

Seg·ment

News and

Information for our Customers and Partners

January 2007



steag

Entsorgung

a magazine
of the SEG-group

ASIKOS
Strahlmittel GmbH

Mineral 
plus



Editorial

Dear readers,

Before an eventful year draws to a close, I would like to thank all friends and customers of the SEG group for the good and faithful cooperation.

The FIFA World Cup in Germany surely was a highlight for all of us in 2006. But also within the SEG group, we succeeded in scoring a number of goals.

One example regarding MINERALplus is the expansion of the RAG waste management to the Degussa locations. Also, in April of this year, SEG founded STEAG PowerMinerals Ltd. as a wholly owned subsidiary located in London, and for Asikos, the new logistics centre in Pontwert.

In 2007, the planned IPO of RAG is going to impose new challenges on the SEG group, which we are already preparing for today.

As of January 1, 2007, all our steament® products will bear the CE mark and the Ü mark. Thus fly ash is now accepted as a European building material. Read more about the legal background in the article "New Regulations for Fly Ash in Concrete".

These are some of the topics we have prepared for you in this December issue of Seg-ment. I hope that we have found an interesting mix of subjects for you again.

I wish you, your families and your friends a peaceful Advent season, a blessed Christmas and all the best for the new year 2007!

Yours sincerely,

Rudolf Mauder

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Picture from left to right:
Andreas Hugot (CEO SEG), Carole Sterckx (SPM), Hans-Peter Ickemeyer (SPM) und Thomas Duve (CEO SPM).

News

SEG Goes British

In April of this year, STEAG PowerMinerals Ltd – a 100% subsidiary of STEAG Entsorgung-GmbH (SEG) – was registered at Companies House in Cardiff. Thomas Duve is the Chief Executive Officer of this new company and has been in England since May. We caught up with him recently.

Segment: Why did SEG decide to establish a subsidiary in the UK? Wouldn't it have been easier to appoint a sales representative locally at first?

Thomas Duve: SEG feels that forming a company locally is the best way to develop the UK market. The 'Buy British' days may be in the past, but it is definitely a psychological advantage to be regarded as a British company. There are also legal and tax implications which make the founding of a British company appear advantageous.

Segment: Where is the company based?

Thomas Duve: Our head office is located in Richmond, in the South West of London.

Segment: Why was this location chosen?

Thomas Duve: Our potential suppliers – ie: the power plants – are spread right across the country. For this reason we chose a location nearer to our clients rather than to our suppliers. The greater London region is the area with the highest demand for building materials.

Segment: How many employees does the British company have?

Thomas Duve: So far there are three of us: Hans-Peter Ickemeyer: former Director of London First Centre, is my adviser and brings with him a wealth of experience and contacts spanning over 30 years in the UK; Carole Sterckx: born in England with fluent German is my assistant and office manager. And then there's me: former Assistant Sales Manager and Sales Office Manager at SEG.

Segment: How would you describe the business activities of the new company?

Thomas Duve: The aim is to mirror the activities of SEG here in the UK. That is to say the by-product management at coal-fired power stations and industrial facilities as well as the marketing of the power plant by-products: coal fly ash, bottom ash and FGD gypsum to the building and building materials industry. Ultimately the disposal security of the German STEAG power plants should be safeguarded through international sales.

Segment: Can the activities and the approach on the British market be compared to the way in which Germany approaches the market?

Thomas Duve: That's a wonderful question but hard to answer. Much is the same – for example the structure of the building material/cement markets. However a different approach needs to be taken here as the mentality of the British people is different to that of the Germans. Let me explain by giving you an example: In Germany, if you want to sell fly ash to a cement manufacturer, you basically have to convince the customer of the product's technical qualities and its cost effectiveness. Once you have done that and your price is lower than that of the competitors, a deal will be struck. It is virtually irrelevant whether the customer likes the supplier on a personal level or not.

This is quite different in the UK. You may have the world's best and most cost effective product in your range. But if it is not possible to establish a personal rapport with the customer, your chances of selling are reduced. The British call us "specification minded" which probably hits the nail on the head.

Segment: Where do you see the biggest similarities and/or differences?



