



Sustainability

DAW

Deutsche Amphibolin-Werke
von Robert Murjahn Stiftung & Co KG

Sustainability: durable and innovative



An increasing number of people are becoming aware that our lifestyle must change and adapt to new challenges. This is because the way that we today deal with the resources and the climate of our planet can severely impair the living conditions and equality of opportunity for our children and subsequent generations.

Today, we often need

more resources than can be restored by natural and technical regeneration processes in reasonable time frames. This ecological problem conceals substantial social and economic grounds for conflict. "Sustainability" is here generally understood as a concept for resolving these challenges.

Above all, the focus is increasingly being placed on buildings when considering sustainability, because world-wide they account for more than one third of the greenhouse gas emissions. As Europe's largest private manufacturer of building paints and enamels, thermal insulation composite systems and building protection products, our company has a wide operational field opening up before it. Irrespective of whether new construction, reconstruction or energy-saving modernisation is involved, in all aspects our innovative coating systems offer individual, functional and decorative solutions for the greatest possible value retention and the most attractive living spaces.

We as a company are conscious that our objective of becoming the role model in our field for sustainability in Europe cannot be achieved overnight. But today there is much that is included under sustainability which has for a long time been a constituent part of our corporate philosophy. After all, since 1895 we have been concentrating on the research, manufacture and marketing of high quality and innovative coating systems, which have also acquired the highest recognition amongst customers due to the timely consideration of environmental protection, residential health and energy efficiency. And also as a profit-orientated industrial company we have been convinced through our five generations that long-term personal customer relations and a fair balance of interests are the mainstay of present and future success.

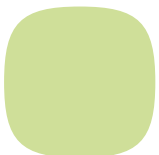
In this brochure we present our current contribution to sustainability. In addition, we have committed ourselves through our entry into the Global Compact of the United Nations. We regard our company as part of society and would like therefore to enter into an open dialogue about our contribution to a more sustainable world. Your suggestions in this respect are very welcome! You can contact us at nachhaltigkeit@daw.de.

A handwritten signature in blue ink that reads "Dr. Ralf Murjahn". The signature is fluid and cursive.

Dr. Ralf Murjahn
Managing Shareholder of DAW

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1.0

Tradition and innovation

Paints have always been part of people's lives, enhancing their living space and protecting their assets from the influences of weather and decay. Even today paints have not relinquished any of their original tasks, but their functionality has been expanded in hundreds of ways – often through innovations from DAW.

As the entrepreneur from Hamburg, Eduard Murjahn, acquired mining rights for manganese in the Odenwald in 1885 he laid the foundations for an internationally orientated and recognised company in the building paints sector – DAW.

Then, just as today, an inventive spirit, a feeling for making the correct economic decision at the right time and responsibility for the security and well-being of people and the environment were the primary concerns.

Max Fiedler chose to do apprenticeship
as a painter at DAW.



1.1

Characterised by ingenuity

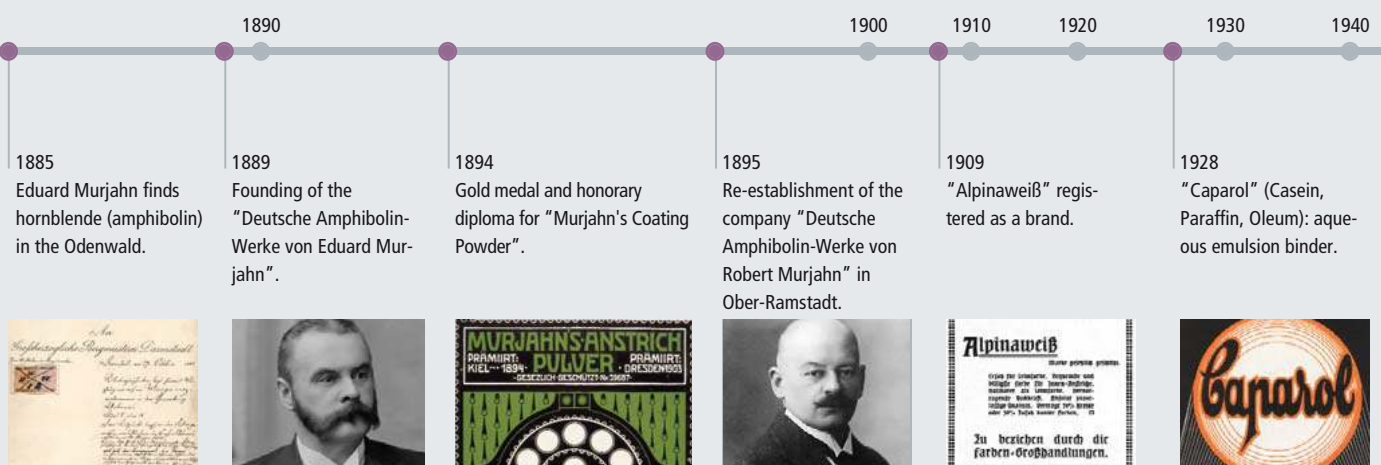
During examinations of the soil in the Odenwald mountain range Eduard Murjahn discovered large quantities of hornblende, a silicate rock in the amphibole group. He founded the Deutsche Amphibolin-Werke and developed a method of processing the mineral to form a product for use in plasters and coatings. In 1894 Eduard Murjahn's son, Robert, gained recognition for improving a formulation based on modified raw materials: At an exhibition in Kiel he received a gold medal and an honorary diploma. Subsequent product innovations from DAW made history in the industry. Based on sized chalk, in 1901 a powder paint which was soluble in hot water was developed and registered in 1909 as a brand under the name of "Alpinaweiß". From 1913 the powder was made soluble in cold water, rendering it suitable for easy use on construction sites. Today, Alpinaweiß is Europe's most-sold interior paint. Sales outposts in Switzerland and Strasbourg marked the beginning of international success for DAW even at the start of the 20th century.

Useful innovations for the painting trade

Robert Murjahn's son, Dr. Robert Murjahn, instigated the transition to an industrial chemical company. In 1928 he developed the aqueous dispersion binder, Caparol, with the aid of which the decorator can produce the required paint himself from pigments and fillers. This invention made the work immensely easier for the painting trade – for DAW Caparol was the foundation stone for expansion as a company within the chemical industry. This was particularly the case when in 1936 an acrylic dispersion replaced the natural oil content in the product.

This step marked the beginning of modern dispersion paint technology. Dispersion paints were far superior to earlier paints based on natural binders – both in their ease of application by the painter and in their durability. Even though this meant that the trend was fully established away from products based on natural raw materials, which today would probably be marketed as "bio" or "eco",

Overview of company history



these products were still “sustainable”. This was because the substantially longer renovation cycles and the shorter work preparation time produced immense advantages economically which were not linked to any significant ecological disadvantages.

