



DEKOMTE Profile

Providing Specialised Expansion Joint Technology



Our Company

DEKOMTE de Temple offer innovative and quality expansion joint solutions to bring reliability of operation in the applications they are installed, whilst creating better technologies that benefit both the customer and the environment.

As a specialist engineering company, we can offer complete product management, starting from the initial design to the maintenance of the expansion joint. It is the extensive experience and technical nature of DEKOMTE that has led to the successful application of expansion joints in a wide array of industries.

Typical applications are industrial incinerators and annealing furnaces, power plants, steel plants, petrochemical installations, pyrolysis and precipitators, HVAC, food industry and also the fire-proofing of wall penetrations.

DEKOMTE considers the expansion joint to be an integral part of the duct system. Only through proper evaluation and integration of all the components, such as the duct connection, duct material and the steel frame design, can an optimised solution regarding technology and price be achieved.

Engineering support in the form of annual inspections or life time assessments can form a critical part of the maintenance planning of a power plant or industrial manufacturing process. DEKOMTE can support and advise its customers on supply and installation appropriate to their requirements. The design of the expansion joint uses the latest materials and composition to optimise cost and technical function.

Post-installation, our competent customer service team is always available to help you; either by answering queries or the rapid, problem-free complete product replacement.

Fabric Expansion Joints

Fabric expansion joints are suited for gaseous media, such as air, exhaust gases and solvent fumes, as well as for operation below dew point (also involving substances with certain concentration of acids), also with abrasive enriched gases (e.g. coal or cement dust).

Due to their modular design, fabric expansion joints adjust especially well to different requirements (e.g. critical sealing requirements, frequent temperature and pressure variations), and therefore, cover a very wide spectrum of applications.

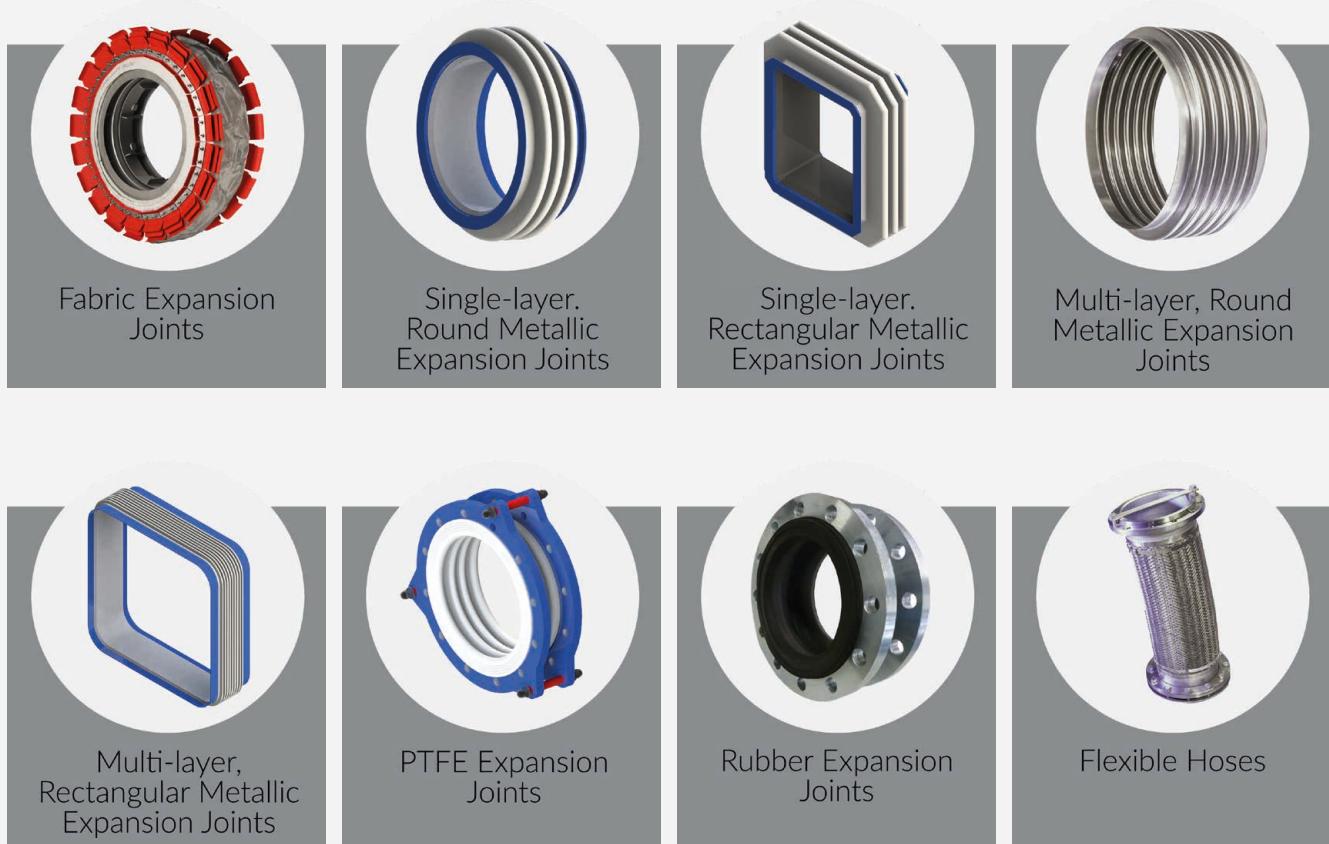
The high quality materials as well as the technical experience in designing and manufacturing assure the long life and durability of DEKOMTE fabric expansion joints.



