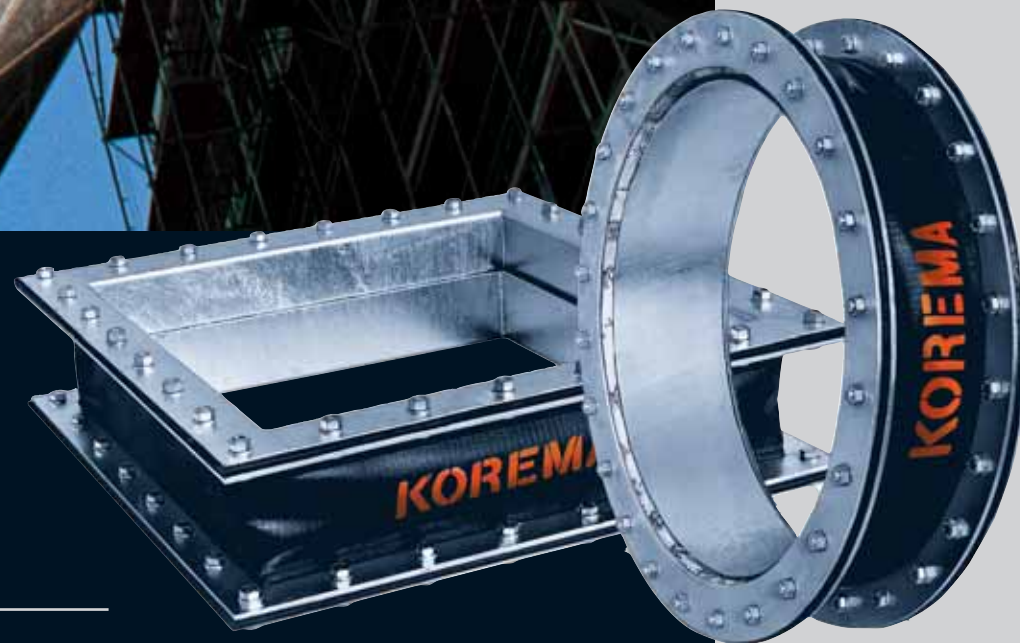


KOREMA®
Kompensatorenwerk Rhein-Main
GERMANY

EXPANSION JOINTS

and accessories



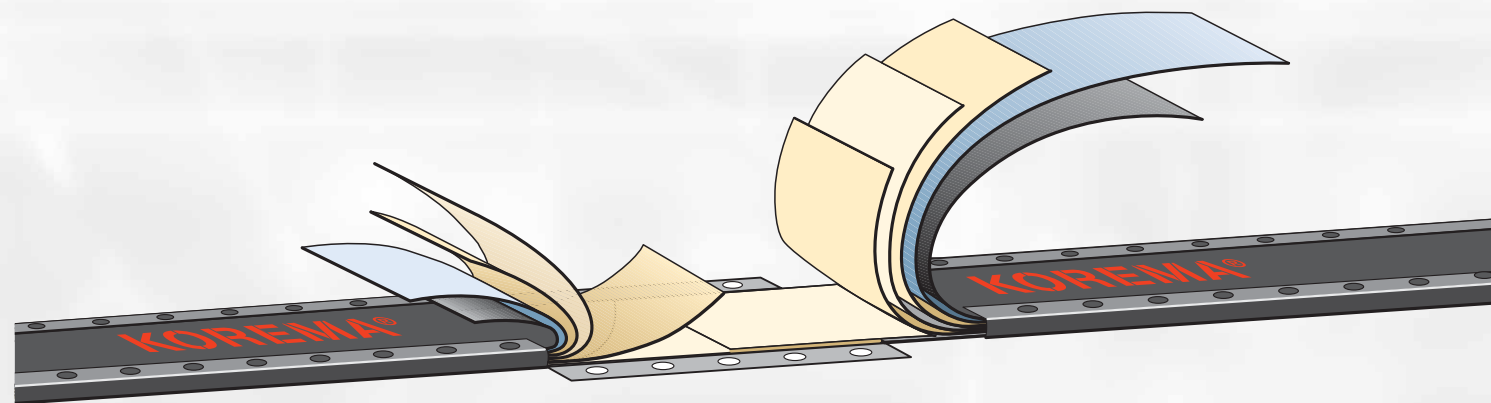
CATALOGUE

Quality makes the difference

E

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KOREMA® – the first producer of asbestos-free fabric expansion joints worldwide

KOREMA®

Made by KOREMA® Germany
A trademark for proven quality

I History

In 1967, KOREMA® established a new company specializing in the manufacture of ecologically beneficial expansion joints.

KOREMA® was the first in using acid resistant mineral fiber cloths (not glass fiber) which were patented in 1970.

Additional patents have been granted both in Germany and worldwide. KOREMA®'s objective the manufacture of high quality non-asbestos expansion joints for all temperatures. Today, KOREMA® flexible expansion joints are identified as a trademark for proven quality worldwide.

I Achievements

Intensive research and development has kept KOREMA® at the cutting edge of material design and application technology.

As a result KOREMA® can offer a technical solution with top grade materials for almost any application. KOREMA®'s developmental improvements include trend setting, environmentally friendly materials such as the patented SIMIFLON® and ELTROFLON®.



KOREMA® -booth at the AICHEMFAIR /Frankfurt am Main



It is difficult to image
a piping system in a modern
production plant that does not
have expansion joints

KOREMA® manufactures
expansion joints in all sizes and
cross sections

Flexible expansion joints are manufactured in round, rectangular and oval shapes, as transition pieces, and can be customized to meet specific requirements. Originally, steel expansion joints were used to absorb movement. With development of synthetic fibres, it was possible to make a flexible connector which permitted movement in all directions. KOREMA®'s expertise and more than 35 years of manufacturing experience are your guarantee of the best solution.

I Other types of expansion joints

I Rubber expansion joints

- upper temperature limit is approximately 120 °C / 248 °F

I Steel expansion joints

Applications from domestic hot water piping to nuclear power station systems and for steam, gas and other fluids at high pressures and temperatures.