Success through customer orientation

User benefits and responsible conservation of resources were the forces behind many further product innovations. For example, in 1954 “Murjahn's Latex Paint”, the first ready-to-use brush-applied latex dispersion paint which, once applied, remained resistant to water and abrasion. When the AVA tinting paint was introduced in 1957, the laborious work of pigment grinding was no longer needed. In the autumn of the same year DAW played an important part in the implementation of the very first thermal insulation composite system. A DAW technical consultant recommended that a painter should glue polystyrene boards to the outer wall of a single-family house in Berlin to improve thermal insulation before then coating it with surfacing plaster and dispersion paint. Today, this technology is widely used and is promoted in many countries as the most important constituent part of energy and resource-saving building insulation.

Due to consistent customer orientation, economic success was soon forthcoming. By 1965 DAW was Germany's largest dispersion paint manufacturer. Surveys confirmed that by 1968 “Alpinaweiß” was one of the first and most well-known branded articles for paints in Germany. In 1979 it was the most-sold interior paint in Europe. With the founding of Alpina Farben Vertriebs GmbH & Co. KG in 1983 it

was possible to specifically serve the rapidly expanding DIY market.

Large size demands responsibility

The DAW Group has always understood itself to be more of a pioneer in terms of progress in environmental protection and products harmless to health – for the protection of application workers, consumers and the environment. By 1973, one year after Dr. Klaus Murjahn took over the company management, the starting shot for the reduction of solvents in enamels was given with the introduction of the first aqueous acrylic enamel, “Capacryl”. In 1985 with Indeko-plus DAW launched one of the world's first emission-minimised and solvent-free interior paints onto the market. The “Alpina Environmental Interior Paint” was assessed as being “very good” by a leading German consumer testing organisation – providing proof that excellent environmental properties and first-class product quality are not mutually exclusive.

Expansion through reunification

After the reunification of Germany DAW expanded by taking over Lacufa AG, the former enamels and paints co-operative of the GDR, also in the enamels sector. The “Capalac” range of enamels and glazes introduced in 1993 is essentially based on many years of experience at the long-standing site in Köthen (Sachsen-Anhalt). The Lacufa sites in east Germany were able to be retained and expanded by investment in modern and environmentally friendly production processes. Furthermore, they became the starting point of the expansion into Eastern Europe.

1950

1954

“Murjahn's Latex Paint”: the first ready-to-use, brush-applied latex dispersion paint in Germany.



1960

1957

Development of the first thermal insulation composite systems (ETICS), founding of Disbon GmbH in the building protection sector.



1970

1965

In terms of turnover DAW is Germany's largest supplier of dispersion paints.



1980

1973

“Capacryl”: first DAW acrylic enamel with an aqueous base.



1981

Founding of the Capatect insulation systems for marketing ETICS through wholesalers.



1983

Founding of the Alpina Farben company for marketing paints through hardware stores and DIY superstores.



1.2

Responsibility through five generations

In subsequent years the dynamic development of international markets has never pushed the importance of ecological, safety and application-orientated innovations into the background. In 1996 the expansion of production at the headquarters site in Ober-Ramstadt in south Hesse lead to the start-up of one of the most modern dispersion-paint factories in Europe. For years it has been quality and environmentally certified – again underlining the compatibility of industry and environmental orientation.

Safe and healthy products

In the years 2001/2002 “Alpina Sensan” and “Caparol Sensitiv” were presented – the first interior wall paints free of preservatives and allergy-tested. Also the Nespri-TEC System, which was introduced onto the market in 2004 and was awarded the federal prize for excellent innovative work for the trade in 2005, is a DAW product with unique technical and ecological selling points (refer to Chapter 4.0 “Sustainable products”). In the same year with “Alpina AirClean” an interior wall paint was developed which can improve the quality of interior air. In 2009, one year after Dr. Ralf Murjahn had taken over the chairmanship of the management, DAW through Caparol introduced the first full product range for the emission-minimised floor coatings “PrimaKlima”, which fulfil the strict requirements of the Committee for Health-Related Evaluation of Building Products (AgBB criteria).

1990

2000

1984

The striped elephant becomes the new logo for Caparol.

1992

Takeover of Lacufa AG “Treuhand” and expansion of enamels production.

1995

Takeover of Alligator, largely retaining its autonomy.

1996

Start-up of one of the most modern dispersion paint plants in Europe at the company headquarters in Ober-Ramstadt.

2002

Takeover of the facade specialist, alsecco. Retention of the brand and extensive independence.

2003

Conversion of DAW into a family trust under the designation “Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co KG”.



ALLIGATOR



Setting course for the future

With Dr. Ralf Murjahn the “Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co KG” is now being managed by the fifth family generation. Sustainability implies ensuring business success going forward and setting standards today for the future. The increasing orientation of industry and consumers to the model of sustainable development accommodates the DAW corporate philosophy very well.

Taking responsibility internationally

DAW is well aware of the fact that the quality and environmental standards in many markets are still at a low level. Also, that this may obstruct fast growth with especially high quality and environmentally friendly products, which inevitably mean high costs and corresponding sales prices. But with their increasing growth, the aspiring states in Eastern Europe, the Middle East and in Asia will be making higher quality demands. This means that DAW with its products can provide an increasingly significant contribution to more quality of life and sustainability.

Participation in Global Compact

At the international level DAW has committed itself to demanding sustainability standards. By entering the Global Compact of the United Nations in January 2012 the company acknowledges the ten basic values in the field of human rights, occupational standards, environmental protection and anti-corruption measures. Participation is an expression that DAW is actively applying these principles in its sphere of influence (more information at www.globalcompact.de).



To ensure high quality only raw materials of the highest quality are used.

2005

Founding of the Dr. Robert Murjahn Institute for quality inspection for internal and external customers as well as for consultancy on matters of environmental protection and healthy living.



2007

Founding member of the German Sustainable Building Council.



2009

“Top 100 Quality Seal” as one of the 100 most innovative German companies. Opening of the DAW day nursery, “Rüsselbande”.



2010

Founding of the Sustainability Advisory Board..



2012

DAW enters into the Global Compact.




2.0

The sustainability strategy at DAW

The interaction of economic efficiency, protection of the environment and socio-cultural aspects have always characterised the values and corporate philosophy of DAW. This reflects the environmental and user-orientated product development as well as high quality demands, a co-operative management style aware of its objectives as well as ethically flawless and environmentally compatible commercial procedures.

For DAW as a family company the principles of sustainable development – that is harmony of economics, ecology and social aspects – are taken as a matter of course. Short-term profit objectives have therefore never determined the activities at DAW, but rather always the long-term yield prospects.

Healthy and safe living – that is at the same time a customer requirement, an economic objective in politics and an unmistakeable market trend. The DAW Group is following these requirements, objectives and trends through clearly set objectives, a strategy orientated to the target groups and cross-departmental management.