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Products



Company Progress



Foundation of the Company - Germany Headquarters



The firm of DEKOMTE de Temple Kompensator-Technik was founded at a time when the technical requirements for expansion joints were rising at an unprecedented rate. In 1978 the company's founder, Günther de Temple, continued a family tradition under the motto "from regulator to expansion joint" as the de Temple name had already been associated with reliable steam engine regulators since 1890.

Today, the name of DEKOMTE de Temple stands for high-tech expansion joint technology. We have almost 400 people in our global team across 11 facilities, dedicated to delivering a first class customer experience and quality solutions to the industry. Our network of global partners gives us access directly to support over 30 countries.

1980 - Belgium



The first subsidiary of DEKOMTE de Temple was founded in 1980 by Johnny Verkempinck, namely the company DEKOMTE Benelux in Oostende, Belgium. Following this, Belgium also started the subsidiaries in France and South America.

1992 - Manufacturing



The production was originally established in the Black Forest region of Germany, but with the continual drive for quality, growth and cost, the production investment began in Ploesti Romania in 1992. The forming of fabric joints now has a team of over 180 people.

2001 - UK



From 2001, Jake Waterhouse started the growth of activity in the UK and Ireland. In 2007 the office, workshop and service centre was built in the Cotswolds. The UK has been involved in developing the international business and subsidiaries in Mexico and the USA.

2004 - Fabrication



The detailed engineering and steel fabrication started in Romania in the mid-90s, and in 2004 a full independent fabrication workshop team was established. In 2016 a purpose built facility was built in Ariceşti, and we now work with a team of over 100 qualified team members.

2008 - USA



The American market was supported and supplied from Europe, until the formation of a dedicated team in 2008. Today the company is based in Marietta GA and has over 15 staff members providing sales, project management and service to the growing USA market.

Subsidiary Network



We are focused, independent and capable to serve our customers around the globe. Our network of additional sales and service offices in **Czech, France, Netherlands, Russia, Spain and UAE** give local support and greater contribution to the DEKOMTE Group.

Scope of Supply - Design for Integration

DEKOMTE fabric expansion joints are available in any geometric shape (round, square, oval, multi-sided) and in any size.

The scope of design responsibility is a key aspect of DEKOMTE philosophy for an integrated solution to the adjacent duct; this ensures no weakness in the steel frame, liner plate or insulation system.



A metal frame, flow plate, liner system, backing bars, fixings and insulation all form part of the scope that creates a reliable expansion joint. DEKOMTE is able to consider the impacts of turbulent flow, pressure variations, vibration to the expansion joint and the surrounding environment.