Considerations:

- more sophisticated installation requirements
- greater unit weight
- higher deflection forces

I PTFE expansion joints

for aggressive fluid media. Upper temperature limit is 250 °C / 482 °F

Considerations:

- deflection forces
- unit weight



Only the most flexible
of materials are used in the
production of KOREMA®
multilayer expansion joints

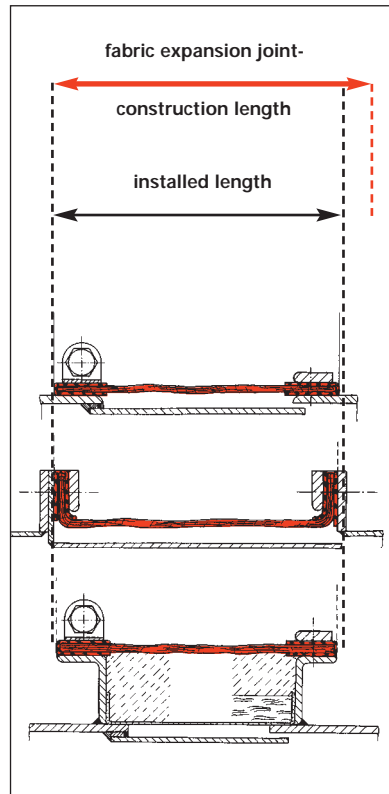
I The KOREMA® flexible expansion joint

For all low pressure gaseous media flowing through piping systems. Characteristics of KOREMA® products:

- Temperature-typical range -100 °C to +1000 °C or -148 °F to +1832 °F
- Thermal insulation
- Vibration resistant
- Acoustic insulation
- Compound movement
- Elongation absorption depends on design – in axial, radial and lateral directions
- External protection
- Ozone resistant



The sandwich style construction consisting of high strength textiles, elastomers, and foils combined with special adhesives to form a gas tight vulcanized seal



The availability of combinations of more than 100 various materials means that KOREMA® can always provide the correct solution to any application. The KOREMA® design principle is based on temperature reduction.

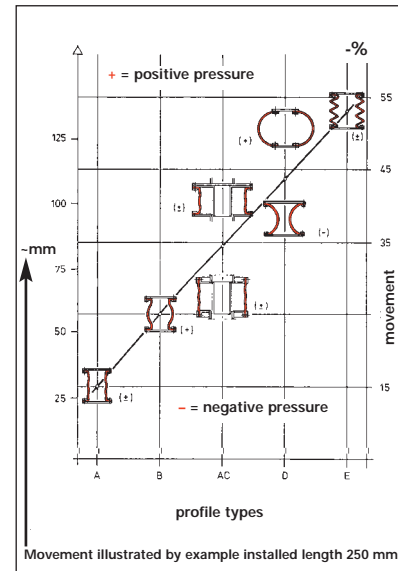
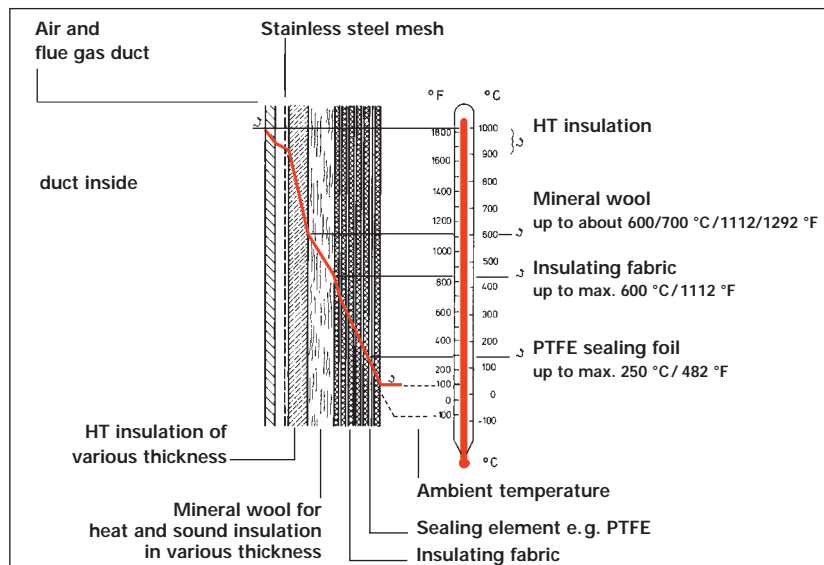
For any expansion joint application, the more detailed the information provided with the inquiry, the better the solution KOREMA® can provide.

I Medium
Consistency of the medium:
- gaseous
- saturated
- condensate

Contaminants in the medium:
- dust laden
- corrosive (acid or solvent bearing)
- explosive potential

I Temperature
Temperature design depends on internal and external temperature, continuous and upset temperature

Diagram of temperature pattern in bellows (without external insulation)



Movement for standard profile types

I Pressure
Operating pressure – positive or negative
Maximum (upset condition) pressure

I Velocity
Use of internal liners

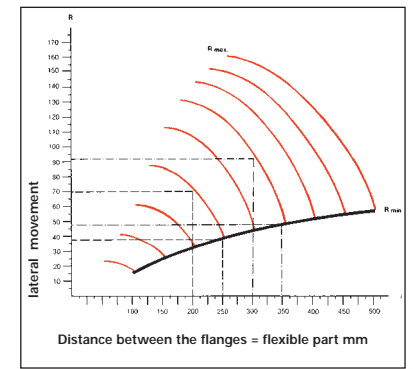
I Installation requirements
Installed length
Distance between flanges

I Movement capability
Axial: upset, extension, full working
Lateral: shear displacement
Radial: torsion and twisting
Angulation: angular displacement

I Characteristics
Special designs for ambient temperatures over 50 °C/122 °F
Effective external protection using ELTROFLON®.
Silicone free design – e.g. spray booths for automotive industry.
Food quality applications SIMIFLON®.

Close cooperation between user and design engineer is essential

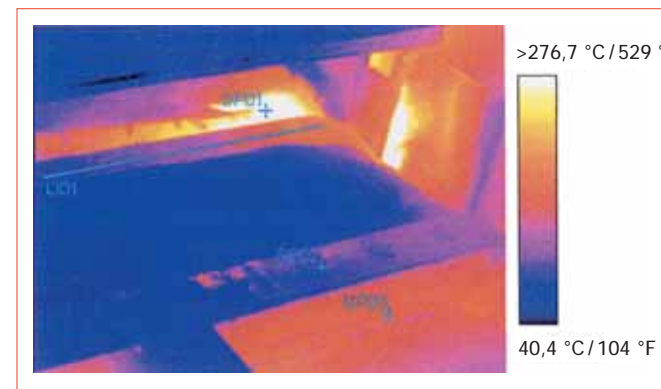
The expansion joint construction depends on the application. Basic construction forms include the KOREMA® belt and U types. Because no one construction type is suitable for all applications KOREMA® offers a number of standard profiles. Only a close cooperation between the customer and KOREMA® design engineers will guarantee the optimum application features. Different profiles mean easier problem solving.



lateral movement

KOREMA® Profil types	movement in % of installed length/flexible part		
	10 - 15%	20 - 35%	bis 50%
A			
AC*, B, BC*			
E, EC*			

C* = Extended flange arrangement



x-ray photograph



AC1 fabric expansion joint

Basic Construction The KOREMA® belt type



AC1 (open) belt type

The belt type (KOREMA® uses suffix "1" to denote this) is the preferred choice for large diameter ducts. Delivery available with insulation pre-installed for high temperature applications. Insulation depends on temperature level of the medium.

Pre-insulation is necessary to protect the expansion joint from abrasive media. Corners of rectangular expansion joint frames should be radiused.



