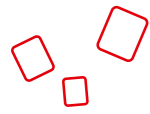




THE WHOLE WORLD OF PLASTICS



Polyamide · Polyester
Polymer Alloys
Polymer Solutions



PENTAC customers are more relaxed

Our tailor made compounds set international standards

You can recognize our customers by their relaxed attitude. They know that we will always be there. Our family owned company has a special affinity to service and flexibility.

Since 1987 PENTAC is a recognised and certified producer and partner for development and manufacturing of customized polyamide and polyester injection molding compounds.

Reaching across various industries (automotive, electronics, engineering etc.) we focus specifically on:

- Polyamide injection molding compounds in various modifications
- Additions by a portfolio of polyester grades
- Polymer alloys based on both basic materials
- Tailor-made compounds

We are happy to support you in the decision process of choosing the optimal product for your application and technology, and above all: how to really save costs.



What you can expect from us:

- High flexibility from a mid-sized company
- Variety from smallest to biggest volume
- Individual assistance from your dedicated partner
- Profound and comprehensive process knowledge
- Flexible hands-on plastics experts
- Unbureaucratic support on short notice
- Individual solutions



Quality & Sustainability under hand and seal

Four guaranties for your product safety



1. Competence without compromise

To offer such an extended compound portfolio demands secure and precise control of processes and production. Clicking like a clock work all gear wheels turn flawlessly. The perfect interaction in a motivated and competent team is also an essential part of our company philosophy.

Processes and documentation are subject of regular audits by the TÜV Hessen according to the rules of DIN EN ISO 9001.

2. Certification and additional supervision

The quality management system of our central plant in Groß-Umstadt near Frankfurt is certified according to ISO 9001 and complies with international standards. In addition we conduct substantial quality controls to secure an all-over security for our customers. Certificates of analysis according to DIN 50049 go without saying.

3. Documentation

We keep records of our quality monitoring, not only to secure quality, but also to follow a continuous optimisation process. Also following rule applies for us: Safety doesn't happen by accident.

4. Sustainability by the use of recycled compounds (ReCompounds)

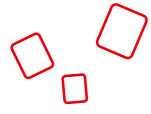
Besides processing virgin polymers we also produce our „ReCompounds“ mainly for automotive industry since more than 20 years in order to live up with the concept of „green“ materials and connected sustainability.



Certification
and Sustainability

What you can expect from us:

- An audited and certified supplier according to ISO 9001, ISO 14001, and ISO 50001
- Certificates of analysis
- Processing recommendation
- Sustainable ReCompounds



We want you to be highly profitable

Enthusiasm starts in our laboratory

State of the art technology and high quality standards are essential parts of our company philosophy. To supply first grade and highly profitable products to our customers is our primary target. Our competence center and well equipped laboratory are ready to provide individual services.

25 years of innovation and satisfied customers around the world give evidence of our widespread competence. Customers appreciate our ability to provide them with economic, effective and competitive products after very short development cycles.

We make compounds better and more effective.

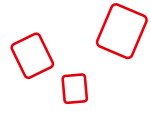


What you can expect from us:

- Competence center
- Fully equipped lab
- Technological high class products
- Leadership in development
- Highly profitable solutions

Research
and Development





Putting compounds to the acid test

A perfect application guarantee

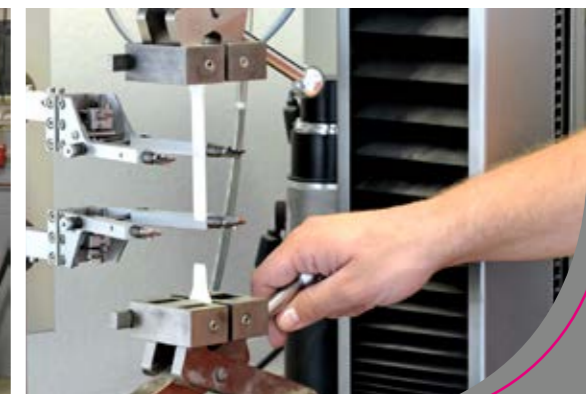
Our customers say about us: „When PENTAC develops tailor made polymer compounds for us, we have the feeling that they are a longterm part of our enterprise and take major responsibility for **Quality, Workflow and Economics.**“

Yes, we do. Because based on our experience we know exactly what it´s all about: a well-proven product specifically designed for your applications. One of the milestones in this process is our test laboratory. Here you can meet **Engineers, injection molding specialists and process technicians**, who put the newly developed products to the acid test – over and over again. With equipments for all commonly used tests.

One stop shopping – for your convenience and safety

What you can expect from us:

- Developments based on superior application technology
- Injection molding specialists
- Engineers as discussion partners
- Hands-on process technicians
- Safe applicability