A woman with dark hair tied back, wearing a patterned scarf and a light-colored top, is sitting on a green rug inside a colorful tent. She is holding an open book and looking down at it. Two young children are sitting next to her. The child on the left is a girl with blonde hair, wearing a blue polka-dot shirt, looking towards the camera. The child on the right is a boy with brown hair, wearing a light blue shirt with a red graphic, looking at the book. A small yellow toy truck is on the rug near the girl. Another book is lying flat on the rug in front of the boy. The tent's interior is decorated with vertical stripes in various colors like green, yellow, orange, and blue.

Lena Roth is one of the nursery carers who look after the children of employees in the DAW day nursery "Rüsselbande".

2.1

Guiding principles and objectives

DAW is working towards its objective of consolidating and expanding its strong position in the sector in terms of sustainability.

As a company in the chemical industry, DAW regards it as its duty to put onto the market customer-orientated, environmentally friendly products which are safe in application and which possess the right mix of material efficiency, longevity, safety, health-compatibility and environmental protection as the basis of their sustainability properties.

Sustainability concepts were integrated into the guiding principles of DAW years ago and reference was made to international agreements in the sector:

In everything that we do we behave responsibly towards people, nature and society. As an innovative family enterprise we feel morally obliged to make a contribution to sustainable, environmentally compatible, economic management that is fit for the future. We maintain the principle "Coatings Care", which was formulated by the international paint industry as an ethical leitmotif and we put the guidelines into practice which are published by the Association of German Paint and Printing Inks Industry:

- Plant safety
- Environmental protection
- Employee training
- Product responsibility
- Conservation of resources
- Safe handling
- Disposal

(Extract from the DAW guiding principles)



Interchange of ideas: To find the best solution employees from all hierarchical levels maintain a collegial atmosphere, as here in the DAW staff restaurant.

2.2

The DAW sustainability strategy

For the definitive implementation of the guiding principles of sustainability the DAW Group has, after intensive consultations, decided on a sustainability strategy which is based on three fields of activity:

1. Sustainable company:

We want to manage the company in a sustainable manner, compatible with the needs of the future. This applies above all to the areas of research and development, purchasing, operational environmental protection, consumption of resources, occupational safety, a forward-looking personnel policy and engagement in society.

2. Sustainable products

We want to put innovative, high quality and long-lasting products onto the market, which, due to their material properties, enhance environmental and climatic protection as well as the health and well-being of people. Furthermore, we would like our products to contribute to the value retention of buildings.

3. Sustainable building:

We want to support the sustainable construction and modernisation of buildings by planners, architects, application workers and end-users such that our products are amongst the preferred building materials in forward-looking new construction and refurbishment projects.

Sustainable company

Energy

Emissions



Raw materials
and consumables

Effluent /
waste

Sustainable products



Innovative, protecting
environment and health

Sustainable building



Reduction of NOX, CO2, biocides,
solvents, heating, cooling



Sustainable company

Careful use of resources is the order of the day. After all, we only have one planet and its raw materials are limited. It is good therefore that the high quality coatings from DAW are high yielding and cover extremely well. Also in production processes resources have to be used sparingly – even dusts are collected and fed back into the material circulation.

Another important resource are the employees. They are promoted in the company according to their ability and have the freedom to work under their own initiative. Integrity and maintenance of fundamental ethical and legal guidelines in the business environment are important parameters. For example, as a company with sustainability demands DAW makes many small contributions to social togetherness and also helps with charitable projects beyond the boundaries of commerce.

Master painter, Carolin Knoblauch, belongs to the team in the Technical Application Centre in the Dr. Robert Murjahn Institute. Here, she is producing a reinforcing layer.



3.1

Sustainability management

Responsibility for sustainability

In order to be able to design the processes so that they can always be optimised further for people and the environment, integrated management systems and committees have been set up to form an organisational base. The overall responsibility for sustainability management lies with the chairman of the DAW management.

Furthermore, the “Sustainability project group”, an internal committee of members from different company areas under the chairmanship of a member of the management, controls the further development and implementation of the company activities relevant to sustainability.

Apart from this committee DAW set up a Sustainability Advisory Board in 2010 with external experts. Under the chairmanship of Dr. Ralf Murjahn this board is made up of personalities from the fields of architecture, industry and the painting trade who are recognised and valued in the field of sustainability. The board meets twice each year and supports DAW in the positioning of the Group with regard to future trends, product development and management processes which further the objective of sustainability.

The efforts towards steady improvement are also aided by the Continuous Improvement Process (CIP) which was introduced in 2007. The employees in the CIP team initiate processes for optimisation which primarily benefit the customer, but which also have a positive influence on co-operation and the working atmosphere.



The internal "Sustainability project group" meets regularly to add impetus to the subject within the DAW Group.

Genuinely sustainable

At the large sites in Germany an Integrated Management System (IMS) has been in place since 2003 which is composed of the modules Quality Management, Environmental Management and Occupational Safety. The production sites in Ober-Ramstadt, Fürstenwalde, Köthen and Nerchau are regularly certified by the Swiss Association for Quality and Management Systems (SQS) according to international standards, i.e. ISO 9001 in the field of quality, ISO 14001 in the field of environmental protection and OHSAS 18001 in the field of occupational safety. Currently, an energy management system is being set up to be able to measure and control the processes in this important field.

Other locations are also working on specific certifications. For example, the DAW subsidiary company, Alligator Farbwerke has been certified to EMAS or ISO 14001 since 1996. In October 2010 the Austrian DAW subsidiary Synthesa Chemie received the Responsible Care Certificate from the Association of the Austrian Chemical Industry (FCIÖ).

Award: Sustainable Company 2011

Within the framework of the project "Environmental and social responsibility in brand companies and retail" the consumer organisation, Verbraucher Initiative e.V., presented DAW and their brands, Caparol and Alpina, with the silver medal for their commitment to sustainability.



Environmental management is also an important part of the DAW production.



DAW won the n-tv Business Award in the category of sustainability

3.2

Employee's support

Innovation needs competence

In the DAW Group more than 4,500 employees are employed serving customers at over fifty locations throughout the world. Here competence is demanded – competence in materials, working processes, in sustainability management, in customer consultancy and much more. In times of rising market requirements DAW is increasingly dependent on competent and enthusiastic employees in production, development, administration, marketing and services. Consequently, a high value is put on an exacting apprenticeship and on professional development in the company.

The companies within the DAW Group provide training in 15 different specialised apprenticeships, both in the commercial and in the industrial/technical fields. With approximately 200 apprentices the apprenticeship quota is about eight percent – the average for the sector is 5.2 percent. For university graduates an international management trainee programme is offered in which the junior employees also work from three to six months at locations abroad. The professional development section of DAW School and DAW University has a large number of activities on offer, including seminars on organisation and team development as well as a manager development programme.