Group photo taken at dinner in the "House of Commons".

Thomas Duve: As I mentioned before, the biggest similarity is the market structure. Many of our German customers – Heidelberg, Cemex, Holcim and others – are represented here either by their own companies or by a shareholding in British companies.

There are lots of differences which spring to mind. Perhaps the biggest difference in our business is that up until a few years ago, there was very little recycling awareness in the UK. For example only a few months ago, domestic waste recycling was introduced. And only now are people starting to really think about what to do with domestic waste once the existing landfill quotas are exhausted.

However the public perspective on recycling is changing rapidly and people are becoming aware of many past environmental blunders.

This is good news for us. For years it was common practice for national and international power generators in the UK to simply dump fly ash in lakes. Now generators are facing enormous criticism and are looking for alternative forms of utilisation. And this is where our experience comes to the fore.

Segment: Is it advantageous for the company to belong to an energy group?

Thomas Duve: Not necessarily, as I just mentioned. It is however true that STEAG AG has a good reputation as a company steeped in tradition. It is also seen as positive that SEG is independent from the cement industry. But it is definitely advantageous to be a subsidiary of the German market leader in the field of by-product management of coal-derived residues. We benefit hugely from this as Germany has an excellent reputation here in the field of recycling.

Segment: Is it useful having good business contacts with German power generators to fall back on and is it easy to make contact with their UK subsidiaries?

Thomas Duve: It probably is useful but we haven't yet had occasion to put this to the test.

Segment: Are the activities of our parent company well known in the UK?

Thomas Duve: Some of the power plant operators know of SEG. We're actually promoting STEAG Encotec who, amongst other things, specialises in the refit and construction of FGD plants.

Segment: Has SEG ever attempted to establish itself in the UK market?

Thomas Duve: No, not SEG on its own. However talks jointly initiated with VliegasUnie Holland were held with Castle Cement (a subsidiary of the Heidelberg group) and others regarding the supply of fly ash.

Segment: Why wasn't the UK market interesting until recently?

Thomas Duve: At the end of the day, the decisive conclusion we reached was that you have to be located in the country itself in order to establish a long term business.

Segment: Where do you see the biggest challenge for the new company and, of course, for you personally?

Thomas Duve: To be successful. Nothing else counts at the end of the day. Apart from this – possibly pathetic sounding! – statement, the relocation of my family to London is a great personal challenge for all concerned.

Segment: Is the framework for the marketing of power plant by-products – ie: the legal and technical requirements – comparable between Germany and the UK or are there significant differences?



Photos: Em & M Photography

Thomas Duve: Thanks to European legislation and standards, the framework is comparable.

However there are significant differences in the quality of the fly ash. Due to the difference in boiler technology at many UK coal-fired power stations, the LOI and the residual carbon content are considerably higher than in Germany. In addition to this, coal with a relatively high ash content is still being used which leads to high volumes of fly ash being produced.

Segment: What is the situation with co-combustion in the UK?

Thomas Duve: Co-combustion is common practice at virtually all sites. In most cases wood pellets are added and sometimes petroleum coke too.

Segment: Does this lead to problems with marketing the fly ash?

Thomas Duve: The potential problems arising from co-combustion are overshadowed by quality issues such as the very high residual carbon content.

Segment: What volumes of power plant by-products are produced in the UK?

Thomas Duve: Approximately 7 million tons of fly ash are produced annually. I do not have the exact figures for FGD gypsum and bottom furnace ash. As far as I know, boiler slag is not produced at all as there are no slag tap boilers. It is also worth mentioning here that the quantities of FGD gypsum will increase significantly as a result of the flue gas desulphurisation plants currently being built.

Segment: So we can see that PowerMinerals has a lot to do! Thank you very much for talking to us, Thomas, and we wish you and your team every success.

Coal fired power stations within the UK STEAG PowerMinerals Hosts Fly Ash Workshop

On 21 November 2006 STEAG PowerMinerals hosted a workshop in London entitled: 'Using Fly Ash: The Environmental and Greenhouse Gas Benefits'. Almost 50 participants assembled at the German House of the German Embassy in London to hear presentations given by experts from Germany, Switzerland and the UK. Drawing from their experience in the building industry, their scientific and technical knowledge and industry networking, they reported on the possible and practicable use of fly ash in concrete and the recommended use of fly ash on the basis of its properties.