Cement plant – expansion joint with lateral preset



Pre-formed corner with backing flanges



A1 endless, fastening by hose clamp



AC1 cross section/insulation unit

I Delivered as open ended construction for site completion
The final splice will be made at site. The storage and installation instructions as well as the necessary adhesives are included with each shipment.

Pre-assembled endless units are complete with appropriate steel components which may be in several parts depending on the size.

A1 and AC1 types with "one side drilled" will simplify installation at site.

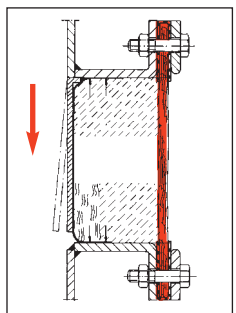
KOREMA®'s "on site service" is available for site supervision.

Drawings 1, 2
AC1 type with pre-insulation for high temperature applications. Depending on movement a pre-formed convolution may be necessary

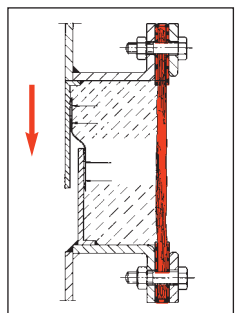
Drawing 3
Refractory lined duct

Drawings 4, 5
A1 profile – simple, slip on installation using hose clamps or straps

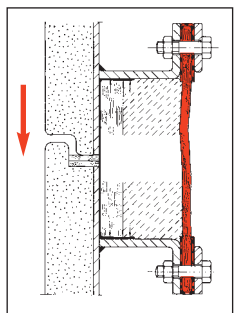
Drawing 1



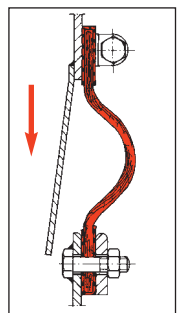
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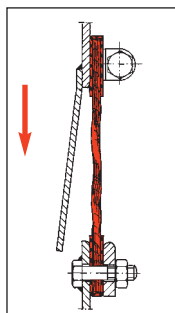
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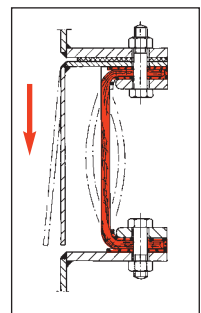
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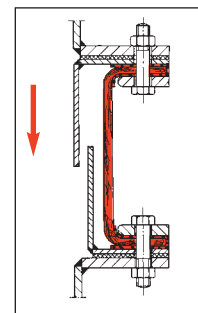
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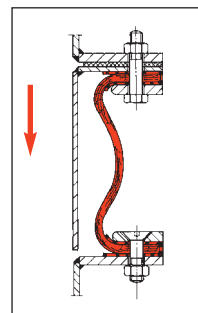
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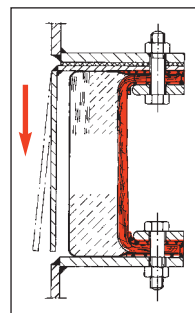
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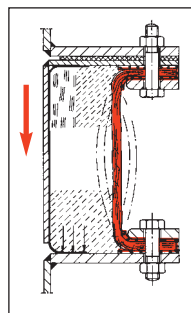
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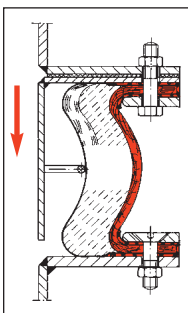
9



10



11



Basic Construction The KOREMA® U type



A3 flange expansion joint with aluminium laminating



A3 flange expansion joint with elastomeric coating outside



A3 flange expansion joint with aramid inner layer



BC3 KO flanged expansion joint pre-assembled with insulation and support ring

This is the most installed version of the fabric expansion joints (KOREMA® type A3 or AC3 as well as B3 or BC3). The name "flange-type" is used for expansion joints located between pipe or duct end flanges.

For existing plants the flange design varies according to customers' requirements or depending on the constructed steel design. For innovative designs KOREMA® will identify the suitable technical and economical solution.

Special design: supplied as "open" multilayer expansion joint. On site service available exclusively from the KOREMA® service team.

Pre-insulation is incorporated to protect the expansion joint against abrasion as well as for thermal insulation.

The choice of insulating material, either mineral wool or ceramic felt, depends on the design temperature.

For operation at or below dew point, a vulcanized elastomeric layer is available.

Pre-assembled units, complete with liners and clamp bars, are available.



Drawings 6, 7, 8
Various A3 flange connections and internal sleeve constructions, without pre-insulation

Drawings 9, 10
AC3 and BC3 flange expansion joints in various alternatives with pre-insulation. Insulation (mineral wool, ceramic felt, alloy mesh) will be integrated on-site

Drawing 11
Factory assembled complete with insulation and inner support ring, if required

KOREMA® manufactures all types of custom made multilayer expansion joints

Each joint is tailor made. Layers of material are assembled on a frame which conforms exactly to the required profile.

Bellows type expansion joints incl. or without reinforcing rings/frames.

Diaphragms

Expansion joints for varying cross sections and transitions.

Construction from round to rectangular

Construction according to drawings

Non-standard high temperature seals

Compound movement

Additional special designs such as D3, F3 and E3 available.



E15-bellows type expansion joint with fastening by clamping straps



A15-coniform fastened with hose clamps



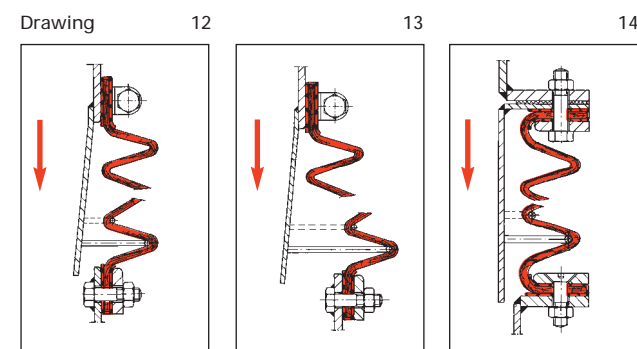
A35-transition piece both ends flanged



E1 unit with pleats s/s reinforcing frames



A3 joint with offset flange food industry application



Drawings 12, 13 E1 and E15 expansion joints with stainless steel reinforcing rings for high pressure and movement

