



**Engineering progress  
Enhancing lives**

## **Ready for the pressures of today, tomorrow and beyond.**

AWADUKT Sewer Pipe System PP: Secure sewer pipes for increasing dynamic loads



# AWADUKT PP – A class of its own

Your benefits at a glance



<sup>1)</sup> Source: Correspondence wastewater, 2013, „Sewage pipes in comparison“ section.5 <sup>2)</sup> Source: Installation Times TEPPFA, 2013, taken from Sewer Installation Time – Plastics versus Concrete <sup>3)</sup> Source: Concrete pipe weights taken from [www.berdingbeton.de](http://www.berdingbeton.de)  
<sup>4)</sup> Source: MFPA Weimar, 2003, report B45/454/03



30,000 km of the European sewer network is perfectly equipped for the future thanks to AWADUKT PP sewer pipe systems.



**Up to 250 x higher dynamic load capacity** compared to PP pipes with mineral filler<sup>1</sup>.  
More information on Page 7

**10 Year Warranty**  
for the complete system.  
More information on Page 9

**30 % faster installation<sup>2</sup> as they are  
90 % lighter than concrete pipes<sup>3</sup>.**  
More information on Page 7

**100 % Reliability**  
a perfectly safe working system:  
Pipe – Chambers – Fittings – Service.  
More information on Page 9

**No. 1 for Peace of Mind**  
REHAU carries out structural  
calculations under dynamic loads.  
More information on Page 5

**At least 40 x more impact resistant**  
than clay<sup>4</sup>. Choose the right material.  
More information on Page 7

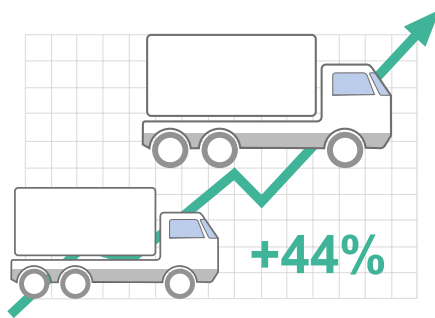
**1 Call is all you need.**  
Our competent staff are knowledgeable  
and ready to take your call.  
More information on Page 11

# The challenge of the future

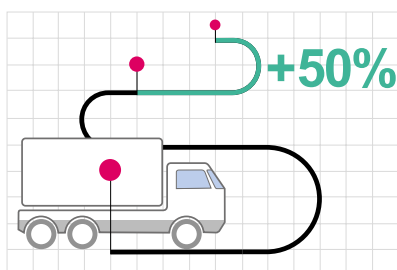
## Our solution: Secure sewer pipes for increasing dynamic loads

In the coming decades, a huge increase of heavy traffic will be on our streets. Freight traffic will more than double by the year 2050<sup>1</sup>. This means a considerably higher dynamic load for the underground infrastructure.

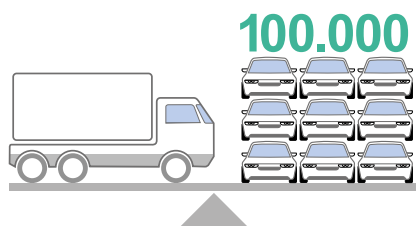
### Increasing traffic loads



Transportation will increase 44 % by 2050.<sup>1</sup>



The distance driven will increase by 50 %.<sup>1</sup>



One lorry puts as much strain on the road as 100.000 cars<sup>2</sup>.

**95% of all constructors**

place special importance on dynamic load-bearing capabilities<sup>3</sup>

REHAU has recognised the increasing demand for sewer networks and offers you a complete sewer system solution, which already meets future requirements.

**AWADUKT PP has optimum values for static and dynamic load-bearing capacity – for a permanently secure sewer network.**

<sup>1</sup> Source: protrans (on behalf of the Federal Ministry for traffic, construction and urban development), 2007, Final report "Assessment of the long term development of freight transport in Germany by 2050"

<sup>2</sup> Source: DIE ZEIT, 2011, no. 31/2011. The example compares a car with a four-axle 30-tonne truck.

