Engineering progress
Enhancing lives

Pressure resistant. Flexible in cold conditions. Break resistant.

High-pressure hoses
for low temperature ranges

REHAU | Fluid Solutions

Our speciality

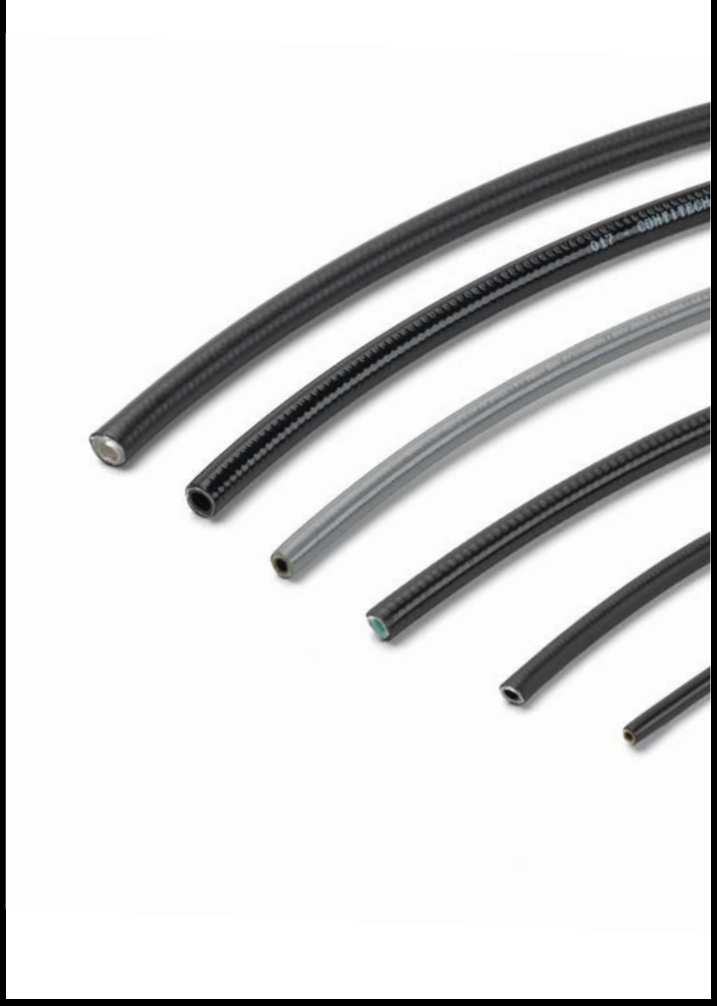
High-pressure hose technology has been an integral part of REHAU's product portfolio for decades.

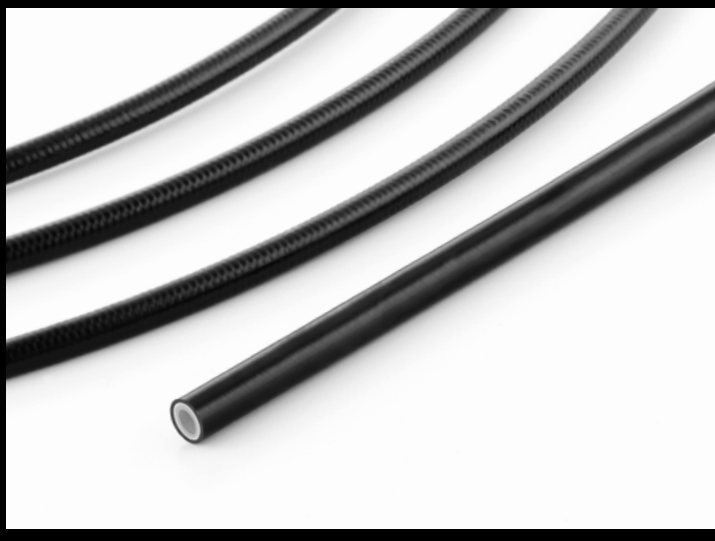
The product spectrum ranges from small-dimensioned and mini hydraulic hoses to double hoses and high-pressure cleaning lines including matching fittings.