Drawing 14 as mentioned above, as type E3



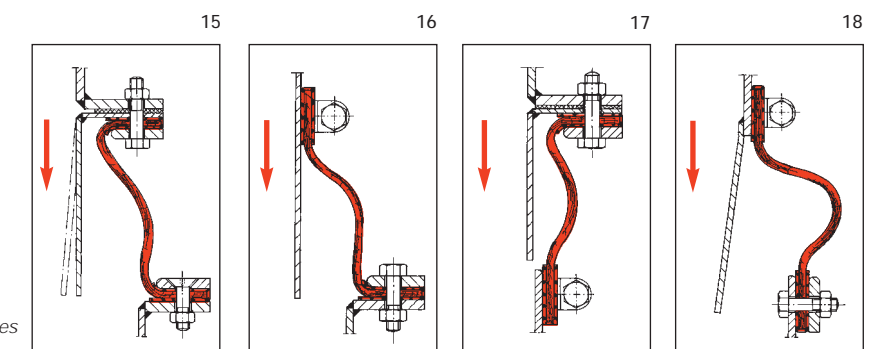
E3-flanged type with internal and external steel rings



E1-bellows "slip on" type with PTFE support rings and band clamps



B 35 transition piece



Drawings 15, 16, 17, 18 Varios B profile expansion joints using different types of fasteners



KOREMA® joints in a typical ducting run for a cement plant



Test criteria/standards for KOREMA® expansion joints
burst pressure/DIN 53 861
tear resistance/DIN EN 863
flame resistance/DIN 53 438/2
bend uniformity/DIN 53 359
electrical conductivity and surface resistance/DIN EN 1081

Material description	Temperature °C / °F = approx.		Properties
	°C	°F	
Substrates			
PR and PRD polyesters	150/180	300/355	Acid and rip resistant
Aramid	300	570	Lightweight, rip resistant
Reinforced mineral fiber cloth TSC® and TETE + S®	600	1100	Conducts electricity Chemical resistant
Mineral fiber cloth C-600 / C-603 / C-610	600	1100	Flame and chemical resistant Good insulation
Insulating cloth T-700	600	1100	Exceptional fire resistance
Reinforced TS-700	600	1100	Exceptional fire resistance Conducts electricity
Stainless Steel and alloy mesh	600/1200	1100/2200	Heat and chemical resistant support matrix
Insulation			
Mineral wool/40 mm/1,5" mesh	640/700	1180/1300	Will not burn/DIN 4102 Good insulation and dust protection
HTI-fiberglass/25 mm/ 1"	1100/1200	2000/2200	Good thermal insulation properties
HT-needle cloth/5-10 mm/1/4"-3/8"	1000	1830	Will not burn/DIN 4102
Glass material/8-10 mm/3/8"	500/600	930/1100	Will not burn Resists vibration
Elastomers			
Chloro-sulfonated polyethylene ASTM designation CSM (Hypalon)	-40/120	-40/250	Good resistance to ozone, UV, weatherproof. Good conductivity
Silicone®-rubber White/black/clear ASTM designation SI	-20/250	-4/482	Good temperature resistance. Very good ozone and weather resistance
Viton ASTM designation FKM	-40/204	-40/400	Good acid resistance
Teflon®/PTFE ASTM designation AFMU	-190/250	-310/482	Good chemical resistance
Patented PTFE Compounds			
SIMIFLON® Excellent sealing characteristics	-40/260	572 (upset) 500 (op)	Outstanding chemical resistance – SIMIFLON®/ELTROFLON® is chemically inert. Very good temperature, pressure and heat resistance.
ELTROFLON® Excellent sealing characteristics	-40/260	572 (upset) 500 (op)	Outstanding chemical resistance – SIMIFLON®/ELTROFLON® is chemically inert. Approved for food industry by FDA Electrical conductor/ATEX 94/9 EG
Gas seals and foils			
Hypalon® ASTM designation CSM	120	250	Chemical resistant Conducts electricity
Silicone® ASTM designation SI	250	480	Resists oxidation Suitable for food industry
Teflon®	250	480	Conducts electricity, suitable for food industry
Rubber – natural ASTM designation NR/IR	85/170	185/338	Acid resistant
Lead	300	570	Acid and X-ray resistant
Kapton®	320	600	Good chemical resistance
Aluminum	600	1100	Reflects heat
NiCr and st. steel sheet	1200	2200	Good temperature and chemical resistance

SIMIFLON®

ELTROFLON®

® Registered trademarks of materials used in the production of KOREMA® joints

KOREMA®:
STAHLTEX-TSC®
und TETE + S®
SIMIFLON®
ELTROFLON®

DU PONT:
Kevlar®, Viton®,
Hypalon®,
Teflon®, Kapton®

WACKER:
Silicon®



KOREMA® Know How best qualified to handle the most difficult applications



I SIMIFLON® and ELTROFLON®
Defining new standards
For more than 35 years KOREMA®'s contributions to the development of the non-metallic expansion joint market have lead the way – improved materials better construction techniques, increased product life.

Worldwide patents protect SIMIFLON® and ELTROFLON® which represent the most recent developments from KOREMA®.

These products are made from a unique process that combines the characteristics and properties of Silicone®, rubber and polytetrafluoroethylene (PTFE).

I Rubber provides the flexibility
PTFE and silicone the chemical resistance

Used in conjunction with special fabrics available exclusively from KOREMA® these remarkable elastomers provide a sealing standard and chemical resistance that far outperforms the nearest competitor.

KOREMA® expansion joints have been exhaustively tested and have demonstrated compliance with the standards and technical requirements of the EU guidelines 2002/72, US Federal Drug Administration (article 177.2600), the PAS 1010/6 manual for pressure containing equipment and ATEX guidelines 94/9 EG (explosive atmosphere).