Contributions from a former Member of Parliament, a lawyer and a public relations specialist provided the audience with interesting insights into how the political climate, the legal situation and the public perception can influence the use of this material. The lively debate that ensued reached a definitive consensus in demanding an increase in recycling quotas (currently at 50%).

Following the workshop, all participants were invited to a reception at the residence of the German Ambassador. Members of the STEAG Board and the SEG Board had travelled to London to gain their own impression of the company and its development.

By hosting this event, STEAG PowerMinerals was able to demonstrate on an internal level the broad range of contacts that it has developed in its first six months and on an external level it was able to show that – as a relatively small company – it has the backing of a large concern.

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News

Old Church Shines in New Splendour

In cities, almost every house owner knows the situation: The facade has just been built or renovated, and already it is disfigured by graffiti or soiling on the wall.

The magic word in such situations today is low pressure blasting – a gentle cleaning method with a wide variety of applications.

With low pressure blasting, soiling and graffiti on facades can be removed without traces and without damaging the surface. Even if nature has left its marks on the facade in the form of weathering or other environmental influences, this blasting method is unbeatable.

It can be applied to almost all surfaces, does not require water or chemical cleaning fluids and is a cost-efficient, environment-friendly cleaning method using a special type of blasting abrasives.

“The specialty about low-pressure blasting is that the surface stays completely intact”, explains Thorsten Nægeler, works manager at BSS GmbH in Nordkirchen, Germany. “With this technology, you can even remove text from a sheet of paper without damaging it.” This will make house owners happy in particular, whose facades have been disfigured by sprayers with colourful words. Until recently, house owners had to pay through their nose and attack the legacy of self-appointed artists with lots of chemicals and a high pressure cleaner. The result: Often the surface was permanently damaged. With low pressure blasting, these unpleasant and cost-intensive side effects are a thing of the past.

according to Nægeler. “Everybody knows the traces left behind by ivy, moss or wild wine. With conventional means, it is hardly or not at all possible to remove them. With low pressure blasting, it’s no problem.”

In the preservation of monuments and historic buildings, the method is applied as well. A subsequent coating developed with nano-technology protects the surfaces against future soiling, weathering and aggressive environmental influences.

As an example for the preservation of historic buildings, the technology is currently being demonstrated by BSS GmbH. Ulrich Gößlinghoff, managing partner of BSS, started with his business idea in April 2005. He completed the service spectrum of his house painting company with offerings in the areas of fire damage restoration and facade protection.

This business idea fell on fertile ground, as is shown, for example, by an impressive reference object: the St. Pankratius church in the village of Südkirchen.

The old paintwork on the walls of the St. Pankratius church was removed with low pressure blasting. The method is suitable for both small and large surface areas. The blasting abrasive used is ASILIT® from ASIKOS Strahlmittel GmbH. ASILIT® is used especially for the gentle cleaning of mineral building materials in the preservation of buildings and monuments, but also for the above-mentioned purpose of removing graffiti from almost any kind of surface. “Fine as pepper powder, with grain sizes between 0.04 and 0.5 milli-

But the new technology is not only suitable for use against graffiti. If nature has left ugly traces on facades, low pressure blasting is equally recommendable





meters, ASIKOS creates this iron-free blasting abrasive from boiler slag”, explains Dieter Ays, works manager at the ASIKOS factory in Herne, Germany.

A small red container filled with ASILIT® and a long black tube with a fine nozzle at its end – and immediately the dirt is grabbed by the neck. “We can clean all kinds of surfaces gently – be it clinker, concrete or sandstone”, says Thorsten Nägeler, works manager at

BSS, the company commissioned with the cleaning of the St. Pankratius church.

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EUROMENT at “Betondag 2006”

With a new concept and a new booth, EUROMENT presented itself at the “Betondag” trade fair in Rotterdam, Netherlands, on November 16, 2006.

