



REHAU CONNECTION SYSTEMS

AWADOCK® FOR LEAK-PROOF SERVICE CONNECTIONS

CONTENTS

REHAU CONNECTION SYSTEMS INGENUOUSLY SIMPLE, SIMPLY INGENUOUS: AWADOCK FROM REHAU

	Page
AWADOCK - Drill - Screw – Leak-proof	205
AWADOCK connection options	206
 AWADOCK POLYMER CONNECT	
Connection to smooth-walled plastic pipes	208
Properties and product advantages	209
Your advantages at a glance	212
Drilling tools	213
Installation instructions	214
Text for invitations to tender	217
Product range and price list	218
 AWADOCK NEW GENERATION	
Connection to concrete, reinforced concrete, clay pipes, concrete chambers and flat walls	220
Properties and product advantages	223
Your advantages at a glance	226
Installation instructions	229
Text for invitations to tender	230
Product range and price list	231
 AWADOCK CP (corrugated pipes)	
Connection to composite sewer pipes	237
Properties and product advantages	238
Installation instructions	239
Text for invitations to tender	241
Product range and price list	242

AWADOCK

DRILL - SCREW – LEAK-PROOF

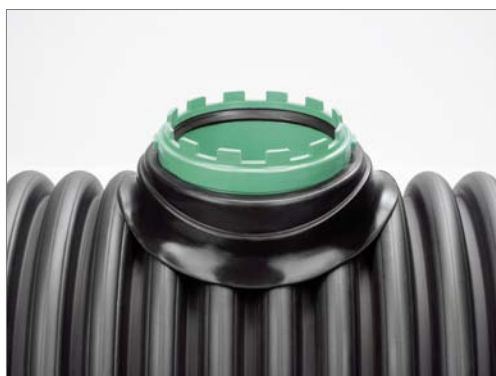
With its numerous variants the AWADOCK sewer pipe connection system offers an ideal and permanently leak-proof solution for the subsequent lateral connection of pipe connections and secondary pipes.



NEW: AWADOCK POLYMER CONNECT
Connection to smooth-walled plastic pipes



AWADOCK NEW GENERATION
Connection systems to concrete, reinforced concrete and clay pipes



AWADOCK CP
Connection to composite sewer pipes



AWADOCK T-Flex
Connection to thin-walled main pipes up to DN 500 (e.g. fibre cement)

Damaged side inlets Not unusual

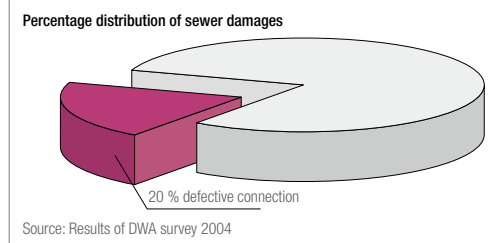
One fifth of all damage in sewer networks concerns lateral connections. This damage pattern therefore represents the largest proportion of sewer damage, according to the result of the 2004 DWA survey "Condition of the sewer system in Germany" (see diagram below). The network operators believe damaged connections to be the most frequent fault.

When a connection to the sewer pipe is not properly established, the following damage patterns occur:

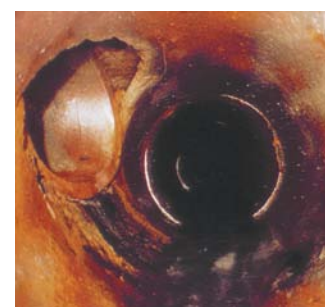
- Leaky connections due to missing or unsuitable fittings
- Inwardly protruding pipes
- Root penetration

Consequences of damaged side inlets:

- Contamination of ground water due to leakage of wastewater
- Additional burden on the sewage treatment plants due to the ingress of infiltration water
- Pipe blockages







One fifth of all damage in sewer networks is due to a defective side inlet









Defective side inlet

AWADOCK connection options

Connecting branches	Wall thickness of the main pipe in mm	Dimension of the main pipe	KG* connection			Clay connection	GRP/cast connection	KG* wall duct		KG* connection	
			AWADOCK DN/OD 160 with ball joint	AWADOCK DN/OD 160	AWADOCK DN/OD 200	AWADOCK clay DN/ID 150	AWADOCK GRP/cast DN/ID 150	AWADOCK MD DN/OD 160	AWADOCK MD DN/OD 200	Combination set DN/OD 250	
Borehole diameter			200 + 2 mm - 1 mm	200 + 2 mm - 1 mm	257 + 2 mm - 1 mm	200 + 2 mm - 1 mm	200 + 2 mm - 1 mm	200 ± 1 mm	250 ± 1 mm	276 ± 1 mm	
Drill bit diameter			200 mm	200 mm	257 mm	200 mm	200 mm	200 mm	250 mm	276 mm	
Connection main pipe											
Concrete / reinforced concrete pipes to DIN EN 1916	60-85		Type A 179950-500	Type A 176001-500	Type A 170501-500 (only suitable for connection above DN 400)	Type A 176051-500	Type A 176151-500				
	85-115		Type B 179960-500	Type B 176011-500	Type B 170511-500	Type B 176061-500	Type B 176161-500				
	115-160		Type C 179970-500	Type C 176021-500	Type C 170521-500	Type C 176071-500	Type C 176171-500				
	160-175		Type D 179980-500	Type D 176041-500	Type D 176009-500						
	180-195			Type E 176005-500	Type E 176014-500						
	200-215			Type F 176006-500	Type F 176015-500						
	220-235			Type G 176007-500	Type G 176016-500						
	240-250			Type H 176008-500	Type H 176017-500						
	≥ 60	≥ DN 500								176231-200	
	≥ 60	≥ DN 600									
	≥ 60	≥ DN 800									
Clay pipes to DIN EN 295-1	37-60	≥ DN 300	Type K 179990-500	Type K 176201-500	Type K 170541-500 (only suitable for connection above DN 400)	Type K 176211-500					
	60-85		Type A 179950-500	Type A 176001-500	Type A 170501-500	Type A 176051-500	Type A 176151-500				
Conc. chambers to DIN EN 1916											
Flat walls and rectangular concrete chambers	≥ 60							170991-500 171001-500 171021-500	171391-500		
AWASCHACHT PP DN 1000											
Pipes with a smooth exterior e.g. PP to DIN EN 1852; PVC to DIN EN 1401		DN 200									
		DN 250									
		DN 315									
		DN 400									
		DN 500									
		DN 630-700									
		DN 700-900									
Composite sewer pipes to DIN EN 13476-3		DN OD 315- DN ID 400									
		DN OD 500 - DN ID 800									
		DN OD 800 - DN OD 1200									
Matching tool	Installation wrench					176111-600					
	Drill bit/bell-shaped pipe cutter		176301-001		176321-001	176301-001			-	176047-100	

*KG = Basic sewer pipe; pipes with a smooth exterior, e.g. PP to EN 1852 or PVC to EN 1401

to concrete pipes		KG*/clay connection to concrete chamber			KG* connection to smooth-walled plastic pipes		KG* connection to AWASCHACHT		KG* connection to composite sewer pipes		
Combination set DN/OD 315	Combination set DN/OD 400	AWADOCK KG DN/OD 160	AWADOCK KG DN/OD 200	AWADOCK clay DN/ID 150	AWADOCK Polymer Connect DN/OD 160	AWADOCK Polymer Connect DN/OD 200	AWADOCK KG DN/OD 160	AWADOCK KG DN/OD 200	AWADOCK CP DN/OD 160	AWADOCK CP DN/OD 160	AWADOCK CP DN/OD 200
341 ± 1 mm	426 ± 1 mm	200 + 2 mm - 1 mm	257 + 2 mm - 1 mm	200 + 2 mm - 1 mm	162 ± 1 mm	200 ± 1 mm	200 ± 1 mm	250 ± 1 mm	178 + 3 mm - 1 mm	200 + 3 mm - 1 mm	250 + 3 mm - 1 mm
341 mm	426 mm	200 mm	257 mm	200 mm	162 mm	200 mm	200 mm	250 mm	178 mm	200 mm	250 mm
											
176241-200											
	176251-200										
		170551-500	170561-200	170571-500							
							190365-200 191175-200	191345-200 191355-200			
					171551-200						
					171561-250	172121-250					
					171571-315	172131-315					
					171581-400	172141-400					
					171591-500	172151-500					
					171601-630	172161-630					
					172011-800	172171-800					
					172021-999	172181-999					
									Type A 191780-160		
										Type B 191790-160	
											Type C 191800-200
		176111-600			190497-001		176111-600				
176048-100	176049-100	176301-001	176321-001	176301-001	190477-001	190028-100	190028-100	190457-001	353390-178	190028-100	190457-001

AWADOCK POLYMER CONNECT

CONNECTION TO SMOOTH-WALLED PLASTIC PIPES

The application:
Save time and costs when establishing side inlets.