<sup>3</sup> Source: Survey of the company REHAU, 2013



New: REHAU  
carry our structural  
**calculations**  
under dy-  
namic loads

# No. 1 for peace of mind

Reliable planning from the start with  
structural calculations by REHAU

The increasing traffic on our roads verify the importance of dynamic load-bearing capacity. REHAU offers you calculations based on tested material parameters and assurance that increasing loads will be borne by our pipe system.

#### **Free and reliable calculation for specifiers and builders:**

- The material parameters have been determined by extensive repeated load cycle trials for the dynamic load-bearing capacity.
- These material parameters are incorporated into the structural calculation as per ATV-DVWK-A 127.
- This establishes the safety margins for the AWADUKT PP system by taking into account all loads, including the dynamic loads, for the first time



Our specialists will carry out a project-related, structural calculation at your request. Simply get in touch with REHAU for more information.



# Choose the right material

## AWADUKT PP SN/10/HPP SN16

### 100 % Free From Fillers

AWADUKT PP is considerably superior to other systems in a direct comparison due to the filler-free design made of high-quality polypropylene.

### 100 % Planning Reliability

Substantiated material properties enable a structural calculation also for dynamic loads.

### Minimum 100 Year Service Life

AWADUKT PP sewer pipes and sewer chambers have a guaranteed service life of at least 100 years. This allows you a depreciation over a long period of time.

### Flexible use of Bedding Material

The solid wall design offers the highest stability even in coarse-grained bedding material. As a result, you can for example use backfilling materials up to a grain size of 75 mm for AWADUKT HPP SN16, which saves time and costs.



### Up to 40 x more impact resistant than clay pipes<sup>1</sup>

Common damage patterns such as cracks and fractures in commercially available traditional pipe systems (e.g. vitrified clay or concrete pipes) are virtually ruled out by the tough, constantly further developed material polypropylene in AWADUKT PP.

### Up to 250 x higher dynamic load capacity compares to PP pipes with mineral filler<sup>2</sup>

There are more differences between polymers than expected – for example, polymer pipe systems are offered on the market, which contain up to 40 % mineral additives. This does not remain without consequences for the quality properties of the systems.

### The No. 1 in direct comparison

An investigation by Dr. Fischer confirmed that the polypropylene pipes not containing fillers have by far the best values in terms of impact resistance, dynamic load-bearing capacity and resistance to notches in a direct comparison with pipes containing fillers. You can find details about the investigation in article "A comparison of sewer pipes" published in „Korrespondenz Abwasser“ on 09/2013 or you can view at

[www.rehau.de/kunststoffrohreimvergleich](http://www.rehau.de/kunststoffrohreimvergleich)

### 30 % faster installation<sup>3</sup> as 90 % lighter than concrete pipes<sup>4</sup>

PP sewer pipes are considerably lighter compared to concrete. This saves costs on the one hand thanks to the elimination of heavy construction site equipment during the installation and on the other hand thanks to the straight-forward assembly of pipes.



Use the QR code to access the article.

1) Source: MFPA Weimar, 2003, Report B45/454/03 2) Source: Korrespondenz Abwasser, 2013, A comparison of Sewer Pipes Part.5

3) Source: Installation times taken from TEPPFA, 2013, – Plastics versus Concrete

4) Source: Concrete pipe weight taken from [www.berdingbeton.de](http://www.berdingbeton.de)

# 100 % reliability

AWADUKT PP – A complete system where everything fits.

A sewer pipe is never installed on its own. You will obtain a perfectly coordinated sewer pipe, fittings and chamber system as well as the experience of a long-term system supplier with AWADUKT PP.

1

## Continuous colour for clear identification

The integral colouration of the pipes requested in DIN EN 1852 enables a clear identification as a waste water and rainwater sewer thanks to the colours orange and blue used.

