according to the same test methods. The new, updated and a hundred per cent correct data appear from the enclosed data sheet for the INSULITE 1900, and our quality control of these slabs has already for some years been the most advanced within the calcium silicate producing industry. We will try to stay ahead. Please notice that no blocks available on the market match our blocks neither qualitywise nor technicallywise. That is probably why our INSULITE 1900 slabs are the most widely used calcium silicate slabs for cathode insulation worldwide.

## Aluminium Prices

The prices for aluminium has dropped continuously over the past months, not to say year. It has been a long time since the prices were this low. Obviously, we will see, as a result of these low prices, that some smelters will close part of their production, or maybe even whole plants will be closed down and some maybe forgot.

It is unfortunate but probably necessary in order for the rest of the industry to survive, the part of the industry producing according to the newest technologies, in the most rational and cost saving plants. However, it is a sad development, which causes a lot of human sufferings!

As far as I have been able to follow, a reason for the low prices is the fact that a certain East European country is dumping metal into the international market, and as a Danish tax-payer I feel a little frustrated to put it mildly. First we are asked by the European Community and the Danish Government to support the East block, because of the bad financial shape they are in, what I think is a human thing and should be done.

Also we must help the East Europeans who are short of food and many other things which we in the West consider normal in our daily life. They must have food and we must send them money. That is alright, but isn't it fantastic that due to the unfair competition of one of the East Block countries dumping aluminium on the world market, I, as a Danish tax-payer, have to fight in a very difficult market in order to survive and make money, of which part has to go to East Europe, it is not fair, is it?



### Contest

Travelling the world within the aluminum industry has shown us that there are many smelters, which have a fair average pot-life, of course some are better than others, and it is not always the oldest Søderberg pots which have the shortest pot-life. We also know that several smelters have some very old pots running, and we think that it could be funny if those of you reading this letter would let us know how old your oldest pot is.

We shall then try to collect this information, and the persons, among all the reactions we might get, who write us and tell us about the oldest pots in operation, will be awarded:

a ball point similar to that used lately by President Bush and Gorbatsjov for signing some documents. These pens are made from scrapped weapons like missiles etc. and most of the money paid for these pens is used for worldwide charity.

We will publish which smelters have these old pots, either before but latest in our next News-Letter.

We know that some smelters have life-times above 3,000 days, but there might be some even older, and let us know about it. Just send us a fax, a short letter, telling us what type of furnace it is and when it was put into operation and how old it is on the 1st of January 1992.

We look forward to hearing from you in this respect, and we can hardly wait to get your reply.

### Inauguration of Domestic Airport

Those of you who have been visiting us over the years have mainly been flying out of Copenhagen to Karup in Jutland about 50 minutes' drive from Nykøbing Mors.

The airport is situated in one of the most busy and progressive industrial areas in Denmark. Karup is very close to Herning which is the head quarter of the clothing industry in Denmark. Also there are a lot of other factories in this area, and therefore the demand for a new airport has been very strong over the years, and a few years ago it was decided to build a new one.

For the inauguration on the 1st of August, 1991, all the big shots from the government, the local administrative districts, all the SAS people, ministers from Denmark, Norway, Sweden plus the Danish Crown-Prince, Prince Frederik, were invited. As a very frequent user of the Karup Airport over the years, I was invited too and sat pretty close to the Crown-Prince during the inauguration. (You know: The Prince and I...)

It was a big day for our area, and when you come to Karup again, you will agree with us that this is a beautiful, Danish designed airport, which is a fantasy in glass, steel and marble and very elegant. We look forward to showing you the airport.

## Murphy's Law

You have probably all heard about Murphy's Law, but have you ever read the whole law collection made by this Murphy, who is said to be an Irishman, what is probably not correct. I do not even think that Murphy ever existed - or did he?

Anyway, Murphy's Law is quite extraordinary, and during a trip to Australia a few years ago I bought a big poster with all Murphy's laws printed on it. I have had this reduced to a more acceptable size, and I enclose a copy of Murphy's law for you which you could hang in your office as it is always good to have a nice laughter.

Look at it when things are a little gloomy and do not work out right, and I will tell you, Murphy will cheer you up - enjoy yourself.

## Phoning in Hotels

Phoning is a very special thing in hotels, anyway in some places, and lately I cut out from Far Eastern Review the following article about how to phone, and the contents of this small article is fantastic, isn't it. How, they ever find out how to call from one room to another in the Simbabwe Sun Hotel, I just do not understand.

