

Annual Report 2004





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Foreword

Difficult times despite good results

In tonnage terms, growth in our industry in 2004 was generally good and to some extent better than expected, even though perhaps not all companies managed to profit fully from this development. Most companies reported results that were between satisfactory and very good, so that really there should be no reasons for complaint. This applies not only to the aluminium industry but to other sectors as well. Nevertheless, the general mood in our society is depressed – there is a lack of confidence in the future. We seem to have forgotten how to recognise good results and take pleasure in them, to think positively and to do business in a forward-looking manner. Of course, we don't know today whether the orders received in the next few months will again reach a high level or whether operating profit will be good. If we knew that beforehand there would be no need for business skills. These skills manifest themselves when decisions have to be made against a background of uncertainty. Uncertainty should release creativity and potential in everyone who does business. Often the opposite appears to be the case.



Gerhard Buddenbaum, GDA-President

If one takes as yardsticks the general mood, the doubts people have about what the future will bring and the lack of commitment on the part of politicians, then times are indeed difficult. However, difficulties will not be solved by repeatedly asking whether Germany has a future as a business location for our industry, especially for primary aluminium smelters. Questions like this do not get us anywhere. Our aim is to ensure Germany remains a business location for aluminium companies and the only question then is what politicians, the industry and society should undertake to safeguard it. The solution is not to repeatedly put a question mark over business locations in Germany and central Europe and then do nothing to safeguard them.

Joint action is called for, together with politicians and within society. Joint action is also a good approach in our industry. Any action that benefits companies, the metal and the industry as a whole has to be planned jointly, put into practice and, of course, financed as well. This is the only way that we will be able to withstand competition from other materials, maintain our position in society and succeed in the political debate. GDA – Gesamtverband der Aluminiumindustrie is our platform for joint action. With GDA we can achieve that which we define as the common interest of the aluminium industry. Success depends on us all. We are the ones who, with our Trade Association, have the opportunity to shape our environment.

This Annual Report only gives an extract of the work of GDA. In particular, it cannot go into detail about the work of the specialist Trade Associations or the technical advice given to our clients because this work is too much the subject of day-to-day business. Nevertheless, the Annual Report still shows how the GDA team in Düsseldorf represents us in matters where we have a common interest and helps us move forward.

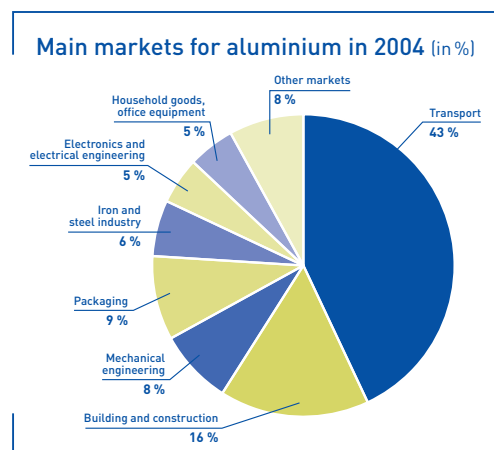
Markets

Overall, the 2004 financial year was a good one for the German aluminium industry. Order intake improved over a broad front, both from at home and from abroad. Whereas in the past there were mainly direct orders from abroad that were responsible for stimulation, this year it was indirect export effects; very buoyant demand from abroad for aluminium-intensive products made in Germany was responsible for market growth at home. At ALUMINIUM 2004, the world's largest aluminium trade fair that was held in Essen in September, it was possible to detect signs of a market upturn in many segments of the market.

Aluminium markets

The turnover of the German aluminium industry in 2004 was 13.3bn euros, which represents an increase of 1.5% (2003: 13.1bn euros). In contrast to 2003, nearly all sectors of the aluminium industry reported increases in order volume and production in the past year. The industry employed a total of 73,000 people in 2004. Demand in Germany was 3.02m tonnes and thus some 2.3% higher than a year ago (2003: 2.95m tonnes). The metal was able to further strengthen its position and importance in its traditional markets; fields of application such as consumer electronics and design items are also increasingly relying on the optical appeal of the light metal. With the exception of the building and construction industry, the aluminium industry's traditional target markets all profited from a very buoyant world economy in 2004. However, it was not only the USA and China that provided the driving forces, but also the markets of eastern Europe. The transport sector showed positive signs, above all with strong growth in commercial vehicle construction and in the aircraft industry.

During the course of the year, car making also proved to be an attractive market for rolled,



extruded, drawn and cast products. Thanks to the high level of exports, aluminium products for the mechanical engineering sector were strongly in demand, and markets such as the packaging and electrical industries maintained the high levels they had already achieved; only the performance of the domestic building and construction industry proved to be less than convincing. However, the manufacturers managed to compensate for the losses in this segment by increased exports or by changing their product portfolios.

Outlook

The growth in exports, which was responsible for success in 2004, will not be repeated to the same extent in 2005. Overall, however, the prospects and expectations for 2005 are positive. Above all, the investments made in equipment could start making an increased contribution to the development in the amounts of aluminium used in the various markets in the second half of the year. Apart from that, demand from abroad will continue to affect demand, even though the growth rate will be below that of 2004. The prospects for 2005 in the transport sector are based on the increased demand in the construction of commercial vehicles and in the

international aviation industry coupled with growth in the car-making industry that is expected to remain steady. Stable growth is also expected in other markets, such as packaging and mechanical engineering. Overall, the German aluminium industry needs profitable growth in the medium term. The profitability and thus the willingness to invest in Germany is also dependent on the government's industrial policy. Energy prices that continue to rise are a constant threat for an energy-intensive sector like the aluminium industry.