Proven expertise
Renowned manufacturers around the world have been relying on REHAU's hose expertise for decades.

Custom solutions
We are particularly adept in the customised development of hose systems for the highest technical requirements.

Around the globe several times
Every year, millions of metres of high-pressure hose leave our production halls to be sent to our customers on every continent.





The industries we serve:

- Industrial and mobile hydraulics
- Lifting devices
- Lubrication, measurement and control technology
- Grease guns
- Central lubrication units
- Hydraulic controls
- High pressure cleaning devices
- Extension lines
- Pipe cleaning

High-pressure hoses for forklifts

Our special hoses are indispensable in lifting devices and hydraulic control systems.

Not just customers, but real partners: We are development partners of the leading international manufacturers of forklifts.

High flexibility and minimal bending radii
For use in the lift mast

Plug & Play
Functional overall system with suitable fittings and processing parameters

Print
Customised branding, e.g. through laser printing

Extreme pressure resistance
250 bar operating pressure with safety factor 1:4

Wide range of dimensions
DN 6 to DN 12

State-of-the-art braiding technologies
The overall dimensions are kept as small and compact as possible to maximise the driver's field of vision

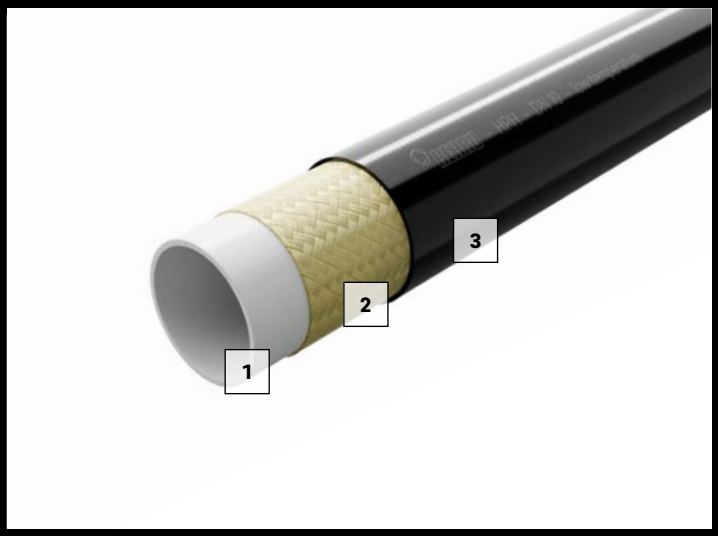
Development expertise
Sustomised design, special solutions, single hoses and welded double hoses are possible

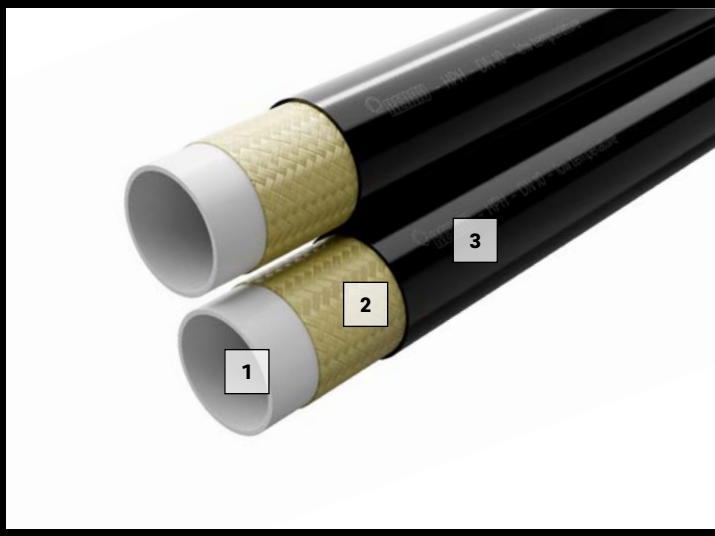
1 Base hose/media-resistant contact layer:
inner hose layer made of TPE or PUR

2 Reinforcement:
braiding made of polyester yarn (with one or two layers of reinforcement) or aramid yarn, with optional bonding

3 Outer layer:
outer layer made of TPE or PUR

The sheathing ensures high flexibility, abrasion resistance and a long service life on the lift mast.





