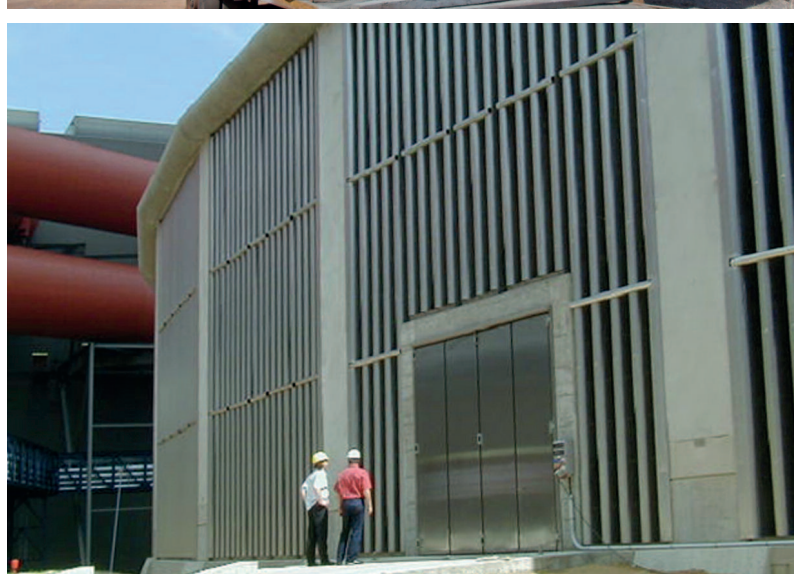
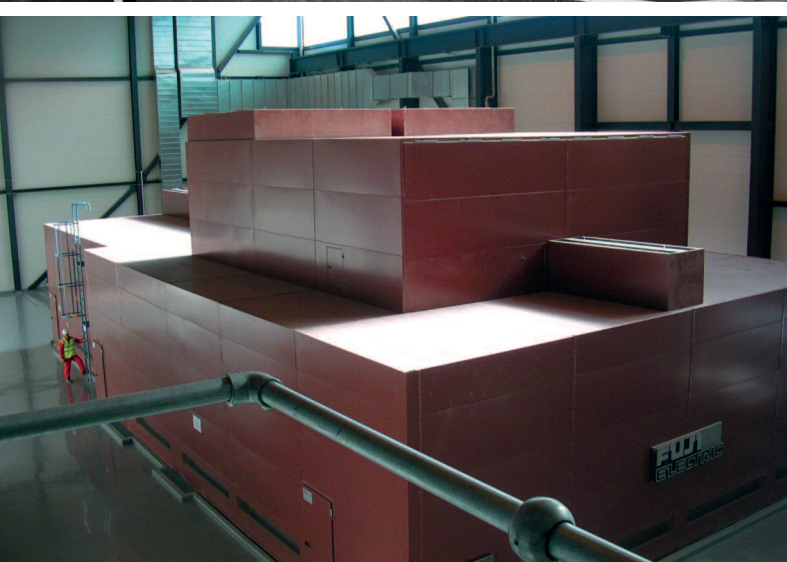




Quality manual

2023



Company structure

1. Products and activities worldwide

For more than 30 years BBM Akustik Technologie GmbH has been supplying the industry with noise reduction products for the most diverse noise-control tasks.

Our approved manufacturing methods ensure that we can offer special products tailored to suit each individual case of application in the following fields:

- Blow-off silencers behind start-up and safety valves for steam and gas
- Baffle silencers for waste heat boilers, for by-pass stacks behind gas turbines as well as for cooling towers, fans and fresh air ventilation systems
- Noise enclosures for steam and gas engines, compressors, etc.
- Sound absorbing shrouds for waste heat boilers, boiler housings
- Inline silencers and resonator silencers for compressors, stationary internal combustion engines, fans, etc.
- Complete condensation systems with water and steam separation
- Custom-made constructions and systematic solutions