Leading production – Made in Germany



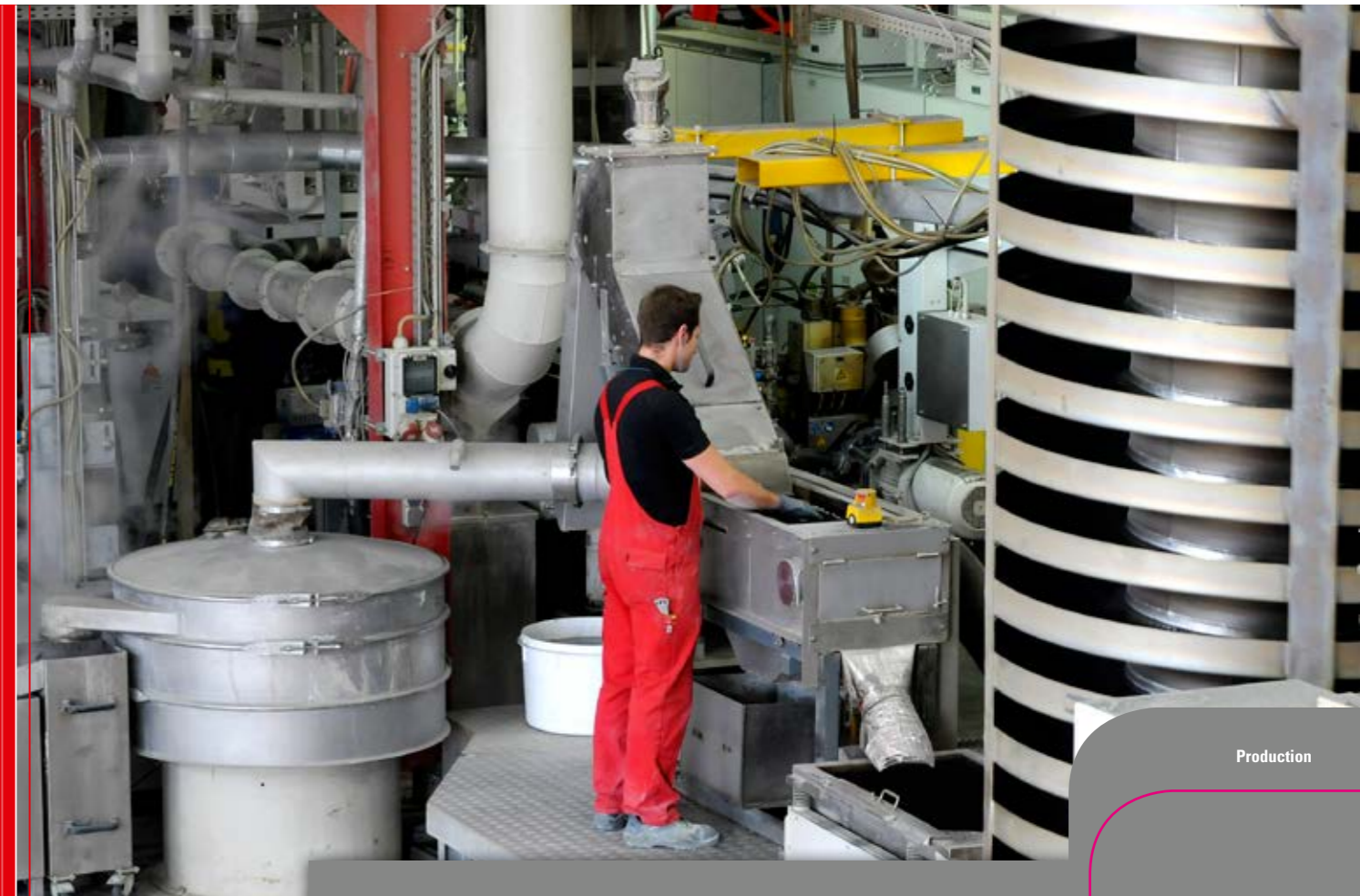
Special requirements request longterm experience

We permanently make high investments to render our production of **Polyamide, Polyester and Polymer** alloys better, faster, and more economic.

Our in-house production allows us to implement individual customer requirements efficiently. Innovative production processes and modern machinery guarantee **top quality, short lead times and competitive advantages**.

Not only for PENTAC but certainly also for our customers.

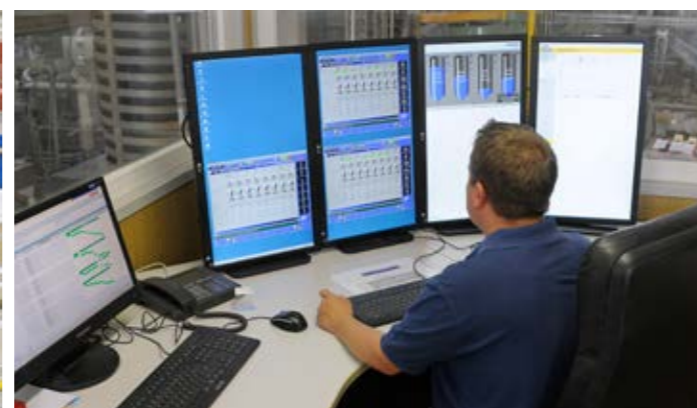
Whatever your demand is 200 kg or 20 tons: our production can handle all volumes



Production

What you can expect from us:

- In-house production – Made in Germany
- Modern machinery
- Sustainable manufacturing process
- Flexible from small to big volumes



Competence and Service around the world

Our products set international benchmarks

Because you know that we care for you. Everywhere around the world

We do not only speak your mother tongue, but we are also aware of the cultural and technical characteristics in your country. We know the local rules and standards and know what is what. This saves our foreign customers a lot of trouble and money.

Because you know: **Development, Testing, and Production „Made in Germany“** focussed on the specifics of your domestic market provides significant competitive advantage for you. And if you – on top of all that – can communicate in your mother language – you feel at home.



What you can expect from us:

- Local contact persons speak your language
- Excellent market knowledge
- Know how of local standards and culture



International
Expertise



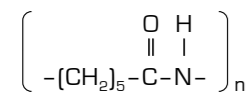
PENTAMID® - perfect know how for a perfect material

Polyamides in various formulations and fit for use up to 200 °C

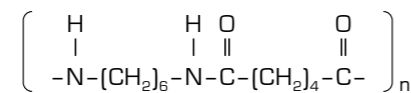
The PENTAMID grades based on five base polymers and eight product clusters represent the largest product group in the PENTAC portfolio.

A versatile scope of variations covers a wide range of applications.

