



RAUTITAN WATER SERVICES

GERMAN FLEXIBLE PEX PLUMBING SYSTEM

MORE SECURE

REDUCE YOUR RISK. MAXIMISE POTENTIAL.



THREE STEPS TO SECURITY



1. Expand the pipe



2. Slide in fitting



3. Compress and complete!



REHAU COMPRESSION SLEEVE JOINTING TECHNOLOGY

REHAU's compression sleeve connection creates a permanently sealed joint with the pipe, fitting and compression sleeve. Additional O-rings or other sealants can be weak points over the long-term, are not needed because the pipe itself functions as a sealant.

100% permanent leak-proof joint

Unlike other jointing technologies where there are uncertainties if the joint is properly soldered, crimped, tightened or welded, the quality of the RAUTITAN joint can be confirmed by a quick visual inspection.

The RAUTITAN compression sleeve joint is a simple, robust and reliable connection; that is not compromised by uncontrollable factors such as:

- Incorrect heating, cooling and holding times during welding; too short it leaks; too long or over-push it may completely seal up the hole
- Poor workmanship and/or unskilled workers

Reduce workmanship fault



FEWER JOINTS, FEWER MISTAKES

Even the most skilful plumber can make a mistake during jointing, not to mention the unskilled worker. Maximum flexibility of the pipe system and availability of coils can reduce the number of joints per installation by more than 30%. Elbow fittings are replaced by a smooth bend of the premium RAUTITAN PE-Xa pipe.

>30% less joints

Many systems are available in only 4 meter straight lengths. This means for a 100m straight pipe run there are more than 48 joints to be made. Available in flexible coils up to 100m run, the RAUTITAN system can be installed in one single pipe run; no connections; 100% system security!



NO CASE OF MISTAKEN IDENTITY

Installation of 'cold water pipes' (PN10) for hot water application may result in the pipe bursting and can cause significant consequential damages. Further, this incorrect installation can not be detected during pressure test.

The RAUTITAN his 311 system includes a single PN20 pipe for both hot and cold water applications, completely removing the risk of pipe bursting due to the use of the wrong pipe class. Not only mistakes are eliminated but also the cold water systems share the highest protection against pressure surge.

**One pipe for
hot and cold**



ROBUST MATERIAL

As a global supplier of materials for the Automotive, Industry and Construction sectors REHAU understands what is required to get the job done; today and for the future.

RAUTITAN his 311 pipes are uniform and have a very high level of cross linking over the whole cross-section of the pipe wall. The result is a robust and reliable pipe system with a high degree of safety and burst pressure up to 70 bar.

RAUTITAN PX compression sleeves are made from PVDF (polyvinylidene fluoride) and the fittings are made from PPSU (polyphenyl sulphone). Both high performance polymers have again and again proven their qualities, including in aircraft construction and in clean room production.

To complete the range the RAUTITAN system includes a range of high quality Dezincification resistant brass fittings. Installed across the globe the RAUTITAN brass fittings are designed for even the toughest water quality conditions guaranteeing long-term security.

**burst pressure:
up to 70 bar**

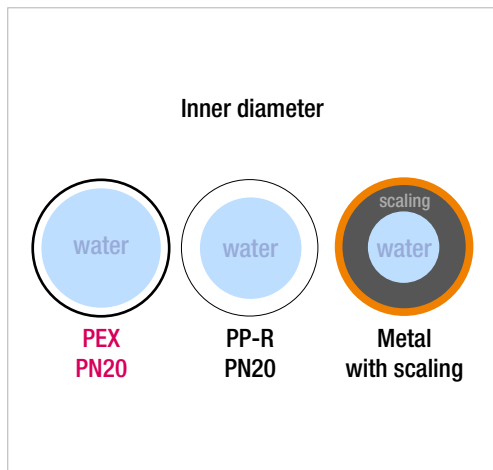
MAXIMUM PERFORMANCE

FOR TODAY AND TOMORROW



FUTURE ORIENTATED AND POWERFUL

Designed for the future the RAUTITAN plumbing system delivers the highest standards of comfort, hygiene and life cycle costs.