2

## Leak-proof with Safety-Lock-System

The safety-lock system fixes the seal so reliably that it is virtually impossible to push it out during the push fit process and the sewer system remains permanently leak-tight. The connection up to 2.5 bar internal pressure remains leak-tight even with a slight deformation or bending. Thanks to this reason, you can also use AWADUKT PP in drinking water protection zones II and III.

3

## Easy identification underground

The permanent, internal marking with details about the manufacturer, material and diameter also allows a clear identification of the pipe system – even when it is installed.

## 10 Year warranty for the complete system

REHAU offers its customers 10 years warranty for the entire system – including installation costs and removal costs as per the terms and conditions of the REHAU warranty certificate. We are happy to make them available to you on request.



## Perfect compatibility of all components

AWADUKT PP offers you an universal solution with a very wide application range in combination with AWASCHACHT PP – from the standard application through to extreme requirements when draining chemically polluted and hot industrial waste water.

## Standard ring stiffness of the entire system

REHAU offers you the matching fitting range for every pipe for a standard, minimum ring stiffness e.g. 16kN/m<sup>2</sup> for AWADUKT HPP SN16. This allows you to install them in shallow installation depths as well as deep top fill heights.

## Made in Germany

The entire sewer network system is developed and produced by REHAU in Germany. The know-how of our employees as well as stringent quality inspections ensure a top quality from the idea through to delivery.

**Made in  
Germany**







**100% leak-proof**  
thanks to the safety lock system which fixes the seal

3

1

2

# 100 % customer focussed, 100 % free

## Advice and support throughout your project

We will advise you personally on the telephone and on site. Arrange an appointment with one of our specialists, who will support you in your project. The biggest advantage: the service is free-of-charge for you.

### Profitability calculation

Benefit from our dynamic cost comparison calculations.

### Sewer network planning tailored to your requirements

Benefit from the application and cost-optimised definition of nominal chamber widths.

### 10 Year Warranty

We are confident in our product solutions. We therefore offer you much more than the legally stipulated warranty services. 10 year warranty including installation and removal costs according to warranty certificate.

### Quality Assurance

We have our sewer range tested and monitored regularly by independent institutes.

### CAD Design Support

You will receive a drawing for every pipe and fitting for carrying out the construction work on request.

### Technical Support

Detailed texts for invitation to tender in Word and GaeB format can be found at [www.rehau.de/tiefbau-ausschreiben](http://www.rehau.de/tiefbau-ausschreiben)

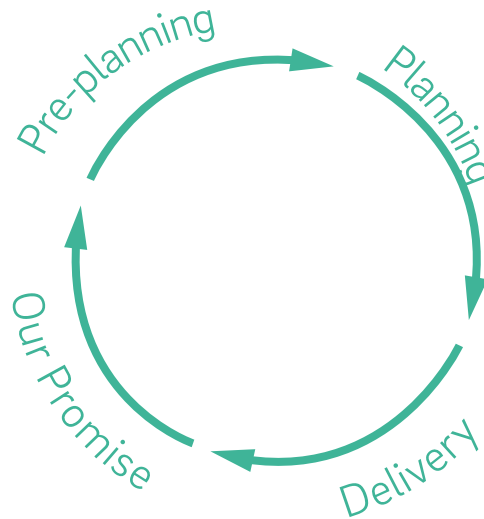
- Pipe Hydraulics: We will calculate the hydraulic dimensioning of polymer gravity pipelines for your task to DWA A 110 and DIN EN 752.
- Structural Design: Our specialists calculate structural designs for your application to ATV-DVWK A 127.
- New: Now also taking into account dynamic loads!

### On-site Support

We will visit you on site and competently train you and your colleagues about our products.