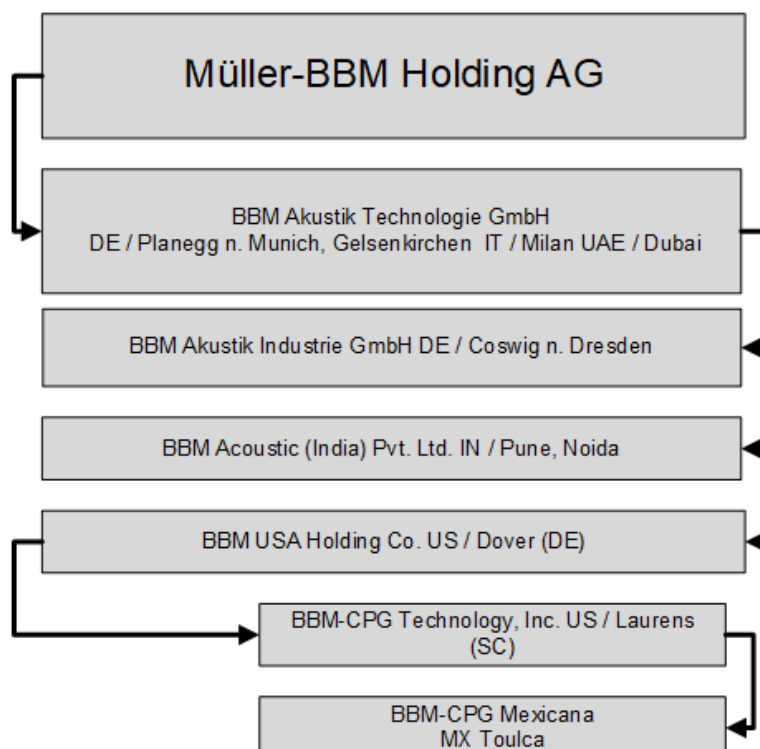
In Germany we are represented at sites in Gelsenkirchen and Planegg near Munich. In Italy we are represented at Milan. We offer our services worldwide, from planning and design through engineering and development right up to the delivery of complete systems.

Our services comply with the most important European and international guidelines (European Directive P E D 2014/68/EU, EN standards, AD-2000, TRB, TRD, ASME, Chinese Safety License, etc.) – depending on specific customers' and legal demands.

2. The strength comes from our group of companies

2.1 Müller-BBM Group

The former company GERB Akustik Consult GmbH started delivering systems for industrial noise control in 1979. The former company GERB Akustik Consult GmbH started delivering systems for industrial noise control in 1979. BBM TECHNIK GmbH developed special silencer for the same applications. In 2000, the company was renamed in BBM GERB Akustik GmbH with BBM TECHNIK GmbH as a shareholder. In July 2005, after complete take-over by the Müller-BBM Group, the company was re-named in BBM Akustik Technologie GmbH. It is now a company member of the Müller-BBM Group to which also belongs Müller-BBM GmbH, an internationally working consulting office specialised in the field of noise control and air pollution control. With its 100 per cent affiliated companies BBM Akustik Industrie GmbH in Coswig near Dresden and BBM Acoustic India Pvt. Ltd., BBM Akustik Technologie has its own production sites in Germany and India.



Organisation

The longstanding experience of BBM Akustik Technologie combined with the expertise of Müller-BBM GmbH's consulting engineers has created extensive know-how available to BBM Akustik Technologie in the field of industrial noise control, from which our customers benefit.

The sales engineers in our agencies in Pune (India) and Milano (Italy) are the direct consulting partners of our clients on site.

2.2 Organisation

Distribution

Our customers are in contact with our well-trained and skilled engineers, who have field experience in plant engineering and are specialists in industrial acoustics.

In close cooperation with our customers, we specify the tasks and requirements, elaborate suggestions for solving the problems and implement the solutions in the development of our products..

Project handling

Our project managers are responsible for the complete handling of the orders – from the design to the delivery or assembly. They verify the conceptional design and manufacturing documentation from the design department, and make sure that all fixed dates, regulations, guidelines and other customers' requests are met and take part in the final inspection in the manufacturing plant.