Branches are predominantly used for subsequent connections to smooth-walled plastic pipes. Previously the main pipe had to be completely uncovered for the connection and cut through in two places in order to be able to fit a branch. Two sleeve couplers were additionally required. The connection is therefore very costly and time-consuming.

REHAU assumed this task and expanded its AWADOCK family which has been tried and tested 500,000 times to include a new tapping branch: AWADOCK POLYMER CONNECT for the connection to smooth-walled plastic pipes made from PVC, PP and GRP. With the new REHAU system the connection can be carried out professionally and cost-effectively.

PROPERTIES AND PRODUCT ADVANTAGES

SIMPLE. VARIABLE. RELIABLE.

With the AWADOCK POLYMER CONNECT plastic pipes DN 160 and DN 200 can be connected to smooth-walled PVC, PP and GRP plastic pipes in dimensions DN 200 to DN 1400.

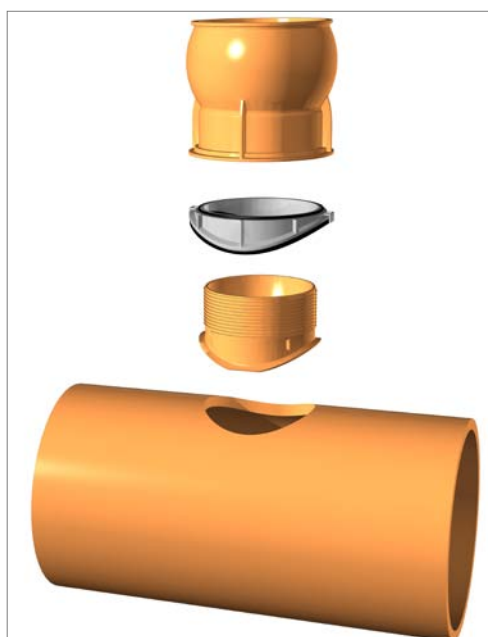
Simple:

The connection at a 90° angle to the pipe axis can be used subsequently or at the time of a new installation. The effort is considerably reduced for creating a lateral pipe connection as the existing main sewer does not have to be uncovered completely, nor cut through.



Variable:

The connecting saddle is fitted with an integrated ball joint. Settlement movement such as shear loads and bending can be compensated for in this way. It therefore fulfils the requirements for a flexible connection of the ATV-DVWK-A 139.



Reliable:

The external diameter of PVC and PP plastic pipes is standard. AWADOCK POLYMER CONNECT therefore seals from the outside - even in the case of slight pipe deformation. In the case of failure an additional „airbag seal“ seals possible leaks.

PROPERTIES AND PRODUCT ADVANTAGES

FLEXIBLE. UNCOMPROMISINGLY SAFE.

It must be possible to easily integrate a subsequent connection into an existing sewer network, and it must not weaken the whole system.

The AWADOCK POLYMER CONNECT fulfils these requirements perfectly. In addition to the easy assembly, the connecting branches score points with excellent properties.

Flexible:

A ball joint is integrated into the screw-in crown. This makes it possible to bend the secondary pipe horizontally or vertically continuously by up to $\pm 7.5^\circ$, (DN 200: $\pm 4^\circ$). The assembly of the new AWADOCK POLYMER CONNECT is therefore made considerably more easy particularly in narrow pipe trenches. Shear loads, e.g. due to settlement, are reduced to a minimum.

The connection is permanently load-free.

Uncompromisingly safe:

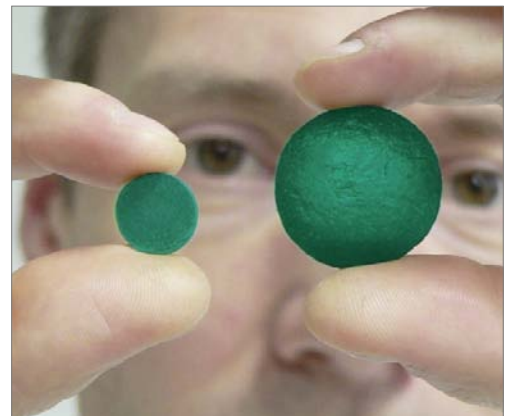
The air bag seal in case of failure

A green "airbag seal" made from Q-TE-C is integrated into the connecting seal.

Q-TE-C is a swellable thermoplastic elastomer, which was developed by the Fraunhofer Institute UMSICHT specially for the application of the AWADOCK connection system. When this secondary seal comes into contact with water it starts to swell and reliably seals leaks within 48 to 72 hours. This safety characteristic is similar to an airbag in a car and is only deployed in an emergency. The primary leak-tightness is ensured by the main seal.



Connection can be bent continuously by $\pm 7.5^\circ$ horizontally and vertically



Unswollen (left) and swollen Q-TE-C probe



Connecting seal Q-TE-C



Fraunhofer
UMSICHT

PROPERTIES AND PRODUCT ADVANTAGES

ECONOMICAL.

Economical:

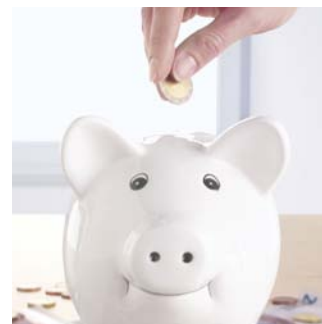
The ingenious functionality of the AWADOCK POLYMER CONNECT in conjunction with the simple assembly results in an extremely economical connection system. Starting with the material costs, through to the reduced assembly effort. The diagram below compares the material costs for a connection created subsequently

- On the one hand with AWADOCK POLYMER CONNECT
- On the other hand with a single branch

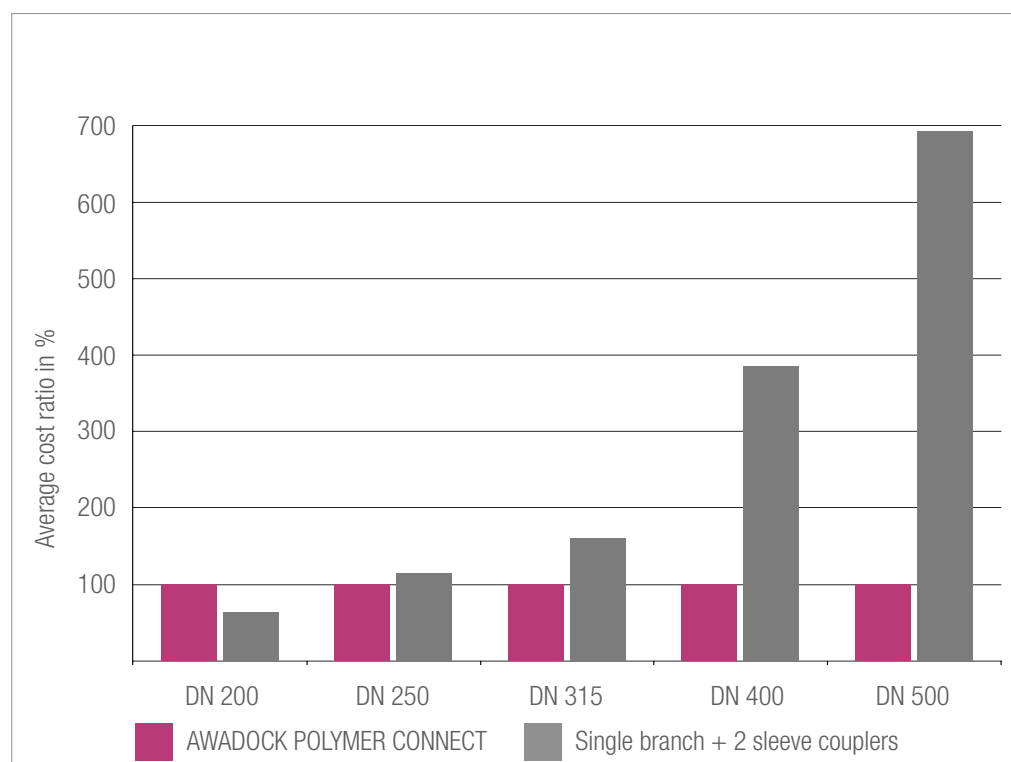
Already from the dimension DN 250 the AWADOCK connection is more cost-effective in comparison to a 90° single branch with sleeve couplers.

The time-consuming uncovering and separation of the main pipe is not required for the assembly of the new connection, which is standard for the traditional methods of creating pipe connections. The pipe bedding remains intact. Assembly costs are reduced.

The properties of the new AWADOCK POLYMER CONNECT make the connection system the first choice for the connection to smooth-walled plastic pipes.



Material costs for a subsequent connection of AWADOCK POLYMER CONNECT compared to a single branch:



AWADOCK POLYMER CONNECT DN160:
Already economical without taking the assembly advantage into account.