SIMIFLON® expansion joint in a garbage incinerator duct



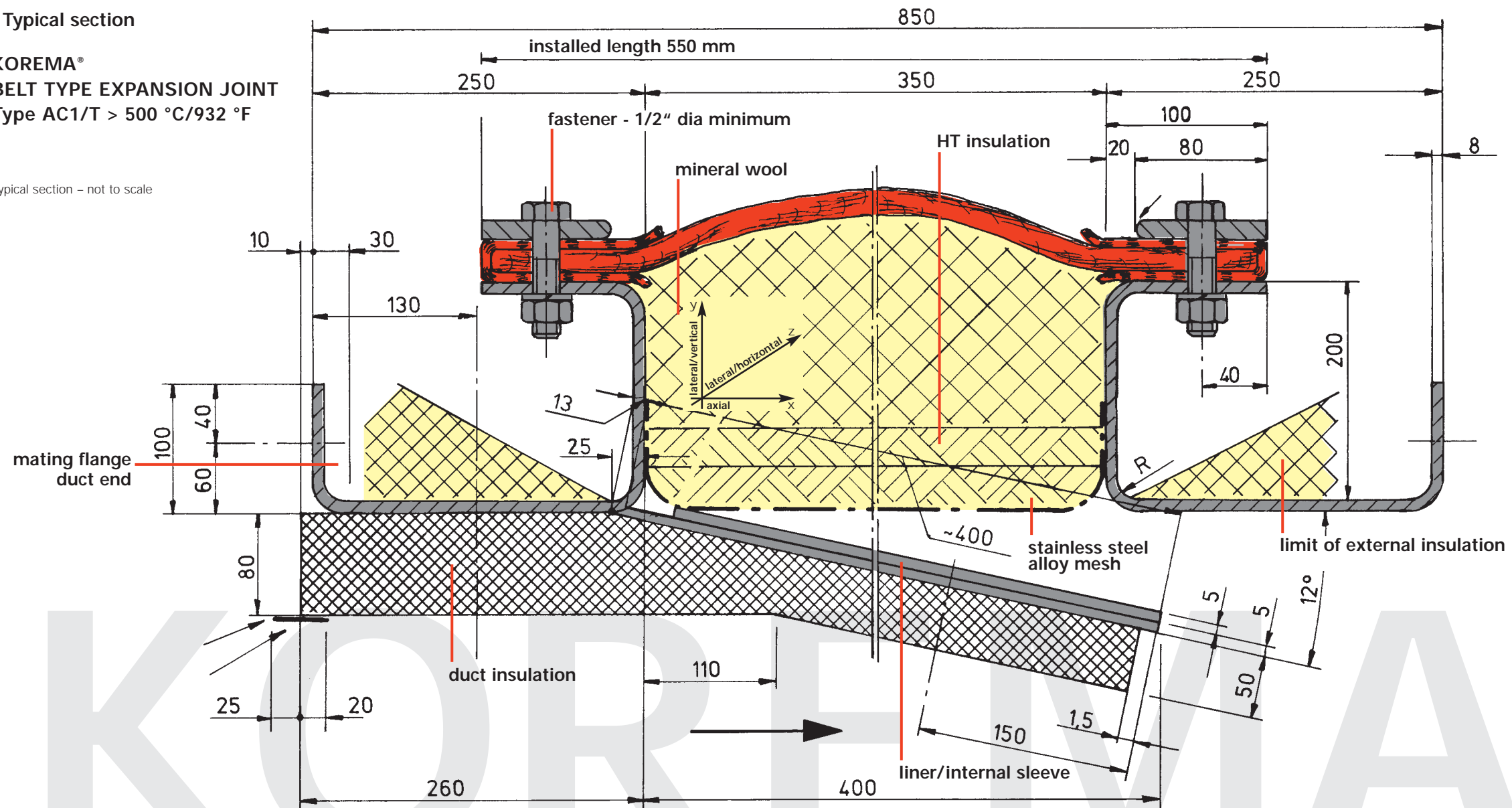
AC1 expansion joints pre assembled



I Typical section

KOREMA®
BELT TYPE EXPANSION JOINT
 Type AC1/T > 500 °C/932 °F

Typical section – not to scale



The information must be as detailed as possible to manufacture KOREMA® fabric expansion joint. This will enable us to select the most economic material construction, strictly in accordance to customers' requirements. In various combinations we are able to combine more than 100 different textiles and foils. They will be manufactured together with high temperature glue into multi-layer expansion joints and vulcanized. KOREMA®'s construction principle is based on temperature reduction. As often many interdependences between the named parameters are unavoidable, please let us have your applications in full, in case of enquiry.

Please make use of the KOREMA® Questionnaire!

- KOREMA® – the best solution for**
- ambient temperatures > 50 °C/122 °F
 - vibration
 - patented materials for unique applications
 - silicone free manufacture (auto body spray booths)
 - pressure stability
 - patented stainless steel foil design for internal/external temperature loading (air – air heat exchangers)
 - extremely high temperature systems (> 1000 °C/1832 °F)
 - fire protection requirements (meets EU classification F30/60/90/120)

Inquiries must state if regulations such as OSHA which refer to surface temperature or other conditions will apply!

Temperature
 Designed for internal and external temperatures,
 - normal continuous and peak conditions
 - with or without elastomer coating
 - pre-insulation and insulation pad for high temperatures

Pressure
 Negative/positive working conditions
 - maximum (upset) design pressure
 - with or without reinforcing rings

Designs for:

- flue gas - zero leakage
- dust tight - pressure surge

Flow velocity
 - always use internal sleeves/liners
 - for longevity
 - for gas velocities >10 m/s (30 ft/sec)
 - in dust or particulate laden gas streams
 - for abrasion protection

Movement capacity
 Installed length is a function of movement
 - axial compression extension
 - lateral, horizontal and vertical deflection
 - angulation movement (rotation)
 - torsional and twisting displacement

Custom designs for vibration
 - fan isolation - mills - conveyors

Medium

- air
- flue gas analysis – gaseous, saturated, condensate laden contaminants
- dust laden
- particulate laden
- corrosive



Expansion joint with static protection



Crushing mill outlet joint



Fan isolation expansion joint



Food industry – hoppers and expansion joints



AC1 joint with weather cap



Flue gas duct and expansion joint

SIMIFLON®

ELTROFLON®

Expansion joints have to be designed for pressurized systems as described in 97/23 EG and PAS 1010/6

The contributions KOREMA® has made to the non-metallic expansion joint market since 1978 have continuously set new standards in material development, product design improvement and manufacturing techniques. KOREMA® technical standards meet or exceed the requirements for pressurized systems and have been expanded to include the ATEX guidelines 94/9 EG (ATEX= explosive atmospheres).

Description

The newest of these are SIMIFLON® and ELTROFLON®. These products represent a remarkable achievement that combines



Application certified on the expansion joint identity plate



silicon, rubber and PTFE to give a chemically inert compound that is very flexible, provides excellent sealing and is also resistant to temperature.

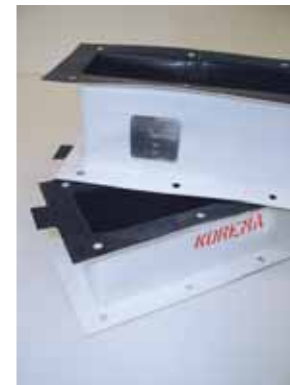
SIMIFLON® and ELTROFLON® have also been approved by the US Federal Drug Administration and EU for use in the food and pharmaceutical industries.

SIMIFLON®

ELTROFLON®

Applications

- Food industry
- Pharmaceutical industry
- Flue gas systems



ATEX RL 94/9 EG

Seamless and smooth surfaces

A3/FDA protection foil



SIMIFLON®

ELTROFLON®

Used in combination with substrates such as natural (mineral fibers) and synthetic (polyester) materials, SIMIFLON® and ELTROFLON® satisfy the guidelines for pressurized devices as described in 97/23 EG. The rubber membrane makes it possible to meet the required standards for the food industry.

The PTFE provides the outstanding chemical resistance. The electrical conductivity characteristics provide the necessary protection for equipment with explosive media (ATEX).