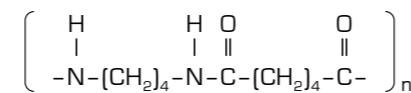
Polyamide 6 = PENTAMID® B



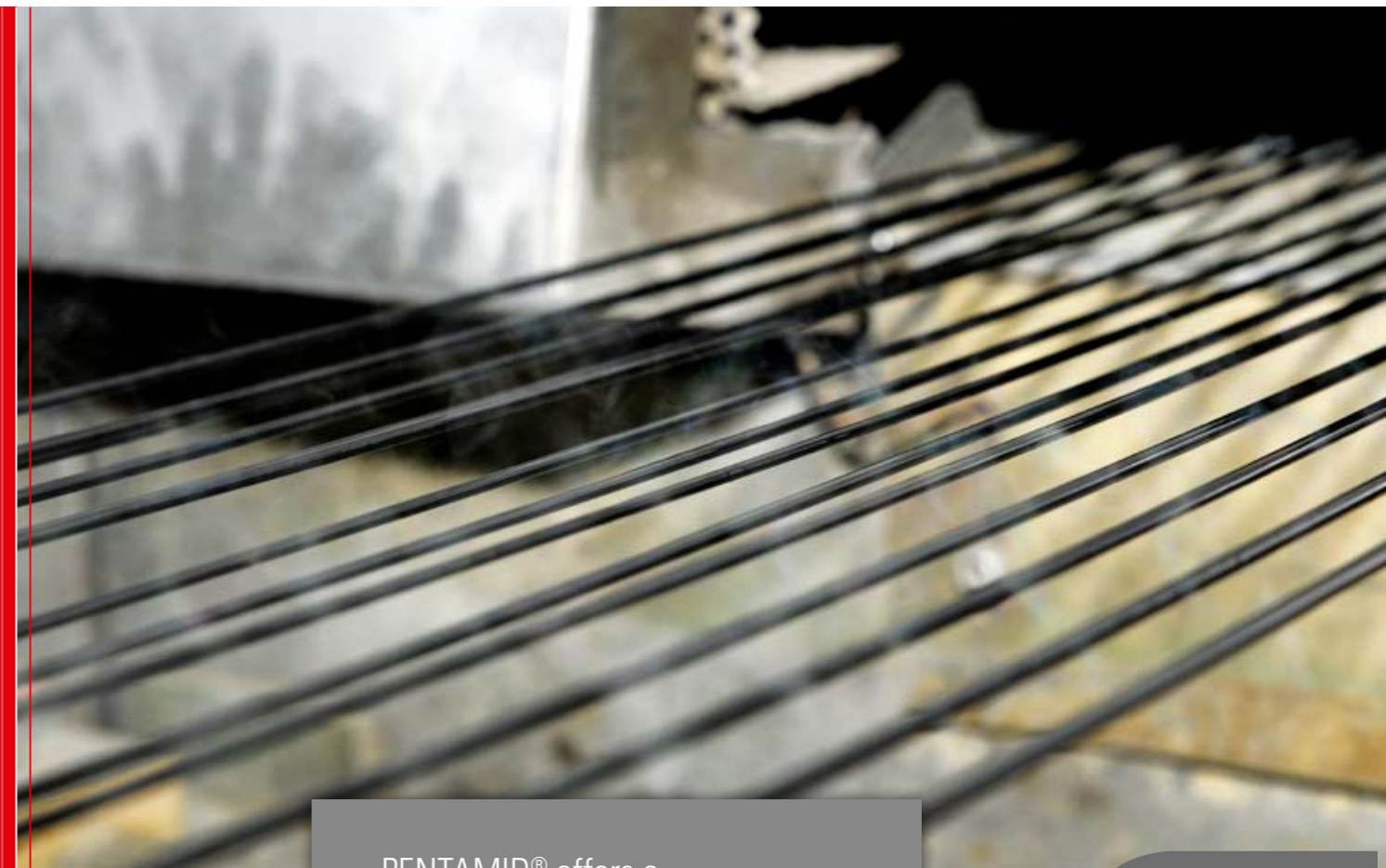
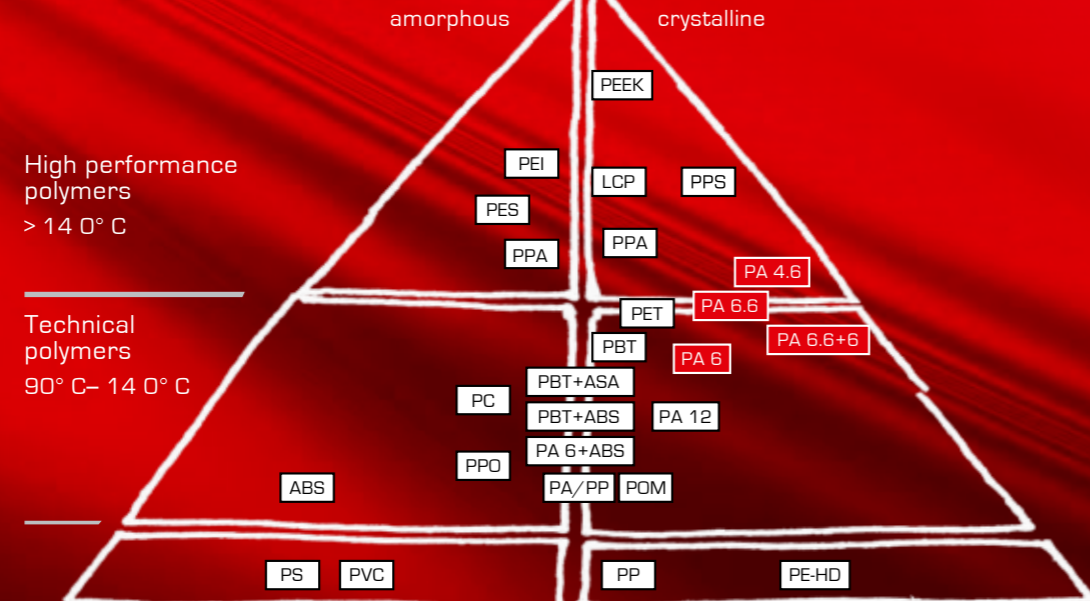
Polyamide 6.6 = PENTAMID® A



Polyamide 4.6 = PENTAMID® AHT



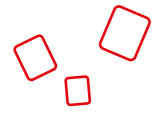
PENTAMID



PENTAMID® offers a wide range of characteristics

- Non-reinforced
- Reinforced with minerals, glass or carbon fiber
- Impact modified
- Easy flowing
- Weight reduced
- Laser markable
- Flame retardant

Polyamide



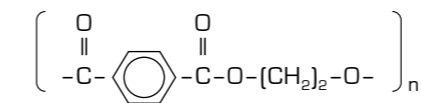
PENTESTER® – the perfect completion to polyamide compounds

For the production of highly precise parts

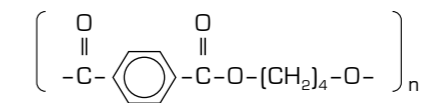
The polyester families (PET and PBT) are an ideal completion to PENTAMID injection molding materials from PENTAC.

