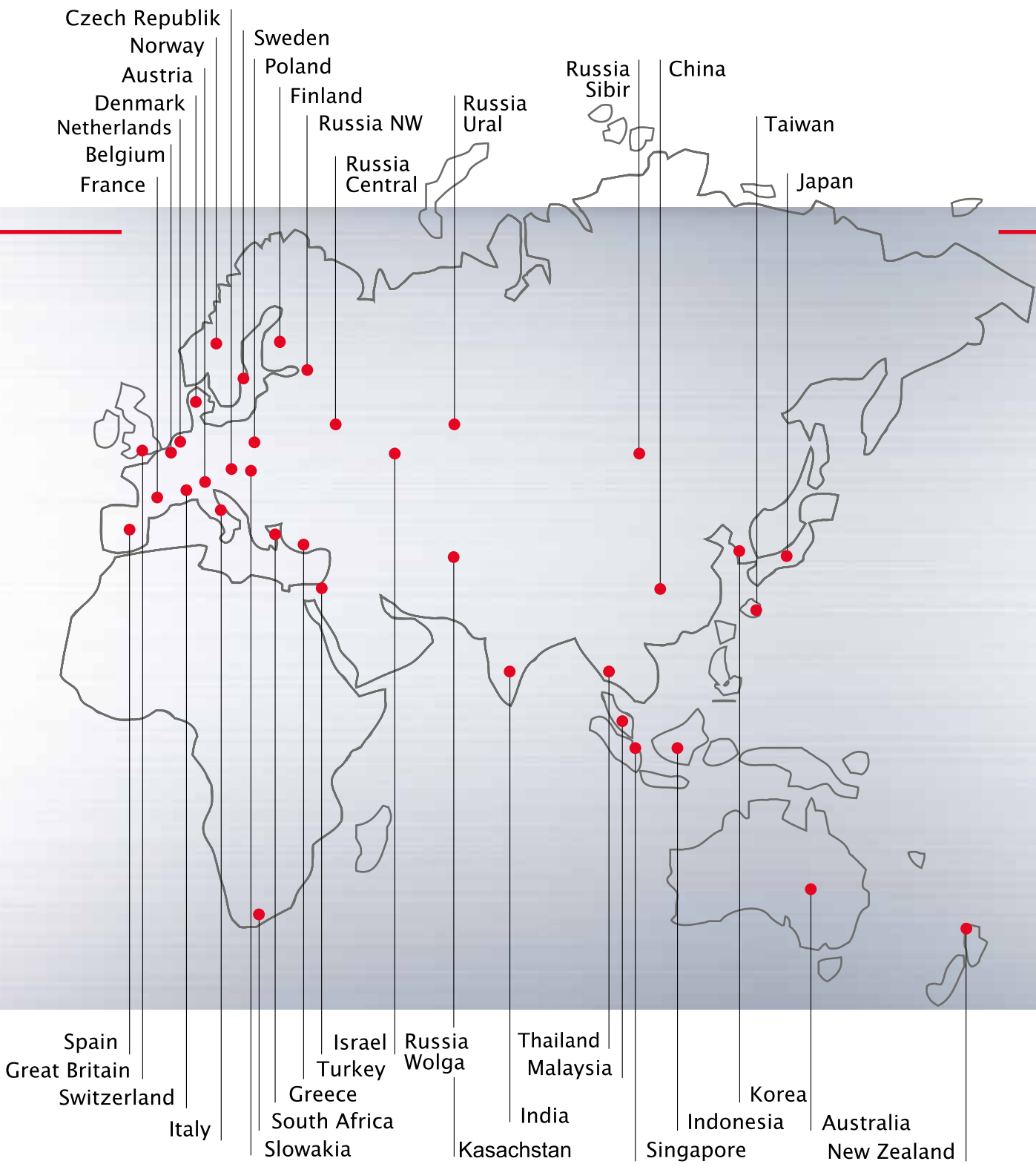


Our *passion* is enclosures.



ROLEC.

40 years of innovation tradition

1969

Friedhelm Rose founded
ROSE Elektrotechnik.

1970

Invention and development
of the first standard enclosure
principle in the world (the most
sold even today): aluKOM.