### Q U O T E

If state-of-the-art communications are vital, I do not give Zimbabwe much of a chance to become an IFC. Joan Kaufman, after spending years trying to figure out the convolutions of the Peking telephone system, found even more challenging instructions at the Zimbabwe Sun Hotel:

*To speak to a guest in another room:*

*Please follow these instructions:*

*1st Floor - add 250 to the room number and dial, on to 2nd, 3rd and 4th floors - dial the number required. 5th Floor - subtract 250 from the room number and dial, e.g. to contact Room 510 dial 260 EXCEPT for room 542 whose number is 294.*

### U N Q U O T E

Nearly at the same time as I read these sentences in the Far Eastern Review, I also saw in a Danish paper some examples which the paper had picked up from a paper in Claremont in California regarding various signs in hotels:

1. Japanese Hotel:  
You are invited to take advantage of our chambermaid!  
(That is quite something, isn't it?)
2. Russian Hotel in Moscow:  
If this is your first visit to the USSR, you are welcome to it.  
(What about that? The English language is a difficult one, isn't it?)



3. Hong Kong Marked:  
For your convenience we recommend courteous, efficient self-service (that is one of the things about self-service, I do not like - the service is so damned bad)
4. Hotel in Zürich:  
Because of the impropriety of entertaining guests of the opposite sex in the bedroom, we suggest that you use the lobbies for this purpose. (I do not know what the other guests would think if one really followed the instructions of the hotel!)
5. Norwegian Bar:  
Ladies are requested not to have children in the bar. (No, they should either stay at home or go to the hospital, shouldn't they?)

This summer I read in the magazine Highlife, published by British Airways, an article about it that fax machines may be able to shake hands, but the loss of the human touch may mean the loss of business. That is why we travel all the time!

There is one thing which is the bad news about the fax machines. Communication is very fast, and you can flash a message from one end of the world to the other within seconds. However, everyone is being pushed, because you feel obliged to reply immediately. These fax machines, I believe, in fact stress people even though they make it easier to do business, but what if the human being is suffering under this constant pressure of all the faxes coming in, which you must reply to immediately?

I have a very good friend who is one of the world's leading doctors in his field. He is in daily contact with colleagues all over the world, and he travels the world and gives papers on the special subject in which he has specialized.

He really gets upset, when someone sends him a fax and ask him a very complicated question concerning someone having a fatal disease and must be helped immediately. As he says, "it is not that easy to give a reply without knowing the patient, and then by fax, and you feel that you have to give a reply immediately even though you need some time to think about this special case, as no two cases are the same".

I think that my friend is right, so in the future let us use the fax as it should be used, and not let it run us down.

Finally, I apologize many times for having made another extensive News-Letter, but obviously many of the readers like to get the various news. As you know I have always been one of these guys, who not only talks a lot, but I also talk a lot to the dictaphone, and therefore the letters tend to become very long.

I try to make them personal, as if I was speaking to you, and the only advice I can give you is that if you do not want to read it, leave it.

However, I hope that there are a few points which may interest you in this News-Letter, and I wish you a lot of fun with Murphy's Law and with the article about phoning in the hotels, and I thank you for the support you have been giving us so far and not least in 1991. I hope for a good co-operation also in the future and for a beautiful and good 1992 for our families and ourselves, and may we stay healthy.

As one of my friends said,

"IF THE GOOD LORD WILL MAKE SURE, I DO NOT GET POOR, MY WIFE WILL MAKE SURE I DO NOT GET RICH"

and how right he was, wasn't he?

Many kind regards and have a really nice and peaceful Christmas.

SIMONSEN & SONS LTD.