Properties of SIMIFLON®/ELTROFLON® meet or exceed the international criteria

Europe – EU guidelines 2002/72 and 97/23 EG – PAS 1010/6 burst pressure	Test criteria:	
	Burst test	DIN 53861
	Permeability	DIN EN 863
USA – FDA CFR 21, sect 177.2600 and 177.1550	Bending/creasing	DIN 53359
	Flame resistance	DIN 53483/2

Characteristics unique to ELTROFLON® – black format

PTFE foil as the electrical conductor 94/9 EG – ATEX	Test criteria:	
	External resistance	DIN EN 1081

Characteristics of SIMIFLON®/ELTROFLON®

Temperature range	continuous operating	260 °C 500 °F
-200 °C to 300 °C	short term upset, 15 min.	300 °C 572 °F
-328 °F to 572 °F	melting point (outgases)	327 °C 620 °F

Mechanical	Excellent sealing properties
Chemical	Resistant to almost all chemicals
Flammability	Will not burn
Weatherproof	Excellent

Utility Model No.
Patent Office Germany



I KOREMA® will supply both the flexible element and the complete expansion joint assembly. Because KOREMA® offers 100% in shop production of all necessary components, we can provide a complete design and production package quickly and efficiently.

Correct fit-up at the factory insures easy site installation and avoids time consuming and costly rework.



Fully preassembled with metal components

Steel components, including baking flanges, liners, sleeves, and fasteners can be provided in any standard material, according to EN and DIN:

- St37 H II steel quality
- chemical and high temperature resistant stainless steel materials
- stainless steel wire mesh and foils
- finish and priming coats



according to KOREMA® standard:

- epoxy tester coats
- sand blast surfaces
- hot galvanized
- special designs

according to customers' specification:

- screwed connections of carbon and stainless steel
- supporting rings and gallows frames of stainless steel for constructions with pre-formed shafts
- clamping straps 13/25 mm galvanized/stainless steel
- ISO-bolts and clips for fastening of the pre-insulation
- potential equalizers
- special coatings



Preassembled type AC1



KOREMA® steelparts and accessories



I High-temperature seals
While the PTFE products give the best performance at lower temperatures, KOREMA® has developed high temperature seals such as the T700 material for use at temperatures in excess of 250 °C / 482 °F.

These laminar components are fully vulcanized and are located between the liner and the mounting flange to provide the best possible seal under extreme conditions.

I Low temperature seals
Elastomeric seals such as Hypalon, Silicone and Viton are used together with KOREMA®'s patented materials SIMIFLON® and ELTROFLON® for their outstanding low temperature sealing qualities.

I Frame seals
KOREMA® manufactures numerous frame seals including graphite pre-treatment for special applications.

I Condensate drain
Condensation results from continuous operation at or below dew point and also occurs at plant shut-down or under partial load. Condensation always flow to the lowest point of any system. If this low point is the expansion joint, a drain is necessary.

To avoid unnecessary damage to the expansion joint KOREMA® incorporates vulcanized drain connectors directly into the body of the expansion joint. Available in PTFE or stainless steel.



Opening up or loosening an expansion joint requires replacement of the sealing elements. Compressed and work hardened materials cannot be reused.



Various seal units



Fastening material set



Service kit



I Insulation for the expansion joint void

- delivered loose for site installation
 - pre-assembled by KOREMA® e.g. types AC3-KO and BC3-KO
 - mineral wool on wire mesh up to 700 °C/1292 °F density from 250 kg/m³ (16 lb./ft³)
 - HT insulation up to 1425 °C/2600 °F. density from 128 kg/m³ (8 lb./ft³)
- Always follow KOREMA® assembly instructions for correct performance.

I Fastening materials

For on site splicing of "open" expansion joints, KOREMA® supplies all necessary adhesives and fasteners, together with comprehensive instructions.

I Service kit

The KOREMA® service kit includes all necessary materials and tools for on site repair.

I Adhesives kit

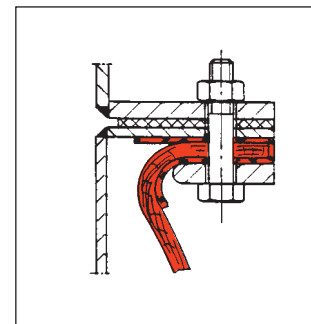
- For on site splicing
- Room temperature vulcanizing agent – K 303 transparent black/white
- high temperature adhesive K 404 Tempercol
- Liquid graphite seal
- Hypalon adhesive

Adhesives are available in cans, tubes or cartridges. ISO 11014, EU Standards, ANSI and OSHA data sheets and Material Safety Data Sheets (MSDS) for all of these products are available.

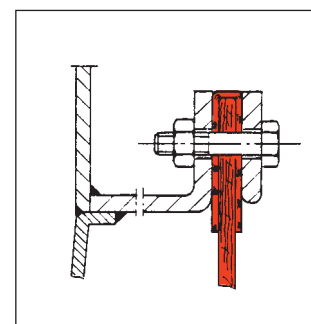
Installation requirements for

1. U profile types
2. Belt types
3. Hose clamps

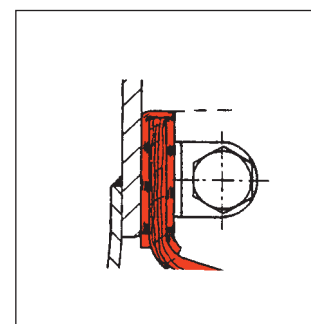
1. U profile type



2. Belt type unit



3. Fastening by hose clamps



KOREMA® is always available to answer specific questions concerning installation procedures and torque requirements. Bolted connections are the preferred method of installation for large section circular and rectangular expansion joints. Flange dimensions and correct bolt spacing are essential for a good seal. After assembly, check the expansion joint for correct position on the frame. Use a torque wrench to check bolt tightness. Rechecking after one or two days is recommended, as the fabric is compressed when first installed and bolts can loosen. For any further queries feel free to contact the KOREMA® engineering department. They will be glad to be at your service.

I For your kind attention

The dismantling of an expansion joint (e.g. by reasons of plant revision etc.) will have the effect of reduction of tightness at flanges after re-installation.



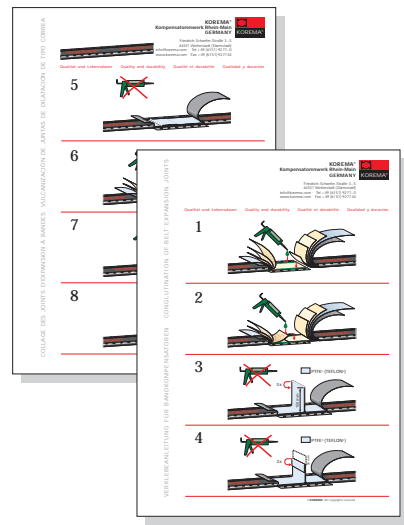
On site installation

Flange connections are required for all U profile and belt type expansion joints operating at pressures above 50 mbar. Hose clamps may be used up to 100 mbar pressure. Flange areas: special designs for zero leakage applications and for extreme conditions or pressures over 200 mbars must be vulcanized for best performance. For fastening also spring-plates and washers can be utilized.