1990

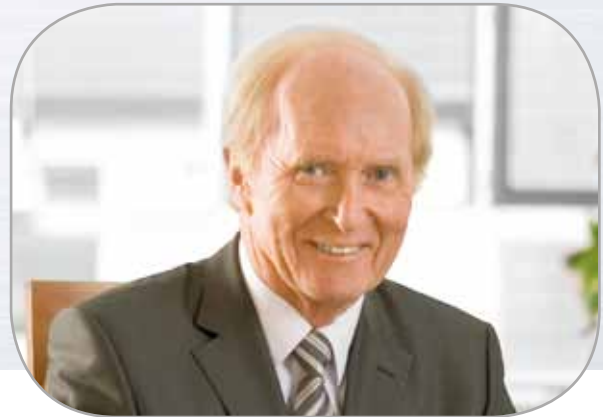
Daughter Bettina Rose
strengthens management of the
family company.

1996

Invention and patenting of the
EMC enclosure
system conFORM.

Friedhelm Rose
Inventor and entrepreneur
Pioneer of enclosure technology

**“ROLEC aims to lead
the development and
implementation of new
enclosure concepts”.**



Modern enclosure technology is measured against ROLEC. The ROLEC founder is the pioneer of enclosure technology. Finished enclosure systems for the protection of electrics and electronics have only existed since Friedhelm Rose came upon the idea. 1970. His first enclosure system became the standard: aluKOM. It is still produced and utilised around the world today. The name of its inventor became the brand name: ROSE. ROLEC has the longest proven know-how in the development and production

of enclosures for machinery and vehicle manufacturing, aircraft production, the chemical industry, the energy sector, medical engineering, the military sector... . Right up until today. Always in the closest possible proximity to practical applications and together with these.

2008
Invention of the patent-registered enclosure system aluCLIC.

And developments by the technological leader ROLEC continue and remain exciting ...

2010
Development of the first round enclosure. The aluDISC system.

Matthias Rose
Company Management



Betty Rose
Company Management



Continuity is assured for the long term. The second generation took on responsibility at an early stage. Matthias and Betty Rose share the management of the modern family business. Friedhelm Rose stands at their side.

The consistent principle - with all requirements - is made in Germany. Diligence in every decision. Enabling this requires corporate commitment, ability on every level, communication via the shortest route, freedom and trust in the responsible actions of trained personnel.

240 pages of the ROLEC catalogue list standard

ranges and specialities for all industrial areas with every detail. Diligently designed and produced by expert personnel, who have been with the company for the long term - are superbly qualified, motivated and receive regular further training. Family business is brought to life - fully independently. Solid quality and consistent new ideas thrive best in a company culture in which the people and the needs of the user are made central to every decision. Demands know no upward limits.

"ROLEC concepts are a benchmark for quality."

ROLEC.

From the idea to ready-to-install enclosure.

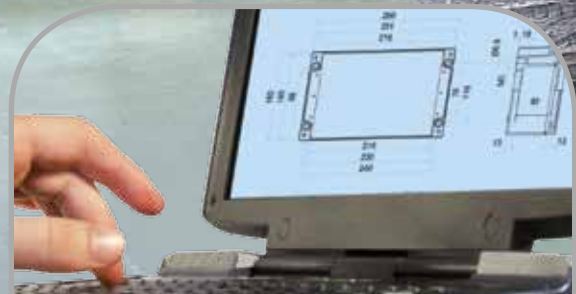
In aluminium. In thermoplast.

Or in glass fibre-reinforced polyester.

► Idea • Design • Mould investment • Casting • Stockpiling • Project planning



Brainstorming for idea generation.



Design.

The very first and most important investment: The invention and development

The strength of ROLEC is product development. Not without reason does ROLEC have market recognition. ROLEC creativity sets benchmarks in enclosure technology. Most recently with the electronic enclosure **aluPLUS** and the very first round enclosure ever: **aluDISC**.