Design and calculation

Our design and calculation departments develop and document our products from the first concept to final documentation using modern CAD workstations. The calculations are performed according to formulae of pertinent rules and regulations using static programs, stress and structural analyses by FEM as well as flow calculations by CFD. Detailed production drawings together with full welding instructions and test plans serve as the basis for our product manufacture.

Production

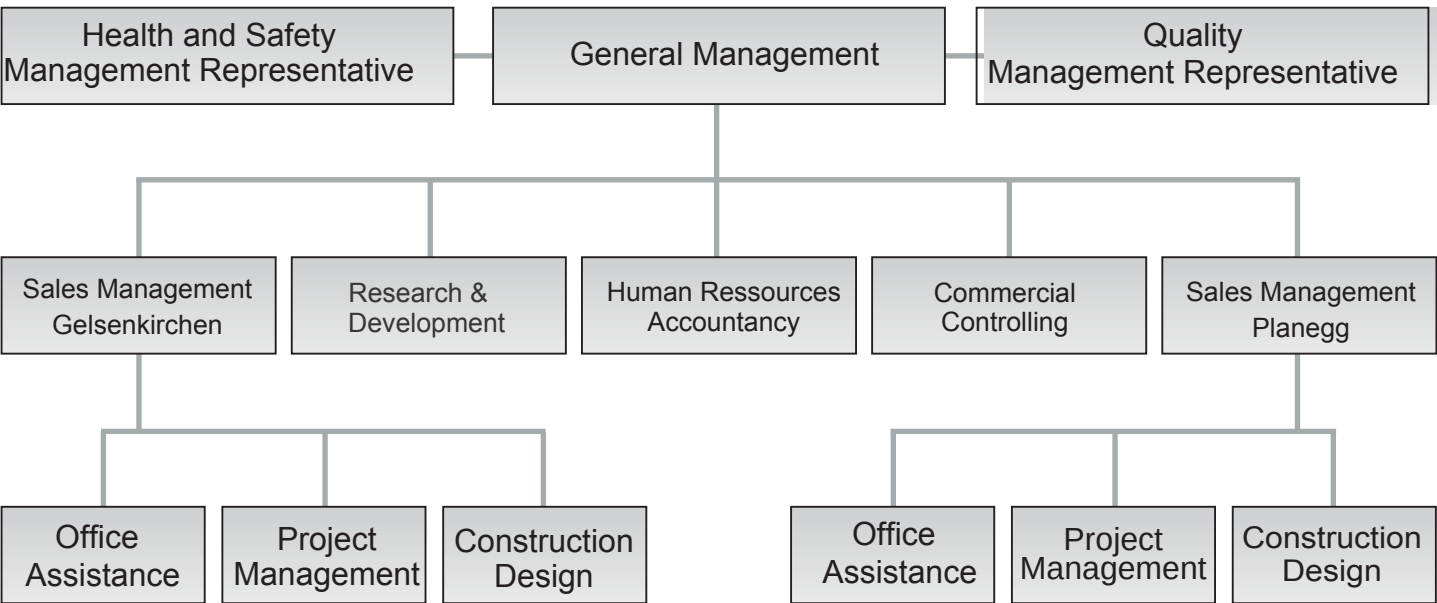
Our products are exclusively manufactured by authorised and qualified suppliers whose staff possess the required welding and testing authorizations and certificates. Our main supplier is our own production plants in Coswig/Germany and Pune/India.

Research and development

Research and development serve to continually improve existing and develop new products. R&D projects are regularly carried out using our own testing facilities or those of the Association.

Quality assurance

Our demands for quality and our customers' requirements are met through our staff's high quality-awareness and the regularly reviewed rules of our quality management system.



Organisation chart of BBM Akustik Technologie GmbH

3. Quality policy, visions and objectives

3.1 Quality policy

To meet market and customer requirements and to realise the company's objectives, BBM Akustik Technologie GmbH emphasizes a continuous quality and customer orientation. Good business relations are only possible with satisfied customers, and this forms the basis for continuous mutual benefit.