Diversity as an opportunity

As a company operating internationally, DAW has high ethical benchmarks with regard to collegial togetherness. Therefore, we acknowledge with conviction the stipulations of the general law on equal treatment (AGG) and in the summer of 2011 we reaffirmed this claim by signing the "Charter of Diversity" of German companies.

As a signatory of this charter we commit to a corporate structure which is characterised by the mutual respect and appreciation of each individual. In our personnel processes we ensure that they are compatible with the capabilities and talents of all employees. The cultural diversity of society is also reflected in the company and we want to utilise the potential within it beneficially for the good of the company.

Combining work and the family

In 2009 with the opening of the works day nursery "DAW Rüsselbande" the possibility was created of offering mothers and fathers in the company continuing full-time employment, i.e. bringing the job and family together in harmony. The intention here is to avoid losing talent when workers have children.

Many of the activities at DAW are classical jobs for men. Efforts are being made to successively increase the proportion of women, particularly as many women like the jobs at DAW once they have become familiar with them. For years now the company has participated in the annual "Girls' Day" which is intended to give adolescent girls an insight into "typical" jobs for men.



Feeling at home in the playground of the DAW day nursery.

3.3

Designing living space with colour

Commitment beyond business

Colour is a feel-good factor. This central concept characterises the social commitment of the DAW Group. Colour adorns the daily living space of people – from the living environment of children to the public space in the city. Consequently, DAW is particularly engaged in areas in which professional competence is important. The spectrum extends from donating paints for children's painting activities in deprived areas through to the renowned Architectural Prize.

"Building refurbishment" endowed professorship

Furthermore, since the start of 2009 DAW together with Knauf Gips KG have supported the endowed professorship on the subject of "Building refurbishment, extension and design" in the Faculty of Architecture at the University of Darmstadt. With this engagement DAW sees an early opportunity of having a constructive interchange with students and of making a significant contribution to the thorough training of young people.

Children like colour

Many projects have come to fruition based on the fact that children and colour are made for one another. For example, in September 2010 DAW supported the international women's network "Soroptimist" during a charitable children's painting project which was linked to a donation campaign for a project in a deprived area. For the children's group "Help & Hope" in Herne, which represents a shelter for socially deprived children, a holistic colour concept was developed to provide a sense of well-being and was immediately accepted by all involved. Even the annual Caparol Golf Cup serves a good purpose. For example, the Christian child-aid project "Arche", which is fighting child poverty in cities, or the Bethanien Kinderdörfer are supported in their social work.

Architecture creates identity – with colour

With the foundation of the Architectural Prize "Colour – Texture – Surface" DAW is investing financial and personnel resources in a project which especially honours design ideas in architecture. Since 2004 the prize has been awarded every two years in co-operation with the architectural trade journals "AIT" and "xia Intelligent Architektur". The nominated projects, which are selected from an independent, renowned jury, must be exemplary with regard to the use of colour, texture and surfaces. The focus is on the context-related utilisation of colour and surface which underlines the special features and unmistakeable character of a building. The competition therefore promotes creative construction and the sensitive use of colours and surfaces – and in fact irrespective of whether DAW has supplied the material. The decisive factor is that DAW companies conduct a dialogue with planners and architects about colour and surface design, thereby also making a contribution in designing more comfortable working and living surroundings.

The prize is linked to the Murjahn Medal which is always presented on the Darmstadt Mathildenhöhe. Represented by the Mathildenhöhe Institute, this internationally acknowledged art nouveau building ensemble is currently applying for recognition as a UNESCO World Heritage site. DAW has been supporting the work of the institute for some years. From 2012 the Architectural Prize will be expanded to include the category "Student projects".



The Architectural Prize "Colour – Texture – Surface" is presented every two years on the Darmstadt Mathildenhöhe.



The holistic colour concept provides a pleasant learning environment and a feel-good atmosphere for children in the kids' club.

4.0

Sustainable products

DAW products are in demand, because they combine unique quality and sustainability properties. High-performance thermal insulation composite systems in conjunction with resilient render layers and coatings provide energy optimisation of buildings – and real advantages for the environment and customers.

The need for clean, healthy living and working surroundings has led at DAW to a wide range of emission-minimised and solvent-free paints, enamels and floor coatings.

Also, there are practical and environmentally friendly solutions for the application of the products.

And since the world does not stand still, research and development at DAW is looking into how products can be made even more sustainable and better.



DAW workers, Jan Martin Großkopf and
Maike Schüttler, test an aqueous enamel coating.

4.1

Sustainable climate-protecting shells

Saving energy helps the environment and the purse

The rise in energy consumption and the resulting change in the climate represent one of the greatest challenges of our time. The focus of attention is particularly on buildings due to their potential energy savings. For new buildings or reconstruction: thermal insulation composite systems (ETICS) are genuine climate-protecting shells – and are therefore the order of the day.

The insulation of the building shell with a composite system was partly developed by DAW in 1957 and has been the international standard for over 50 years in the new construction sector and in the thermal reconstruction of buildings. Also projects in the passive-house standard, which can be operated almost without any additional energy, are therefore possible.

If one takes the average sales of ETICS in the DAW Group and the generally achieved potential savings, then the ETICS systems supplied new by DAW throughout Europe in 2011 and extrapolated over their complete service life giving a saving of about 12 billion litres of heating oil.

Innovative Dalmatiner facade insulation board

Also in ETICS, DAW product research has in the past few years often put decisive key innovations onto the market. An innovative, patented facade insulation board introduced in 2002 – named “Dalmatian” due to its black and white spots – is being manufactured using a novel method and combines the advantages of white and grey rigid polystyrene foam. Classified in the thermal conduction group 035 or 032, its insulating performance is 12.5 or respec-



Water-repellent: The coating of the Capatect Dalmatiner facade insulation fulfilled high demands during testing.



A thermal insulation composite system consists of insulating material and various types of coating.

tively 20 percent higher than a white standard polystyrene board. This advantage can be exploited to achieve a better insulating effect or to reduce the thickness of the insulation layer. Due to its thermal durability it maintains its shape at almost any working temperature.