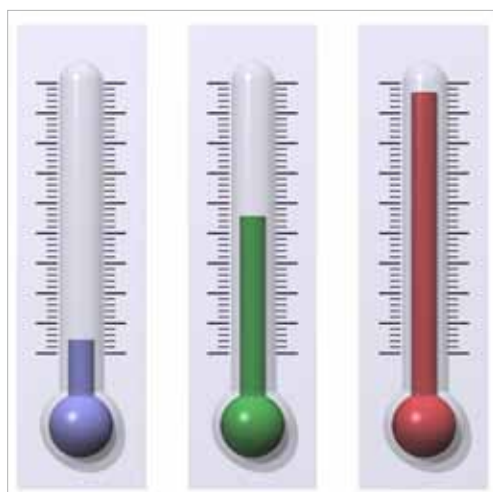


LONG-TERM PEACE OF MIND

With more than 60 years of world class polymer engineering and 30 years of plumbing experience, the RAUTITAN system has been developed for the future. In combined with advanced PVDF/PPSU polymer fittings and Dezincification Resistant Brass threaded fittings RAUTITAN PE-Xa pipes are significantly more resistant to scaling, corrosion and/or erosion than traditional systems such as copper.

Due to the corrosion and scaling resistant properties, the RAUTITAN system provides the highest standards of hygiene and hydraulic performance, today and in the future!

No scaling!



SUPERIOR RESISTANCE TO HIGH TEMPERATURE AND PRESSURE

During installation and/or operation, temperature and pressure conditions can change and cause significant stress on an installed piping system; potentially resulting in system failure. The RAUTITAN system has a significantly greater resistance to temperature and pressure compared with similar polymer based systems. Tested, proven and certified for continuous temperature and pressures of up to 70°C, 10 bar (service life > 50 years) and short term temperatures of up to 100°C, the RAUTITAN system provides ultimate security.

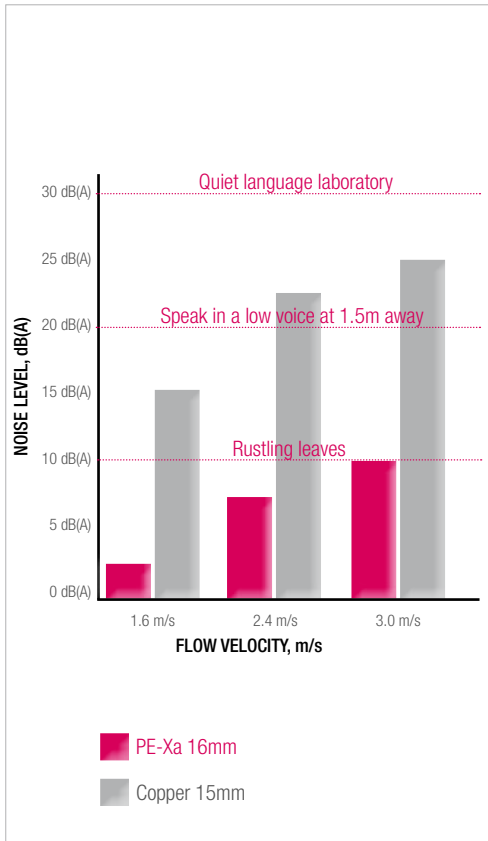
**Service life
> 50 years**



SHOCK AND VIBRATION PROOF

Rigid structures are prone to break with vibrations. The superior flexibility of the RAUTITAN PE-Xa system provides shock and vibration resistance under even extreme conditions.

**Suitable for
tremor-prone area**



MAXIMUM COMFORT

With increased efforts to improve building energy efficiency there is a trend to increase the insulation capabilities of the building envelope, which in turn has the effect of reducing the infiltration of external noise. The resultant impact to the occupant is an increased awareness of internal noise, generated from such things as air-conditioners and/or pipe systems.