It is the acknowledged aim of BBM Akustik Technologie GmbH, to solve our customers' technical problems, to meet the expectations and demands on our services and to constantly increase customer satisfaction.

- Development and maintenance of procedures that increase the quality of our products as well as their performance and safety.
- Promotion of our staff's skills and creation of a motivating working environment by enhancing a vivid awareness of quality achieved by one's own activities.
- Assuring the occupational safety and health of all our employees as well as our subcontractors.
- Assuring competitiveness through permanently optimising working procedures and through continuous research and development projects.
- Increase reliability and flexibility by solid partnerships with our suppliers and cooperation in the further development of quality assurance.

Satisfied customers ► Good business partners ► Mutual benefit

3.2 Visions

For the future orientation of our company we have the following visions:

- to be our customers' first competent contact in terms of noise control components and to supply them with cost-optimized products
- to be our customers' problem solver in all aspects of industrial acoustics.
- to offer our staff a secure job in the future, where each one can enhance both his own and the company's through commitment and responsible actions.

We want to realise these visions with the support of our partners from the company Association.

3.3

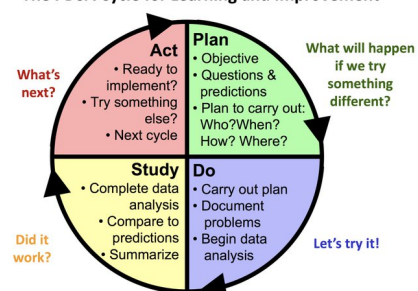
It is the declared aim of BBM Akustik Technologie GmbH to solve our customers' problems, to meet the relevant requirements and expectations of interested parties, to take advantage of opportunities and minimize risks and to continuously increase customer satisfaction.

The organization uses the PDCA cycle * for its individual processes and for the quality system as a whole, it determines external and internal issues and deals with them on an ongoing basis. Various types of analysis are used to systematically identify opportunities and risks, such as SWOT analysis, process analysis or quality techniques are used.

Our quality-management aim: satisfied customers



The PDCA Cycle for Learning and Improvement



* PDCA Plan / DO / Check / Act Deming circle schematic representation

Quality management system

4. BBM Akustik Technologie's quality management system

To achieve the visions and objectives described under 3.2 and 3.3 BBM Akustik Technologie GmbH has introduced a process-based quality management system and ensures its strict application and constant further development.

The quality management system is based on the International Standard

DIN EN ISO 9001:2015

and meets the required grade. This applies to all branch offices of the company.

The QM documentation consists of this quality manual, the process instructions as well as working and testing instructions. The steps detailed in these instructions are obligatory for all members of the company's personnel and are constantly applied.

The management of BBM Akustik Technologie GmbH has appointed a quality management representative, who participates in organizing the business processes and sees to their implementation within the company. The quality management representative regularly in forms management about the effectiveness of the QM system and the improvements required. The QM representative possesses the necessary authority and competence to implement the appropriate measures required to maintain and improve the QM system.

Together with management, the quality management representative promotes staff awareness of the importance of quality and customer satisfaction. Management ensures the availability of the auxiliary facilities required.

BBM Akustik Technologie benefits of the occupational health and safety expert (external) who advises the employees in all questions of occupational health and safety, controls the compliance with occupational safety regulations and registers the respective figures for accident statistics.