EUROMENT, an affiliated company of Cementbouw Mineralen and STEAG Entsorgung, is marketing coal fly ash and limestone powder in the Benelux countries. Like every year, the EUROMENT team used the opportunity to consolidate its good contacts to the concrete and precast concrete parts industry and to establish new contacts.

The industry’s interest in the Betondag event is as high as in the years before. At the opening, Ir. P. Kieft, president of the Dutch Concrete Association, welcomed about 3000 visitors from all over Europe. The number of exhibitors – about 150 – proves the great interest in the event as well.



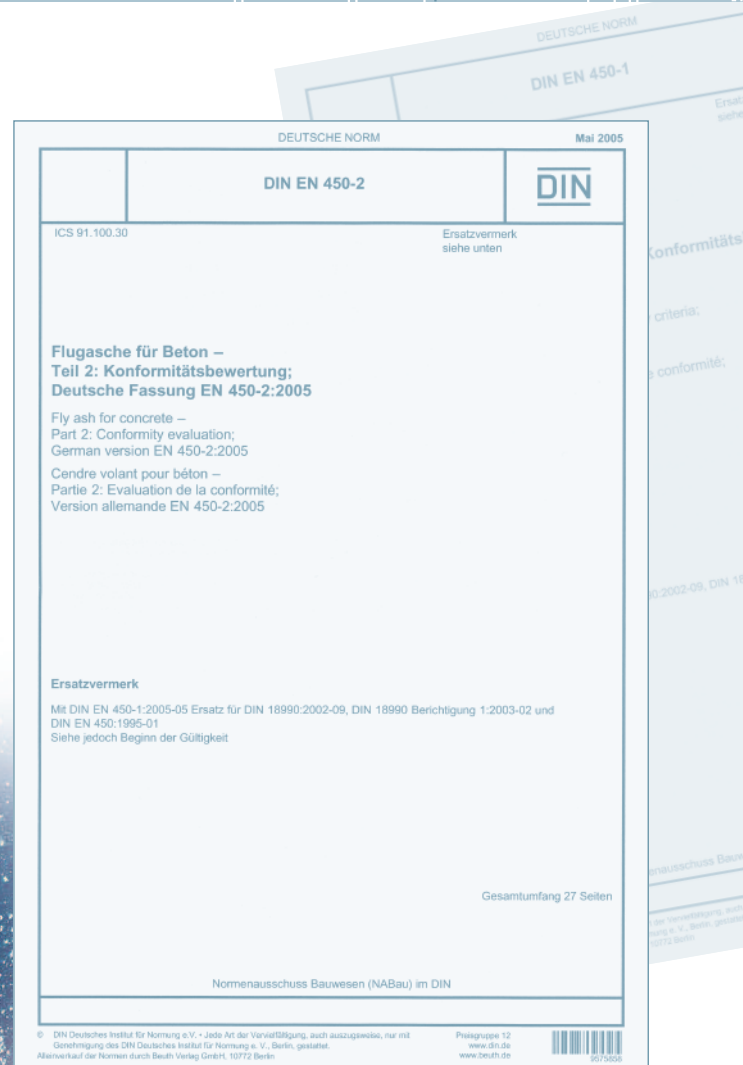
New Regulations for Fly Ash in Concrete

Technology

In 1996, the DIN EN 450:1995 standard “Fly ash for concrete – Definitions, requirements and quality control” with the accompanying application guidelines by the DAFStb “Use of fly ash in concrete construction according to DIN EN 450” was introduced. Since DIN EN 450:1995 does not allow co-combustion, fly ashes from co-combustion processes were subject to the regulations of the technical approval of the German Institute of Building Technology (DIBt) until now. Meanwhile, the DIN EN 450 standard has been revised and reintroduced in its new version DIN EN 450-1:2005-05 (“Fly ash for concrete – Definition, specifications and conformity criteria”) as a harmonised European standard. It now also covers fly ash produced by co-combustion of certain substances and fly ash subjected to conditioning processes, such as drying or mixing.

The regulations for carrying out the quality control and for verifying the standards compliance of a fly ash are specified in DIN 18990 “Fly ash for concrete – Attestation of conformity” since 2003. This German standard is now being replaced by the harmonised European standard DIN EN 450-2:2005-05 (“Fly ash for concrete – Conformity evaluation”).