YOUR ADVANTAGES AT A GLANCE

11 REASONS TO CHOOSE AWADOCK POLYMER CONNECT



Leak-tight and safe

1 Leak-tight:

Large-volume seal seals from the outside, even in the case of slight pipe deformation. The correct positioning of the seal can be checked immediately following assembly.

2 Safe:

„Airbag“ seal with Q-TE-C for sealing leaks in case of failure.

3 Resistant:

Thanks to the polypropylene the connection is particularly impact resistant and resistant to aggressive waste water.

4 Approved:

Approved by the building authorities to DIBT Z-42.1-455.



Economical

5 Economical:

Cheaper than the conventional construction methods with branches and sleeve couplers.

6 Time and cost-saving:

The channel can normally remain operational during installation.
Drill – Screw – Leak-tight.

7 Space-saving:

Only uncover connection point.

8 Durable:

Due to 100 % filler-free polypropylene.



Functional

9 Flexible:

Connecting pipe can be adjusted by $\pm 7.5^\circ$ horizontally or vertically due to an integrated ball joint (DN 200: $\pm 4^\circ$). The requirements for flexibility according to ATV-DVWK-A 139 are fulfilled.

10 Identifiable:

The internal marking makes it possible to identify the connection during inspection with a camera.

11 Universal:

For retrospective connections or new installations.

DRILLING TOOLS

USEFUL TOOLS FOR EFFORTLESS DRILLING INTO PLASTIC SEWER PIPES



AWADOCK hole saw

- Drilling into plastic sewer pipes (PVC, PP, PE) in a matter of seconds
- Smooth and neat borehole – with virtually no burr
- High service lives (duration of use)
- The drill core is fixed to the centre drill and can easily be removed without falling into the main pipe
- Borehole diameter: DN 160: 162 mm
 DN 200: 200 mm



REHAU diamond drill bit for GRP pipes

- Complete with retainer and quick centring bit
- Working length 150 mm
- Packed in a tool case

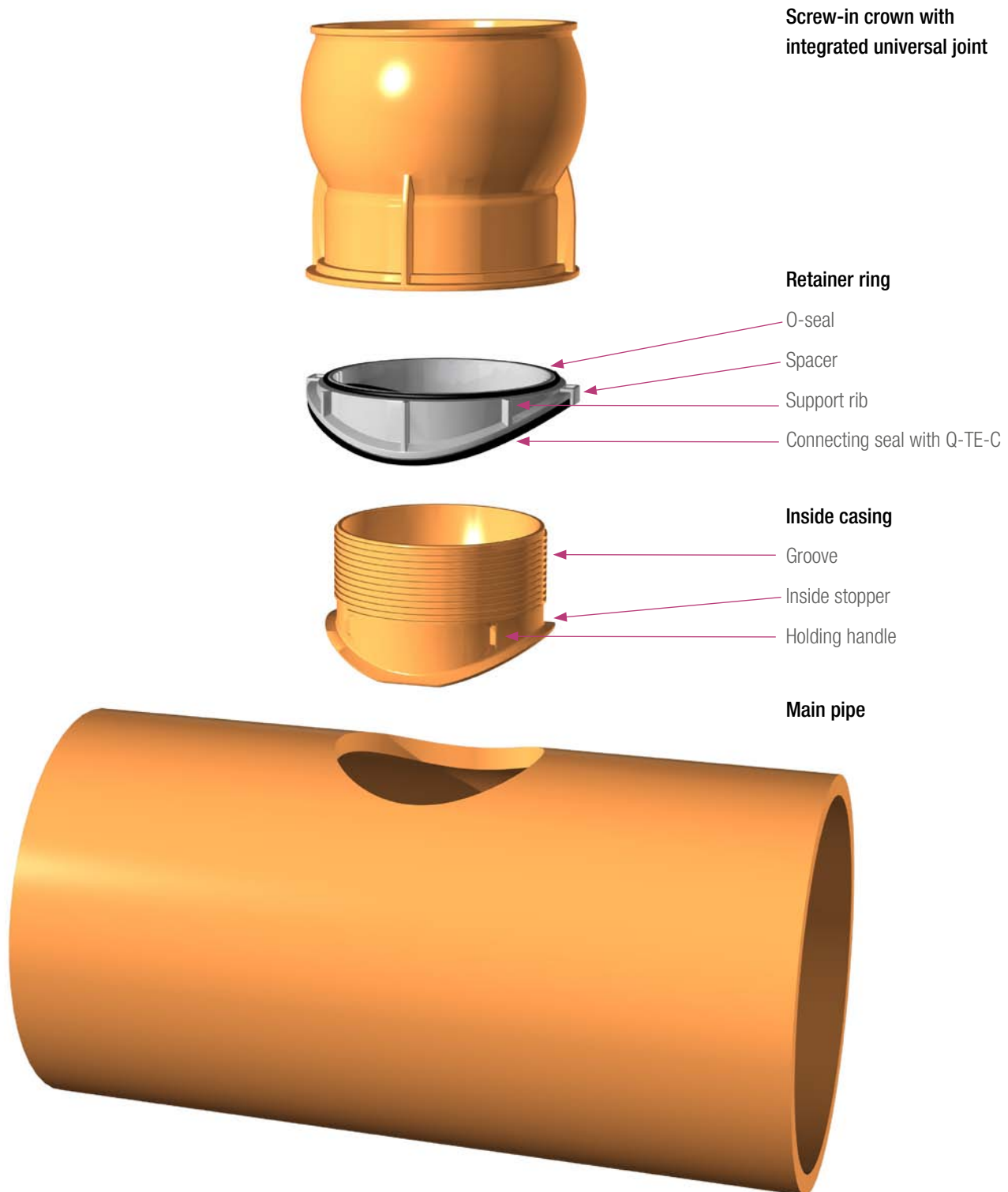


AWADOCK drilling stand for right-angled and central drilling

- Convenient and controlled drilling
- No fastening to the pipe required, so short set-up times
- Precise boreholes vertical to the pipe axis – without tilting – guarantees absolute leak-tightness of the connecting saddle.

INSTALLATION INSTRUCTIONS

AWADOCK POLYMER CONNECT





Installation instructions:

- Check the AWADOCK POLYMER CONNECT set for completeness
- Test the main pipe for sewage backup before installation
- During installation, pay attention to cleanliness
- For an optimum drilling process without loss of power wind up the cable drum completely if necessary
- Keep the retainer ring dry until the final connection
- An installation wrench set is necessary for the correct fixing. Please find in the AWADOCK accessories programme Art.No. 190497-001
- Information about diameters and pipe wall thicknesses are to be tested and compared with the main pipe

Dimension of the main pipe	Wall thickness		AWADOCK POLYMER CONNECT		Material of connecting and main pipe
	Minimum	Maximum	DN 160	DN 200	
DN 200	4.9	10.2	171551-200	-	PVC to EN 1401 PP to EN 1852 PP-MD to EN 14758 GRP to DIN 19869 and DIN 19565
DN 250	6.2	12.7	171561-250	172121-250	
DN 315	7.7	15.6	171571-315	172131-315	
DN 400	9.8	19.5	171581-400	172141-400	
DN 500	12.2	24.1	171591-500	172151-500	
DN 630-700	15.0	33.0	171601-630	172161-630	
DN 700-900	15.0	33.0	172011-800	172171-800	
DN 900-1400	15.0	33.0	172021-999	172181-999	
Bore diameter			162 mm ± 1 mm	200 mm ± 1 mm	



Proceed as follows:

- 1 Mark the connecting position with a suitable pen (between 90° und 270°) see sketch.
- 2 Drill the marked place with an 8 mm drill.
- 3 Insert centred drill into the pre-drilled borehole. Bore with keyhole saw at a 90° angle to the pipe axis, bore diameters, see table.



- 4 Deburr the drilled section on the inside and outside with a suitable tool.
- 5 Hold the inside casing as shown above. We recommend that gloves are worn.
- 6 Attach the inside casing to the borehole.
- 7 Strongly push the inside casing into the borehole.



- 8 Rotate the inside casing until the groove is parallel to the pipe axis. Now raise the inside casing.

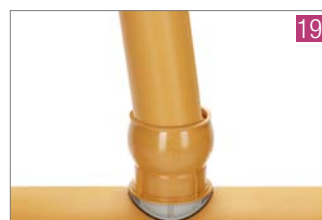


Ensure that the seals and sealing surfaces are completely clean!

- 9 Attach the retainer ring with connecting seal and the O-seal to the inside casing.
- 10 Apply lubricant to the sealing surface of the crown.
- 11 Manually screw the screw-in crown head first onto the inside casing. Fix the retainer ring with the other hand.