Successful developments prior to this: **aluNORM** enclosure, modular with the

single-channel attachment system. **conFORM** enclosure with integrated EMC shielding. **aluCASE** enclosure with separate attachment level, concealed lid and fixing screws. **aluCLIC** enclosure - clip-on instead of screw-attached. **aluPLUS** enclosure in standard dimensions with attachment options with closed enclosures. **aluDISC** enclosure in a round format. With separate attachment level.

In ABS: **technoCASE** enclosure with concealed lid screws. **starCASE** enclosure with separate attachment level.

g • Customer-specific modifications • Supply ready for installation “Just-in-time”



Thermoplastic injection moulding.



Aluminium die casting.



Rapid access to our large stocks.

The major investment:

High quality moulds and tools. ROLEC enclosures are produced on leading-edge aluminium die casting and plastic injection moulding machines. Top quality is only guaranteed by high quality moulds. ROLEC investments are high. The moulded enclosures should be essentially void-free and have surfaces that fulfil the demands.

An investment in flexibility and reliability:

Large stocks. Just-in-time means just-in-time. Enclosures are commonly the last link in an industrial production chain. They are therefore needed quickly. ROLEC keeps the entire range of enclosures available permanently – ready for calling up from a large warehouse without time loss. Every model is available in all dimensions. Finish in accordance with the customers wishes: Drilled, equipped, mounted ... delivered.

ROLEC.

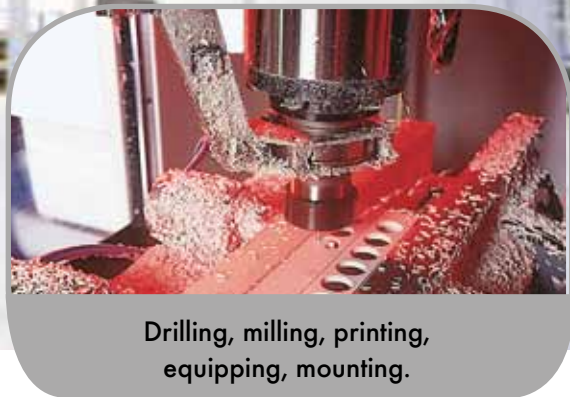
The details:

Perfection with every assignment.

► Drilling • Milling • Powder-coating • P



Processing in accordance with the user's wishes:

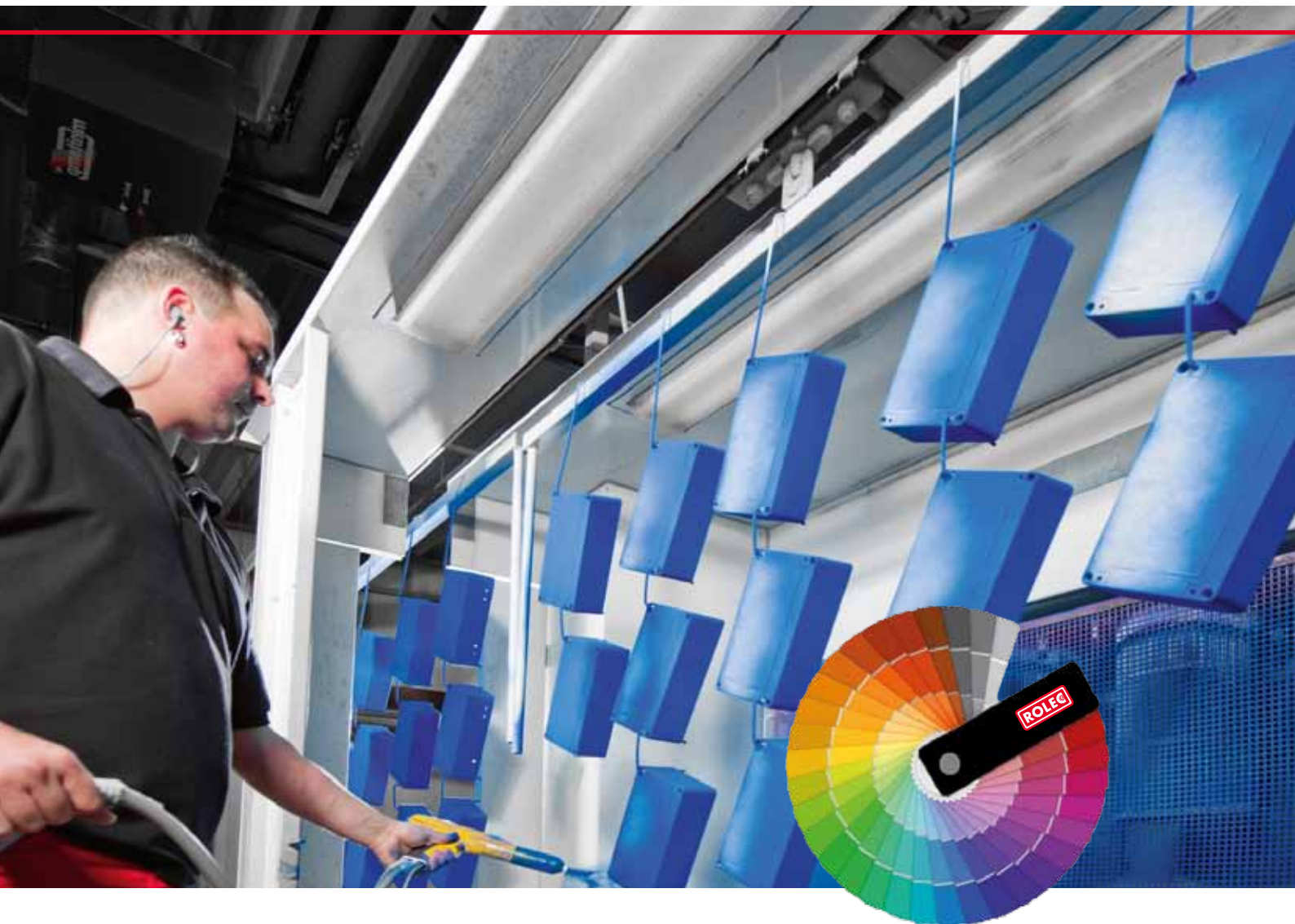


Drilling, milling, printing, equipping, mounting.

Anyone who has established enclosure development and innovated in this field for over 40 years knows what it is about and what is required. This can be seen in every ROLEC product. There is nothing lacking – in line with the principle: German diligence and reliability. Everything has been thought of – in advance. Best example: **aluKOM**, the first enclosure developed by Mr Rose, the "mother" of all standardised enclosures. Still produced and utilised around the world today. Simply serving the purpose.

Before Friedhelm Rose had the idea of standardising enclosures in the 1960's, the industry used to undertake costly construction itself, in accordance with individual concepts and requirements. The user is able to choose from a program encompassing over 500 sizes and types. Special designs are also economical even in the smallest batches. With the aid of CAD drawings available on the internet it is possible to communicate modification wishes.

Painting • Engraving • Printing • Equipping • Assembling • Delivery



ROLEC.
Finish as required.
And always efficiently and
environmentally friendly.

ROLEC delivers ready-for-use. This includes special requirements. Ready-for-use means ready-for-use. ROLEC is flexible, manufactures reliably, is installation-friendly and functional. Design and production know-how and a high level of service readiness are the preconditions for realising every required addition. Be it preassemblies or special paints (per RAL), power-coatings or wet paint applications.

ROLEC.

"Ready-to-install by the manufacturer"



Tailored for installation.

Processing example

Electronics and terminal enclosures are supplied ready for installation.

The user need only install the electrical and electronic components and attach to the machine - ROLEC takes care of everything else.

Enclosures are painted in standard colours or in accordance with our customers' wishes. On request we supply enclosures ready-to-install with membrane keypads, terminals and cable glands

Drilling. Milling. Engraving... in accordance with your specifications.

Here you can see an example of enclosure processing. Drilling and milling specifications are incorporated into the enclosure structure and engraved into the surface depending on the function. The principle is simple: We design our enclosure in accordance with your specifications, ready for immediate integration into your work flow.







ROLEC. Finished means finished.




- Drilling
- Milling
- Engraving
- Powder coating
- Painting
- Serigraphy
- Inserting/Assembly
- Front plates
- Membrane keypads
- Delivery

ROLEC.