KOREMA® recommend to treat the expansion joint flange surfaces by means of graphite powder prior to installation.

KOREMA®
expansion joints are
made of high performance
materials and must be
handled with care

Flexible expansion
joints should be handled and
stored with care.
To avoid mechanical
damage careful handling
is necessary



Splicing instructions – please see:
www.korema.com/montageinfo.htm

They should be installed at the pipeline, at the last stage of erection. Damaged joints should not be installed – repairs can be made but please refer to the manufacturer. Joints which have been stored below 10 °C (50 °F) must be warmed through at 20 – 30 °C (70 – 85 °F) for 5 or 6 hours. Work step by step ensuring each is completed before proceeding to the next stage of assembly. Oil and rust paints and other flammable materials to be kept away from joints (they are supplied fully treated in all respects).

Do not treat the bolts with a rust preventative during assembly or removal, a possible fire hazard may exist at start-up. The standard types should be externally insulated. Exceptions only for the patented KOREMA® special types or according to KOREMA®'s instructions.

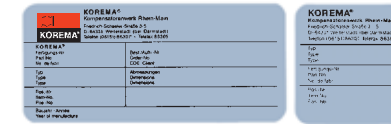
I Internal sleeves are basically necessary. Special designs without metallic "inner protection" only according to agreement. In case of setting up of external steelparts please contact us referring to the release of production. The steelparts must be trimmed and according to the measurements they must have a minimum size/thickness. Backing flange thickness as well as bolt type and spacing is a function of duct dimensions and operating conditions.

It is recommendable to supply all joints already drilled. Bolts should be tight fitting. To eliminate possible leakage clearance of holes must not be too large. If necessary provide extra seal for bolt holes. Backing flanges may be attached to large units a section at a time. To ensure proper sealing cut them diagonally and use a bridge piece or fish plate to span the adjacent sections. Because of the seating of

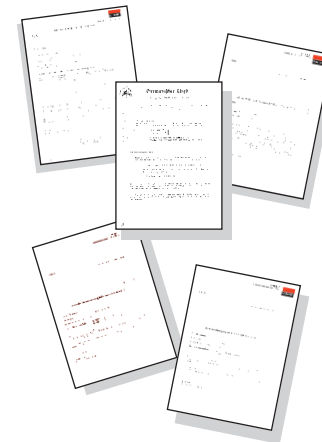


the woven flexible retighten bolts after start. For safety, do it several times. Regarding bolt starting torques please see our special instructions.

Expansion joints pre-assembled with sleeves and backing flanges must be fitted with installation bars for site lifting and handling (for slip-in purposes) to minimize risk of damage during erection. Remove all installation bars after location of the flange bolts.



ATEX RL 94/9 EG



Symbol for
eco-friendly and recyclable materials

I Nameplate

Each fabric expansion joint will be separately marked with a nameplate. Therefore it is possible to correctly assign each item to the appropriate position.

I Certificates

All common certificates are available, i. a.:

- manufacturer's certificates
- inspection certificates
- DIN/ISO/EN 1024 - 2.1/3.1B
- safety data sheets
- 91/155/EEC - DIN 52900
- product data sheets
- inspection certificates for samples
- German Lloyd AG
- institute for constructional engineering
- inspections referring to projects (to be charged)

I Certificates of Conformity

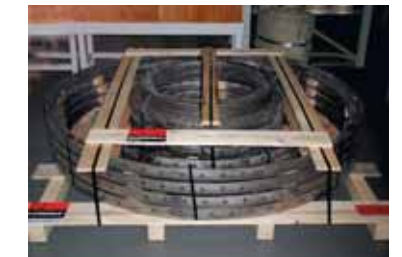
- for pressure containment – 97/23 EG
- for food industry – in Europe 2002/72 in USA - FDA
- ATEX 94/9 EG guidelines
- project specific test certificates – at cost

I Delivery

KOREMA® offers prompt and reliable delivery service. KOREMA® production facilities are centrally located in the Rhein-Main area close to the Weiterstadt/Darmstadt motorway intersection and minutes from the Frankfurt International Airport.

I Packaging

Considering the legal guidelines of transport packaging (IATA) KOREMA® is only using ecological products marked with RESY-symbol reusable packaging, wooden pallets and cardboard packaging. Special packaging suitable for road-, railway-, air- and seartransportation as per prior agreement with customer. KOREMA® fabric expansion joints will be supplied in form-protected packaging.



Protective packing



Type E3
expansion joint
for a papermill



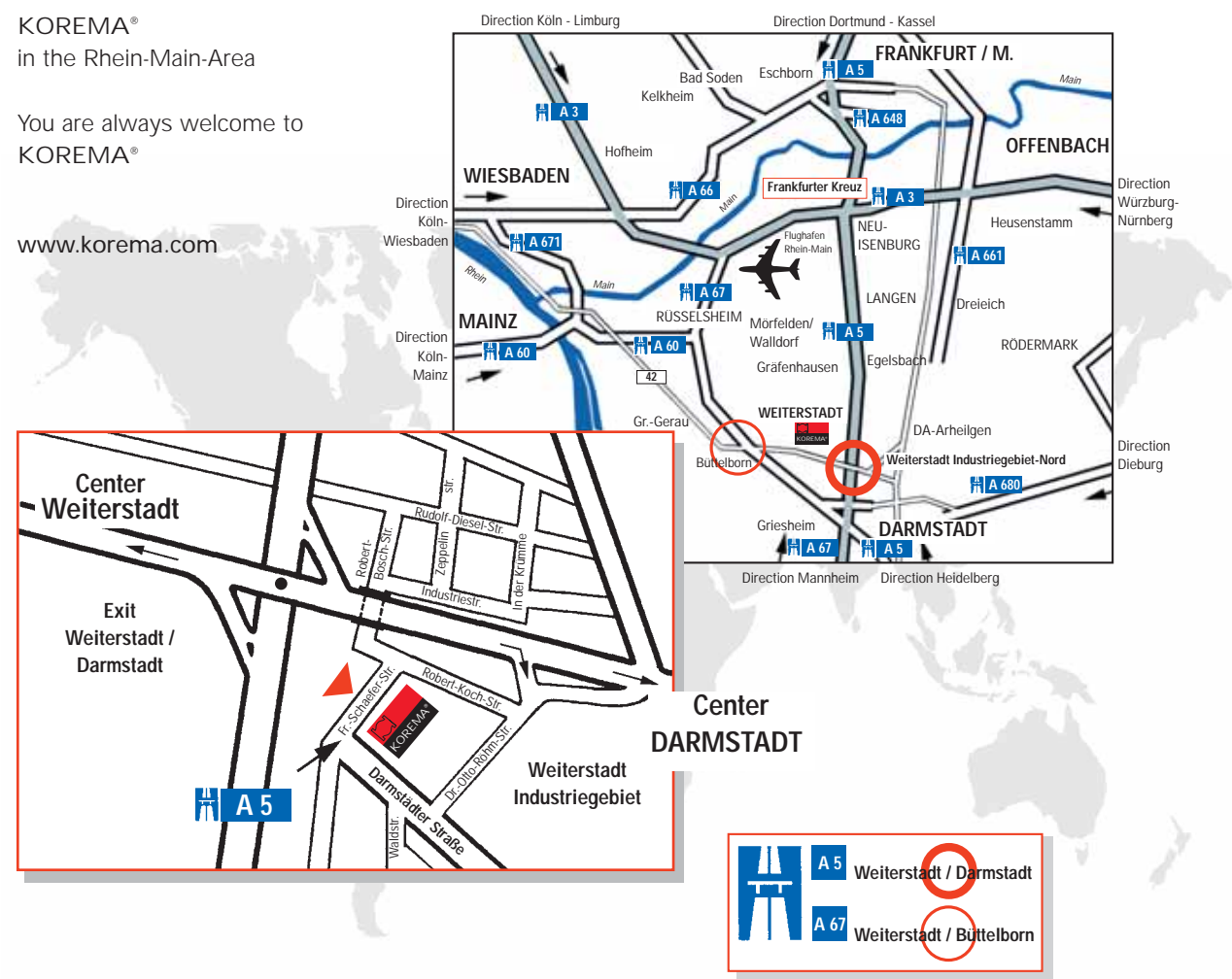
KOREMA® Headoffice and factory | Sales Department (local and export) | Advice and Service Center | Training Center