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
1000406240-MSC-RvA-DEU

Initial certification date:
02 May 1997

Valid:
01 November 2021 – 31 October 2024

This is to certify that the management system of
BBM Akustik Technologie GmbH
Helmut-A.-Müller-Str. 1-582152 Planegg, Germany
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Engineering and design for manufacturing and installation of systems for noise reduction

Place and date:
Barendrecht, 06 October 2021

For the issuing officer:
DNV - Business Assurance
Zwolsseweg 1, 2994 LB Barendrecht, Netherlands



Erika Kerk
Management Representative

Certificate for our quality management system

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance B.V., Zwolsseweg 1, 2994 LB Barendrecht, Netherlands - TEL: +31(0)102522889 - www.dnv.com/assurance

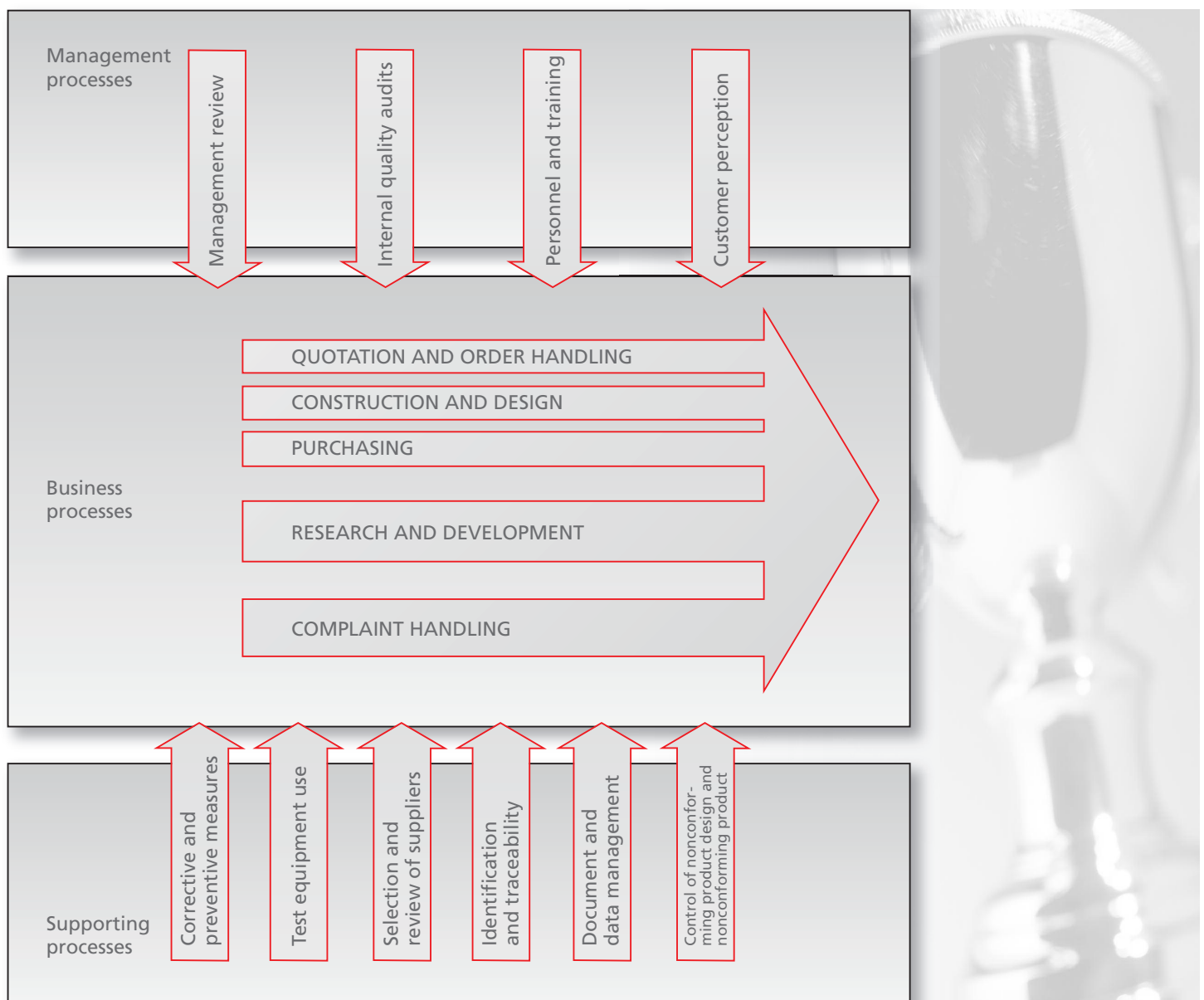
5. Processes of BBM Akustik Technologie

The following process model shows the interaction of the processes relevant to quality management. The individual processes are described in the pertinent process instructions.