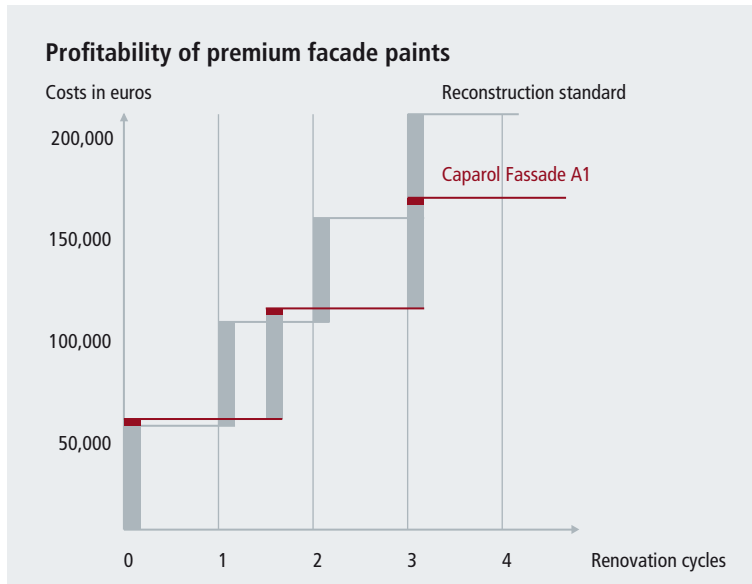
Insulating sustainably with wood

Customers who prefer to insulate their buildings with natural construction materials have an alternative with the insulation systems offered by the DAW company, Inthermo. These natural insulation systems are based on wood-fibre insulation boards and in conjunction with specially developed renders facilitate a high level of living comfort. The insulation boards consist of wood fibres which are obtained from Central European conifers. For this purpose residual timbers, which cannot be used for furniture nor for construction, are processed to wood fibres that are then pressed together. Here, lignin, a natural constituent of wood, acts as a biological adhesive.

Insensitive shell

The work for DAW on the building shell does not end though with the thermal insulation. Innovative products for sustainable value retention are offered also for the immediate outer skin of a building – the render layer and paint coating applied to the ETICS. Innovative render systems offer special protection against soiling in that they significantly reduce the absorption of moisture, although the diffusion capabilities are unimpaired. Renders are consequently longer lasting and paints remain in good condition longer. The Carbon System developed and patented by the DAW Group has a significantly longer service life due to its excellent hardness and resilience.

Also the patented silicone lightweight render technology offers clear advantages. The consumption, which is reduced by about 20 percent compared to conventional silicone renders, relieves the environment due to less consumption of resources and less effort in transport due to a significant reduction in weight.

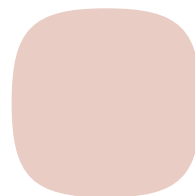


The higher procurement price of Caparol ETICS pays off within a few years.

Nano-quartz matrix technology (NQG), which was introduced by DAW a few years ago, goes one step further. NQG products give the maximum resistance to soiling particles from the air and against algae and fungal attack. With the NQG facade render the binder and pigments are permanently joined together in a microscopic matrix structure. The tight bonding makes the surface hard and strong – particles of dirt find less of a grip. When it rains, the loose dirt is simply washed off.

Quality is worth it

Sample calculations show that the long-lasting protection and the reliability of building facades with premium facade paints gives particularly good value retention, because the renovation cycles are significantly extended. Due to the omission of a renovation stage, real estate owners can generally save 20 percent of the renovation costs over the service life of a building.



4.2

Colourful variety in a healthy environment

Emission-minimised and solvent-free

One of the clearest trends in the sector of interior design in past decades was the change to environmentally and health-orientated paints and enamels. DAW and its marketing companies detected and responded to this consumer demand at an early stage.

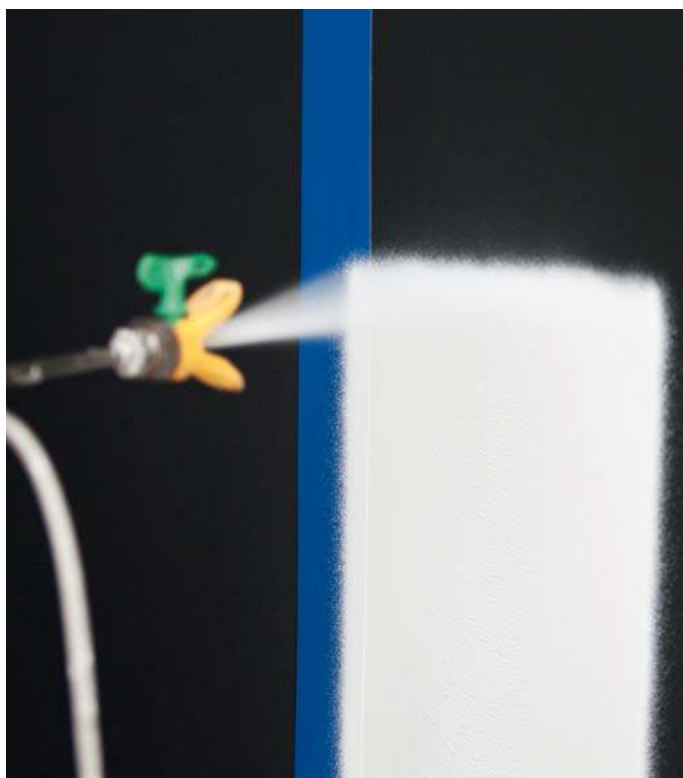


DAW paints: innovative, protecting both the environment and health

Today, emission-minimised and solvent-free (E.L.F.) products at DAW are no longer occasional demonstration products, but represent an important market segment with a wide range of applications. On one hand the customer spectrum comprises people with special health requirements, such as allergy sufferers or children and on the other hand there are people for whom attributes such as solvent-free or water-thinnable are important.

DAW offers E.L.F. formulations for external facades, primers and interior wall paints. Furthermore, an interior wall paint has been developed which can contribute to an improvement in the room air due to its photo-catalytic effect. Even a special coating is offered for reducing low and high-frequency electrosmog in interior areas. In the Capacryl product range twelve different environmentally friendly and water-soluble enamels are offered. For example, consumers obtain a healthy room climate – and the application workers can breathe properly again.

Analogously, in the do-it-yourself sector Alpina stands for innovative coating materials which protect both health and the environment. This is proved by numerous awards and test emblems, such as for example "very good" from the magazine Öko-Test for white as well as for coloured interior paints. The water-based 2-in-1 enamels from Alpina bear the Blue Angel. The Technical



Environmentally friendly coating work is carried out efficiently and safely without a spray mist using the Nespri-TEC System.

Control Board (TÜV) confirms that the wall paints, Alpina Sensan and Alpina NaturaWeiss, which are free of preservatives, are suitable for allergy sufferers. For decades Alpinaweiß has represented the harmonisation of performance and environmental conservation and for the 100-year brand anniversary in 2009 this was expressed with a project for the protection of threatened nature in the Alps which was carried out together with the WWF.

Mist-free spraying technology

Environmentally compatible products are not the only objective of the DAW product development. The focus is also on their application. Nespri-TEC, for example, is an exceptional coating system for facades and interiors. With this system it is possible to apply facade coatings and paints without the interference of spray mist which is hazardous to health.

Mist-free spraying implies fatigue-free, ergonomic working at a high, steady working speed with a high level of health protection. Therefore, the system has been classified in Protection Level 1 according to the Ordinance of Hazardous Substances.