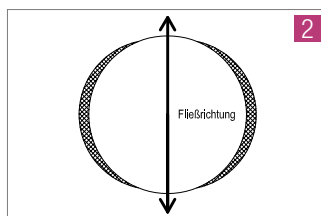
- 12** Hold both installation wrenches as in picture above.
13 Ensure that the first installation wrench grips on the support rib of the retainer ring. This is used for fixing and will not be rotated.
14 With the second installation wrench, tighten the screw-in crown.
15 The spacer on the retainer ring is used as a "torque limiter".



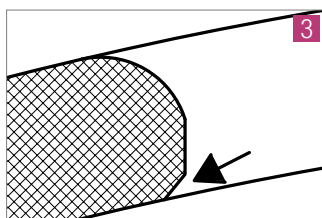
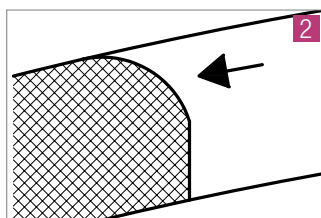
- 16** Check that the inside stopper is evenly on the pipe.
17 Check that the seal is installed correctly.
18 Apply lubricant to the connecting pipe and push into the screw-in crown up to the stopper.
19 If necessary the connecting pipe can be adjusted about $\pm 7.5^\circ$ horizontally or vertically (DN 200: $\pm 4^\circ$).

Also note the following installation instructions when installing GRP pipes

- 1** Drill with diamond drill bit (Art. No. 190 547) at right angles (between 90° and 270°) to the pipe axis, for bore diameters, see table.



- 2** Chamfer the outer edge of the bore on the hatched areas with a suitable tool (e.g. iron file, buffing rasp, sanding disc, etc.)..



- 3** For GRP pipes smaller than DN 500 the inner edge of the hole must also be chamfered.
4 Apply lubricant to the chamfered edge, to allow easier insertion of the inner sleeve. After the insertion of the inner sleeve, the excess lubricant must be wiped away from the surface.

To complete the installation, please follow points 5 - 19 in the installation instructions.

TEXT FOR INVITATIONS TO TENDER

THE TEXTS FOR INVITATIONS TO TENDER ARE AVAILABLE FROM THE REHAU SALES OFFICES OR AS A DOWNLOAD FROM THE INTERNET AT WWW.REHAU.DE/TIEFBAU

Saddle piece with ball joint

KG DN/OD 160/90° – KG DN/OD 315

The saddle piece for the lateral connection of smooth-walled PP, PVC and GRP sewer pipes DN/OD 160 to smooth-walled main pipes made from polypropylene and PVC. Complete saddle piece made from polypropylene with integrated ball joint, pipe line can be bent continuously in the ball joint on all sides between 0 and 7.5° (total 15°). Connecting seals which lie outside of the main pipe made from EPDM with an additional swelling seal made from thermoplastic elastomer. Saddle piece with permanent marking (material/diameter) which can be read from the main pipe.

Main pipe diameter: DN/OD 315. Main pipe wall thickness: 7.7 mm to 15.6 mm. In the unit price the professional connection using a hole saw (borehole: 162 mm +/- 1 mm) is to be added to the main channel.

An assembly/borehole report is to be raised. Saddle piece with ball joint, e.g. REHAU AWADOCK POLYMER CONNECT with ball joint or similar type.

Quoted product/type:

To be completed by bidder

1.00 Pc

PRODUCT RANGE AND PRICE LIST

AWADOCK KG-KG DN 160

Connection of PVC and PP sewer pipes DN/OD 160 to smooth-walled plastic pipes

Can be bent continuously horizontally and vertically by $\pm 7.5^\circ$

Material: PP/EPDM/Q-TE-C

Colour: Orange/Grey/Black



Art. no.	Main pipe/connecting pipe DN/OD	Boxes/Pallet	€/Pc
171551-200	200/160	48	99.00
171561-250	250/160	48	99.00
171571-315	315/160	48	99.00
171581-400	400/160	48	99.00
171591-500	500/160	48	99.00
171601-630	630/160-700/160	48	99.00
172011-800	700/160-900/160	48	99.00
172021-999	900/160-1400/160	48	99.00

AWADOCK KG-KG DN 200

Connection of PVC, PP and GRP sewer pipes DN/OD 200 to smooth-walled plastic pipes

Can be bent continuously horizontally and vertically by $\pm 4^\circ$

Material: PP/EPDM/Q-TE-C

Colour: Orange/Grey/Black



Art. no.	Main pipe/connecting pipe DN/OD	Boxes/Pallet	€/Pc
172121-250	250/200	36	119.00
172131-315	315/200	36	119.00
172141-400	400/200	36	119.00
172151-500	500/200	36	119.00
172161-630	630/200-700/200	36	119.00
172171-800	700/200-900/200	36	119.00
172181-999	900/200-1400/200	36	119.00

Installation wrench set

Specially developed for the assembly of AWADOCK POLYMER CONNECT

Material: Stainless steel

Colour: Silver



Art. no.	Description	Pack.unit	€/Pc
190497-001	Installation wrench set AWADOCK PC (2-piece)	individually	49.00

AWADOCK hole saw

For the pilot drilling of plastic pipes
incl. hole saw retainer, chuck, centre drill with ejector
packaged in a tool case
Material: Steel
Colour: Black



Hole saw



SDS adapter

Art. no.	Description	Ø in mm	Pack.unit	€/Pc
190477-001	Hole saw	162	individually	517.00
190028-100	Hole saw	200	individually	549.00
190577-001	SDS adapter		individually	89.00

AWADOCK Diamond drill bit

For the pilot drilling of GRP pipes
Complete with retainer and quick centring bit, working length 150 mm;
Packed in a tool case



Art. no.	Var.	Description	Ø in mm	Pack.unit	€/Pc
190547-001	001	Diamond drill bit	162	individually	629.00

AWADOCK drilling stand

Guarantees right-angled and central drilling
Material: Aluminium



Reducing bushes for BST 3

Art. no.	Description	Retainer diameter Machine retainer [mm]	Pack.unit	€/Pc
190487-001	BST 1	43	individually	771.00
190557-001	BST 3	60	individually	771.00

190567-001	Reducing bush set for BST 3; for the compatibility of drilling machines with retainers 48 mm and 53 mm, Set consisting of 2 bushes 60/53 and 60/48		individually	98.00
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AWADOCK NEW GENERATION

CONNECTION TO CONCRETE, REINFORCED CONCRETE, CLAY
PIPES, CONCRETE CHAMBERS AND FLAT WALLS



AWADOCK NEW GENERATION

AWADOCK NEW GENERATION

is a connection system for the lateral connection of sewer pipes DN 150/160 and DN 200 made from

- PVC
- PP
- Clay
- GRP and cast iron

to

- Concrete pipes
- Reinforced concrete pipes
- Clay pipes
- Concrete chambers and
- Flat walls

The AWADOCK principle:

Drill – Screw – Leak-tight:

The large-volume connecting seal is used in the pre-drilled main pipe. The conical screw-in crown with male thread is screwed into the seal. The sealing effect is achieved due to the high compression which occurs between the seal and the screw-in crown.

As a result of this, shear loads and bends, which arise due to the different settlement behaviour of the main and connecting pipes, are particularly well absorbed.

PROPERTIES AND PRODUCT ADVANTAGES

THE REVOLUTION IN SEWER CONNECTION

The airbag revolutionised the safety technology in the automotive sector. The “AWADOCK NEW GENERATION” connection system combines ingenious functionality with unique safety technology.

This safety principle functions in a similar way to the air bag, which reduces the risk of head and chest injuries during a road accident. However, the airbag is no replacement for a seatbelt, but only an addition. The statistics show that the seatbelt is still the main lifesaver in road accidents. Airbags significantly increase passenger safety.

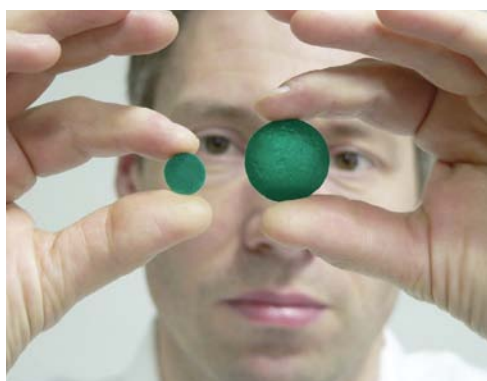
The reliable and tried and tested AWADOCK connecting seal is figuratively speaking similar to the seatbelt. The task of the airbag in the system is carried out by an additional second seal. If a leak occurs between the borehole and seal, the green „airbag seal” absorbs the water, increases its volume and can seal the leak. Permanent leak-tightness is therefore restored.

The Fraunhofer Institute developed Q-TE-C®

The green “airbag seal” is called Q-TE-C and is a swellable thermoplastic elastomer composite. This seal was developed by the Fraunhofer UMSICHT specially for the application of the AWDOCK connection system, which starts to swell on contact with water and seals leaks.