Because of their excellent dimensional stability and thermal resistance they are suited for the precision manufacturing of automotive and electrical parts.

PolyEthyleneTerephthalate = PENTESTER® ET



PolyButyleneTerephthalate = PENTESTER® BT



PENTESTER® offers a wide range
of characteristics

- Non-reinforced
- Reinforced with glass fibers or bubbles
- Easy flowing
- Flame retardant



PENTALLOY® - „If you chase perfection, you often catch excellence“

quotation of William Fowble

Perfect alloys for perfect compound properties

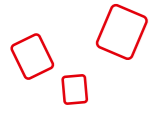
The addition of other polymers allows to adapt the properties of engineering plastics polyamide and polyester to extended part specifications. The range of these alloys is steadily developed and extended in cooperation with our clients to satisfy changing requirements.

- PENTALLOY BS = Polyamid 6 + ABS
- PENTALLOY BTA = PBT + ASA
- PENTALLOY BTS = PBT + ABS
- PENTALLOY BP = Polyamid 6 + PP



PENTALLOY® offers a wide range
of characteristics

- Non-reinforced
- Reinforced with glass fibers or bubbles
- Easy flowing
- Flame retardant



Customized solutions establish a competitive edge

Your own polymer material –
perfectly adjusted to your
specific needs

PENTAC is your professional international partner for customized polymer solutions from the very start. Innovations continuously developed in our technical competence center reveal their excellence and optimal implementation of strict material requirements – for safe, most economic, and trend-setting plastics solutions.

New developments including experimental series, intensive testing and sample production can be easily executed thanks to a modern laboratory and short distance to in-house testing and production.



What you can expect from us:

- State of the art quality lab
- Technical competence center
- Testing services for partners
- Sample preparation
- Production of pilot and small production lots





What you can expect from us:

- International availability of materials
- Longterm and regional constant quality
- Sustainable ReCompounds
- Standard compounds
- Tailor made solutions

We make your automotive injection molding process more efficient, precise and sustainable

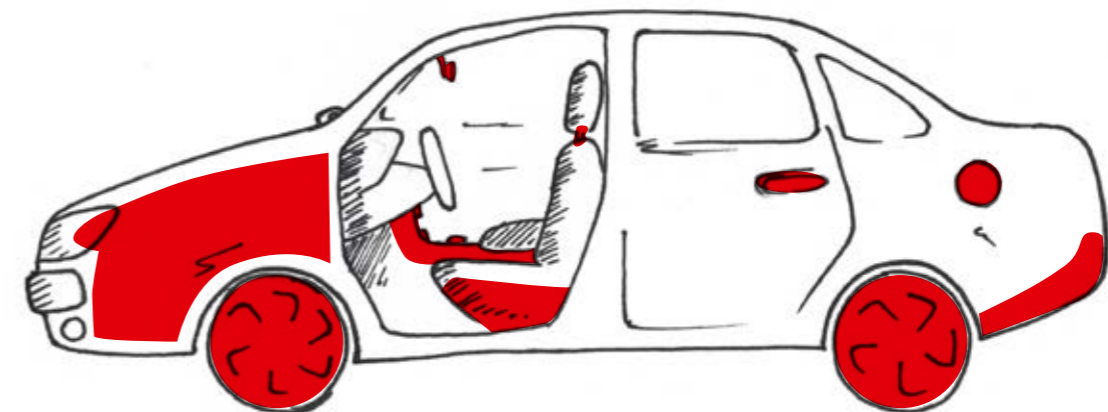
More than 25 years of experience create competitive advantages for you

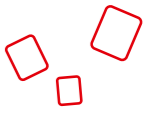
Requirements of the automotive industry have been growing steadily: lighter vehicles, increasing model portfolio, and top quality are demanded for global market coverage.

At the same time pressure and challenges for the engineering departments have annually been increased: continuously shorter product life cycles, significantly earlier start of production, quicker startup, and universal availability of materials must get in line with changing market trends.

Referring to use of polymer raw materials this means: **to provide raw materials perfectly adjusted to the specific application for a flawless and smooth production at all times – globally with consistent quality.**

PENTAC is an international partner of the automotive industry since more than 25 years and we exactly know the requirements of this industrial sector. That saves time and money.