### Technical Documents

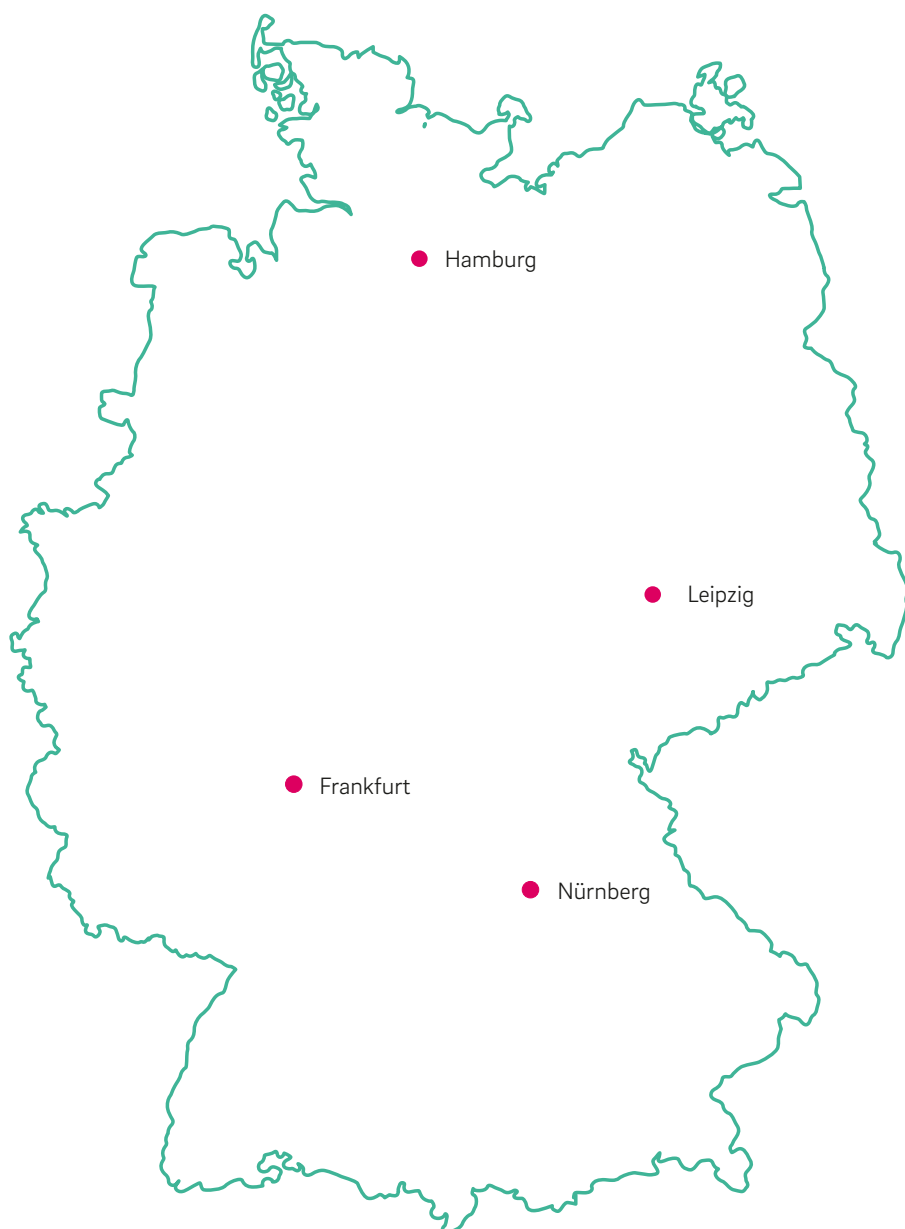
You will receive detailed installation, assembly and laying instructions for our products. Also obtain information online at [www.rehau.de/tiefbau](http://www.rehau.de/tiefbau)



# Only 1 call

## The largest sales network in the market

REHAU is always in your area with the most area sales managers and seven sales offices. Experienced employees are available to you nationwide for fast, competent and constant local support. Short distances to your guarantee that a quick solution is found.



### **Sales Office: Frankfurt (Main office)**

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Interested in AWADUKT PP? Please contact us for more information.

Subject to technical modification.

Please observe the relevant technical product information,  
which can be obtained online at [www.rehau.com/ti](http://www.rehau.com/ti).

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