Apart from the prevention of emissions, the ecological advantages primarily include the reduction of waste. In 2005 DAW received the "Federal prize for excellent innovative work for the trade" for Nespri-TEC.

Disposable – but in a special way

Many building materials are supplied in powder form and mixed with water to form plaster, filler and similar coatings on the construction site. The mixing work takes time and requires various machines which have to be cleaned after use. A genuine innovation for application workers is therefore the One Way Container (OWC) from the DAW Group which provides savings in time and material on construction sites.

In contrast to returnable systems, with the OWC no return is necessary – refilling the 800-kilogramme container with product from sacks is possible at any time. Once the work is terminated, the carton can be easily disposed of with recycled paper and the plastic inner bag put in with the recycled plastic. Incidentally, the idea of designing packing materials to be separable was implemented in the do-it-yourself sector as long ago as 1993 with the innovative Öko-Pack from Alpina.



Well thought-out and practical – the OWC simplifies construction-site logistics.

4.3

Innovation with consultancy

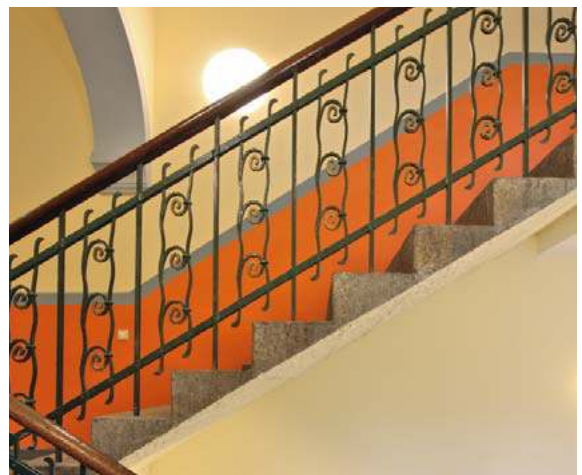
Sustainable products will also determine the research and development work at DAW in the future. In this respect the requirements of the market and the customer have priority which in turn are the consequence of ecological, social and economical developments in society.

Durable and long-lasting

According to the understanding of “sustainable” at DAW, it means “durable” and “long-lasting”. Therefore, along with the environmental and health compatibility of raw materials, the economy of the products during application is important. The product development department at DAW always strives for the optimum in terms of environmental protection, safety and costs. The products should also be able to be cleaned easily (cleanability). Furthermore, they must be colour fast and resistant to the effects of weather and temperature. This means that the renovation cycles are extended and more efficient due to savings in costs and materials is obtained.



Noise nuisance sustainably reduced – a pleasant acoustic room climate was produced by the use of Melapor elements in the refectory of the school centre in Wesseling.

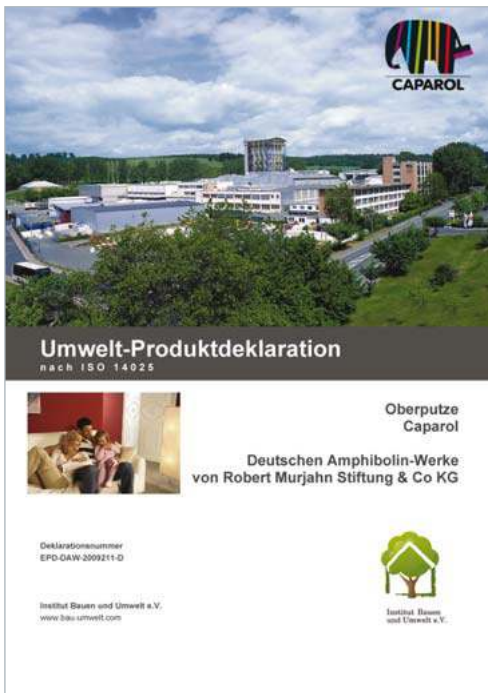


Primary School, Oranienbaum: High quality DAW interior wall paints are in demand when the most exacting requirements are specified for hard-wearing properties.

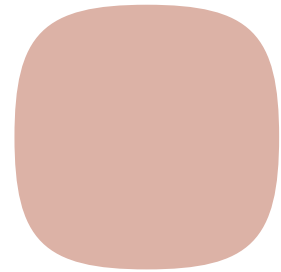
Environmentally orientated product declarations

Also, increasing building certification is driving innovation for products which fulfil the growing need for energy optimisation in buildings and non-toxic materials. DAW companies have participated intensively in the work on producing environmental product declarations (EPDs). Certified environmental product declarations have been available since 2009 for the key products from DAW. They are gradually being supplemented for further products.

EPDs and other aspects relevant to the environment are requested by sustainability-orientated building owners, architects and investors to an increasing extent.



Environmental product declarations provide the basic data for an ecological building assessment.



In order to meet this demand for information, DAW has put sustainability data on the building products platform of the German Sustainable Building Council (DGNB) – the DGNB Navigator (www.dgnb-navigator.de).

Product information for sustainable building

In order to be able to give more consideration in the future to the increased demand for well-founded information in the field of sustainable building, a dedicated office was created specially to address the subject of products and sustainable building. For example, here data relevant to sustainability is brought together and gathered in a data base. In this way customers and employees can find comprehensive and competent information and advice at any time.

5.0

Sustainable buildings

DAW products decorate and protect at the same time, because they offer a large variety of colours, textures and protection from the effects of the weather. This means that they provide a valuable contribution to sustainable building. And that is important, because "green buildings" may be a niche market now, but may soon represent the standard. Market trends, sustainable building certificates and political regulations will ensure this.

Irrespective of whether new construction or renovation is involved, sustainable building design can be realised with DAW products – economically, ecologically and socially. Visions then become reality.



Martina Lehmann (left) and Simone Hörr work for the company's ColorDesignStudio and develop concepts for the colour design of facades and interiors.

5.1

Realize new standards with DAW products

Sustainable building is not only a good idea for reasons of ecology and economics – market developments and legislative progress also ensure sooner or later that “green buildings” become the standard. This applies equally to the planning and construction of new buildings as to the reconstruction of existing ones.

Buildings are some of the largest emitters of carbon dioxide. They are responsible for more than 40 percent of the global energy consumption – and therefore for a major share of world-wide greenhouse gas emissions. The greatest potential savings here are not in the industrial and property sector, but rather in residential buildings which have an energy consumption of about 26 percent. The refurbishment of existing buildings is particularly important with regard to state climate protection objectives.

Building certification becomes established

Apart from politics which wants to push forward with energy-optimised buildings for reasons of climate protection and foreseeable scarcity of energy, industrial initiatives are the main market driver.