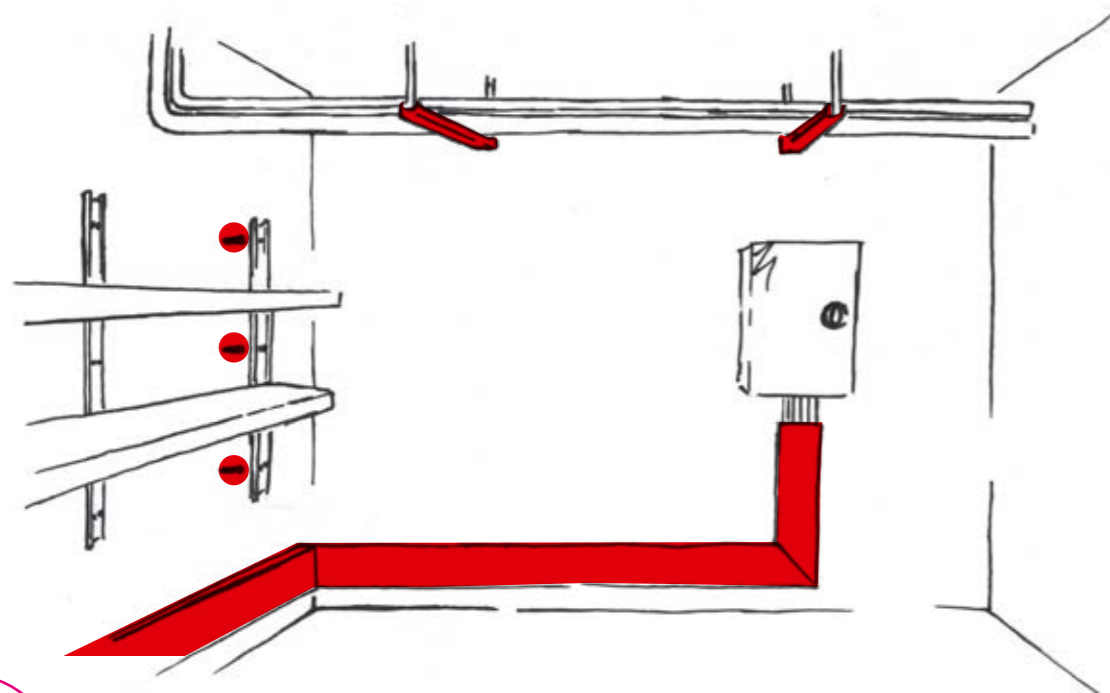


Smart fasteners based on smart materials

We know which materials are suited most

We know the requirements in the fastening and assembly technique very well: fast, safe, and precise installation of fastening and anchor elements, processed easily and smoothly – persistent and compliant.

PENTAC fulfills these standards based on modern process technology and the perfect compound knowledge. No matter if **screw anchors**, **fitting accessories**, **cable trays** etc. – our compounds are **available at all hours**, perfectly adjusted to the specific application, and **guarantee flawless and low scrap rate production** – in consistent quality around the globe.



What you can expect from us:

- Optimized compounds for fastening and mounting
- For screw anchors, fitting accessories, cable trays etc.
- Longterm consistent quality
- Standard compounds
- Tailor-made compounds

Pass the baptism of fire – meet the highest expectations in electrical engineering

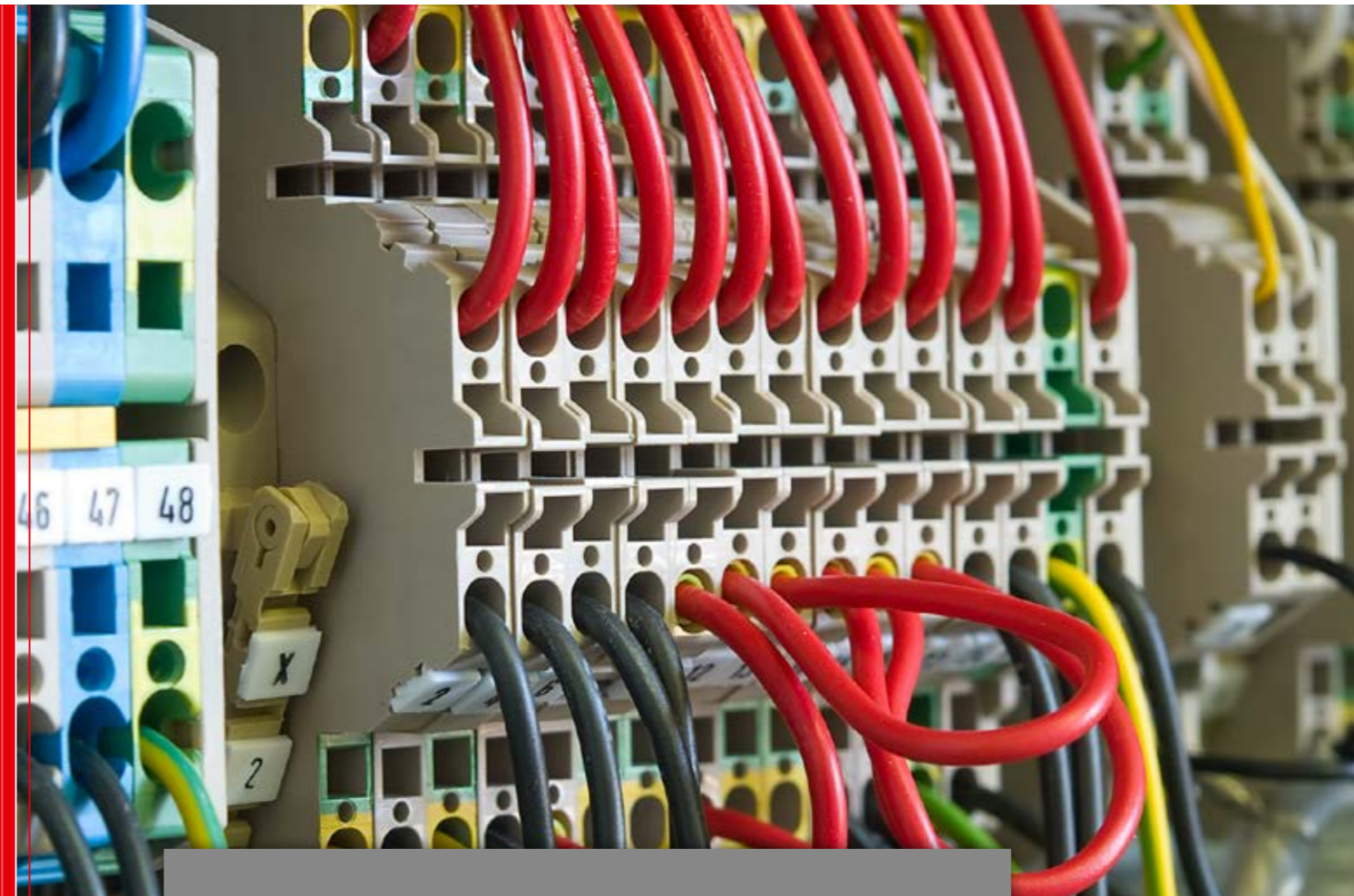
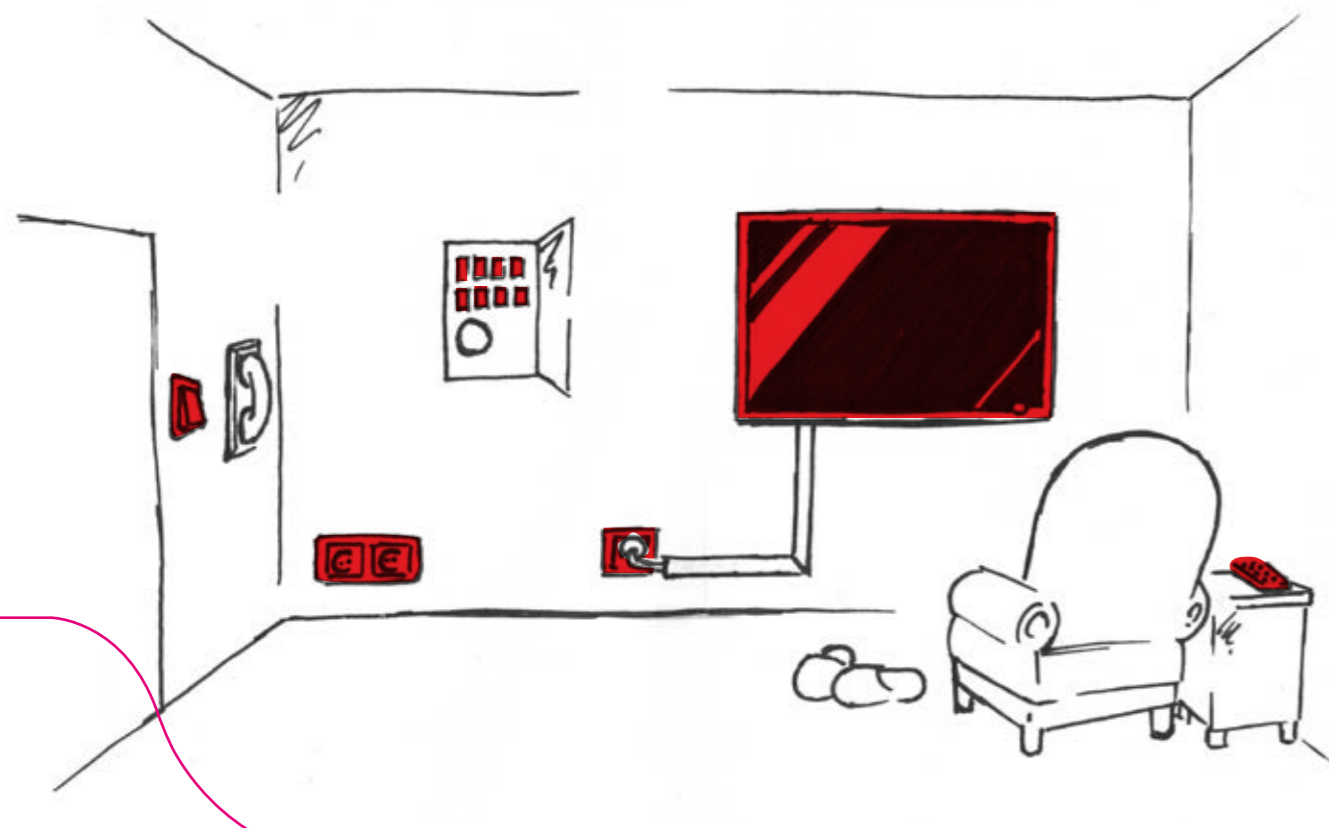