Jørgen Simonsen



# insulating firebricks

Technical Data Sheet No. 4 – August '91

**simonsen**  
& sons ltd

		its-20	its-23	its-24	its-25	its-25-hs	its-26	its-28	its-30	its-32
<b>Bulk density:</b> (ASTM C-134-84)	Kg / m <sup>3</sup> Lbs.cu.ft.	450 28	480 30	500 31	760 47	850 53	780 49	880 55	1000 62	1250 78
<b>Service temperature:</b> (or classification temperature)	°C °F	1100 2000	1260 2300	1320 2400	1370 2500	1370 2500	1430 2600	1540 2800	1650 3000	1760 3200
<b>Cold crushing strength:</b> (ASTM C-93-84)	Kg / cm <sup>2</sup> Mn / m <sup>2</sup> Lbs.sq.in.	8.0 0.8 114.0	11.5 1.1 164.0	12.0 1.2 170.0	18.0 1.8 256.0	32.0 3.2 454.0	17.0 1.7 241.0	21.0 2.1 300.0	25.0 2.5 355.0	35.0 3.5 497.0
<b>Modulus of rupture:</b> (ASTM C-93-84)	Kg / cm <sup>2</sup> Mn / m <sup>2</sup> Lbs.sq.in.	7.5 0.7 107.0	9.5 0.9 135.0	10.0 1.0 142.0	16.0 1.6 227.0	22.0 2.2 312.0	14.0 1.4 200.0	18.0 1.8 257.0	18.0 1.8 257.0	21.0 2.1 298.0
<b>Permanent linear change (%):</b> After 24 H soaking at temperature (ASTM C-210-85)	1070°C/1950°F 1230°C/2250°F 1300°C/2370°F 1350°C/2460°F 1400°C/2550°F 1510°C/2750°F 1620°C/2950°F 1730°C/3150°F	- 0.1 - - - - - - -	- - 0.2 - - - - - -	- - - 0.2 - - - - -	- - - - 0.5 - - - -	- - - - 0.5 - - - -	- - - - - 0.2 - + 0.2 - -	- - - - - - - 0.6 -	- - - - - - - - 0.6	- - - - - - - -
<b>Thermal conductivity mean temp.:</b> (ASTM C-182-83) W/mK	400°C 600°C 800°C 1000°C 1200°C 1400°C	0.13 0.15 0.17 - - -	0.14 0.16 0.18 0.20 - -	0.14 0.16 0.18 0.20 - -	0.27 0.30 0.33 0.36 - -	0.31 0.34 0.37 0.40 - -	0.27 0.29 0.31 0.33 0.35 -	0.32 0.34 0.36 0.38 0.41 -	0.41 0.43 0.44 0.45 0.47 -	0.49 0.50 0.51 0.53 0.56 0.60
Btu / sq.ft.h °F / in.	752°F 1112°F 1472°F 1832°F 2192°F 2552°F	0.90 1.04 1.18 - - -	0.97 1.11 1.25 1.39 - -	0.97 1.11 1.25 1.39 - -	1.87 2.08 2.29 2.50 - -	2.15 2.36 2.57 2.77 - -	1.87 2.01 2.15 2.29 2.43 -	2.22 2.36 2.50 2.64 2.84 -	2.84 2.98 3.05 3.12 3.26 -	3.40 3.47 3.54 3.68 3.88 4.16
<b>Hot load strength (%) deformation after 90 mins. (ASTM C-16-81) at:</b>	1100°C/2000°F at 5 psi (0.35 kg/cm <sup>2</sup> ) 1100°C/2000°F at 10 pst (0.70 kg/cm <sup>2</sup> ) 1200°C/2200°F at 5 psi (0.35 kg/cm <sup>2</sup> ) 1260°C/2300°F at 10 psi (0.70 kg/cm <sup>2</sup> ) 1320°C/2400°F at 10 pst (0.70 kg/cm <sup>2</sup> ) 1370°C/2500°F at 10 pst (0.70 kg/cm <sup>2</sup> )	0.10 - - - - -	0.10 - - - - -	- 0.1 - - - -	0.2 0.3 - - - -	0.15 0.25 - - - -	- - - 0.20 - -	- - - 0.10 0.20 -	- - - - 0.10 0.50	- - - - - 0.20
<b>Reversible linear thermal expansion at max. service temperature:</b>	max. %	0.5	0.5	0.6	0.7	0.7	0.7	0.8	0.9	1.1
<b>Typical chemical analysis:</b>	Al <sub>2</sub> O <sub>3</sub> SiO <sub>2</sub> Fe <sub>2</sub> O <sub>3</sub> TiO <sub>2</sub> CaO MgO Na <sub>2</sub> O + K <sub>2</sub> O	35.8% 44.7% 0.8% 1.0% 16.1% 0.3% 1.2%	37.0% 44.4% 0.7% 1.2% 15.4% 0.3% 1.1%	39.1% 44.4% 0.7% 1.5% 13.2% 0.2% 0.8%	40.0% 53.5% 0.9% 0.6% 2.6% 0.3% 2.1%	40.0% 53.5% 0.9% 0.6% 2.6% 0.3% 2.1%	58.0% 39.1% 0.7% 0.1% 0.1% 0.2% 1.8%	67.1% 31.0% 0.6% 0.1% 0.1% 0.1% 1.0%	73.4% 25.1% 0.5% 0.1% tr tr 0.9%	77.0% 21.5% 0.3% tr tr 0.1% 0.9%
<b>Overall dimensional tolerances:</b>	Length Width Thickness	± 1 mm ± 1 mm ± 1 mm								
<b>Max. sizes available:</b>	Length Width Thickness	250 & 230 mm 640 & 610 mm 64 & 76 mm larger sizes can be supplied but glued together								
<b>Gross densities for calculating transport costs:</b>	Kg / m <sup>3</sup> Lbs. / cu.ft.	500 31	530 33	550 34	810 51	900 56	830 52	930 58	1060 66	1310 82
<b>Standard export packing:</b>	CARTONS ON PALLETS EQUIPPED WITH SHRINK-FILM									