Economic data for the German aluminium industry

Production	2002 in t	2003 in t	2004 in t	Change 04/03 in %
Primary aluminium	652,800	660,800	667,800	+ 1.1
Secondary aluminium	666,150	680,400	703,800	+ 3.3
Aluminium semi-finished products				
Rolled products	1,632,600	1,681,300	1,720,500	+ 2.8
Extruded and drawn products	465,900	464,020	523,500	+ 12.8
Conductor material	17,300	12,800	2,700	- 78.9
Aluminium mould casting				
Die-casting	371,600	375,600	* 400,700	+ 6.3
Permanent mould casting	231,000	238,800	* 257,200	+ 7.0
Sand casting	55,200	53,900	* 57,800	+ 1.7
Other casting processes	2,800	2,800	* 42	-
Aluminium processing				
Foil and thin strip	244,400	248,600	250,300	+ 0.7
Tubes, cans, impact extrusions	60,200	59,200	59,500	+ 0.5

* Changes made in method of reporting, thus no percentage changes given for 'Other casting processes'.
Sources: GDA – Gesamtverband der Aluminiumindustrie e.V.

Statistics for the industry

Since the beginning of 2004, GDA has had access to the Global Trade Atlas. This makes it possible to track trade flows in aluminium within the EU25.

With effect from January 2004, production and consumption figures for non-ferrous metals are no longer being collected on an official basis. GDA had already reached an agreement with the companies and responsible authorities in

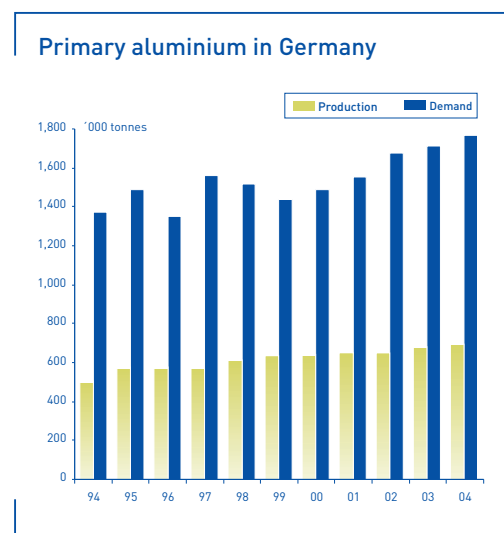
2003 that it would undertake these tasks. After doing so for more than a year, the association's experience is positive. In addition to its member companies, GDA has been able to gain the support of non-members in all areas of production, who report their statistical data to the association on a regular basis. The range of data collected was improved and extend in 2004.

Specialist Trade Associations

In order to achieve its objectives, GDA brings together product-based specialist Trade Associations under a single umbrella. Their tasks include an exchange of experience with the individual aluminium companies as well as representing the politico-economic interests of the individual product groups. Via the specialist Trade Associations, GDA informs its member companies about the market, the environment and technology. Thanks to a close-knit network with other national and European associations, GDA is in a position to represent the interests of its member companies and thus the whole industry effectively, even across national borders.

Primary Aluminium Trade Association: Rising energy prices put competitiveness in jeopardy

The five German primary aluminium smelters produced a total of 667,800 tonnes of primary aluminium in 2004, a rise of 1.1% on the previous year. The demand for primary aluminium in 2004 again showed a rise, increasing by 3.1% to 1.794m tonnes. Despite their good capacity utilisation, the primary aluminium smelters are worried that they are finally about to lose their competitiveness because of the current development in energy prices. Compared with their international rivals, they have to put up with considerable competitive disadvantages. High energy prices in particular mean that there is a danger that production capacity and with it jobs will be moved abroad. If the trend towards ever-higher energy prices continues, there are fears that the whole value-added chain of the German aluminium industry will suffer. There is a threat of a domino effect –the primary aluminium smelters will go first, only to be followed by the downstream processing facilities. The aluminium industry is therefore waiting for the agreement between energy producers,



industrial customers and politicians to give clear signals in favour of Germany as a business location and thus secure the future of the industry. The legislative procedure relating to the Energiewirtschaftsgesetz (Energy Management Act) should be concluded without delay and create transparency in the regulations covering the price calculation in the electricity

and gas markets. In the public debate of this matter, the question is often raised whether Germany is the right location for primary aluminium smelters or whether it would not be better to locate these in places where energy and raw materials are more readily available.

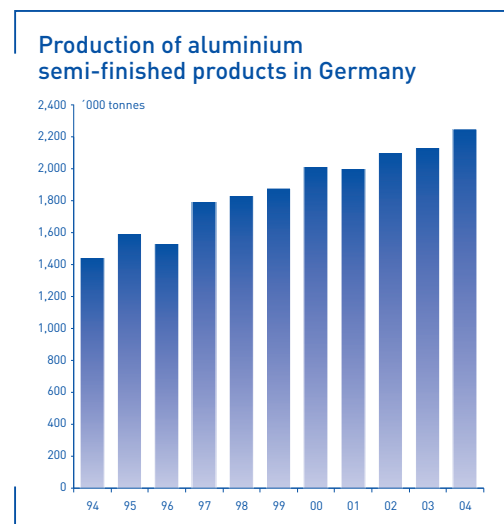
GDA has tailored its communication activities accordingly and highlights what the asking of such a question really means. It is not goal oriented because one could question every industrial activity in this way. GDA's basic position here is that we want to keep all industrial

activities, and thus jobs, in Germany and the only target-oriented question in this context has to be: How do we maintain industrial activities in Germany? Against this background, work is also being carried out on a small brochure to show value-added chains in Germany. The intention is to demonstrate that even in a highly industrialised country it still makes sense to maintain and support activities associated with aluminium from primary aluminium production right through to foil conversion, the manufacture of windows or use in motorcars.