Flame retardant compounds for electrical and electronic industry

Electrical engineering was the first industrial sector to recognize the importance of polymer materials use and strongly supported their development. PENTAC is aware about the important role of polyamide and polyester in electrical and electronic applications and has therefore recently started to build up a portfolio of flame retardant PENTAMID® grades for this industry.

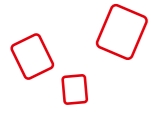
Our customers benefit from our wide experience that is necessary to develop products for E & E applications. In this field the combination of specific requirements for fire performance and electrical properties have to come along with the standards for mechanical properties like impact strength and toughness.

PENTAC compounds are used in connectors, terminal blocks, switch gears, power tools etc.



What you can expect from us:

- Optimized compounds for E & E applications
- For couplings, fuses, office equipment, circuit breakers etc.
- Longterm consistent quality
- Standard compounds
- Tailor-made compounds



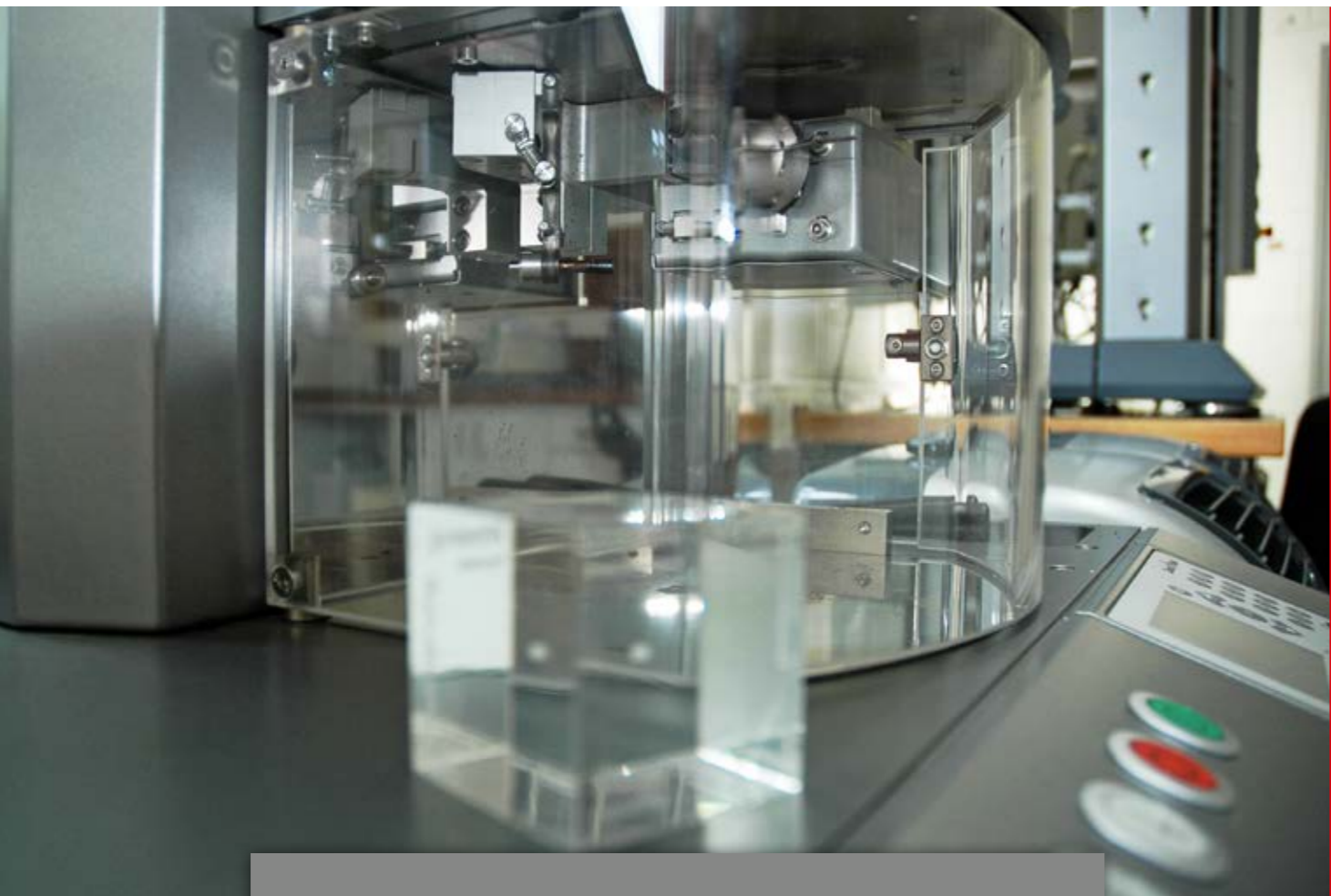
When the going gets tough - PENTAC compounds in engineering