AWADOCK NEW GENERATION

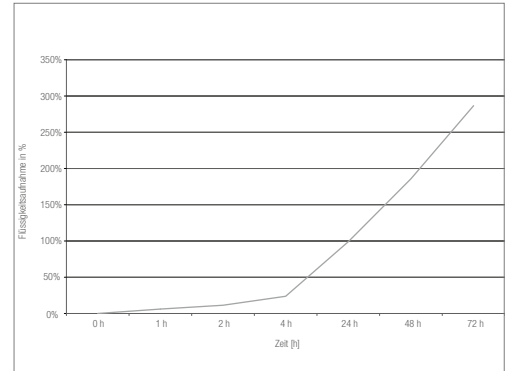


Unswollen (left) and swollen Q-TE-C sample.

 **Fraunhofer**
UMSICHT

Characteristics and benefits of the Q-TE-C material

- Reliable swelling property
- High cyclic capability, i.e. even with frequent changes between dry and wet (e.g. in the case of a changing groundwater level) the capability to absorb and save water is retained permanently
- Dimensionally stable, even in the swollen condition
- High water retention ability under pressure loads
- Sealing takes place directly at the leak
- Swell pressure defined specially for the product application



Fluid absorption of Q-TE-C depending on the swelling duration

Construction AWADOCK NEW GENERATION

The sealing effect of the previous AWADOCK design is retained without exception.

This means that, as before, a large borehole tolerance of a total of 3 mm (200 - 1/+2 mm) is approved.

In spite of this capability of being able to compensate for such large tolerances, defects such as e.g. voids in the borehole reveal or an angled borehole cannot always be ruled out.

An additional safety characteristic has therefore now been incorporated with the Q-TE-C seal, which can ensure retrospective sealing in the event of an emergency.

Here the swellable seal is inserted into a groove of the connecting seal. Activated by water, the seal swells and presses against the hole reveal. Two more sealing lips above and below the sealing groove encapsulate the Q-TE-C seal and therefore ensure additional sealing.

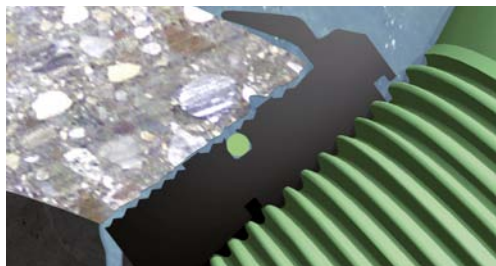


PROPERTIES AND PRODUCT ADVANTAGES

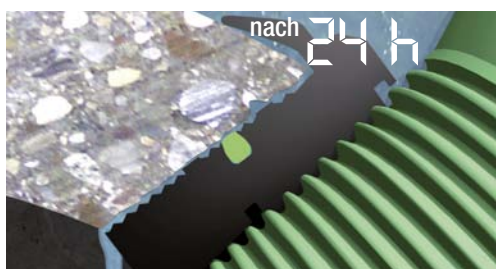
LEAKS ARE SEALED INDEPENDENTLY

Function AWADOCK NEW GENERATION

In an unfavourable assembly situation the hole reveal has large defect areas, e.g. voids, grooves or it is drilled slightly at an angle to the pipe axis.



The connection leaks. Groundwater ingresses into the main sewer.



Between 10 and 24 hours later the Q-TE-C seal starts to swell noticeably. The sealing starts.



48 to 72 hours later the permanent sealing of the leak takes place. The Q-TE-C seal is therefore encapsulated in the connecting seal in such a way that the water remains stored there. Drying out is minimised.

Frequently asked questions

How many swell cycles can be achieved with Q-TE-C?

The Fraunhofer UMSICHT is running long-term investigations into the cycle capability. We can already say that even after several dozen cycles the water absorption still functions reliably.

Is such a high cycle capability really required in the sewer pipe?

The number of cycles should describe the performance of the material. It only remains in the sewer pipe for a few cycles. On one hand the Q-TE-C seal is encapsulated in the connecting seal in such a way that the water remains retained in the seal. On the other hand, complete drying out would only occur in a warm, dry stream of air. The relative air humidity in the sewer pipe of over 90% is sufficient to prevent drying out.

Why doesn't swelling start immediately on contact with water?

In order to be able to continue to guarantee easy assembly in line with practice on the building site, REHAU has developed the seal in such a way that noticeable swelling only starts between 10 and 24 hours later. This means that the seal will not swell inadvertently prior to assembly, e.g. in the case of accidental storage in damp conditions on the building site.

PROPERTIES AND PRODUCT ADVANTAGES

AWADOCK NEW GENERATION AT THE IKT TEST FACILITY



AWADOCK DN 160 achieves "VERY GOOD" in the IKT product test

Were weaknesses previously discovered in AWADOCK?

No. Quite the opposite: The AWADOCK screw principle with the conical construction has been tried and tested x 100,000.



AWADOCK is one of the most purchased service connection systems and was awarded "VERY GOOD" in the IKT product test „Service connecting branches - 2002“. AWADOCK with Q-TE-C provides even more safety during assembly and operation – with safety for generations.

AWADOCK NEW GENERATION at the IKT test facility

Based on the inspections of the service connecting branches product test, REHAU commissioned new practical tests, some under more stringent testing conditions, at the Institute for Underground Infrastructure (IKT).

The following tests were carried out:

1. Leak-tightness with standard drilling within the borehole tolerances 200 + 2/-1 mm
2. Leak-tightness with drilling outside of the tolerance range - drilling 204 mm – e.g. caused by non-circular drill bits
3. Leak-tightness following angled drilling (5° deviation) - possible defect source particularly for small main pipes

The results speak for themselves:

The AWADOCK connection system guarantees leak-tightness and functional capability, even under these difficult basic conditions. In tests 2 and 3 AWADOCK with Q-TE-C sealed the leaks after max. 48 hours.

As these test parameters exceed the market standard manufacturing specifications, the IKT has given the AWADOCK NEW GENERATION the "IKT tested" seal of approval.



PROPERTIES AND PRODUCT ADVANTAGES

AWADOCK WITH BALL JOINT, AWADOCK FOR THICK-WALLED AND MULTI-LAYERED REINFORCED CONCRETE PIPES



AWADOCK NEW GENERATION with ball joint

AWADOCK with a ball – for even more flexibility

The AWADOCK connection system for the connection of PP or PVC pipes DN 160 to concrete, reinforced concrete and clay pipes has been expanded to include a new design.

A ball joint integrated into the screw-in crown makes it possible to bend the connected secondary pipe horizontally or vertically continuously by up to $\pm 7.5^\circ$.

This flexibility makes assembly easier, particularly in narrow pipe trenches.

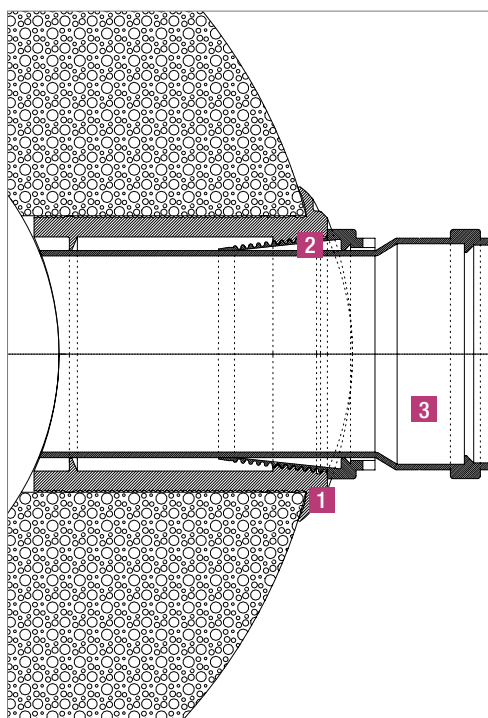


Connection can be bent continuously by $\pm 7.5^\circ$ horizontally or vertically

AWADOCK for thick-walled and multi-layered reinforced concrete pipes

The set comprises:

- 1** A connecting seal, matched to the wall thickness of the pipe, with sealing lip on the inside
- 2** A screw-in crown – configured as a pipe duct
- 3** A concave chamfered AWADUKT PP SN4 connecting pipe, which compresses the sealing lip of the seal
- 4** Lubricant and installation instructions



4

YOUR ADVANTAGES AT A GLANCE

12 REASONS TO CHOOSE AWADOCK NEW GENERATION

1 Permanently leak-tight

The conical screw-in crown is screwed into the connecting seal. The full surface of the seal compresses the borehole, even the leak-tightness requirements of DIN EN 1610 are exceeded: The leak-tightness is proven in a trial up to 1 bar.



2 Assembly – screwed in easily and quickly:

- Bore pilot hole with core drill and deburr borehole
- Insert connecting seal
- Apply lubricant
- Screw in conical screw-in crown securely with installation wrench
- Connect pipe - done!



3 “Very good” rating in the IKT Product Test (2002)!