The exact application of the described processes is a prerequisite for ensuring full customer satisfaction.

5.1 Process model

The procedures and work steps can be subdivided into different processes. An exact description of the actions to be taken as well as the required information input, resources and responsibilities are contained in the form of process-instruction flow charts.



Process model

Processes

5.2 Management processes

The management processes serve to control, maintain and monitor the quality management system.

Management review

Within the scope of a regular management review, the quality policy, and the quality and company objectives are reviewed by the people responsible and the general management with regard to appropriateness and efficiency. The demands of external parties are determined, the resulting opportunities and risks are assessed and internal and external issues are dealt with on an ongoing basis. The efficiency of the QM system is determined, measures for improvement are determined and the effectiveness of the measures introduced is checked.

Internal audits

Internal quality audits

The results obtained from the regularly performed internal quality audits are an important indicator for evaluating the effectiveness of the QM system and initiating the improvement process.

The intervals of all audits planned for the current year are fixed in an audit schedule. Additional quality audits are performed

when processes have been changed or upon request of staff or third parties.

Personnel and training

The qualification of the entire personnel is a fundamental condition for the successful handling of projects and customer satisfaction. Our staff's technical and personal qualifications are ensured by internal and external training.

Staff members' specific training needs are regularly determined and included in a training schedule. Upon selection and participation in an appropriate training course, its effectiveness is checked by the head of the department concerned.

Customer perception

To achieve a targeted improvement in customer satisfaction it is necessary to know the exact demands and expectations of the customer. Due to our sales engineers' intensive contact with our customers, these requirements can easily be determined in personal conversations. The information obtained is systematically recorded and serves as a basis for evaluating customer satisfaction.



The quality management system is regularly evaluated

5.3 Business processes

Business processes are made up of day-to-day business contact with customers. These processes characterise the whole procedure – starting from customer inquiry through to problem solution and/or product delivery.

Quotation and order handling

All incoming inquiries are registered in our central project management system. The inquiry is checked with regard to technical and commercial aspects and it is decided whether an offer can be made. If an offer cannot be made, the customer will be informed accordingly. Otherwise, a quotation will be detailed and sent to the customer. In the subsequent follow-up, the customer will be contacted to find out whether there are any additional demands or modifications to be considered in a revised offer or in the contract negotiations.

Upon receipt of the order, its contents are compared to those of the offer or negotiation minutes. Deviations will be clarified with the customer. When the order has been accepted after review of the contract, the customer receives an order confirmation. Specifications as well as calculation and planning are included in the process of dimensioning and designing. Once the design and purchasing processes have been implemented, the delivery of the specified products and documents to the customer is checked and the invoice issued.

Construction and design

Upon submission of the design data, the construction department draws up the required release and design documents and submits them to the customer or to an external expert for checking.

Based on the released documents the manufacturing drawings, parts lists, welding and testing plans will be prepared and, after checking and verification within the scope of the purchasing process, they are handed over to the production department.

With the preparation and review of the final documentation, the process is completed.

Purchasing

The quality of our products and services depends on our suppliers' manufacturing quality. Therefore, the purchasing process serves to ensure the provision of products and services by



authorised suppliers in compliance with the required specifications and agreed commercial conditions.

Before delivery, the quality and compliance of the products is verified in a final inspection – upon request in our customer's presence.

Research and development

Research and development are performed to further develop know-how and state-of-the-art technology. In this process, materials we currently use as well as new materials and products are tested for suitability and the results are documented for further developments. The data base obtained in this way also serves to develop calculation methods for our own design programs. Our customers benefit from these developments by our company's enlarged know-how as well as by improved competitive products.