Benefit from well-engineered and consistent compound solutions

Because of their properties and advantages engineering plastics are increasingly used for applications in the engineering sector. Many machine parts, that have been made from traditional materials, e.g. metals, until 10 years ago, are nowadays designed and made from technical polymers.

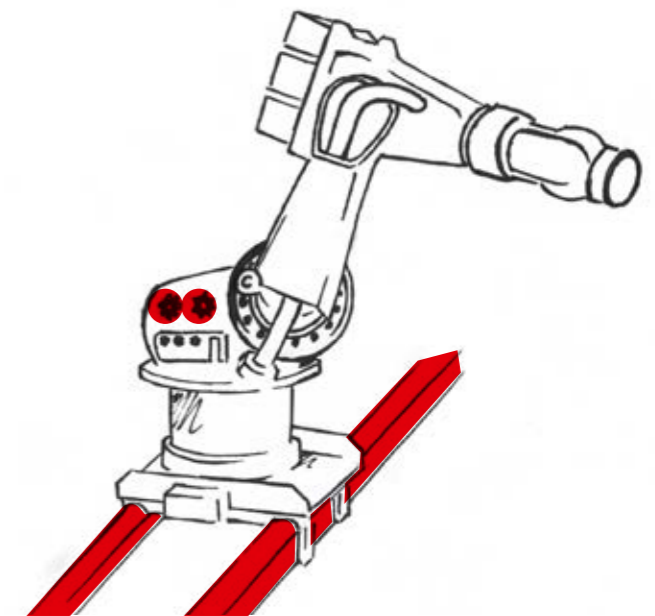
PENTAC compounds provide weight reduction, wear resistance, vibration adsorption etc. – and an easy and quick processing.

Typical applications of our materials can be found in the production of plain and slide bearings, guiding and sliding rails, robot elements, gear wheels.



What you can expect from us:

- Optimized compounds for engineering
- For plain and slide bearings, guiding and sliding rails, gear wheels, chain wheels etc.
- Longterm consistent quality
- Standard compounds
- Tailor-made compounds



The good makes way for the better.

You should not miss out on these advantages

We have grown together with our customers. Grown with our joint challenges and successes. Grown by experience and knowhow. There are many benefits from a cooperation with PENTAC:

Guarantee for an optimal solution in your application

Longterm experience and technological lead provide security to our customers

Technical Center and Customer Lab

Individual customer trials for safety and efficiency

Multidisciplinary application know-how

Your partner at eye level across industries

International competence

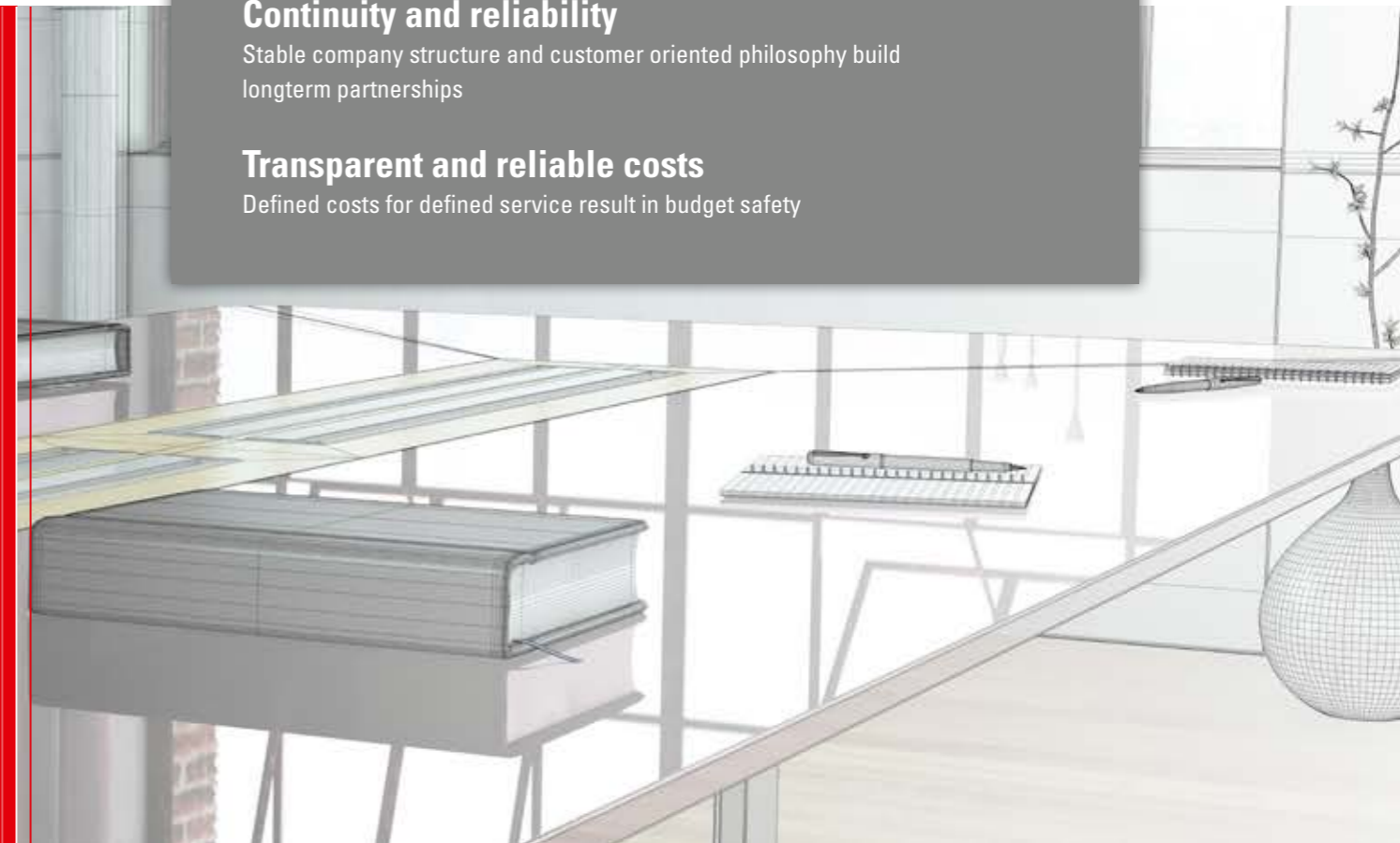
Engineers and technicians support you around the world