Aluminium Semi-finished Products Trade Association: Market-oriented information

The aluminium semi-finished product manufacturers recorded yet another production record in 2004. At 2,246,700 tonnes, production was 4% higher than in 2003. Turnover of the German rolling mills was up by a moderate 2.8%, with increased demand coming mainly from exports. There was a significant improvement in the quantities of extrusions and drawn products manufactured in 2004. Production rose 12.8% year-on-year. The sector benefited from the high demand for industrial profiles in the process and mechanical engineering sectors, as well as from the car industry and various niche markets. Aluminium semi-finished products include rolled products with a thickness in excess of 0.2 mm, extruded products (profiles, rods and bars, tubes), wire, drop-forgings, pressings and forgings.

The German market is the largest consumer market in Europe for these products. Germany accounts for about a third of European demand for rolled products and about 25% of demand for extrusions. With rolled products, foreign trade plays a very important role, with large quantities being exported as well as imported. The market for extrusions is markedly regional in character. The Aluminium Semi-finished Products Trade Association represents various



product groups with differing fabrication processes and to some extent with differing target markets. The individual product groups have set up various working groups and these regularly discuss topical economic and politico-economic issues. Here, the main focus is on information relating to statistics and market developments. Topics from the field of technical marketing are also regularly on the agenda.



The work of GDA's Technical Marketing Group is strongly influenced by activities in the field of aluminium semi-finished products. Topics covered include standardisation, surface treatment, joining techniques and topics relating to building regulations. As far as standardisation is concerned, GDA maintains close contact with the DIN and CEN standards committees. The managing director of the Aluminium Semi-finished Products Trade Association, Christian Wellner, is a member of the Technical Standards Committee for Non-ferrous Metals (FNNE). At one time, the FNNE was co-financed by GDA, via the WirtschaftsVereinigung Metalle e.V. (WVM). This financing is now provided directly by the specialist Trade Associations. This means that the specialist Trade Associations are more closely responsible for issues relating to the standardisation of their materials and products. The German mirror committees for the European Committee for Standardisation (CEN) are administered by FNNE. As GDA is one of the main supporters of FNNE, its member companies have the right to send representatives to the German mirror committees as well as via these to the CEN working groups, and thus to safeguard the interests of the companies and the sector.

In the field of semi-finished aluminium products, the subject of ecology/ecolabelling has acquired greater significance. Particularly in the building and construction industry, one can observe diverse activities by institutes and government and semi-government organisations trying to exert greater influence on products. These activities are being closely followed by the Aluminium Semi-finished Products Trade Association and influenced where necessary in order to incorporate the aluminium industry's expertise.

In recent months, questions about export markets were again to the fore. The discussion centred above all around the markets of central Europe, which have developed well and in which German suppliers have now acquired substantial market shares. To some extent these markets

can be supplied from German production plants. However, it is expected that in future production units will be established locally when the markets become more developed. The Chinese market was also in the spotlight; it is not only gaining in importance but also markedly affecting world markets.

The Aluminium Semi-finished Products Trade Association is the largest national group in the European Aluminium Association (EAA). The semi-finished products manufacturers are members of EAA via their respective national Trade Associations whereas the primary aluminium producers can also be members of EAA directly. GDA staff and company delegates are actively involved in the activities of EAA and its divisions, both in the specialist working groups and in the management committees. Such involvement is essential because despite growing globalisation there are still differences between the markets and political systems of the various countries in Europe. Lobbying and marketing is targeted accordingly. It will not be possible for a European central organisation or Trade Association to deal with these issues in the foreseeable future. However, co-operation is coordinated with EAA and the International Aluminium Institute (IAI) at international level and with the WirtschaftsVereinigung Metalle, amongst others, at national level. The organisations concentrate on different tasks and are not in competition with each other. Clearly defined interfaces and co-ordinated concerted actions ensure that the Trade Association system functions effectively and efficiently.

The PR activities in the semi-finished products sector were supported in 2004 by press releases and in particular by an article service for the trade press. ALUMINIUM 2004 in Essen provided a very good platform for GDA's press activities. The article service is aimed particularly at specialist journals, which gladly use the various articles because they are neutral as far as intercompany competition is concerned and well researched. In this way, the semi-finished products manufacturers were able to communi-

cate with their end-users in a targeted manner. The semi-finished products manufacturers were kept regularly informed about GDA's activities by means of circulars, information services and other forms of communication as well as during

various meetings. Member companies also submitted suggestions thereby helping GDA to carry out good and effective work on behalf of the member companies and the industry.

Trade Associations for aluminium packaging

National associations with international focus

The manufacturers of aluminium packaging are organised into three specialist Trade Associations within GDA: Fachverband Aluminiumfolien is concerned with aluminium foil, Fachverband Flexible Verbundstoffe deals with flexible laminates and Fachverband Tuben, Dosen, Fließpressteile covers tubes, cans and impact extrusions. The 38 members of these Trade Associations are mostly medium-sized companies and employ about 15,000 people. The companies achieve some 70% of their turnover in the packag-

ing sector, above all in the food and pharmaceutical industries. The main activities of the specialist aluminium-packaging Trade Associations are political lobbying, PR work, statistics, standardisation and technology and foodstuffs legislation. At the joint spring meeting of the German aluminium Trade Associations, Prof Franz Radermacher, head of the Research Institute for Applied Knowledge Processing (FAW) in Ulm, Germany, gave a lecture on Germany as a business location in the context of globalisation.