4 Flexible

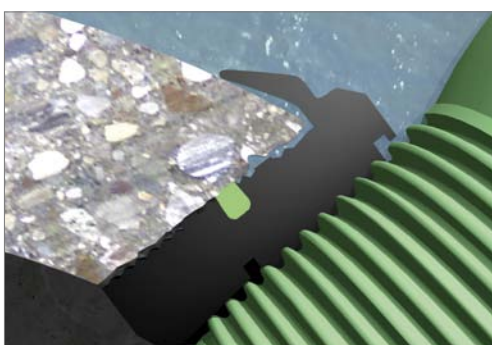
New AWADOCK screw-in crown with ball joint facilitates bends of $\pm 7.5^\circ$ and makes assembly easier in narrow pipe trenches.



5 Large borehole tolerance – more safety during assembly

The green „Airbag seal“ (Q-TE-C) can permanently seal leaks between the borehole and connecting seal, e.g. due to incorrect drilling.

Thanks to wide, solid connecting seals, bridging of borehole tolerances from + 2 mm to - 1 mm is possible.



6 Safety for generations

All connecting branches of the AWADOCK product range are fitted with the new Q-TE-C seal.

7 Corrosion protection

Connecting seals of different lengths reliably protect the cut lengths of reinforcing steel in reinforced concrete pipes against corrosion. Seal and pipe socket lengths are adjusted to the wall thicknesses of the main sewer (type A/B/C/D, etc.).



8 Impervious to shear loads and bending

Shear loads and bending occur as a result of the differing settlement behaviour of the main and connecting pipes. Compacting below the pipe connecting branches also poses a problem.

For this reason as well, the ATV-DVWK-139, Point 9 calls for flexibility of the connections.

They should be able to absorb movements.

Possible settlement and the resulting loads in the area of the connection should be taken into account.

These specifications are fulfilled by the AWADOCK connection system thanks to the compression of the large-volume connecting seal. Both loads were rated as “VERY GOOD” in the IKT product test.



9 Internal identification provides information

The front surface of the connecting seal contains the following important information:

- Make
- Product name
- AWADOCK type (A, B, C, etc.)
- Production year and month

As a result of this, during the final sewer inspection, it is possible to check whether the right product has been installed. However, in 50 or 80 years time, the product will still be identifiable



10 No inwardly protruding pipes

A stop in the screw-in crown prevents the connecting pipe from protruding into the main sewer.



11 Awarded general technical approval under Z-42.1-348

**Deutsches
Institut
für
Bautechnik**



12 Flexible and economical:

Time and money for creating side inlets can be saved with AWADOCK.

Due to the integrated ball joint in AWADOCK DN 160 and AWADOCK POLYMER CONNECT you will also save an additional fitting.

With just one TYPE A connecting socket you can cover more than 80 % of installation cases.

(Main pipe with 60-85 mm wall thickness)

This saves you time and money on the building site.

INSTALLATION INSTRUCTIONS

AWADOCK NEW GENERATION



Assembly instructions:

- AWADOCK with Q-TE-C is to be stored protected against moisture and in dry conditions
- Protect against moisture until shortly before assembly in order to avoid inadvertent swelling prior to assembly
- Check that your AWADOCK set is complete (connecting seal, screw-in crown with lip seal, lubricant)
- The minimum distance between two connections to a concrete or reinforced concrete pipe should be 1 m
- A second borehole immediately adjacent is to be avoided
- In spite of their dimension, concrete pipes can be produced with different wall thicknesses
- In case of doubt, the wall thickness of the main pipe is decisive for selecting the right AWADOCK type
- Information about nominal bores, connection type and internal diameter is to be checked and compared with the main pipe
- Investigate the main line prior to installation for the backing up of waste water
- Ensure cleanliness during the installation



	AWADOCK for pipes and concrete chambers	AWADOCK for flat walls
DN 160	200 ⁺² ₋₁ mm	200 ⁺² ₋₁ mm
DN 200	257 ⁺² ₋₁ mm	250 ⁺² ₋₁ mm

1 The drilling equipment is to be fixed using suitable means at between 90° and 270° (e.g. using pegs, suction cups, tension belts, drilling stand).

2 With a diamond drill bit create a borehole at right angles and centrally to the pipe axis. See table for borehole diameters.



3 Remove the drill core if necessary. Clean the hole reveal.

4 The hole reveal is to be examined to determine any defective areas and, if necessary, rectified.

5 The AWADOCK connecting seal is to be inserted into the borehole. It is to be ensured that the sealing lip of the connecting seal lies flush to the outer wall of the main line. The arrows indicate the longitudinal direction of the pipe.

6 Coat the female thread of the AWADOCK connecting seal across the whole surface with the lubricant provided. Distribute the remaining content over the thread of the screw-in crown.



7 Place the installation wrench on the screw-in crown.

8 Screw the conical screw-in crown into the connecting seal smoothly up to the last thread using the installation wrench



Ensure that the screw-in crown is screwed in centrally.

9 Check that you have installed the correct branches. The seal and the branches must not protrude into the main sewer.

10 Coat the chamfered connecting pipe with lubricant and push it up to the stop in the screw-in crown.



10a For AWADOCK with ball joint: Depending on the assembly situation, the connecting pipe can be bent continuously up to $\pm 7.5^\circ$ horizontally or vertically.

The invitation to tender texts can be obtained from a REHAU sales office or as a download from the internet under www.rehau.de/tiefbau.

Sewer connection systems

Saddle piece DN/OD 160/90° with ball joint, KG-concrete, reinforced concrete, clay

Saddle piece DN/OD 160/90° with conical screw-in crown made from polypropylene with integrated ball joint, pipe line can be bent continuously in the ball joint on all sides between 0 and 7.5° (total 15°).

Connecting seal made from SBR with female thread and additional swelling seal made from thermoplastic elastomer, with general technical approval Z-42.1-348

Saddle piece for the lateral connection of smooth-walled sewer pipes DN/OD 160 to concrete or reinforced concrete to DIN 4032/4035 or DIN EN 1916 or clay pipes to EN 295 DN ____;

Wall thickness approx.: ____ mm

In the unit price the professional connection using a core drill (bore-hole: 200 mm +2/1 mm) is to be added to the main sewer.

Saddle piece with ball joint, e.g. REHAU AWADOCK NEW GENERATION with ball joint or similar type.

Quoted product/type:

To be completed by bidder

1.00 Pc

Saddle piece DN/OD 200/90°, KG-concrete, reinforced concrete, clay

Saddle piece DN/OD 200/90° with conical screw-in crown made from polypropylene. Connecting seal made from SBR with female thread and additional swelling seal made from thermoplastic elastomer, with general technical approval Z-42.1-348

Saddle piece for the lateral connection of smooth-walled sewer pipes DN/OD 200 to concrete or reinforced concrete to DIN 4032/4035 or DIN EN 1916 or clay pipes to EN 295 DN ____;

Wall thickness approx.: ____ mm

In the unit price the professional connection using a core drill (bore-hole: 257 mm +2/1 mm) is to be added to the main sewer.

Saddle piece, e.g. REHAU AWADOCK NEW GENERATION or similar type.

Quoted product/type:

To be completed by bidder

1.00 Pc

PRODUCT RANGE AND PRICE LIST

Connection of sewer pipes DN 160 made from PVC and PP to concrete or reinforced concrete pipes

Material: Elastomer/Q-TE-C/PP

Colour: Black/Green



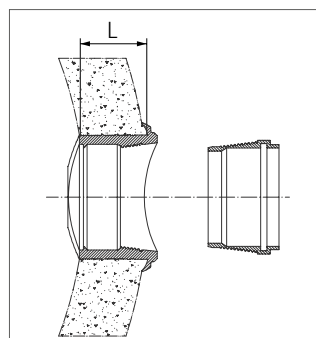
AWADOCK KG-concrete with ball joint

Art. no.	DN/OD	Type ¹⁾	L [mm]	Units/Pallets	€/Pc*
179950-500	160	A	60	45	69.00
179960-500	160	B	80	45	79.00
179970-500	160	C	110	45	89.00
179980-500	160	D	155	30	139.00

Connection of sewer pipes DN 160/200 made from PVC and PP to concrete or reinforced concrete pipes

Material: Elastomer/Q-TE-C/PP

Colour: Black/Green



AWADOCK KG-concrete

Art. no.	DN/OD	Type ¹⁾	L [mm]	Units/Pallets	€/Pc*
176001-500	160	A	60	75	59.50
176011-500	160	B	80	75	76.00
176021-500	160	C	110	60	89.00
176041-500	160	D	155	45	145.00
170501-500	200	A	60	55	119.00
170511-500	200	B	80	45	134.00
170521-500	200	C	110	45	147.00

Connection DN 200 of other pipe materials using a connecting reducer possible.