Complaint handling

To be able to correct a fault in the event of a customer complaint as quickly and specifically possible, the complaints are centrally recorded and the required action to correct the fault is immediately taken and monitored. The customer is kept informed on the progress of his case.

A process of corrective and preventive action is initiated if measures to prevent such non-conformities in future are required. Should the cause of the fault be related to manufacture, the necessary corrective action will be defined and monitored in cooperation with our supplier's quality assurance.

Realisation

5.4 Supporting processes

Corrective and preventive measures

Corrective and preventive measures are taken to prevent repeated occurrence of nonconformities and to eliminate their causes and possible sources. The process is started by complaints, internal error messages and improvements suggested by staff members or by audits. The implementation of the measures in the respective processes is monitored and its effectiveness controlled.

Use of test equipment

For all our own test equipment used for the final product inspection or control measurements, this process describes the methods involved in purchasing, applying and regular monitoring.

The stipulated arrangements ensure compliance with the limiting values fixed regarding the maximum error of test equipment during the whole duration of use as well as the maintenance of the test equipment. Due to this, the use of inappropriate, faulty test equipment can be excluded.

Selection and review of suppliers

Our suppliers are selected according to preset criteria. Only suppliers meeting these requirements are used. A regular review of all active suppliers assures our aim to provide our customers with perfect products which comply with the quality demanded.

Identification and traceability

Due to the obligatory identification of our documents and products, they can unambiguously be assigned and identified. For each type of document and product, the type and extent of identification are determined according to the requirements.

Document Informations

There are two different kinds of documents and data:

- Order-related documents and data are needed in the order handling. Within the individual processes, those involved in a project are responsible for maintaining and releasing them.
- Non order-related documents and data serve as instruction and auxiliary means for the work on a project or acquisition and public relations. These documents shall be released before use by the sales management / general management.

There are procedures laid down for the identification, status of edition, filing, archiving and disposal of order-related and non order-related documents and data.

Control of faulty product design and faulty products

Faulty products are identified in order to avoid their unintentional use. According to type and place of the occurred fault, adequate action is taken for its segregation or reworking.

6. Administration of the quality manuals

There are two kinds of quality manual:

- A specimen for information submitted to the customer upon request.

The copies correspond to conditions current at the time of issue. They are not subject to the up-dating service.

- An updated specimen accessible to each staff member via the computer network.

These copies are subject to the up-dating service. This ensures that the latest edition of the manual is always available for application.

The quality manual is the property of BBM Akustik Technologie GmbH. It may not be copied or forwarded to third parties without prior written approval by the general management of BBM Akustik Technologie GmbH.



Documentation

7. Requirements according to EN ISO 9001:2015 and description of the implementation in the quality management documentation

Processes of the QM system of BBM Akustik Technologie GmbH

Section of the EN ISO 9001:2015

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Solving industrial noise problems for more than 30 years.

BBM Akustik Technologie – a leading supplier
of industrial silencers and enclosures.

Our products

Hot gas turbine silencers

- Bypass silencers
- Gas turbine silencers
- Single cycle silencers
- Optimised splitter design



Steam silencers

- Vent silencers
- Start-up silencers
- Blow-off silencers
- Flash tank silencers



Acoustic enclosures and claddings

- Facades and shrouds
- Partial HRSG enclosures
- Steam and gas turbine enclosures
- Supply and erection



Flue-gas silencers

- HRSG outlet duct silencers
- Main stack silencers
- Id and Fd fan silencers
- Minimized pressure drop



Engine exhaust silencers

- For diesel and gas engines
- Highest attenuation
- Most compact design
- DNV certified spark arrestor



Condensate systems

- Complete system design
- Static and dynamic calculation
- Condensate tanks and flash tanks
- Piping and blow-off silencers



Cooling tower silencers

- Natural draught cooling towers
- Forced air cooling towers
- Cell cooling towers
- Hybrid cooling towers



The range of services offered by BBM Akustik Technologie, headquartered in Germany, comprises acoustic engineering, product-specific advice, manufacture, delivery and mounting.



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