International co-operation

The international packaging Trade Associations, European Association of Aluminium Aerosol Container Manufacturers (AEROBAL), European Aluminium Foil Association (EAFA) and european tube manufacturers association (etma), run also from Düsseldorf. EAFA represents over 120 members in 23 countries in western, central and eastern Europe, and gained 17 new members last year. These were mainly manufacturers of household foil, who became members of a new specialist group within EAFA.

etma is an association that has 52 member companies in 19 European countries and AEROBAL represents the interests of 15 members from 10 European countries. The co-operation of the packaging Trade Associations in the field of political lobbying was intensified at national and international level. For example, there was co-operation with WVM and EAA on the revision of the German Packaging Ordinance and the European Packaging Directive.

Effective media work and PR activities

Continual and up-to-date media activities with background briefings and regular contact with editors are the basis of the communication activities of the packaging Trade Associations. A major event was a background briefing at Hydro's foil rolling plant at Grevenbroich with Dr Hendrik Brenig, chairman of the aluminium foil Trade Association. A discussion was held with representatives of the trade press on the



Representatives of the technical press on a fact-finding mission to Hydro's foil rolling plant at Grevenbroich

current economic figures, the economic prospects and innovations of the industry and future objectives and challenges.

Further regular forms of communication used were the publication of press releases covering the latest economic situation in the sector and the issuing of technical articles on the benefits and possible applications of aluminium in the packaging sector. Editorial articles relating to topics of current interest were positioned in the packaging media at the same time. Publications and brochures are additional forms of communication used for the various target groups. The contents of the GDA packaging brochure were completely revised and the new publication will appear at interpack 2005. The focus of the European PR activities was the media work accompanying the competitions organised by etma and AEROBAL: Tube of the

Year and Aluminium Aerosol Can of the Year. In addition, press releases on the market situation were published and more than 20 specialist articles were placed in the international trade press.

The Alufoil Trophy is one of the EAFA's main PR activities. In addition, there were three issues of the Infoil newsletter, which reports on innovative packaging solutions and is distributed to some 5,000 clients and media representatives throughout Europe, together with a further twelve 'Alufoil Files', which provide information about possible uses of aluminium foil in a number of fields of application. The EAFA Annual General Meeting was again used as an opportunity to meet the local press, this time the Italian trade press, in order to strengthen contacts with the European media.

Strong growth in visits to websites

The AEROBAL website, www.aerobal.org, which went online in February 2002, now has some 10,000 visitors a month. The EAFA website, www.alufoil.org, has recorded continuous growth in the number of people visiting the site and the number of hits reached an average of 130,000 a month in 2004.

The etma website was completed at the beginning of 2004 and provides the European tube industry with a common platform at www.etma-online.org.



Online since the beginning of 2004:
www.etma-online.org

Topical presentations, lectures and workshops

The specialist Trade Associations provide their member companies with market relevant information by means of branch-specific lectures and workshops on topics of current interest.

■ The aim of the meeting under the heading 'Effects of the EU's Policy on Chemicals (REACH) on Manufacturers of Packaging Materials' was

to convey the objectives of REACH to manufacturers of packaging materials and outline possible effects on packaging manufacturers.

■ A meeting involving the Centrale für Coorganisation (CCG) was held to provide information on the traceability of packaging. The aim was to adopt a common approach to

ensure that packaging is traceable. A press release covering this meeting was issued. By discussing this matter at an early stage, GDA was able to adopt a leading role in the traceability of packaging.

■ A workshop organised by GDA on the avoidance or reduction of drawing lubricant residues during impact extrusion was very well attended, with over 30 participants. It is planned to undertake research work to accompany this topic.

Packaging competitions highlight trends

In the packaging sector, Europe-wide competitions – Tube of the Year (etma), Aerosol Can of the Year (AEROBAL) and Alufoil Trophy (EAFA) – have developed into an important barometer for new and innovative aluminium packaging.

In recent years, there has been continual growth both in the participation in these competitions and in the reporting on the prize-winning aluminium packaging in the trade media.



Putting in a strong performance: innovations in flexible packaging

Taking responsibility

By taking on sponsorships and patronages, the packaging Trade Associations have demonstrated their social responsibility. GDA was patron of the 5th ECR Meeting in Berlin; over 1000 decision makers from trade and industry attended the event. EAFA provided support for the PIRA Conference 'Future of Packaging' and AlumPack in Moscow.



Statistics and standards: Benchmarking for members

The market statistics and productivity comparisons compiled by the German specialist Trade Associations and the European associations help member companies monitor markets. They serve as a benchmark for comparing companies with the rest of the industry and help in the future planning and implementation of marketing strategies. The statistics have been continually optimised and adjusted to meet the individual requirements of the market participants.

The national and international market working groups organised by the specialist Trade Associations offer members interesting forums

where they can gain a comprehensive overview of the economic situation in the industry and other company-relevant topics.

In the field of standardisation, active support for the national standards activities is being provided by taking on the chairmanship of the Packaging Standards Committee (NAVp) 2.8 'Tubes'. The work of the committee is to submit standards developed at national level to the European Committee for Standardisation (CEN) as European standards projects and press ahead with them. The committee also deals with standards projects initiated by etma; there was a total of four such projects in 2004.

National and International committee work

In the packaging sector, the conformity of packaging with the demands of legislation covering foodstuffs is becoming increasingly important. Here, GDA is monitoring and staying abreast of the developments in national and European legislation in the field of food law and materials in contact with foodstuffs. It maintains two databases on a regular basis; these contain statement about the conformity of the lacquers used by member companies with respect to legislation covering foodstuffs.