With the announcement of the two standards DIN EN 450-1 and DIN EN 450-2 in December 2005 in the Official Journal of the European Union, the period of coexistence for both generations of the standards began. It ends on December 31, 2006. With the introduction of the standards in the German Building Rules List 2006/1 of October 4, 2006, the use of fly ash in Germany is now regulated in compliance with DIN EN 450-1 as well: In Germany, in addition to the requirements of DIN EN 450-1, the environmental compatibility of fly ashes must be proven as well. This happens in form of a technical approval of the German Institute of Building Technology (DIBt) including an attestation of conformity.



If the attestation of conformity with DIN EN 450:2005-05 and the approval regarding the environmental compatibility have been obtained, the fly ash is given the CE mark and an “Ü” mark.

As of January 1, 2007, these two marks will indicate to users of steament® that they can use this fly ash as a concrete additive. The high quality standard for fly ash complying with DIN EN 450

becomes apparent by the required attestation of conformity according to System 1+, which is demanded in only six of the more than 150 European standards for building materials.

According to the new concrete standards, the use of fly ash is also allowed for concretes that are subject to freeze-thaw cycles and simultaneous exposure to de-icing agents (XF 2 and XF 4), though it is not allowed to take the k-factor into account of the water-cement-ratio. Meanwhile, a research project initiated by VGB Powertech has been completed, which proves that fly ash concretes are suitable for the exposure classes XF 2 and XF 4, too. These findings were taken into account in the published draft of the A2 amendment of DIN 1045 (DIN 1045-2/A2:2006), and the use as a cement replacement following the k-factor approach is introduced for the exposure classes XF2 and XF4 for almost all types of cement. The official introduction of these regulations is expected for the Building Rules List 2007/2.

Furthermore, the results of another VGB research project are taken into account in the revision of the Alkali Guideline of the DAfStB. The inclusion of the reactive alkali content of fly ash (1/6 rule) in the alkali balance of concretes with alkali-sensitive additives will be abolished. Also, the current restriction to fly ashes with a maximum alkali equivalent of 4 % specified in the Guideline will be removed. In the future, the requirements of DIN EN 450-1 will apply here as well, allowing a maximum alkali equivalent of 5 %.

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ASILUX – Certificates of Conformity Issued

As reported in the April 2006 issue of segment, ASIKOS has committed on a voluntary basis to proving the conformity of the effect material ASILUX with the EN 12620 standard "Aggregates for Concrete", even though effect materials generally don't require a CE marking.

Meanwhile, the initial test according to EN 12620 in connection with DIN V 20000-103 has been conducted in the ASIKOS factories in Herne and Duisburg. The test reports confirm that the examined samples comply with the standard regarding the tested properties. The manufacturing process, the operating facilities and the internal production control procedures in the respective factory comply with the requirements of the standard as well.

For each of the two factories, a separate certificate of conformity for ASILUX was issued. This certificate confirms that the regulations for the conformity approval according to annex ZA of EN 12620:2002-09 have been regarded and fulfilled.

The certificates were first issued in May, 2006, and are valid as long as the EN 12620 standard, the conditions for the production of ASILUX and the internal production control of the respective factory remain unchanged.

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Andreas Symma, Manager of Lünen Site

Technology

Asphalt Base Seal for Lünen Landfill

In Lünen, Germany, STEAG Entsorgung GmbH is operating an intermediate storage facility for coal fly ash. The moistened fly ash stored in the facility is redried in the summer months in the on-site redrying facility. From a legal point of view, the storage facility is considered a landfill and is thus subject to the German Landfill Ordinance.

With the Landfill Ordinance becoming effective in 2002, certain requirements of the Technical Instructions on Municipal Waste were concretised for the operation of landfills. Even though some of these requirements could not be met back then, SEG successfully requested a temporary permission to continue the operation. The Lünen site lacked a state-of-the-art base seal and, due to the underground operation, an unobstructed drainage for the seepage water. The continued operation without modifications was permitted by the district administration in Arnsberg until 2009 at the latest.