Data are average results of tests conducted according to standard procedures and are subject to variation. Results should not be used for specification purposes.

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# High Density

## Asbestos free calcium silicate boards

Technical Data Sheet No. 4 – Sept. '91

**simonsen**  
& sons ltd

		ultra-flow	ultra-flow plus	super-con
<b>Nominal dry density:</b> (Tolerance $\pm 10\%$ )	Kg / cm <sup>2</sup> Lbs.cu.ft.	850 53	850 53	1300 81
<b>Max. service temp.</b>	°C °F	800 1472	800 1472	1000 1832
<b>Compressive strength:</b> (ASTM C-165) at 3% compaction	Kg / cm <sup>2</sup>	100	90	80
	Lbs.cu.ft.	10	9	8
	Lbs.sq.ft.	1422	1280	1138
	Kg / cm <sup>2</sup>	150	120	110
	Mn / m <sup>2</sup>	15	12	11
at 5% compaction	Lbs.sq.in.	2133	1707	1565
<b>Flexural strength:</b> (ASTM C-203)	Kg / cm <sup>2</sup>	80	90	80
	Mn / m <sup>2</sup>	8	9	8
	Lbs.sq.in.	1138	1280	1138
<b>Hardness (shore D):</b>	$\pm 10$	60	60	60
<b>Total porosity:</b>	%	65	57	50
<b>Thermal shrinkage:</b> (ASTM C-356) 24h at 750°C (1382°F)	Thickness	0.5 %	0.7 %	0.0 %
	Length/Width	0.15%	0.25%	0.0 %
<b>Coefficient of thermal expansion:</b> 20–800°C (68–1472°F)	K <sup>-1</sup>	6 x 10 <sup>-6</sup>	6 x 10 <sup>-6</sup>	4.5 x 10 <sup>-6</sup>
	°F <sup>-1</sup>	3.4 x 10 <sup>-6</sup>	3.4 x 10 <sup>-6</sup>	2.5 x 10 <sup>-6</sup>
<b>Thermal conductivity:</b> (ISO 8894-2) Hot wire method (parallel) W/m K	200°C	0.19	0.17	0.33
	400°C	0.20	0.18	0.35
	600°C	0.21	0.19	0.38
	800°C	–	–	0.44
	Btu / sq.ft.h°F / in	392°F	1.32	1.18
		752°F	1.39	1.25
		1112°F	1.46	1.32
		1472°F	–	–
				2.29
				2.43
<b>Typical chemical analysis:</b>	SiO <sub>2</sub>	55.1%	48.1%	49.5%
	CaO	41.6%	46.5%	48.0%
	MgO	0.3%	0.3%	0.3%
	R <sub>2</sub> O <sub>3</sub>	1.7%	1.5%	2.2%
	Ignition Loss	1.3%	3.6%	0.0%
<b>Dimensional tolerances:</b>	Length & Width	$\pm 3.0$ mm ( $\pm 1/8$ ")		
	Thickness	$\pm 0.4$ mm ( $\pm 1/60$ ")		
<b>Standard dimensions:</b>	Length	1500 mm & 3000 mm 59" & 118"		
	Width	1220 mm 48"		
	Thickness	12.7 mm – 19.1 mm – 25.4 mm – 31.8 mm – 38.1 mm – 50.8 mm – 76.2 mm and 102 mm		
		1/2" – 3/4" – 1" – 1 1/4" – 1 1/2" – 2" – 3" and 4"		

**Special shapes:** Special shapes, floaters, spouts etc. can be supplied according to customers' drawings. Also special thicknesses, widths and lengths can be supplied upon request.