Sound is generated in a pipe system via the pipe wall as the water flows, and most significantly through the building structure via the vibration of pipe system brackets and clips. In comparison to traditional metallic pipe systems the RAUTITAN PE-Xa system transmits up to 4 times less noise.

Proven by measurements made by the officially accredited German institute Fraunhofer Institute for Structural Physics, Stuttgart, the three common pipe diameters of PE-Xa, copper and galvanized steel were compared under identical conditions such as flow pressure and flow rate. Overall the report established that PE-Xa pipes generate up to four times less noise (sound pressure level difference $LA=12.7$ dBA) than the metal pipes.

4x less noise



REDUCE WATER HAMMER

Water hammer occurs commonly when there is sudden stop of water flow in the plumbing system, for example when closing a tap or shutting off a water valve. Water hammer does not only create unpleasant noise, it can cause extensive property damage as the pressure surge can sometimes exceed 60bar leading to rupture of compromised piping and fittings.

Due to the elastic behaviour of the cross-linked polyethylene RAUTITAN PE-Xa system, water hammer effects can be reduced by up to 75% compared with similar metallic systems.

75% less water hammer

HIGH QUALITY PLUMBING SYSTEM

SIMPLE. ROBUST. RELIABLE.



RAUTITAN HIS 311 PIPES

RAUTITAN pipes are made from high density cross-linked polyethylene (PE-Xa). The cross linking process causes the individual polyethylene molecules to bond in a three-dimensional network creating a tough and durable pipe with superior:

- long-term stability
- high temperature resistance and
- high pressure resistance
- superior flexibility and strength.

The external black PE-sheath blocks more than 99.9% of light transmission through the pipes to prevent the growth of algae within the plumbing system to maintain the system's hygiene.

The RAUTITAN his 311 system includes a single PN20 pipe system for both hot and cold water, which has been exposed in long-term tests at extreme temperature and pressure conditions to confirm its lifespan of over 50 years even for hot water application.

RAUTITAN his 311 Pipe Dimensions			
Outer pipe dimensions	Wall thickness	Coil Length	Straight Length
16 mm	2.2 mm	100 metres	5 metres
20 mm	2.8 mm	100 metres	5 metres
25 mm	3.5 mm	25/50 metres	5 metres
32 mm	4.4 mm	25/50 metres	5 metres
40 mm	5.5 mm	-	5 metres
50 mm	6.9 mm	-	5 metres
63 mm	8.6 mm	-	5 metres



RAUTITAN PX FITTINGS

Honoured with the Design Plus award by the German Design Council within the scope of the Material Vision 2009 fair. Design Plus means outstanding material quality and excellent design.

Available for sizes from 16mm up to 40mm for non-threaded fittings, the RAUTITAN PX fittings are made from robust polymer material (PPSU). This advanced polymer materials have been engineered to the highest REHAU quality. 100% protection from corrosion impacts, tough and durable for any site condition.



RAUTITAN MX FITTINGS

RAUTITAN MX fittings are made of the highest quality dezincification-resistant brass have, providing long-term resistance and performance.

RAUTITAN MX fittings are available for sizes from 50mm to 63mm and all threaded fittings 16-63mm.



REHAU QUALITY

TRIED AND TESTED

The performance of the RAUTITAN system during installation, commissioning and long-term operation is our primary concern. The RAUTITAN system has been engineered, tested and certified to ensure that its performance can be relied upon. Drawing on over 60 years experience in the design, manufacture and application of polymer materials REHAU have established rigorous short and long-term tests according to the valid standards and regulations. We do the tests so you don't have to worry.