External features such as heat convectors for a reliable fixing system, can be a key design aspect for the fabric and clamping area to function.

Adjacent jacketed insulation systems can be used to aid the interfaces to external ducting telemetry or insulation.

Personnel guards and external protection equipment can be integrated with the expansion joint to give a package of supply and make the installation as straight forward as possible.

Formed Solutions

DEKOMTE manufacture bespoke tailor-made solutions, utilising moulds and forms that create an expansion joint to a desired shape. The purpose of a mould is to allow movements to take place without any creasing or folding of materials.

A smooth and formed joint maintains a constant and even surface temperature which reduces the thermal stress and any fatigue to the materials and important gas membrane.

Formed joints are essential in all high movement requirements, where creasing causes rapid material degradation and failure.



Technical Services, Inspection & Installation

Design Studies and Technical Support

Design comparison, investigation and modelling can be achieved using the extensive database of empirical knowledge at DEKOMTE. We offer objective technical support at short notice for critical problems.



Engineering Services

DEKOMTE pushes the boundaries of product development with the latest computer and industry best practice tools and procedures.

The discerning use of Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD), together with 2D and 3D design software, allows a correlation of on-site empirical experience and theoretical models. The formulation of specifications, tenders and design critique are also offered as an independent technical service.

Inspection and Maintenance

DEKOMTE has experienced site engineers and designers who are able to review all expansion joints in a plant. We produce a technical report for maintenance planning and plant improvement, establishing a baseline of the sites expansion joints and helping to build a plan to reduce total costs. This includes:

- Visual and thermographic inspection
- Create a condition report on all existing joints on the plant:
 - » Evaluation of fixing system and gas tightness
 - » Review of adjacent elements for corrosion, cracking or distortion
 - » Internal review of expansion joint, including the flow plate and lining systems



Turnkey Installation

The use of skilled design engineers, technicians, and service engineers, together with qualified on-site skilled labour means DEKOMTE offers a complete turnkey contracting solution for duct problems.

Fabric Expansion Joints

DEKOMTE supplies quality fabric expansion joints, made from many different materials. In principle, fabric expansion joints are best for gaseous media, such as air, exhaust gas and solvent fumes, particularly for operation below the dew point, in acidic environments, or for abrasive exhaust gases (e.g. containing coal dust).

Fabric expansion joints are often multi-layer systems, consisting of:

- Temperature and corrosion-resistant insulating fabrics
- Gas impermeable films, including:
 - » Foils - stainless, aluminium or Inconel
 - » PTFE and composites
 - » Silicone and rubber
- UV and water-resistant materials for external protection

Part of the construction must also consider the supporting mechanical layers to give strength for maintaining the shape and resist pressure (normally internally, but also under negative pressure).



The overall form and shape of the joint is designed and constructed solely for the allowable movements required. Caution should be taken in any additional movement flexibility outside the specified movement criteria.

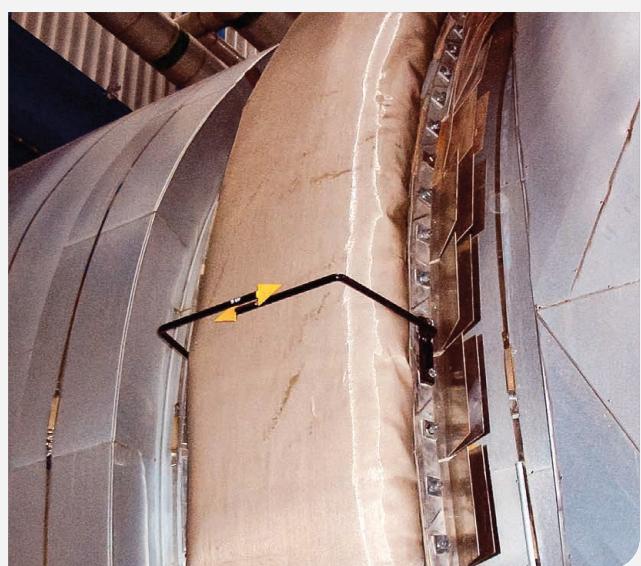
Repairs and Maintenance

An advantage of fabric expansion joints is the ability to patch, repair and replace in sections, thus minimising the downtime or outage. DEKOMTE service approach gives reliable technical advice on what can be repaired and what must be replaced. Considerations to be taken are:

- Damage can be repaired in spot cases to bridge to the next scheduled outage
- Cold-casing application joints can be repaired with low risk and good reliability
- Reliability of repairs can be difficult to achieve in high temperature applications

When an inspection is made, the fabric replacement can be planned to coincide with outage schedules. The upgrading of materials, composition, fixing systems or internal parts can give an important impact on longer life and more durable expansion joints.