Physical and thermal values are based upon regular average test results obtained in accordance with internationally accepted test methods. No warranty or guarantee is implied on the data which are given in good faith.



# Safety Data Sheet

## Product identification

ITS-20, ITS-25, ITS-28, ITS-30, ITS-32  
ITS-23, ITS-26, ITS-30, ITS-24, ITS-25-hs.  
Chemical Name and Synonyms: **N/A Mixture.**  
Chemical Family: **Refractory Insulating Firebricks**  
[CAS # 66402-68-4]

## Hazardous Ingredients

A. As Manufactured: WT.% TLV/PEL.  
**None – See also Health Hazard Data.**  
B. After Normal Use: See Special Precautions.

## Physical Data

Boiling Point:	N/A
Vapor Pressure (mm Hg.):	N/A
Vapor Density (Air = 1):	N/A
Solubility in Water:	Insoluble
Appearance and Odor:	Porous brick. No Odor
Specific Gravity Range (H <sub>2</sub> O = 1):	0.45–1.3
Percent Volatile by Volume (%):	N/A
Evaporation Rate:	N/A

## Fire And Explosion Hazard Data

Extinguishing Media:	N/A
Flammable Limit:	N/A
Unusual Fire and Explosive Hazards:	N/A
Special Fire Fighting Procedures:	N/A
Flash Point (Method Used):	N/A
LEL:	N/A
UEL:	N/A

## Health Hazard Data

Primary Route of Entry: Inhalation, ingestion, skin contact.  
Effects of Overexposure: During installation, it is common to handle and cut these products. The cutting process may generate respirable nuisance dust (TLV: 10 mg/m<sup>3</sup>, total dust; PEL: 5 mg/m<sup>3</sup>, respirable dust and 15 mg/m<sup>3</sup>). Exposure to nuisance dust may cause temporary irritation or discomfort of the skin, eyes, nose, throat or lungs may aggravate bronchial disorders. These products do not appear on any NTP or IARC lists/reports of carcinogens.

Emergency and First Aid procedures:  
Inhalation: Remove to Fresh Air.  
Ingestion: Drink plenty of water.  
Skin: Wash with mild soap and water.  
Eyes: Flush with plenty of water. If irritation persists, call a physician.

## Reactivity Data

Stability: Stable.  
Hazardous Polymerization: Will not occur.  
Materials/Conditions to Avoid: None.

## Spill Or Leak Procedures

Spill or Leak: N/A.  
Waste disposal: Wastes are not hazardous wastes as defined by RCRA (40 CFR 261). Comply with Federal, State and local regulation.  
Method of disposal: Landfill. RQ – N/A.

## Special Protection Information

Respiratory Protection: Dust respirator in compliance with OSHA Standard 29 CFR 1910.134 (MSHA/NIOSH-approved, air purifying, half mask or full facepiece respirator with appropriate filter pad or cartridge).

Ventilation:  
Local Exhaust: Follow OSHA Standard 29 CFR 1910.94.  
Mechanical (General): Follow OSHA Standard 29 CFR 1910.94.

Protective Gloves: Recommended.  
Eye Protection: Goggles/safety glasses recommended.  
Other Protective Equipment: As required to meet applicable OSHA Standards.

## Special Precautions

Precautions To Be Taken After Service and Uo/pn Removal: As manufactured, these products are aluminosilicates which could transform upon heating to mullite and cristoballite (a form of crystalline silica). Removal of these products after service may generate dust. Repeated inhalation of respirable free crystalline silica dust may cause delayed lung injury (silicosis). IARC has placed crystalline silica in Category 2A (IARC believes there is sufficient evidence to carcinogenicity in animals but evidence for the carcinogenicity to humans is limited). The recommended PEL and TLV for respirable cristobalite is 0.05 mg/m<sup>3</sup>. Appropriate Ventilation and respiratory protection should be provided in compliance with OSHA 29 CFR 1920.94 and 1910.134, respectively.

DATE PREPARED: 05/01:87

DATE REVISED: 06/02:89

Producer:

**THERMAL CERAMICS**  
Via Della Rogge  
20071 Casalpusterlengo (MI)  
ITALY



# MURPHY'S LAW

Murphy was an optimist.