EAFA's objective in 2004 was to establish aluminium foil as a recognised functional barrier in the new European 'super directive' for plastics in contact with foodstuffs. A scientific study has demonstrated that aluminium foil provides a complete barrier. This could lead to laminate packaging based on aluminium foil requiring less effort in terms of time and costs with respect to the legally prescribed migration tests.

This would be a competitive advantage over other material combinations.

Following adoption of the European Packaging Directive and a package of standards to describe the general demands made on packaging in this directive, GDA has produced a guide that offers its member companies help with the declaration of conformity for packaging.

In addition, GDA is actively involved in the revision of the defect evaluation list for metal cans and the preparation of a draft standard on hygiene requirements for manufacturers of packaging materials.

Metal Powder Trade Association: Professional lobbying

The main tasks of the Metal Powder Trade Association are political lobbying, legislation covering transport and dangerous substances, statistics and customs-related topics. Together with WVM and EAA, it was able to prevent aluminium powder being classified as dangerous for the environment, a classification that was not justifiable on factual grounds. In addition, the subject of EU chemicals, or policy on chemical substances, played a key role for member companies. The expansion of statistical information to include European and Asian markets was one of the main tasks in 2004. With an export share of 70%, up-to-date and reliable market figures are of particular importance. With the support of WVM, the Metal Powder specialist Trade Association is monitoring international developments with regards to customs. In consultation with the German



Aluminium powder:
also for technically demanding products

Federal Ministry for Economy and Labour, there was extensive discussion on a proposal by Slovakia and Slovenia to suspend duty on aluminium.

Media work and PR activities

The key features of GDA's media and public relations activities in 2004 were personal contacts with journalists, providing up-to-date information about changes and developments in the industry, background briefings, press conferences and market-relevant discussions at trade fairs 2004. GDA's communication activities are the basis for the positive image of the metal, the companies in the industry and the Trade Association in the various trade and financial press media.

Other key features of the media and public relations activities were exhibiting at important trade fairs, such as the Hanover Fair and the trade fair for education and training in Cologne, and providing specialist support for events related to vocational training and further education carried out on site at various member companies.

Personal contacts with journalists

Journalists from the trade and financial press are important contacts and multipliers for GDA's communication activities. GDA has adopted a new approach in order to get together with them in a way that differs from official occasions, such as press conferences or background briefings, or on the telephone.



Enthusiastic participants at the safe-driving training course



Press conference at ALUMINIUM 2004

The personal contacts between GDA specialists and representatives of the press were strengthened during a safe-driving training course at Hockenheimring. The nine participating journalists got to know their GDA partners better and also had the opportunity to obtain detailed information on the metal aluminium while enjoying a sporty programme of events at the grand prix circuit.

Up-to-date and theme-oriented media work

Up to date press releases about the work of GDA are used to inform regularly the trade and financial press about the latest happenings in the industry and at the Trade Association. About thirty journalists attended GDA's traditional annual press conference in autumn. The background briefing held at Hydro Aluminium's plant at Grevenbroich in the first quarter of the year had also met with good response from the journalists of the trade press.

The positive response to invitations to such occasions is an indication of the strength of the personal contacts with the media representatives. There are also media activities accompanying trade fairs and other events and these contribute to the good working relationship with the journalists from the various target media, as do visits to editorial teams, personal discus-



GDA discussion partners at the annual press conference

sions and up-to-date specialist articles. All information is available to journalists online at www.aluinfo.de.

Very good response to specialist articles and article service

GDA specialists demonstrated their high level of professional competence with authored articles, specialist presentations and exclusive publications in the specialist and financial press. They wrote impartially and expertly about the wide range of possible applications of the metal and illustrated this with plenty of practical examples. Eight articles authored by GDA specialists or management appeared in 2004. The GDA article service for the trade and financial press, which appeared five times in 2004, carried reports on innovative applications, current technical developments and market

trends, and included background information on the industry. More and more editors are including these ideas for articles in their publications. A total of more than 30 publications in the trade and financial press were based on information from the article service.



Highlights in 2004 – trade fairs and events

The trade fair highlight of the year was ALUMINIUM 2004. GDA is developer and sponsor of the fair, which has developed into a topical trade exhibition and has made positive changes to the industry's self-image. Since the first event was held seven years ago, the trade fair has become a unique success story. The number of exhibitors and the size of the exhibition have continually increased since then. In 2004, the fifth ALUMINIUM, the growth in the number of exhibitors and exhibition space continued unabated. The GDA stand was well visited on all days of the fair and served as a meeting point for communication and discussions for member companies, journalists from the industry and numerous visitors to the fair.



Popular meeting place for information and discussions: the GDA stand at ALUMINIUM 2004

didacta trade fair in Cologne

At the didacta trade fair for education and training in Cologne in February 2004, GDA exhibited its current range of products that provide information about aluminium for teachers from all types of school. A new folder containing teaching materials for vocational schools was also presented; this complemented the existing practice-oriented 'Aluminium kompakt' teaching materials, which include a folder for teachers, a case containing various exhibits related to aluminium and an up-to-date CD ROM with information and video clips about aluminium.



Information on aluminium from GDA at didacta 2004

Preparations for World Youth Day

The aluminium industry has been conducting an intensive dialogue with various groups of society for about ten years. GDA has helped organising many of these projects – for example with churches in the Ruhr area of Germany,

which culminated in a joint stand at the 1st Ecumenical Church Congress in Berlin in 2003. Following detailed discussions, this working relationship led in 2004 to co-operation with the largest Catholic youth organisation in Germany,

the scout organisation Deutsche Pfadfinderschaft Sankt Georg (DPSG). This will culminate in a joint appearance at the World Youth Day in August 2005, where discussion forums on education, employment and socially responsible business practices are planned.