Protection types per EN 60529 / DIN 40050

DEFINITION OF IP CODE 1

IP CODE 1	INGRESS PROTECTION AGAINST CONTACT AND FOREIGN BODIES
PROTECTION AGAINST	SCOPE OF PROTECTION
0 Not protected. 	-----
1 Large foreign bodies. 	Protection against accidental large surface contact with live and internal moving parts, e.g. by the hand, although no protection against intentional access to these parts. Protection against the penetration of solid foreign bodies with a diameter greater than 50 mm.
2 Medium-sized foreign bodies. 	Protection against contact between the fingers and live or internal moving parts. Protection against the penetration of solid foreign bodies with a diameter greater than 12 mm.
3 Small foreign bodies. 	Protection against contact between live or internal moving parts and tools, wire, etc with a thickness of more than 2.5 mm. Protection against the penetration of solid foreign bodies with a diameter greater than 2.5 mm.

IP CODE 1	INGRESS PROTECTION AGAINST CONTACT AND FOREIGN BODIES
PROTECTION AGAINST	SCOPE OF PROTECTION
4 Granular foreign bodies. 	Protection against contact between live or internal moving parts and tools, wire, etc with a thickness of more than 1 mm.
5 Dust deposits. 	Complete protection against contact with live parts or parts moving internally. Protection against harmful dust deposits. The penetration of dust is not fully prevented but dust shall not penetrate in such quantities as to affect the functionality.
6 Dust ingress. 	Complete protection against contact with live parts or parts moving internally. Protection against the ingress of dust.






Cited abbreviations

The protection classes are specified as abbreviations. These always comprise the identical identification letters IP and TWO CODE NUMBERS for the degree of protection.






Almost all ROLEC enclosures are protection class IP 65 and IP 66 by design and thereby fulfil a high industrial standard for serial products: I.e. the enclosures offer protection against the penetration of water and dust.

Furthermore, on request ROLEC standard enclosures from aluminium and polyester can be produced in protection classes IP 67 and IP 69K.

DEFINITION OF IP CODE 2

IP CODE 2.	INGRESS PROTECTION AGAINST WATER
PROTECTION AGAINST	SCOPE OF PROTECTION
0 Not protected. 	-----
1 Protected against water droplets. 	Vertically falling droplets must not have any damaging effects.
2 Protected against water droplets if the enclosure is inclined up to 15°. 	Vertically falling droplets must not have any damaging effects if the enclosure is inclined up to an angle of 15° either side of vertical.
3 Protected against water spray. 	Water that is sprayed at an angle of up to 60° either side of vertical must not have any damaging effects.
4 Protected against splash water. 	Water that is splashed against the enclosure from any direction must not have any damaging effects.

9K

IP CODE 2.	INGRESS PROTECTION AGAINST WATER
PROTECTION AGAINST	SCOPE OF PROTECTION
5 Protected against water jets. 	Water that is sprayed in a jet against the enclosure from any direction must not have any damaging effects.
6 Protected against powerful water jets. 	Water that is sprayed in a powerful jet against the enclosure from any direction must not have any damaging effects.
7 Protection against the effects of temporary submersion in water. 	Water must not seep into the enclosure in any quantity that may have damaging effects when the enclosure is temporarily submersed under water under standard pressure and time conditions.
8 Protection against the effects of long-term submersion in water. 	Water must not seep into the enclosure in any quantity that may have damaging effects when the enclosure is submersed under water on a long-term basis under conditions that are agreed between the manufacturer and user. These conditions must however be harsher than those for code 7.
9K Water during high pressure/steam spray cleaning 	Water that is sprayed in a powerful, increased pressure jet against the enclosure from any direction must not have any damaging effects.

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Traderegister: AG Stadthagen HR B2184

USt.-Ident.-Nr.: DE 200523238

The information submitted is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors from the responsibility of carrying out their own tests and experiments: neither do they imply and legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

We reserve for ourselves the right of modification and further development of our products. Such changes or errors and printing errors will not give right to any claim for compensation.

As of 1 March 2005, our complete range of products is in agreement with RoHS.

We will continue to supply customers who insist on certain procedures, because their products do not fall under Guideline 2002/95/EC.