Continuity and reliability

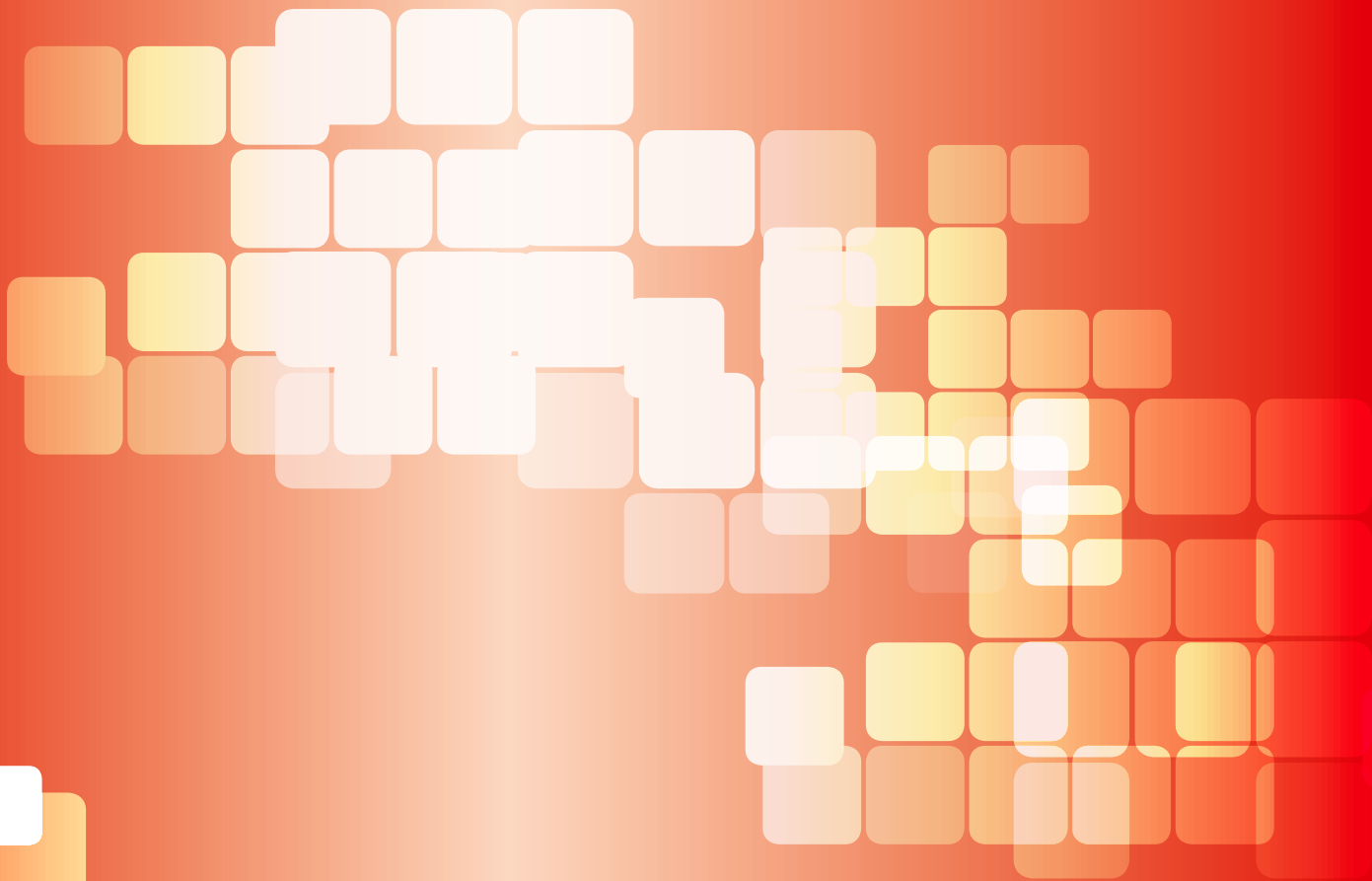
Stable company structure and customer oriented philosophy build longterm partnerships

Transparent and reliable costs

Defined costs for defined service result in budget safety



www.pentac.de



The engineering plastics company

PENTAC Polymer GmbH

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