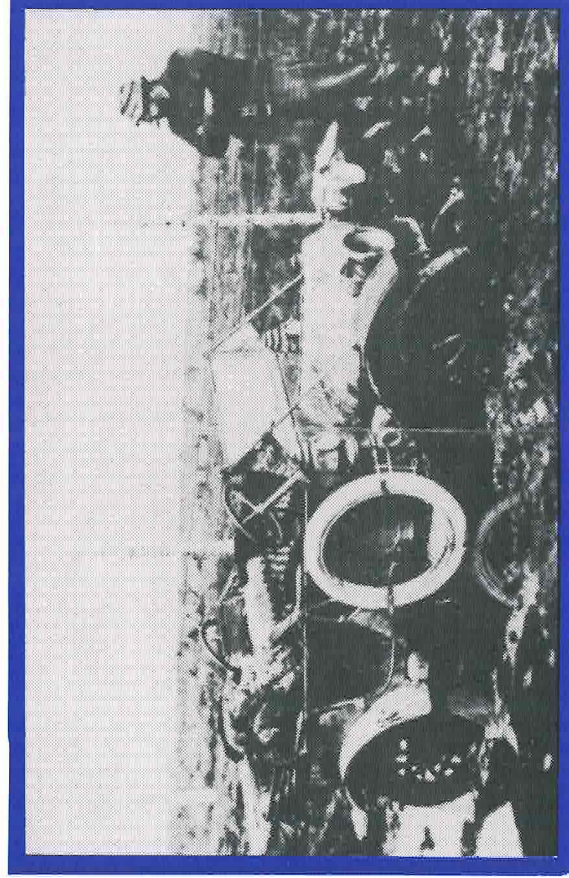
NEVER EAT PRUNES  
WHEN YOU ARE FAMISHED  
ALL WARRANTIES EXPIRE UPON  
PAYMENT OF INVOICE.

WHERE YOU STAND ON AN ISSUE  
DEPENDS ON WHERE YOU SIT.

FRIENDS COME AND GO,  
BUT ENEMIES ACCUMULATE.

IF YOU TRY TO PLEASE EVERYBODY  
NOBODY WILL LIKE IT.

A SHORT CUT IS THE LONGEST  
DISTANCE BETWEEN TWO POINTS.



ANYTHING THAT CAN GO WRONG, WILL GO WRONG.

NO GOOD DEED GOES UNPUNISHED.

LEAKPROOF SEALS — WILL.

SELF STARTERS — WILL NOT.

INTERCHANGEABLE PARTS — WON'T.

THERE IS ALWAYS ONE MORE BUG.

NATURE IS A MOTHER.

DON'T MESS WITH MRS. MURPHY!

90% OF EVERYTHING IS CRUD.

IF YOU'RE FEELING GOOD, DON'T  
WORRY, YOU'LL GET OVER IT.



YOU LOOK.

THE CHANGE OF A PIECE OF BREAD FALLING WITH THE BUTTERED SIDE DOWN IS DIRECTLY PROPORTIONAL TO THE COST OF THE CARPET.

NO MATTER HOW LONG OR HARD YOU SHOP FOR AN ITEM, AFTER YOU'VE BOUGHT IT, IT WILL BE ON SALE SOMEWHERE CHEAPER.

NO ONE'S LIFE, LIBERTY, OR PROPERTY ARE SAFE WHILE THE LEGISLATURE IS IN SESSION.

THE OTHER LINE ALWAYS MOVES FASTER.

IN ORDER TO GET A LOAN, YOU MUST FIRST PROVE YOU DON'T NEED IT.

ANYTHING YOU TRY TO FIX WILL TAKE LONGER AND COST MORE THAN YOU THOUGHT.

IF YOU FOOL AROUND WITH A THING FOR VERY LONG YOU WILL SCREW IT UP.

A \$300.00 PICTURE TUBE WILL PROTECT A 10¢ FUSE BY BLOWING FIRST.

IF IT JAMS—FORCE IT. IF IT BREAKS, IT NEEDED REPLACING ANYWAY.

ANY TOOL DROPPED WHILE REPAIRING A CAR WILL ROLL UNDERNEATH TO THE EXACT CENTER.

THE REPAIRMAN WILL NEVER HAVE SEEN A MODEL QUITE LIKE YOURS BEFORE.

WHEN A BROKEN APPLIANCE IS DEMONSTRATED FOR THE REPAIRMAN, IT WILL WORK PERFECTLY.