A thorough evaluation of the adjacent ducting is required to minimise modification to the duct or steel parts.





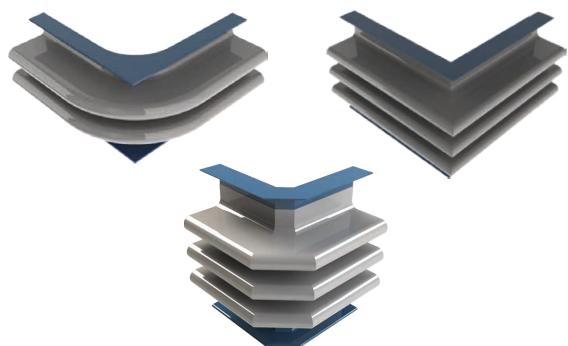
Single-Layer Metallic Expansion Joints

DEKOMTE single-layer metallic expansion joints are individually engineered and manufactured. The laminated construction method facilitates a variety of shapes and boasts no welded corners or larger duct cross-sections.



Corner Design

Typically, three different corner designs are available: round corners, miter corners, or double miter corners. The choice of corners is based on the cycle life and life cycle requirements.



Multi-Layer Metallic Expansion Joints

Multi-layer metallic bellows have a greater flexibility, high cycling capability and gas tightness; opposed to thick walled single-layer metallic expansion joints. Normally constructed with 1 to 6 layers of stainless or other high alloy steels.

DEKOMTE can supply multi-layer metallic expansion joints with weld ends, fixed flange, loose or threaded connections in accordance with German and international standards. Special connections according to customer drawings are also possible.

Depending on the requirements, the connecting parts and anchorages are made of carbon steel, stainless and acid-resistant stainless steel or heat-resistant steel.



PTFE Expansion Joints

DEKOMTE supplies a range of PTFE expansion joints for use in special chemical and industrial applications. The two main options are:

- Low pressure Type R-LD
- High pressure Type R-HD

PTFE multi-laminated tubes that ensure an absolute minimum porosity and a homogeneous wall-thickness, are transformed

again under temperature and pressure to special high-quality bellows, with a high vacuum and pressure resistance, even during a long period of operation.



Rubber Expansion Joints

Rubber expansion joints are universal expansion joints for axial, lateral and angular movements; available with full developed rubber flanges and revolving steel flanges.

The single convolution bellow is made from different rubber qualities with pressure carrying reinforcing high tensile Polyamid cord or as an alternative with reinforced layers of Aramid or fibreglass.

Additional steel or alloy rings may also be used in high pressure applications to avoid distortion of the shape and function of the bellow.



Flexible Hoses

DEKOMTE stainless steel corrugated hoses are high-quality, very flexible and sealed components for pipeline engineering.

DEKOMTE stainless steel corrugated hoses can be used universally for practically all liquid and gaseous media as well as pumpable solids, optionally with PTFE lining as protection against particularly aggressive media or to achieve a non-adhesive inner wall.