As part of this co-operation, GDA will be attending the ceremony marking the 75th anniversary of the DPSG in Altenberg. In addition to materials for use in schools it will be presenting in particular solar ovens, which will play a role in the further co-operation with the scouts both at their Whitsuntide camp at Westernohne and the World Youth Day in Cologne, as well as other activities after the World Youth Day.



Youth organisation meets industry:
social aspects are important for both

Hanover Fair 2004

GDA presented its range of consultancy and other services at the Hanover Fair in 2004. As a partner in a special exhibition covering casting technology, the specialists from GDA's Technical Marketing department were on hand to help

visitors. They offered information and advice about aluminium in a manner that was company neutral and non-product-specific and presented information about the latest technical developments and trends in the industry.



Hanover Fair 2004:
joint appearance at presentation of casting technology

Technical marketing

The main task of technical marketing is providing competent and user-specific advice. Maintaining direct contact with users and keeping a watchful eye on market developments means that one can offer comprehensive and competent advice in the most important fields of application. In addition to the key markets – transport, mechanical engineering, building and construction and packaging – GDA's specialists also provide professional advice in the fields of surface treatment and corrosion, forming and joining, and standardisation and material designations. In addition to carrying out consultancy on an individual basis and holding in-house seminars, the GDA employees are also in demand for making presentations at external seminars and conferences.

Expert advice about materials for the market

Our technical advisory service deals mainly with queries from the fields of car making, mechanical engineering and surface treatment. There was increased demand in the fields of façade cleaning and corrosion behaviour in 2004.

In order to be able to offer quick and direct help, the GDA experts also offer their services at the client's site. Clients seeking information range from one-man small businesses to employees of large concerns.

Researches in GDA's specialist library

In addition to offering individual advice, it is possible to carry out literature searches in the GDA reference library at any time. The library has the most comprehensive collection of

German literature on the subject of aluminium. Here, anyone who is interested will find the information he or she is looking for – with the help of the librarian.

Specialist seminars for the industry

GDA's specialist seminars have an excellent reputation in the aluminium industry. The seminars covering the surface treatment of aluminium and the technology of extruded profiles have already become classics and an up-to-date programme of seminars is presented every year. For the first time, GDA organised these seminars itself in 2004 and the response was good, with some 30 participants in each case. Likewise, the seminar on cleaning and



Practical seminars generate lively interest

maintenance of metal surfaces, which was held for the second time, was also a success. There were 22 participants, including employees of companies engaged in façade cleaning and planning,

facility management and systems providers. The seminar is characterised by detailed and practical handling of the subject matter using concrete examples of materials, processes and design.

International co-operation with commissions and committees

In the fields of surface treatment, materials and semi-finished products, and joining technology, GDA is a member of national and international standards committees. As far as surface treatment and corrosion are concerned, GDA holds positions on the technical committees of the QUALANOD Quality Label, the Gütegemeinschaft Anodisiertes Aluminium (Quality Association Anodised Aluminium) and the Gütegemeinschaft für die Stückbeschichtung von Bauteilen aus Aluminium (Quality Association for Piece Coating of Aluminium Components).

The two working groups for which GDA has responsibility, namely Korrosionschemie (Corrosion Chemistry) and Dach und Wand (Roof and Wall), deal with basic technical considerations and have the task of ensuring that industrial standards take the material properties of aluminium properly into consideration and create market acceptance.

■ On the initiative of the Dach und Wand Working Group, and together with groups representing other metals used to cover roofs and the VDE, basic rules for the use of metal roofs as natural lightning conductors are being prepared.

■ With regards to the media-specific approval of road tankers and bulk powder tankers, the Corrosion Chemistry Working Group is working with member companies to scrutinise the lists issued by the Federal Institute for Materials Research and Testing (BAM) with respect to the resistance of aluminium.

■ Together with EAA and other partners, GDA is



developing the aluMATTER interactive web-based learning tool as part of the European Leonardo da Vinci project. The modular training course is aimed at providing techno-scientific knowledge about aluminium for technical school students, university students, technicians and engineers. GDA is carrying out the translation of the contents into German and the project will continue until the end of 2005.

Up-to-date information service

GDA's 'Aluminiumtechnik' specialist information service has met with a good response. The service, which appears four times a year, provides intersectoral information on current technical developments in the fields of car

making and mechanical engineering and events related to the various topics. The publication also contains references to new standards and news in brief about the sectors.

Customer contacts via seminars and presentations

GDA's specialists regularly give lectures or make presentations at conferences or educational establishments on the uses and areas of application of aluminium. In addition, the co-operation with universities, technical colleges and institutes is being intensified.

The following presentations were made in 2004:

■ A lecture on the current applications and future prospects of aluminium at the Fachhochschule Südwestfalen in Meschede as part of an end-of-semester event dealing with lightweight construction.

■ A lecture on aluminium as a lightweight constructional material at the EUROFORUM conference 'Werkstoffeinsatz im Automobil' (Use of Materials in the Motorcar) in Bad Homburg.



Ecology

GDA – Gesamtverband der Aluminiumindustrie and its members support the overall concept of sustainable, future-oriented development that is based on meeting the needs of the people living today without jeopardising the ability of future generations to satisfy their needs. This involves continuously striving to reduce the environmental impact of production and products over the whole life cycle, taking on social responsibility towards society and achieving continuous progress by adopting best practices.

Dialogue and discussion – lobbying for the metal

GDA continued its dialogue with the most important stakeholders in 2004, too; these included representatives of the authorities, scientific organisations active in advising politicians, various environmental groups and representatives of churches. The aim of this work is to have a proactive influence on discussions about the metal aluminium and to further improve aluminium's acceptance as a

material. The projects and discussions help remove prejudices, emphasise things one has in common and thus continually improve the mutual understanding for the concerns of stakeholders and the aluminium industry.