A PIPE GIVES A WISE MAN TIME TO THINK AND A FOOL SOMETHING TO STICK IN HIS MOUTH.

EVERYBODY SHOULD BELIEVE IN SOMETHING—I BELIEVE I'LL HAVE ANOTHER DRINK.

BUILD A SYSTEM THAT EVEN A FOOL CAN USE, AND ONLY A FOOL WILL USE IT.

EVERYONE HAS A SCHEME FOR GETTING RICH THAT WILL NOT WORK.

IN ANY HIERARCHY, EACH INDIVIDUAL RISES TO HIS OWN LEVEL OF INCOMPETENCE, AND THEN REMAINS THERE.

THE TRASH WHEN THE GARBAGE TRUCK IS TWO DOORS AWAY.

THE RACE IS NOT ALWAYS TO THE SWIFT NOR THE BATTLE TO THE STRONG, BUT THAT'S THE WAY TO BET.

THERE'S NEVER TIME TO DO IT RIGHT, BUT THERE'S ALWAYS TIME TO DO IT OVER.

WHEN IN DOUBT, MUMBLE. WHEN IN TROUBLE, DELEGATE. ANYTHING GOOD IN LIFE IS EITHER ILLEGAL, IMMORAL OR FATTENING.

IT IS MORALLY WRONG TO ALLOW SUCKERS TO KEEP THEIR MONEY.

A BIRD IN HAND IS SAFER THAN ONE OVERHEAD.

MURPHY'S GOLDEN RULE: WHOEVER HAS THE GOLD MAKES THE RULES.

EVERYTHING WEST OF ALICE SPRINGS WILL EVENTUALLY PLUNGE INTO THE INDIAN OCEAN.

NATURE ALWAYS SIDES WITH THE HIDDEN FLAW.

THE LIGHT AT THE END OF THE TUNNEL IS THE HEADLAMP OF AN ONCOMING TRAIN.

CELIBACY IS NOT HEREDITARY.

NEVER SLEEP WITH ANYONE CRAZIER THAN YOURSELF.

BEAUTY IS ONLY SKIN DEEP, DGLY GOES TO THE BONE.

TO KNOW YOURSELF IS THE ULTIMATE FORM OF AGGRESSION. (FREUDIAN PSYCHOLOGY)

NEVER PLAY LEAPFROG WITH A UNICORN.

A SMITH & WESSON BEATS FOUR ACES.

IF EVERYTHING SEEMS TO BE GOING WELL, YOU OBVIOUSLY DON'T KNOW WHAT THE HELL IS GOING ON.

IF MORE THAN ONE PERSON IS RESPONSIBLE FOR A MISCALCULATION, NO ONE WILL BE AT FAULT.

IN CASE OF DOUBT, MAKE IT SOUND CONVINCING.

NEVER ARGUE WITH A FOOL, PEOPLE MIGHT NOT KNOW THE DIFFERENCE.

**simonsen**



## SAFETY DATASHEET

PRODUCER : Cape Boards Siborit GmbH  
In der Marsch 8  
2120 Lüneburg  
Germany

BRANDNAME : ULTRA-FLOW/ULTRA-FLOW PLUS/  
SUPER-CON

1.1 Material identification : Calciumsilicate

1.2 Shape/consistence : Slabs

1.3 Colour : White / pink

1.4 Odour : None

### PHYSICAL AND OTHER DATA CONCERNING SAFE HANDLING:

1.1 Change of consistence : Sintering starts at 1200° C  
(= 2200° F)

1.2 pH-value : 9 ± 0.5

1.3 Dangerous thermal decomposition products : At first heat treatment, the known cellulose oxidation products are released (only Ultra-flow plus).

1.4 Dangerous reactions : None

SPECIAL REGULATIONS FOR TRANSPORT : None

SPECIAL REGULATIONS FOR HANDLING : Where practicable, dust emitted during machine cutting, sanding or drilling of boards should be controlled by local exhaust ventilation at source.

PRECAUTIONS CONCERNING STORAGE AND HANDLING : None

PRECAUTIONS AFTER ACCIDENTS OR FIRE : None

STATEMENT ABOUT ENVIRONMENTAL PERFORMANCE : No problems for disposal

SPECIAL PRECAUTIONS AND COMMENTS : Approved respiratory protective equipment (e.g. BS 6016, BS 2091 or equivalent) should be made available to persons working in concentrations above or around the occupational exposure limit.