Easy to find us

KOREMA®
in the Rhein-Main-Area

You are always welcome to
KOREMA®

www.korema.com



KOREMA® ANFRAGEBOGEN
QUESTIONNAIRE
QUESTIONNAIRE

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info@korema.com · Tel + 49 (6151) 9277-0
www.korema.com · Fax + 49 (6151) 927744

Ihre Firmenanschrift | Address | Votre adresse

Telefon | Phone | Téléphone

Fax

Sachbearbeiter | Official in charge | Affaire suivie par

Anfrage-Nr. | Number of enquiry | Demande No.

Datum | Date | Date

Betriebsbedingungen | Operating conditions | Condition de fonction

Position Item Position	Medium Medium Fluide	Temperatur bis °C Temperature up to °C Température jusqu'à °C	Druck Pressure Pression	Medium- geschw. Flow rate of medium Vitesse du fluide	Bewegungsaufnahme mm Movements mm Déplacement à absorber mm			Leitungsverlauf Duct position Sens couduite
	Luft Air Air	Rauchgase Flue gases Fumées	mbar (daPa ≈ mm WS)	m/sec.	axial axial axial	radial lateral latéral	Vibrationen / Hz Vibrations Cycles	↔

KOREMA®-Kompensatoren | Expansion joints | Compensateurs

KOREMA®-Kompensatoren-Band | Expansion strap | Compensateurs livrés en bande

Montagefertig (endlos) auf Wunsch mit Bohrungen

Complete (endless) ready for installation, drillings upon request

Prêts au montage perçage sur demande

Offen – mit vorbereitetem Stoß – incl. Kleber K 303 / T 404 und Montageanleitung

Open – for site completion – incl. special adhesive(s) K 303 / T 404 with instructions

Ouverts – avec extrémités préparées – colle(s) K 303 / T 404 et instructions de montage inclus

Position Item Position	Anzahl Quantity Quantité	Konstr.-Typ Type of construction Type de construction	Abmessungen / Zeichnungen Dimensions / Drawings Dimensions / Plans	Einbauhöhe Installed length Côte de montage	Bauhöhe Construction length Hauteur de construction	Flansch- / (Klemm-)breite Width of flange Largeur collet de serrage	Bohrungen Holes Perçage	Schellbänder Straps Collet de serrage	
				mm	mm	mm		Ja Yes Qui	Nein No Non

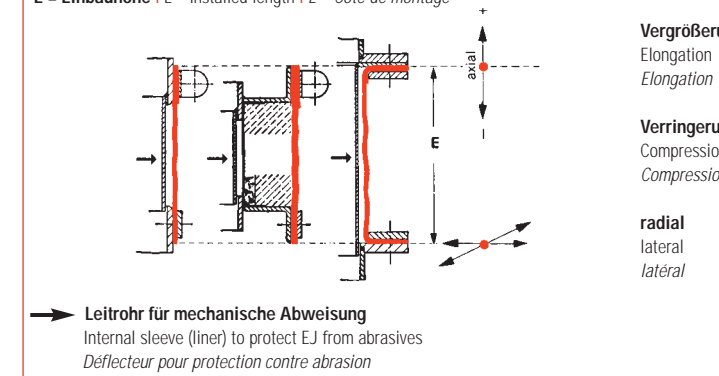
Gewünschter Liefertermin | Requested delivery date | Délai souhaité

Technische Anlage | Technical plant | Type d'installations

Bemerkungen | Remarks | Remarques

Bitte beachten | Please note | Attention s.v.p.

E = Einbauhöhe | E = Installed length | E = Côte de montage



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KOREMA®-12/2004/03-E

Applications

Deflection

—

Thermal insulation

—

Acoustic insulation

—

Vibration

Aeration and venting systems
Air-conditioning systems
Air filter construction
Air heaters
Air pre-heaters
All metallurgical engineering

Blast heating systems
Blowers

Cement factories
Chemical industry
Chimney construction
Conveyor systems
(employing pneumatic and vibration techniques)
Crushing plants

Diesel power plants
Drying systems
Dust exhaust systems
Dust extractors
Dust rejectors

Economizers
Electrical conductivity
Exhaust lines
Exhaust systems of all types
Explosive atmospheres/media (ATEX)

Filter systems
Flue construction
Flue gas systems
Food processing industry (FDA)
Furnace construction

Gas generating, cooling, cleaning
splitting, and drying systems
General apparatus construction for
chemical systems

Heat exchanger
Heat technique
Heaters: gas and air heaters

Industrial furnaces

Lacquering systems
Large motor construction

Metallurgical systems

Paint mist suction systems
Paper machinery manufacturer

Pharmaceutical industry
Pipeline construction (especially
construction of large pipes)
Power plants
Preparing, cleaning and drying
systems for natural gas

Reactor construction
Refinery gas
Refuse incineration

Sheet-metal containers and
sheet-metal pipes for gas lines
Shipbuilding
Sintering and pelletising systems
Sludge combustion system
Steam generating systems
Steel construction for
engineering work, for protection
against heat and corrosion
Suction systems
Systems for natural gas, coal,
coke, and ores

Ventilator construction
Vibration technique



KOREMA® expansion joints



Expansion joint on an electrostatic precipitator in a cement plant



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development.

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www.rau-design.de

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12/2004/03-E



Boiler unit

KOREMA®
manufactures all
types of custom made
multilayer
expansion joints

KOREMA®
Kompensatorenwerk Rhein-Main
GERMANY



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