Hydraulic hoses for low-temperature areas of use

Temperatures far below zero? No problem. Our hydraulic hoses remain flexible even in extremely cold conditions.

The low-temperature, high-pressure hoses have been developed for use in forklifts, even in unusual temperature ranges.

A special material formulation guarantees the perfect combination of flexibility and abrasion resistance, even in extremely cold conditions.

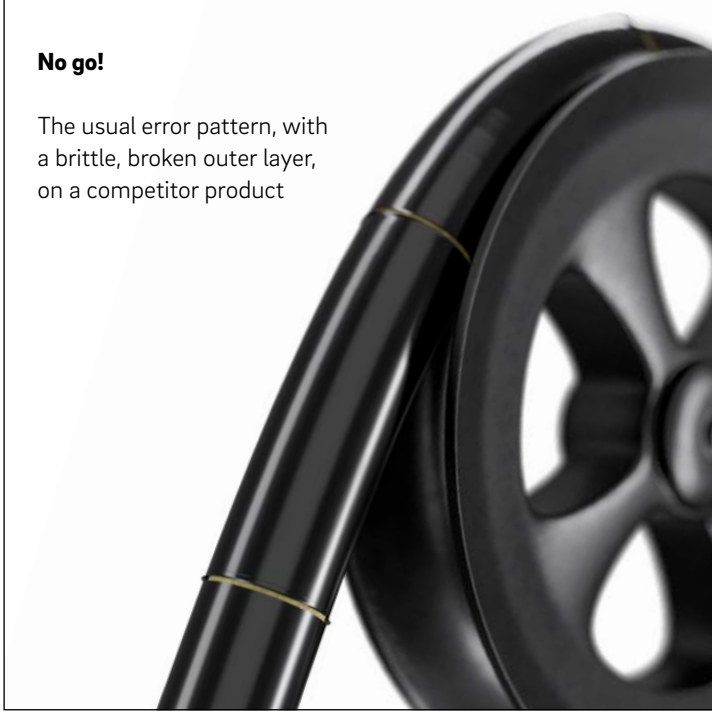
The properties and benefits at a glance:

- **Outstanding flexibility**
  No hose kinking, no brittleness or cracking of the sheathing
- **High abrasion resistance**
  Optimum performance with continuous movement on the lift mast
- **Long service life**
  Low maintenance
- **Temperature-resistant**
  –60 °C to +120 °C

Individual product customisations can be implemented by our development team at any time.

No go!

The usual error pattern, with a brittle, broken outer layer, on a competitor product



Possible applications

The all-rounders for the cold sector can be used in many areas and weather regions.

Cold-storage and deep-freeze warehouses

Logistics centres/open-air warehouses

Foodstuff industry

Industrial areas of use

Shipping/harbour areas

Testing the low-temperature flexibility at - 60 °C

We have innovative extrusion and manufacturing systems, in-house material development, toolmaking, and laboratory and research units.

We subject the hose systems to stringent tests in internal, accredited laboratories.

Task: to identify a combination of raw materials with excellent low-temperature flexibility combined with undiminished abrasion resistance and maximum pressure resistance.

Goal: to test the low-temperature suitability of the selected materials by simulating a lift mast application in extremely cold conditions.

1. Tested samples – high-pressure hose DN 10

Sample A
REHAU low-temperature high-pressure hose

Inner tube:	TPE-E Formulation: RAU-TEL 250
Reinforcement:	simple braiding inlay made of aramid yarn
Sheathing:	TPE-E Formulation: RAU-TEL 150

Sample B
Competitor's hose

Inner tube:	TPE-E
Reinforcement:	simple braiding inlay made of aramid yarn
Sheathing:	PUR

To stabilise the hose during movement, the hose ran in a drag chain that was lined with silicone tape on the inside.