Connection of sewer pipes made from clay, ductile cast iron and GRP to concrete or reinforced concrete pipes

Material: Elastomer/Q-TE-C/PP

Colour: Black/Green



AWADOCK clay-concrete DN 150

Art. no.	DN	Type ¹⁾	L [mm]	Units/Pallets	€/Pc*
176051-500	150	A	60	45	61.00
176061-500	150	B	80	45	76.00
176071-500	150	C	110	45	89.00

External diameter clay connecting pipe: 186 mm

AWADOCK GFK/Guss-Beton DN 150

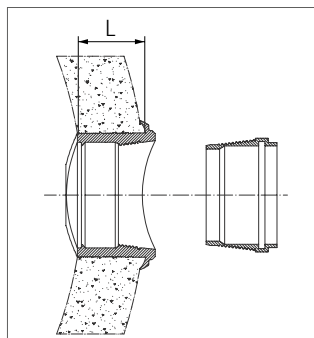
Art. no.	DN	Type ¹⁾	L [mm]	Units/Pallets	€/Pc*
176151-500	150	A	60	individually	72.00
176161-500	150	B	80	individually	86.00
176171-500	150	C	110	individually	96.00

External diameter GRP/cast iron connecting pipe: 168-170 mm

Connection of sewer pipes made from PVC, PP and clay to clay pipes

Material: Elastomer/Q-TE-C/PP

Colour: Black/Green



Anschluss KG an Steinzeug

Art. no.	Description/Type	DN	Type	L [mm]	Pc/Pallet	€/Pc*
176201-500	AWADOCK KG-clay DN 160	160	K	37	90	61.00
179990-500	AWADOCK KG-clay DN 160 with ball joint	160	K	37	60	79.00
170541-500	AWADOCK KG-clay DN 200	200	K	40	35	124.00
176211-500	AWADOCK Stz-clay DN 150	150	K	37	75	66.00

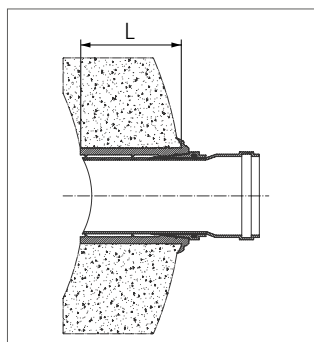
¹⁾ Which AWADOCK type you need for which main pipe dimensions can be found on page 152.

* The prices apply for the entire AWADOCK assembly set (connecting seal, screw-in crown, lubricant and installation instructions)

Connection of sewer pipes DN 160/200 made from PVC and PP to thick-walled and multi-layered reinforced concrete pipes to DIN 1916
consisting of a connecting seal, matched to the wall thickness, a screw-in crown designed as a pipe duct, and a concave chamfered AWADUKT PP SN4 connecting pipe

Material: Elastomer/Q-TE-C/PP

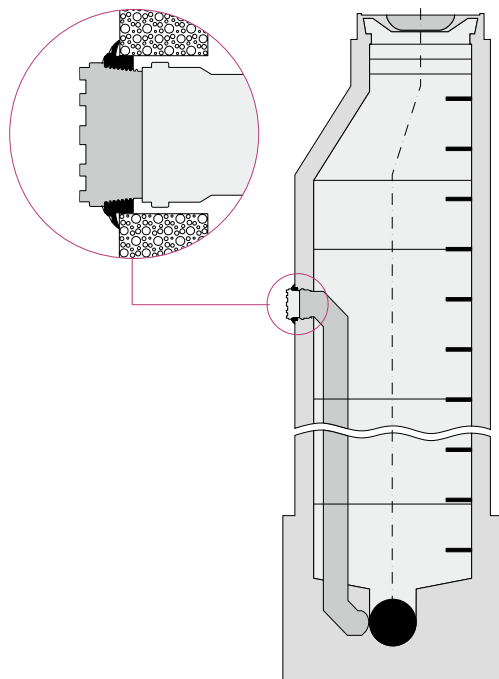
Colour: Black/Green



AWADOCK KG to thick-walled reinforced concrete pipes

Art. no.	DN/OD	Type	L [mm]	Wall thickness Reinforced concrete [mm]	Pack.unit	€/Pc
176005-500	160	E	175	180-195	individually	237.00
176006-500	160	F	195	200-215	individually	243.00
176007-500	160	G	215	220-235	individually	253.00
176008-500	160	H	235	240-250	individually	264.00
176009-500	200	D	155	155-175	individually	235.00
176014-500	200	E	175	180-195	individually	280.00
176015-500	200	F	195	200-215	individually	290.00
176016-500	200	G	215	220-235	individually	300.00
176017-500	200	H	235	240-250	individually	325.00

Do you need an AWADOCK for a larger wall thickness? Please contact us about it.



AWADOCK as a bypass for connection to concrete chambers

Seal flat internally, AWADOCK spigot end DN/OD 160

Material: Elastomer/Q-TE-C/PP

Colour: Black/Green



AWADOCK type K/U (chute/bypass)

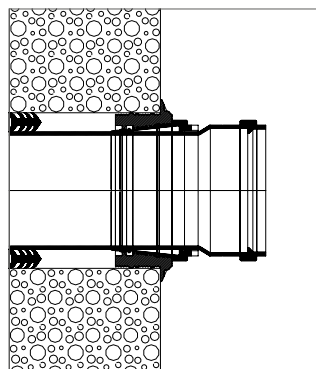
Art. no.		Units/Pallet	€/Pc
170551-500	AWADOCK DN 160	75	99.00
170561-200	AWADOCK DN 200	35	165.00
170571-500	AWADOCK clay DN 150	45	99.00

Inner bypass with bend

Wall duct for lateral connection to flat walls – KG connection

Material: Elastomer/PP

Colour: Black/Green



Art.-Nr. 170991



Art. no.		DN/OD	Pack.unit	€/Pc
171001-500	AWADOCK wall duct	160	individually	79.00
170991-500	AWADOCK wall duct incl. duct pipe and connecting seal, inner	160	individually	129.00
171021-200	AWADOCK chamber connection to flat concrete wall as a chamber bypass fitting, type K/U	160	individually	95.00
171391-500	AWADOCK wall duct	200	individually	134.00

Connection for sewer pipes made from PVC and PP

REHAU AWASCHACHT PP DN 1000:

Material: Elastomer/PP

Colour: Black/Green



Standard type



K/U type with extended spigot end DN/OD
160 internal

Art. no.	Type	DN/OD	Pack.unit	€/Pc
190365-200	Standard	160	individually	59.00
191175-200	K/U	160	individually	66.50
191345-200	Standard	200	individually	116.00
191355-200	as a wall duct, without insertion stop 200	200	individually	126.00

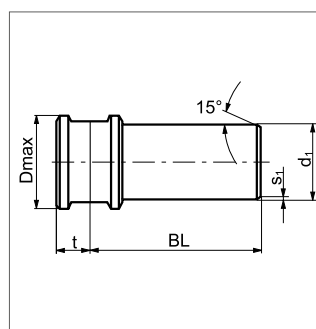
Combination set connection system

comprising a connecting seal and AWADUKT PP SN 10 pipe 0.5 m;

Seal length: 50 mm

Material: RAU-PP 2300 / SBR

Colour: Orange-brown / Black



Art. no.	d ₁ [mm]	t [mm]	BL (laying length) [mm]	Borehole [mm]	€/Pc
176231-200	250	135	500	276	89.00
176241-200	315	145	500	341	109.00
176251-200	400	170	500	426	169.00

Installation wrench for AWADOCK

Material: Stainless steel/plastic

Colour: Silver/Green



New design

Art. no.	Pack.unit	€/Pc
176111-500 Standard	individually	48.00

This installation wrench has been developed especially for AWADOCK and can be used universally for all types.