GDA will continue this dialogue with relevant stakeholders in future, too.

Proactively shaping public opinion

GDA has initiated numerous measures and actions at national as well as international level to improve the acceptance of the industry and the metal especially with critical opinion leaders and decision makers. In order to proactively promote dialogue, GDA has prepared rules concerning terminology, aids to argumentation and specialist brochures. Thanks to the dialogue with the Wuppertal Institute for Climate; Environment and Energy, which has been going on for years, and the leading role of the aluminium industry in the development of sustainability indicators, GDA Managing Director Stefan Glimm was invited to participate in a podium

discussion as part of a celebration under the motto 'Sustainable Manufacturing and Consumption: a Guideline for the Future' to mark the 65th birthday of Prof Ernst Ulrich von Weizsäcker, the founder of the Wuppertal Institute. This was a good opportunity to put the metal aluminium and the whole industry in a positive light with respect to the discussion on sustainability.

Aluminium building products under sustainability spotlight

GDA is actively involved in the building sector in the standards committee dealing with ecology and sustainability. GDA also participates in the Round Table on Sustainable Building organised by the German Federal Ministry of Transport, Building and Housing. GDA is involved in various committees at national and European level dealing with activities and initiatives to standardise

'Sustainable Building'. One should mention here, too, the building-related standardisation activities of ISO, CEN and DIN as well as initiatives concerning the ecolabel for building products. These are necessary in order to avoid possible negative effects of these initiatives on the future use of aluminium in building and construction.

Co-operation at international level

In close co-operation with EAA, IAI and WVM, GDA is participating at international level in various working groups dealing with topics relating to environmental policy. GDA played a significant role in developing the new approach to sustainability of the European Aluminium Association (EAA), the EAA mission statement; the adoption by GDA is in preparation. The EAA sustainability report was strongly influenced by GDA having taken the initiative at an early stage

and together with the Wuppertal Institute for Climate; Environment and Energy defining sustainability indicators.

A long-term task is critically monitoring the EU initiative to incorporate ecological aspects into standardisation activities. This initiative is concerned with developing a higher-ranking environmental standard that would have to be a part of any other standard.

Teachers get to know aluminium

The teacher-training course on the subject of aluminium carried out in co-operation with the Gesellschaft Deutscher Chemiker (GDCh) was continued in 2004 with courses in Göttingen and Koblenz being very well attended. The work of the Education and Social Affairs Working Group, which was set up in 2003, is coordinated and organised by GDA. The working group is a platform for company representatives from the fields of personnel, education and training and public relations; the group is involved, for example, in exchanging experiences on co-operation with schools, Girls' Day events - with the aim of getting more girls involved in technical professions - and other social involvement, both within the company and otherwise.

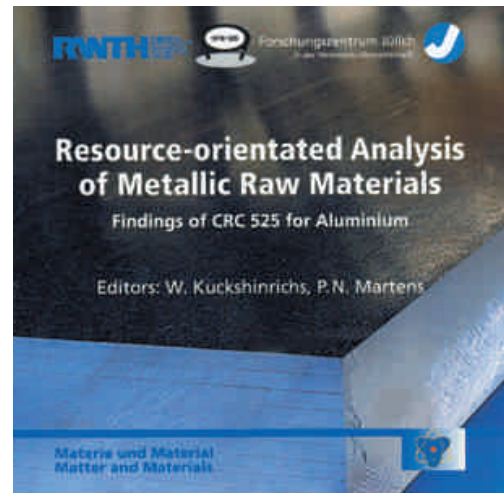


Lessons of a different kind:
teachers doing the learning at a training course in Göttingen

Reference literature for DFG material flows project

For six years, the Deutsche Forschungsgemeinschaft (DFG) supported a special research project carried out at the RWTH Aachen technical university and the Forschungszentrum Jülich research centre that took an overall view of resource-oriented material flows of metallic raw materials. Aluminium was one of the main subjects of the investigation. GDA followed both the methodology and contents of the research project closely.

The specialist publications resulting from the project on questions relating to the sustainability of aluminium as a material are a factually based and neutral source of information for the debate on the ecology and sustainability at company and Trade Association level. GDA has therefore produced a CD ROM containing the most important publications and made this available to all member companies. This will ensure that the objective findings of the project on the global and regional activities of the aluminium industry – obtained with the support of public funds – are made available in a quick and compact form to anyone who is interested. The information is particularly suitable as reference literature for



Providing a factually based and neutral source of information for the ecology and sustainability debate: the results of the special research work carried out at the RWTH Aachen

answering questions from the authorities, non-governmental organisations and research institutes on the subject of aluminium, ecology and sustainability.

Experience has shown that the literature collection is useful, particularly for employees of GDA member companies, especially those working in the fields of environment, ecology and education and training.

Active development aid

An important development-aid project in which aluminium can be particularly useful is the widespread use of solar ovens in the countries of the Third World. GDA promotes the use of solar ovens in developing countries and thus contributes to establishing sustainable structures. For example, GDA provided the Benedictine Abbey in Ndana, Tanzania, with 25 solar ovens to support the work of the monks locally.



Help for self-help: the solar ovens provided by GDA ensure better living conditions for the population

AIS - Aluminium Information Service

The AIS Aluminium Information Service is the No. 1 address for everyone looking for detailed and special information about the metal aluminium. In 2004, the GDA information service received some 5,500 inquiries from home and abroad. Over 50% of the inquiries were sent by e-mail; GDA ensures that all queries are dealt with quickly and that the answers given are up to date.