For example, various certification systems now confirm to building owners whether their buildings fulfil sustainability standards. The oldest dates back to 1990 in Great Britain – the “Building Research Establishment Environmental Assessment” (BREEAM). It became the model for a range of other systems in other countries, for example “Haute Qualité Environnementale” (HQE) in France (since 1996) and “Leadership in Energy and Environmental Design” (LEED) in the USA (since 1998).

Germany started late with this subject, but in 2009 developed the standard with the most demanding content, the German Quality Seal for Sustainable Building from the German Sustainable Building Council. Due to the late start, both the LEED and the DGNB have become established.

Both systems offer certification at various levels. LEED offers certification according to the four categories (in increasing order) LEED certified, silver, gold and platinum.

There are three levels of DGNB certification – bronze, silver and gold. Whereas LEED and BREEAM are largely restricted to ecological criteria, the German system is characterised in that it assesses the building-related costs, value stability, functional quality, interior hygiene and even the tendering. Standard criteria are included in almost all systems of energy and water consumption, room air, acoustic comfort and the resilience of building material.

In countries which have already been dealing with environmental protection for a long time in an advanced manner rating systems have been developed instead of certificates. Rating systems help in particular in the planning phase as well as later in the management phase and are popular due to their lower costs in comparison to certificates. Ratings and certificates are comparable with regard to their ecological requirements.



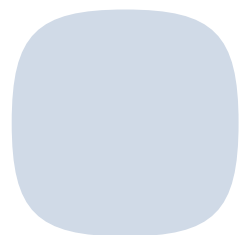
Layer-thickness measurement on reinforcing in the DAW Facade Technical Centre.



The quality of the paints is also subjected to thorough examination in the Colouristics Department..

DAW products fulfil high demands

For many of the criteria of certification and rating systems the DAW Group can supply suitable products – in particular in the sectors of thermal insulation, facade systems, paints, enamels and floor coverings (cf. chapter "Sustainable products"). Most of the products can be used in residential buildings as well as in the industrial and property sectors, enabling customers to realise their objectives such as energy optimisation, reduction of waste, residential health and long-term value stability.



5.2

New buildings: all correct from the start

The coupling of economy, environmental compatibility and socio-cultural aspects plays an important role with sustainably designed buildings. Progressive building owners have shown many times over the advantages of sustainable building and have consequently set an irreversible trend in motion.

Building owners, architects, application workers and end-users are now reinforcing this development and are supporting the demand for products, which, along with economic and ecological potential savings, also contribute to sustainability from socio-cultural viewpoints.

Paints for well-being and motivation

Whether for residential buildings or in the industrial and property sectors – along with health and environmental aspects of the products, questions of colour design are playing an increasingly important role. The ColorDesignStudio at DAW has analysed the relationships based on the basic principles of scientific studies and has drawn up concepts for various target groups and functional areas. For example, hotels, office buildings and children's facilities become inspiring living and working spaces, which positively influence, identification, creativity, social behaviour and well-being.

Examples from the field of new construction

Property	Five-star Hotel Hyatt Hafenspitze, Düsseldorf
Building owner	Projektgesellschaft Hafenspitze mbH & Co. KG, Düsseldorf
Architect	JSK Architekten, Düsseldorf
Application	Woell GmbH, Cologne
DAW products	Interior paints PremiumColor, CapaSilan and Capadecor Metallocryl, floor coating Disbopox 447
Certificate	DGNB Silver Certificate



Property Tower 185, Frankfurt am Main
Building owner Vivico Real Estate GmbH, Frankfurt am Main
Architect Prof. Christoph Mäckler Architekten, Frankfurt
Application C & U Sturm GmbH, Harthausen
DAW products ETICS WDV5-A, LS facade insulation board
 VB 101, lightweight mineral render
Certificate DGNB Silver Certificate, LEED Gold



Property Caritas-Kinderhaus St. Franziskus, Pforzheim
Building owner Caritas Pforzheim
Designers Pforzheimer Bau und Grund GmbH
Colour design ColorDesignStudio, Ober-Ramstadt
Application Christian Hahn GmbH, Pforzheim (ETICS)
 Heinrich Schmid GmbH & Co. KG, Pforzheim (interior)
DAW products ETICS: Dalmatiner-Fassadendämmplatte 160 insulation, CarbonSpachtel, AmphiSilan-Fassadenputz K30 render;
 Facade paint: Muresko SilaCryl
 Acoustic system: CapaCoustic Melapor-Panel;
 Interior wall techniques: Capadecor ArteLasur, DecoLasur, Metallocryl Interior; interior paint: Indeko-plus; enamels/glazes: Capacryl PU-Satin



Property Hotel Sofitel, Jumeirah Beach Residence, Dubai
Building owner Dubai Properties
Architect NORR Group Consultants International Ltd
Project management Al Ahmadiyah Contracting & Trading
Application Emirates Coats LLC
DAW products ETICS with 2.5 mm textured render
 Capacryl Haftprimer primer, etc.



5.3

Old buildings: energy-efficiently refurbished

Reduce costs – protect the environment – preserve value

Whether for private houses or larger residential complexes – reducing energy consumption for heating and air conditioning is sensible simply to reduce costs. Apart from the use of renewable energy and efficient system technology, the correct insulation and surface material is very important. With the use of high-quality thermal insulation composite systems, for example, the oil consumption can be reduced from twenty litres to three litres per square metre of facade area per annum. In this way renovation decisions quickly result in noticeable economic and ecological relief. But also the colour design of buildings moves increasingly into

the limelight from socio-cultural view points. Depending on the building structure, the imagination of architects and building owners and on the requirements of the users, the ColorDesignStudio at DAW produces individual colour and material concepts – of individual buildings and rows of terraced houses through to estates and colour schemes for cities.

DAW products are therefore demanded under the premises of economy, environmental friendliness and socio-cultural aspects, because they bring together unique quality and sustainability properties. They decorate and protect at the same time and preserve the value of the real estate in the long term.

Examples from the field of reconstruction

Property	Residential and commercial property in the historical Schnoor Quarter, Bremen
Building owner	Katholischer Gemeindeverband (KGV), Bremen
Project management	Building management of the KGV Bremen
Application	Hans-Peter Meyer GmbH, Bremen
DAW products	ETICS: Dalmatiner-Fassaden-dämmplatte 160 insulation; Capapor profiled items for cornices, corbels and window joints; facade render.