“The Lünen landfill is an essential component of the supply and waste management safety we are offering to our customers”, explains Andreas Symma, works manager at the Lünen site. “With the intermediate storage facility and our redrying facility in Lünen, we have the possibility to store excess quantities in the winter, which can then be redried and sold in the summer when needed. To ensure a continuous waste management for the power plants as well as a stable supply to our customers beyond 2009 by continuing to operate our storage and redrying facilities, we have requested an unlimited permission for the further operation – even though this requires a conversion of the landfill from an underground facility into an aboveground storage area, reducing the storage volume from 250,000 tonnes to 150,000 tonnes.”

On September 14, 2006, the district administration in Arnsberg, as the approval authority in charge, permitted the unlimited further operation of the landfill. After that, the reconstruction work could be commenced.

The impressive achievements in terms of planning and logistics, given the short realisation period for the project, are illustrated by some numbers:

Already in early April, the emptying of the mine was commenced. Roughly 80,000 tonnes of moistened fly ash had to be dug out. 40,000 tonnes of it were dried in the redrying facility and sold until September 2006. In the same period, 20,000 tonnes of the moistened ash were used for filling a clay pit, and the remaining 20,000 tonnes were used to fill the Gersteinwerk landfill.

Since early October 2006, a daily amount of more than 2000 m³ of sand and soil was delivered, installed in layers and compacted. The soils and sands, supplied by five different sources, had to comply with the requirements of the soil class LAGA Z0. The mine was filled up to a level that guaranteed that future seepage water could flow away freely. A total amount of 62,000 m³ of sand and soil were installed. The layers on top comprise a 50 cm ballast substructure and a three-layer asphalt seal.

Thank to the excellent cooperation of the companies involved – the engineering company IWA as planners, Köster as contractor, the forwarder Stückenschneider as well as the internal and external supervisors, PTM and Düllmann – the project is expected to be completed by the end of December.

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Logistics

New Logistics Centre for ASIKOS

The ASIKOS location in Duisburg-Pontwert, Germany – right within Europe’s largest inland port – will become the new trans-shipment and logistics centre for all trade products of ASIKOS.

Whether it is garnet sand from Tuticorin / South India, metallic blasting abrasives from Muta / Slovenia or corundum from China or the Ukraine – all products have one thing in common: They will be reloaded and stored centrally in Duisburg-Pontwert from now on. “Our products are delivered by ship in containers or by truck and involve a wide variety of demands regarding their reloading”, says works manager Richard Hausmann. “The wide range of different packing methods, product types and qualities is a real challenge for any trans-shipment and storage facility. We not only unload and store the goods. We are also performing all required quality inspections of incoming products here in our laboratory”, explains Hausmann. Goods maintenance and repacking into European standard packages complete the service portfolio of the new logistics centre in Pontwert.

“The existing storage capacities and office space did no longer meet our demands by far”, explains managing director Peter Ley. “Therefore, we developed a new concept for our site with the support of duisport, a service company of Duisburg harbour. For the realisation, the old office building had to be torn down to make room for a new hall, and an old hall that could not be utilised sufficiently was demolished, too, and replaced by a new one.”

In the last months, ASIKOS has not only created more than 1.000 m² of new storage capacity at the Duisburg location, but also perfected the unloading of 20-foot sea containers as well as the storage of a wide variety of products. The new central storage site serves about 1500 customers all over Europe. “It no longer makes a difference for us whether we ship two sacks or 500 tonnes of a product”, explains Oliver Dohmen, dispatch manager in Duisburg.

Finally, Ley points out once again how important the Duisburg location is for ASIKOS. “The container trans-shipment in Duisburg with a railway siding directly on our premises, the good transport connection via the motorways and the proximity to the international seaports of Rotterdam and Antwerpen can only be beneficial for our business in the future.”

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In Brief

In November 2006, as in the previous year, Dr. Michael Lichtmann trained specialised staff and management personnel for concrete test sites on behalf of the academy of the Bildungszentren des Baugewerbes (BZB) in Krefeld, Germany. In the field of concrete and concrete restoration, he gave lectures on concrete additives and the use of power plant by-products in the building industry within the training course for concrete testers as well as the course for the E-Certificate for concrete testing.

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