Complete Plant Solution

DEKOMTE expansion joints are used in every branch of the industry to compensate for thermal expansion in pipe systems. Typical applications include, but aren't limited to:

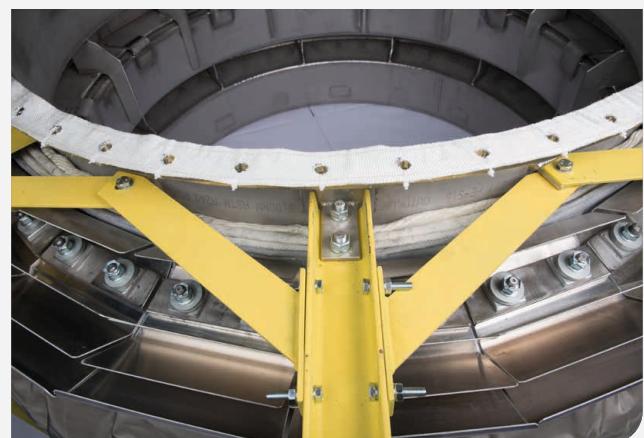
- Fossil-fuel power stations (coal, oil, gas)
- Open and combined cycle power stations
- Nuclear power stations
- Waste and biomass incineration plants
- Steel works and heavy industry
- Refineries, chemical and processing industries

Reliability, performance and the technical and commercial guarantee requirement, means that DEKOMTE has developed into a complete turnkey provider.

The specification of the steel parts, duct stiffeners and supports are fundamental to the operational performance of the expansion joint. Design integration at an early stage can identify the best overall solution for a trouble-free system.



The expansion joint is a central part of the total solution scope of supply. On a simple level, the delivery of a complete installation unit with steel and fabric parts pre-assembled requires no construction and allows straightforward installation on site.

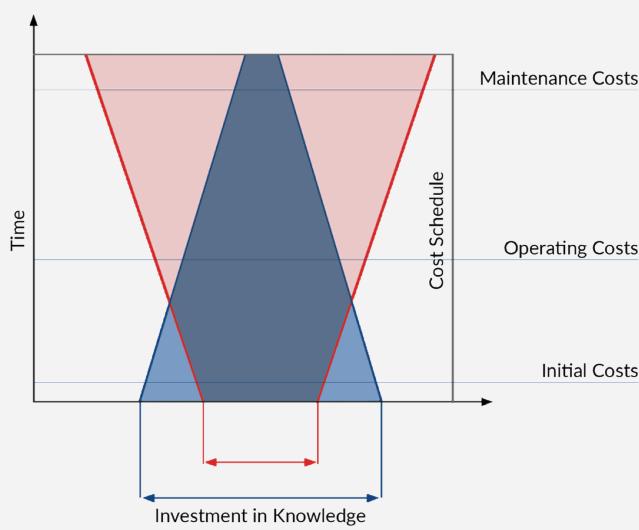


On large projects, the total project management of labour, materials and ancillary site services gives the customer peace of mind for outage programming and competent high quality installation.

During the construction of an expansion joint, the adjacent insulation is imperative to give a reliable and predictable heat radiation and convection of the outer materials, without the risk of overheating.

Economical Value Analysis

DEKOMTE recommend a life cycle value analysis to evaluate the total cost of ownership for an end user. The OEM choices which compare the quality, technical level and cost, must be balanced against the long-term function required by a plant.



The costs associated with maintenance far outweigh the initial capital cost of equipment. DEKOMTE design and quality philosophy can give significant cost savings by an improved longer life initial solution.

DEKOMTE can provide assistance to develop the specification and selection criteria, giving a technical basis for understanding value in fabric expansion joint systems.

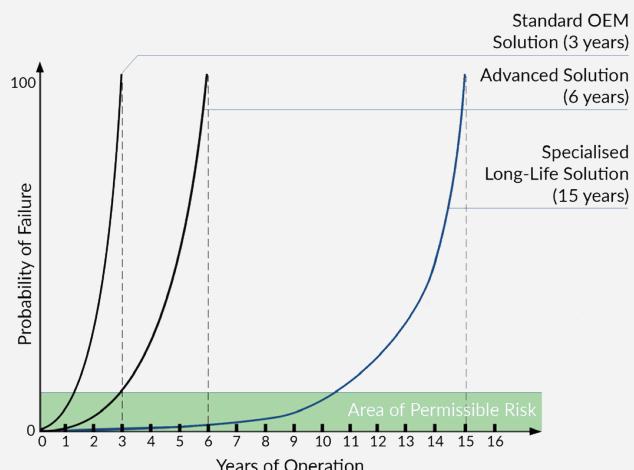
- Commercial impacts of the initial expansion joint selection
- Value and cost analysis requires technical evaluation:
 - » Requirements
 - » Solutions
 - » Value analysis

Probability Curve and Technical Standards

DEKOMTE are able to offer varying levels of technical standard to reach a budget and lifetime required by the customer.