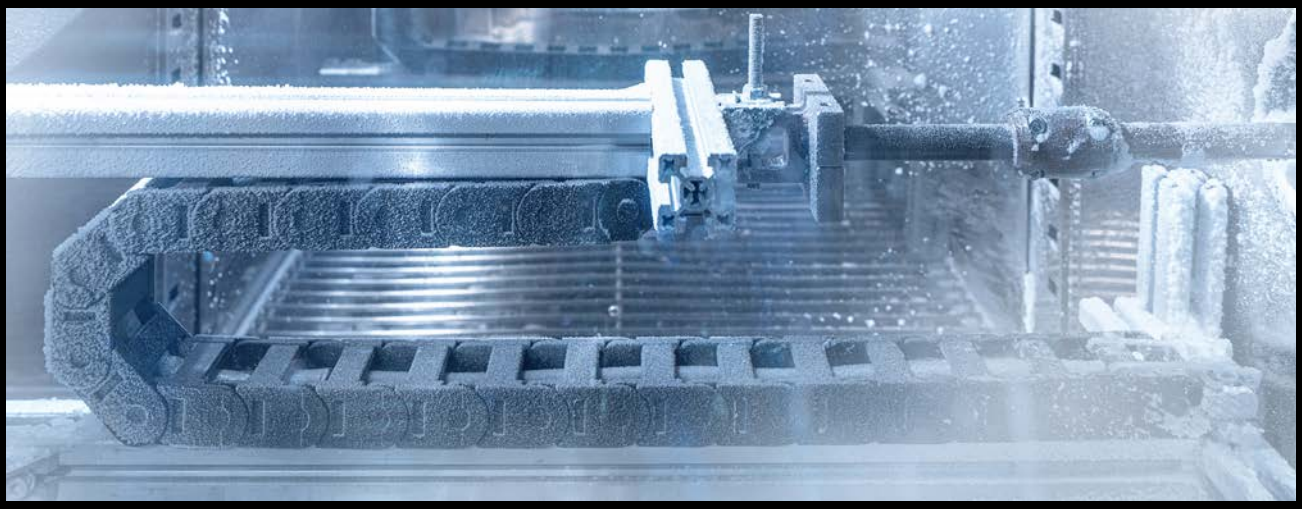
2. Test setup: simulation of the movement on the lift mast

a) Simulation of vertical movement on the lift mast of a forklift:

- Hose runs in a drag chain
- Hose performs a linear movement (240 mm)
- Bending radius is set at 150 mm

b) Run time:
The test runs over 190,000 cycles

c) Temperature:
Movement start at room temperature, reaching –60 °C at 2,400 cycles



3. Evaluation of the test results

Check the surface for cracks and other damage.
Result: The low-temperature high-pressure hose from REHAU offers better flexibility and resistance to breakage at low temperatures than the competitor's hose.

Sample A – REHAU low-temperature high-pressure hose
No visible surface defects

Sample B – Competitor's hose
Some major surface defects

4. Conclusion

The low-temperature flexibility of the developed material formulation is confirmed in the laboratory test

Attention: Testing of the hose under series conditions by the customer is always necessary to confirm suitability for a given application.

Do you need samples?
Do you need help evaluating specifications?
Do you have a development request?

Contact us.
Our development teams can't wait to hear from you!

fluid-solutions@rehau.com

Our verbal and written advice with regard to usage is based on years of experience and standardised assumptions and is provided to the best of our knowledge. The intended use of REHAU products is described comprehensively in the technical product information. The latest version can be viewed at www.rehau.com/TI. We have no control over the application, use or processing of the products. Responsibility for these activities therefore remains entirely with the respective user/processor. Where claims for liability nonetheless arise, they shall be governed exclusively according to our terms and conditions, available at www.rehau.com/conditions, insofar as nothing else has been agreed upon with REHAU in writing. This shall also apply for all warranty claims, with the warranty applying to the consistent quality of our products in accordance with our specifications. Subject to technical changes.

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