Results of a burst pressure test with the universal RAUTITAN PN20 pipe



Proceeding a tension test with compression sleeve joint



Universal RAUTITAN PN20 pipe tested in the notch impact testing device without breaking at a temperature of -30°C



Pipes in a long-term (under 10 bar pressure in a 95°C water bath)

QUALITY AND CERTIFICATIONS

REHAU PE-Xa compression sleeve system are independently tested and locally approved by leading laboratories and authorities. Tests are carried out according to relevant standards such as British (BS 7291 Part 1, 3), Australian (AS 2492, AS 2537 and AS 4020) and American (ASTM F 876) standards.

Australia : Watermark

New Zealand : BRANZ

Taiwan : Taipei Water Authority

Hong Kong : Office of Water Authority

Malaysia : SIRIM

Japan : JWWA

Singapore : PUB, Water Department

United Kingdom : WRAS



RAUTITAN WATER SERVICES

TRUSTED BY THE WORLD



Eureka Tower - Melbourne, Australia



Bel-Air No. 8 - Hong Kong, China



Connexion Farrer Park Hospital - Singapore



Concourse Skyline - Singapore

Since the 80's, millions of connections have been created in Austria, Australia, Canada, Czech Republic, Denmark, Great Britain, Hong Kong, Hungary, Germany, Japan, Malaysia, Netherlands, New Zealand, the Philippines, Poland, Portugal, Singapore, Spain, Switzerland, Taiwan, Thailand and the USA by using REHAU compression sleeve jointing technology. The RAUTITAN his 311 system has been proven to meet all the requirements of the plumbing trade.

PROJECT REFERENCES IN ASIA AND AUSTRALIA

- Eureka Tower, Melbourne, Australia
- Bel-Air No. 8, Hong Kong, China
- Central Park Tower I & II, Hong Kong, China
- JW Marriott Hotel, Medan, Indonesia
- Discovery Shore Hotel, Boracay Island, Philippines
- Radisson Hotel Cebu, Cebu, Philippines
- Kim Keat Gardens, Singapore
- Sandalwood, Singapore
- Courts Mega Store, Tampines Singapore
- Marina Integrated Resort, Singapore
- Luxus Hills (ph 1-3), Singapore
- Connexion Farrer Park Hospital, Singapore
- Kasara "The Lake", Sentosa, Singapore
- Woh Hup HQ, Singapore
- Parvis Residence, Singapore
- Hyflux Innovation Centre, Singapore
- National University of Singapore "Khaya & Angsana Residential Colleges", Singapore
- Lincoln Suites, Singapore
- Concourse Skyline, Singapore
- iLIV, Singapore



Parvis Residence - Singapore



Hyflux Innovation Centre - Singapore

REHAU SERVICES

REHAU ASSURANCE AND SUPPORT

REHAU is committed to excellence and quality in both its products and people. **We listen so we can offer precise and customised solutions that suit your market's needs.**

Every REHAU product is strictly produced according to the most stringent German engineering guidelines, with the company certified to ISO 9001 standards. More than just a pipe supplier, REHAU is a total solutions provider and offers the most comprehensive line of extruded polymer construction products available.



NETWORK OF HIGHLY TRAINED PARTNERS AND INSTALLERS

The quality of our system is only as good as its design, installation and operation. With this in mind, REHAU has established a network of REHAU Authorised Installers (RAIN). Each REHAU installer will become a RAIN member only after completion of the standard REHAU Academy course and test, which is delivered by our own professional trainers. Every project deserves a RAIN member!



TECHNICAL SUPPORT

We recognise that a **successful solution requires the right tools, the know-how of an experienced team and the desire to create a product that exceeds customers' expectations.** We are happy to help our partners to achieve their goals from project planning to job-site supports via the REHAU Competence Team, which you may contact through your nearest REHAU sales office listed on the back of the brochure.

**Support & service
where it counts**



EXCELLENCE THAT LASTS

Every installer, designer or developer is considered a REHAU project partner. We are committed to providing excellent support and service to ensure the security, quality and performance of all REHAU systems for our customers during installation and operation. With this in mind, REHAU provides a comprehensive ten-year warranty* to our project partners.

**10 year
warranty***

** Conditions apply*



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