Current knowledge informatively presented

The comprehensive range of publications from GDA provides answers to practically all questions relating to the material aluminium. The items on

offer, including technical publications, are kept up to date thanks to continual revisions, additions and new editions.

Modern library with comprehensive collection of literature

GDA's library was established over 70 years ago and has the largest collection of literature in German on the subject of aluminium. It contains 3,500 specialist books, 8,000 articles, numerous research reports and conference papers as well as some 4,000 bound volumes of specialist publications. The library is a regular subscriber to about 90 national and international specialist publications on the subject of aluminium, surface treatment and transport; these are evaluated for inclusion in the literature database.

The collection includes literature on material properties, extraction, processing and treatment, and the various fields of application of aluminium. Literature on the light metals magnesium and titanium is also collected and documented. The collection is classified into over 30 main groups.

The comprehensive range of information on offer is well indexed and presented in a user-friendly manner. The whole of the literature has

been stored in an electronic database since 1998. Up until the end of 2003, the whole collection was still indexed using a card-file system according to author and keyword. As part of a major project, this filing system was recorded digitally and indexed using new library software. Following the changes and adjustment of the system and keyword index to the demands of a modern reference library, the contents of the library are now available to all GDA member companies and visitors in electronic form. In the medium-term there are plans to make the over 60,000 bibliographical references accessible to all interested parties via the GDA homepage and the internet.

The GDA reference library is open to the public by prior appointment. Visitors come from the most varied specialist fields; students and postgraduate students of technical courses of study, teachers, engineers or employees from

the aluminium industry are among the visitors to the library. They are well taken care of and given comprehensive advice on carrying out their research.

Well-prepared aids for students and teachers

The folders for teachers and cases containing teaching materials issued by GDA are being increasingly used as official teaching materials in schools. Some 700 teachers are already in possession of a case containing aluminium teaching materials, which besides samples of raw materials contains samples from a range of typical applications. Altogether, about 800 schools throughout Germany make use of the teaching materials associated with the light metal that are on offer. The high demand for the case led to a further 500 being produced.

A work file for vocational schools was added to the educational items on offer in 2004. The text is identical with that for secondary schools. Technical information suitable for the target groups and overhead foils on the manufacturing and processing of aluminium complete the items

on offer. The worksheets for the students comply with the requirements for vocational schools.

The items GDA has to offer also include a CD ROM, an information medium well suited to the age group concerned. In addition to information about the metal, the CD ROM also contains lists of possibilities for carrying out practical training and plant visits, videos and details of the literature available from GDA.

A metalworking course was added to the programme for vocational schools in 2004. In addition to providing instructions on how to work with sheet metal, the penguin serviette-holder metalworking course also offers basic technical and theoretical information about the metal. Two additional metalworking courses covering machining and milling are planned.

Another building block in GDA's range of teaching materials: the penguin serviette holder



Outlook for 2005 / 2006

GDA's extensive range of consultancy and other services will continue to further improve the image of aluminium as a material in 2005/2006 and encourage its acceptance by different target groups. All activities and measures are aimed at conveying the benefits of aluminium – also in competition with other materials – and to increase use of the slogan 'Aluminium for Future Generations'. Attending the leading trade fairs, a professional advisory service and continual media activities are the building blocks of GDA's service philosophy.

Understanding the metal

GDA is planning to further strengthen its certificate-issuing courses on aluminium. The main target groups for these activities are secondary and vocational schools and universities. In addition to the well-proven material available for teachers, two further metalworking courses for secondary and vocational schools are in preparation. A new metalworking course for day-release training at chambers of trade or vocational training centres is currently being developed. A teacher training course for teachers at vocational schools is being developed jointly with the SLV Schweißtechnische Lehr- und Versuchsanstalt (German Welding Institute) in Duisburg.

The industry's involvement in the field of education and training is coordinated by the GDA working group on education and social affairs, which meets regularly.



Metalworking courses for day-release training

On-going media work

The aim of the media work and PR activities in 2005 will again be to position the metal, the industry and the Trade Association in the important publications of the financial, specialist

and popular press. Regular press releases complemented by specialist articles and background briefings form the basis for positive and objective press coverage.

Basic technical information about the metal

GDA's Technical Informations provide clear and reliable information about aluminium. GDA is continually expanding the range. A new Technical Information on the subject of alu-

minium packaging is in preparation. Of the existing Technical Informations, A8, B1, B2, V6 and W17 are being revised.

Personal contacts and dialogue

GDA will also be presenting its Aluminium Information Service and the other services it has to offer at a number of trade fairs and events in 2005, and will be looking for a dialogue with fabricators and end-users of the light metal. For example, GDA will be presenting its range of services in the field of training, education and further education at the didacta trade fair in Stuttgart in March 2005.

After exhibiting at interpack for the first time in 2002, GDA is planning to have a joint stand at interpack 2005 with the European packaging Trade Associations EAFA, ETA and AEROBAL.

Together with the German scout organisation DPSG Deutschen Pfadfinderschaft Sankt Georg,

GDA will be participating in August with companies from the aluminium industry in the World Youth Day. Representatives from the industry sector and GDA will not only be actively involved as participants in discussion forums from 14 to 21 August; prior to World Youth Day, the aluminium industry is also organising plant visits with 24-hour events at these locations.



Specialist and technology seminars for the industry

In addition to the specialist seminars on extrusion profile technology and surface treatment, which have become traditional events in the GDA calendar, the seminar on the cleaning and maintenance of metal façades organised by GDA has also become an established event.

All three seminars will be held again in 2005. Other seminars or workshops on topics of current interest will be announced nearer the date.

In 2005, too:
GDA's traditional specialist seminars



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