Property Agricultural and landscape gardening school, Wiesbaden

Building owner hbm Hessisches Baumanagement, Regional Branch, Wiesbaden

Architect asp architekten spuhler, Wiesbaden

Application Haar und Sohn GmbH, Mainz-Kastel

DAW products Primer: CapaGrund Universal; facade paint: AmphiSilan Nespri-TEC with nano-quartz matrix structure

Award Winner in Facade Competition 2010 of Painters' Guild Wiesbaden-Rheingau-Taunus



Property Residential complex Pfalzdorf (near Goch)

Building owner WohnBau eG, Goch

Architect Architectural consortium Prieske-Becker, Goch

Colour design ColorDesignStudio, Ober-Ramstadt

Application Klaus Schmidhausen, Kleve

DAW products ETICS: Dalmatiner-Fassaden-dämmplatte 160 insulation; facade paint: ThermoSan, AmphiSilan, Muresko



Property Märkisches Viertel, Berlin

Building owner GESOBAU AG, Berlin

Project management IPB.B Ingenieurbüro für Projektentwicklung und Baubetreuung GmbH, Berlin

Colour design ColorDesignStudio, Ober-Ramstadt

Application ASA Baugesellschaft mbH, Zepernick

DAW products ETICS: Dalmatiner-Fassaden-dämmplatte 160 + MW-Fassaden-dämmplatte 149 Extra insulation, mineral render; facade paint: Sylitol



5.4

Learning and recuperation: buildings of well-being

Materials and design – it is the users that matter

Buildings must fill a host of requirements. The right choice of coating and design is very important particularly in areas subjected to sensitive use. Lighting conditions, acoustics, room climate and especially the colour design are crucial to the overall feeling of well-being.

The design concepts “Learning worlds/colour worlds” and “Rooms for care and health”, developed by the University of Applied Science and Art (HAWK) in Hildesheim and DAW, are directed at institutions in the educational sector (kindergartens, schools, universities) as well as hospitals, senior citizens centres, care homes and doctors' clinics. They highlight exemplarily ideal types of colour and material combinations.

For the choice of colour special requirements on the resilience of the surfaces and on hygiene have to be considered, depending on the functional area. In areas of kindergartens and schools, such as common rooms, corridors, staircases and entrance areas which are subject to heavy use materials must be durably cleanable and resistant to mechanical stress, for example abrasion-resistant wall paints. In care and health facilities coating materials are also demanded which are resistant to disinfectants and can be decontaminated. The subject of sustainability plays a substantial role in all sectors – after all, a good life-cycle balance based on high quality and long-lasting coating systems fulfils the requirements for the protection of the environment, pays off for the operator and offers people buildings in which sustainable well-being is possible.

Examples from the education and health care sectors

Property	Dorint Strandresort & Spa Ostseebad Wustrow
Application	Heinrich Schmid, Hamburg
Colour design	ColorDesignStudio, Ober-Ramstadt
DAW products	Capaver FantasticFleece, DecoLasur, Sylitol Bio interior paint, ArteTwin, Capacryl PU-Satin



Property Radiation therapy RADIO-LOG in Altötting

Building owner Radiologie Passau

Architect Hiedel + Partner, Passau

Application Hagel, Waldkirchen

DAW products Wall, floor, ceiling – 2-component epoxy resin coating Disbopox 447 E.MI aqueous epoxy



Property Kindergarten, Sighartstein (Austria)

Building owner Town of Neumarkt

Architect kadawittfeldarchitektur, Aachen

Application EBSTER BAU Gesellschaft m.b.H., Neumarkt, Austria

DAW products ETICS WDVS-B, CarboNit, CarbonSpachtel, AmphiSilan render



Property Comprehensive school in the District of Kassel, Kaufungen

Building owner Zweite Projektentwicklungs-GmbH & Co. Schulen Landkreis Kassel KG, Hofgeismar

Architect Architekturbüro Dipl.-Ing. Joachim Döring, Kaufungen

Colour design ColorDesignStudio, Ober-Ramstadt

Application ETICS: Maler- und Putzbetrieb Richard GmbH & Co. KG, Bebra
Master Painter Klaus Brede, Kassel

DAW products ETICS WDVS-A, mineral wool facade insulation board, high cleanability system with lightness value 70 – 100, wash primer, Latex Satin 20, finishing sealer Disbopur 458 PU-AquaSiegel, for intensive colours Capacryl PU-Satin



6.0

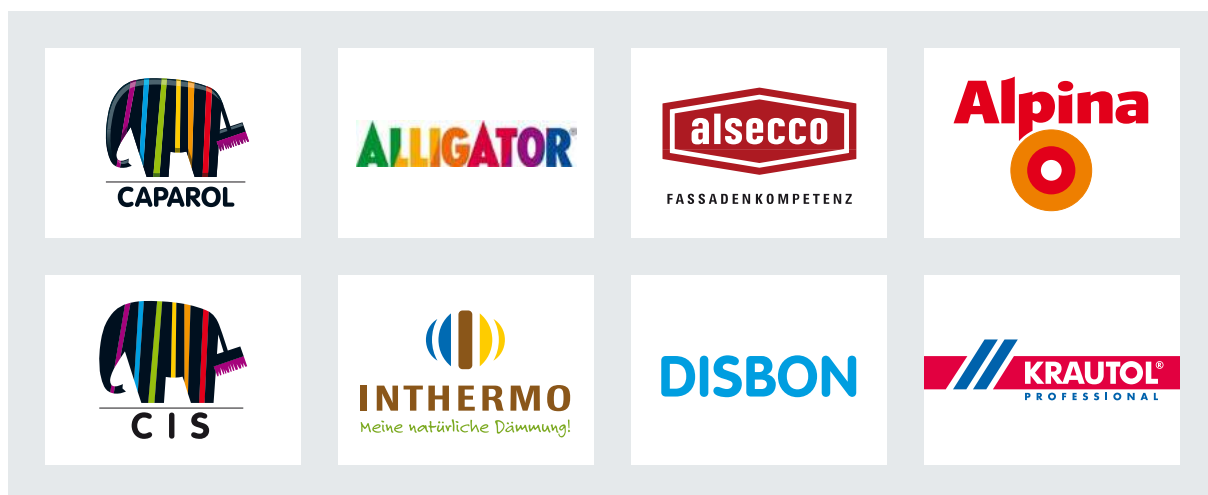
The DAW Group

DAW Group corporate structure

The parent company is the **Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co KG** with its headquarters in Ober-Ramstadt. DAW carries out central functions such as research and development, purchasing, production, personnel, finance and accounting.

The brands of the DAW Group are recognised and valued way beyond the borders of Europe. High quality paints, enamels, glazes, chemical building products and materials for facade and insulation technology are sold under the brand names

Caparol, **Alligator** and **alsecco**. Under the brand name **Inthermo** insulation systems based on wood fibre are sold for residential buildings. **DISBON** offers coating and refurbishment solutions in the field of building protection. In addition, professional building coating materials are sold under the brand name **Krautol**. The **Alpina** product range comprises high quality decorative, environmentally friendly and easily applied paints, enamels and glazes for the end-user. The industrial sector is covered by the company **CIS** (Caparol Industrial Services).



7.0

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As an independent family company, sustainability represents a basic attitude for DAW.

Locations of DAW Group



Company in its fifth generation, basic corporate