Curve 1 shows that the function of expansion joints in standard quality will cease after the guarantee expires. The supplier of these expansion joints is only interested to endure the guarantee period. If the plant wishes to have longer availability, it will require maintenance and replacement at additional cost.

Curve 2 and 3 present an expansion joint design of high / higher quality with a technically high availability and which reflects the performance of an engineering-focussed supplier.



RAL - GZ 719

Key tasks of the Quality Association for fabric expansion joints are:

- Reliable use of the products in all application fields
- Continuous amendments of the state of the art for optimum product quality:
 - » By quality and inspection specifications
 - » By technical information optimised regarding cost and benefit



Fabric expansion joints can be used for all types of media in many duct arrangements and countless applications. The user must be sure that by using these elements:

- The application risks are minimised
- Extreme requirements can be fulfilled
- Durability and reliability of the products are provided

Item	Title
TI-001	Determination of tensile strength of supporting layers for fabric expansion joints
TI-002	Flue-gas tight fabric expansion joints
TI-003	Nekal-tight fabric expansion joints
TI-004	Expansion joint questionnaire
TI-005	Tightness test of fabric expansion joints with foam building liquid
TI-006	Documentation of fabric expansion joints
TI-007	Bolted connections for fabric expansion joints
TI-008	Storage, packing and transportation of fabric expansion joints
TI-009	Planning of installation for fabric expansion joints
TI-010	Installation of fabric expansion joints
TI-011	Insulation requirement for fabric expansion joints
TI-012	Maintenance of fabric expansion joints during shut-down period
TI-013	Tolerances for connection flanges and installation dimensions for fabric expansion joints
TI-014	Glossary
TI-015	Safety management of fabric expansion joints
TI-016	Surface temperature of fabric expansion joints
TI-017	Remarks about EC Declaration of Conformity and CE marking of fabric expansion joints
TI-018	Inspection documents according to EN 10204 for fabric expansion joints

With the increased quality demands according to RAL-GZ 719 and the associated technical information, DEKOMTE automatically fulfils and exceeds the quality demands of the European Sealing Association (ESA) and the American Fluid Sealing Association (FSA).

Quality Assurance



Quality - ISO 9001:2015

The DEKOMTE management team commit themselves to take independent responsibility of the quality of the contractually agreed conditions, standards and other regulations and the associated legal obligations. The DEKOMTE management team actively supports the consistent further development of the system in compliance with the imposed requirements.

Safety - ISO 45001

DEKOMTE recognises that its activities give rise to a range of hazards, in particular: manual handling, use of machinery, work on site at height and IT. It also recognises that its employees may be exposed to hazards when providing on-site support to their customers.

DEKOMTE believes that despite the presence of these hazards, all accidents and incidents of work related ill-health are preventable. It also recognises it has a legal responsibility to ensure the health, safety and welfare of persons affected by its activities.

Environment - ISO 14001:2018

DEKOMTE has a responsibility to help protect the environment wherever it has an opportunity to do so and to provide a good environment for its employees to work in.

Fabrication

DEKOMTE hold manufacturing and workshop execution class EXC3 accreditation, EN1090 and ISO 3834-2 for base materials. Approved and applied methods include arc welding, part-mechanised Tungsten-inert gas metallic arc welding and part-mechanised active-gas welding. DEKOMTE welders are approved and accredited to ISO 9606-1 / ISO 14732.

The personnel for non-destructive testing of welding seams (NDT) is accredited according to ISO 9712.

EJMA - DEKOMTE metal expansion joints are in accordance with EJMA (10th Edition) and AD B13.

PED - DEKOMTE de Temple Engineering SRL has the certification accredited to AD 2000-Merkblatt HP 0, TRD 201 and EN ISO 3824-2. Therefore DEKOMTE is able to manufacture pressure equipment accredited to "Pressure Equipment Directive 2014/68/EU".

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