AWADOCK diamond drill bit

For use in concrete and reinforced concrete pipes with soft to hard aggregates and medium to high reinforcement



Art. no.	Ø in mm	Connection	3-day rental*	€/Pc
176301-001	200	1 1/4" UNC coupler	-	349.00
176321-001	257	1 1/4" UNC coupler	69.00	599.00
176047-001	276	1 1/4" UNC coupler	89.00	980.00
176048-001	341	1 1/4" UNC coupler	119.00	1190.00
176049-001	426	1 1/4" UNC coupler	159.00	1600.00

* non-discountable + deposit

AWADOCK hole saw

For pilot drilling into plastic pipes and chambers incl. hole saw entry, drill chucks, centre drill with ejector, packed in a tool case



Art. no.	Description	Ø in mm	3-day rental*	€/Pc
190028-100	Hole saw	200	59.00	549.00
190457-001	Hole saw	250	89.00	739.00

* non-discountable + deposit

AWADOCK T-FLEX

Connection for sewer pipe systems which are smooth on the outside

Material: Stainless steel/EPDM



Art. no.	DN/OD	Ext. Ø [mm] connecting pipe	Ext. Ø [mm] main pipe	Core borehole [mm]	Pc/Pack.unit	€/Pc
170611-001	110	105-120	200-400	117-125	4	59.00
170621-001	160	150-170	250-500	167-175	4	92.00
170631-001	200	175-200	300-500	203-213	7	139.00

AWADOCK T-FLEX-Drill bit

incl. centre drill

suitable for drilling machines

with friction clutch



Art. no.	For DN	Borehole [mm]	€/Pc
170671-001	110	122	183.00
170681-001	160	172	259.00
170691-001	200	212	309.00

AWADOCK CP (CORRUGATED PIPES)

CONNECTION TO COMPOSITE SEWER PIPES



PROPERTIES AND PRODUCT ADVANTAGES

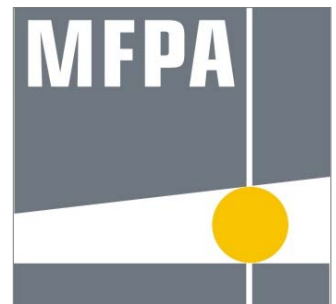
A simple solution for a subsequent connection is often required in the rainwater and drainage sector. Here AWADOCK CP provides an uncomplicated solution for lateral inlets to composite sewer pipes with structured walls and smooth internal surfaces to DIN EN 13476-3 (except for ribbed and spiral pipes). With three connection variants the connecting seals specially developed for this cover nominal bores OD 315 to OD 1200. AWADOCK CP therefore stands out with its simple, universal, safe applicability and leak-tightness up to 0.5 bar.

Function:

AWADOCK CP achieves its safety and permanent leak-tightness of up to 0.5 bar, which has been confirmed by the MFPA thanks to its double sealing function.

On the one hand the sealing is carried out as a result of the compression of the connecting seal against the internal cut surface of the core bore-hole, and on the other hand as a result of the lip seal on the internal wall.

This is achieved by screwing the screw-in fitting into the connecting seal.



AWADOCK CP

Lateral connection for composite sewer pipes.

AWADOCK CP (corrugated pipes) ensures a leak-tight and safe connection of lateral inlets KG DN 160/200 to composite sewer pipes.

Properties:

- Screw-in crown made from PP with connecting seal made from SBR
- Three variants for dimensional range DN/OD 315-DN/OD 1200
- Connection DN 160 to pipes from DN/OD 315 to DN/ID 800
- Connection DN 200 for pipes from DN/OD 800 to DN/OD 1200

Advantages:

- Universal use for all composite pipes on the market to DIN 13476-3
- Screwed in easily, quickly and safely
- Leak-proof up to 0.5 bar



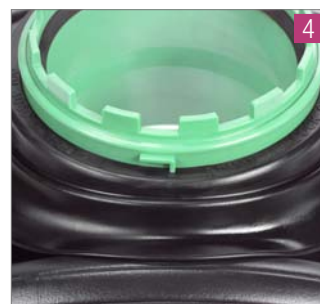
AWADOCK CP Type B and C – Interior view

INSTALLATION INSTRUCTIONS



Assembly instructions:

- Check the AWADOCK set for completeness (connecting seal, screw-in crown with lip seal, lubricant)
- Test the main pipe for sewage backup before installation
- Ensure cleanliness during installation
- Information about diameters and pipe wall thicknesses are to be tested and compared with the main pipe
- An installation wrench set is required for correct fixing. Please find in AWADOCK accessories program, Art. no. 176111



1 Mark the connecting position, preferably on a peak of the corrugation, with a suitable pen.

Drill the marked place with an 8 mm drill.

Insert centred pin/drill bit into the pre-drilled bore. Bore with a keyhole saw at right angles and centrally to the pipe axis. For bore diameters, see table.

	Type A	Type B	Type C
Connection	DN 160	DN 160	DN 200
Drill bit diameter	178 mm	200 mm	250 mm
Bore	178 + 3/ -1 mm	200 + 3/ -1 mm	250 + 3/ -1 mm

Remove the drill bit. The dimensions are to be checked on the inside of the inliner (white). Deburr the hole reveal so that it is clean with a suitable tool.

2 Ensure that the AWADOCK CP set is free from dirt. The AWADOCK CP connecting seal is to be inserted into the borehole without lubricant.

3 Ensure that the internal sealing lip on the inside of the pipe sits flush. If necessary, reach inside and pull the sealing lip out against the inside of the pipe.

4 The arrows on the outer seal must face in the longitudinal direction of the pipe.



5 Coat the male thread of the screw-in crown with lubricant. The AWADOCK screw-in crown is then inserted. The first turns, until the screw crown sits firmly in the seal, are carried out manually.

6 Place the installation wrench on to the screw-in crown. The screw-in crown is then screwed into the connecting seal evenly and centrically up to the last thread with the help of the installation wrench. This (refers to Type A) is then to be turned (max. ½ turn) until its vertical markings lie above the arrows of the seal.

7 Check whether the sealing lip is lying against the inside of the pipe.

8 Coat the chamfered connecting pipe with lubricant and push it up to the stop in the screw-in crown.

Composite pipe dimension		Profile height mm	Protrusion depth mm	AWADOCK CP DN 160		AWADOCK CP DN 200		Profile height mm	Protrusion depth mm	AWADOCK CP DN 200	
ID	OD			Type	Art. no.	Type	Art. no.			mm	Art.-Nr.
	315	20 - 35	14-45	A	191780-160						
300	400										
400	500										
500	630	33 - 70	36-49			B	191790-160				
600	800										
800	1000										
1000	1200							53 - 89	45-53	C	191800-200
Drill bit diameter				178 mm		200 mm		250 mm			
Bore diameter				178 +3/-1 mm		200 +3/-1 mm		250 +3/-1 mm			

TEXT FOR INVITATIONS TO TENDER

THE TEXTS FOR INVITATIONS TO TENDER ARE AVAILABLE FROM A REHAU SALES OFFICE OR AS A DOWNLOAD FROM THE INTERNET AT WWW.REHAU.DE/TIEFBAU

Saddle piece DN/OD 160/90°, KG composite sewer pipe

Saddle piece DN/OD 160/90° with conical screw-in crown made from PP and connecting seal made from SBR with female thread and integrated sealing lips, 0.5 bar leak-tight. (REHAU system or similar)

Saddle piece for the lateral connection of sewer pipes type KG made from PVC to DIN EN 1401 and PP to DIN EN 1852 to plastic composite pipes to DIN EN 13476-3

Main pipe DN/OD 315 – DN/ID 400; AWADOCK CP Type A

Main pipe DN/OD 500 – DN/ID 800; AWADOCK CP Type B

In the unit price the professional connection using a core drill is to be added to the main sewer.

Saddle piece, e.g. REHAU AWADOCK CP or similar type.

Saddle piece DN/OD 200/90°, KG composite sewer pipe

Saddle piece DN/OD 200/90° with conical screw-in crown made from PP and connecting seal made from SBR with female thread and integrated sealing lips, 0.5 bar leak-tight. (REHAU system or similar)

Saddle piece for the lateral connection of sewer pipes type KG made from PVC to DIN EN 1401 and PP to DIN EN 1852 to plastic composite pipes to DIN EN 13476-3

Main pipe DN/OD _____; AWADOCK CP Type C

In the unit price the professional connection using a core drill is to be added to the main sewer.

Saddle piece, e.g. REHAU AWADOCK CP or similar type.

PRODUCT RANGE AND PRICE LIST

Connection of sewer pipes made from PVC and PP to composite sewer pipes (corrugated pipes)

Material: Elastomer/PP

Colour: Black/Green



AWADOCK set KG-CP

Art. no.	DN/OD	Type	Dimension composite pipe	€/Pc
191780-160	160	A	DN OD 315 - DN ID 400	85.00
191790-160	160	B	DN OD 500 - DN ID 800	86.50
191800-200	200	C	DN OD 800 - DN OD 1200	92.00

Installation wrench for AWADOCK

Material: Stainless steel/plastic

Colour: Silver/Green



New design

Art. no.	Pack.unit	€/Pc
176111-500 Standard	individually	48.00

This installation wrench has been developed specially for the application of AWADOCK and can be used universally for all types.

AWADOCK hole saw

For pilot drilling into plastic pipes and chambers incl. hole saw entry, drill chucks, centre drill with ejector, packed in a tool case



Art. no.	Description	Ø in mm	3-day rental*	€/Pc
353390-178	Hole saw	178	49.00	499.00
190028-100	Hole saw	200	59.00	549.00
190457-001	Hole saw	250	89.00	739.00

* non-discountable + deposit

AWADOCK drilling stand

For composite sewer pipes, guarantees centrical drilling at right angles

Material: Aluminium



Art. no.	Description	Retainer diameter Machine retainer [mm]	Pack.unit	€/Pc
190587-001	BST 2	43	individually	771.00

