Axedo

Modular PP manhole

DYKA

INJECTION MOULDING DEPARTMENT

DYKA PLANT

Axedo

For more than 50 years, DYKA has been designing, producing and selling synthetic pipeline systems for applications with strict requirements, for example in terms of density and durability. Furthermore, these systems are designed to allow safe and time-efficient installation.

As a holder of the ISO9001:2008 and ISO14001:2004 quality management systems, DYKA imposes strict requirements on the quality of the products and services it provides. Within the sewers product portfolio DYKA offers a range of inspection chambers for the optimal collection of waste water: The AXEDO 600. Recent developments in the area of inspection and maintenance equipment for pipeline systems (cameras, cleaning tools...) permit underground inspections and maintenance.

For sewer systems that do not require access by personnel, the Axedo 600 inspection chambers provide an alternative solution to traditional inspection chambers. The AXEDO 600 inspection chambers can be installed below roadways or in footpaths, with a maximum installation depth of 6 m. AXEDO 600 inspection chambers can be integrated into synthetic sewer networks with a diameter of DN160 to DN400 inclusive.

Technical **Features**

Density

The density of materials is a key requirement in the design and construction of a sewer system for the purpose of preventing:

- Contamination of soil and groundwater;
- Infiltration of pure water which could adversely affect the operation of water treatment systems.

The AXEDO 600 inspection chambers offer the same density guarantee as synthetic pipeline systems (pipes and pipe fittings) during density tests conducted in accordance with the standard protocols of the NBN EN 1610 standard.

Ease of Installation

The AXEDO 600 inspection chambers facilitate easy manual installation (every element separately does not weigh more than 25 kg, with the exception of the concrete rim). The installation therefore does not require any mechanical equipment and is therefore completed more quickly than the installation of traditional inspection chambers. This results in significant savings related to the placement of chambers.

In case of unforeseen circumstances during the installation (e.g. underground obstacles, cables and pipelines, etc), it is possible to displace the coupling sleeve by an angle of +/- 7.5° in order to accommodate this adjustment during the construction of the pipeline. Finally, a flat bottom provides for a stable AXEDO 600 inspection chamber.

Chemical and Corrosion Resistance

Synthetic materials provide excellent resistance to various chemical agents (see the technical document ISO/TR 10358 or the 'Table of Chemical Resistance' on our website).
Polypropylene, which is used to manufacture the AXEDO 600 inspection chamber, is particularly effective in withstanding potential deterioration from:

- External sources: due to aggressive substrates;
- Internal sources: due to transported liquids, such as hydrogen sulphide (H_2S) and sulphuric aid (H_2SO_4) released by the wastewater.

Resistance to Traffic Loads

The specially developed AXEDO 600 concrete rim facilitates the distribution of the load as a result of which the load is spread across the
surrounding substrate/fill. The concrete rim must be laid on a properly
compacted substrate and may not be fastened to the inspection chamber.

Adaptability

With 29 standard configurations (see p. 8) and the option of ordering custom-made elements, the AXEDO 600 inspection chambers allow you to anticipate all possible configurations.
Our specialists will assist you in choosing the right solution.
Furthermore, an angular displacement of +/- 7.5° makes it possible to adapt the project on-site.
The inspection chamber's height can be adjusted at the yard by shortening the shaft to measure (see p. 11).

Technical **Features**

Ease of Inspection

The flow sections have a continuous longitudinal profile that facilitates entry for inspection and cleaning equipment.

Ease of Maintenance

The extremely low wall-roughness prevents the deposit and adherence of dirt. This makes maintenance of the AXEDO 600 inspection chamber faster and more swift than it is when traditional materials are used.

Recycling

Polypropylene is a thermoplastic material. It is therefore entirely recyclable just like all other thermoplastic materials used in sewer and pressure systems (PVC, PE).

Quality (BENOR / NF / KOMO)

The AXEDO 600 inspection chambers are produced at an ISO 9001:2008 and ISO 14001:2004 certified production site. The products are subjected to a permanent DYKA control process and are manufactured in accordance with the European NBN EN 13598-2 and EN476 standards and bear the BENOR, NF and KOMO quality mark.

BENOR

NF

KOMO®

Product Choice

The AXEDO 600 inspection chambers are recommended for the following situations:

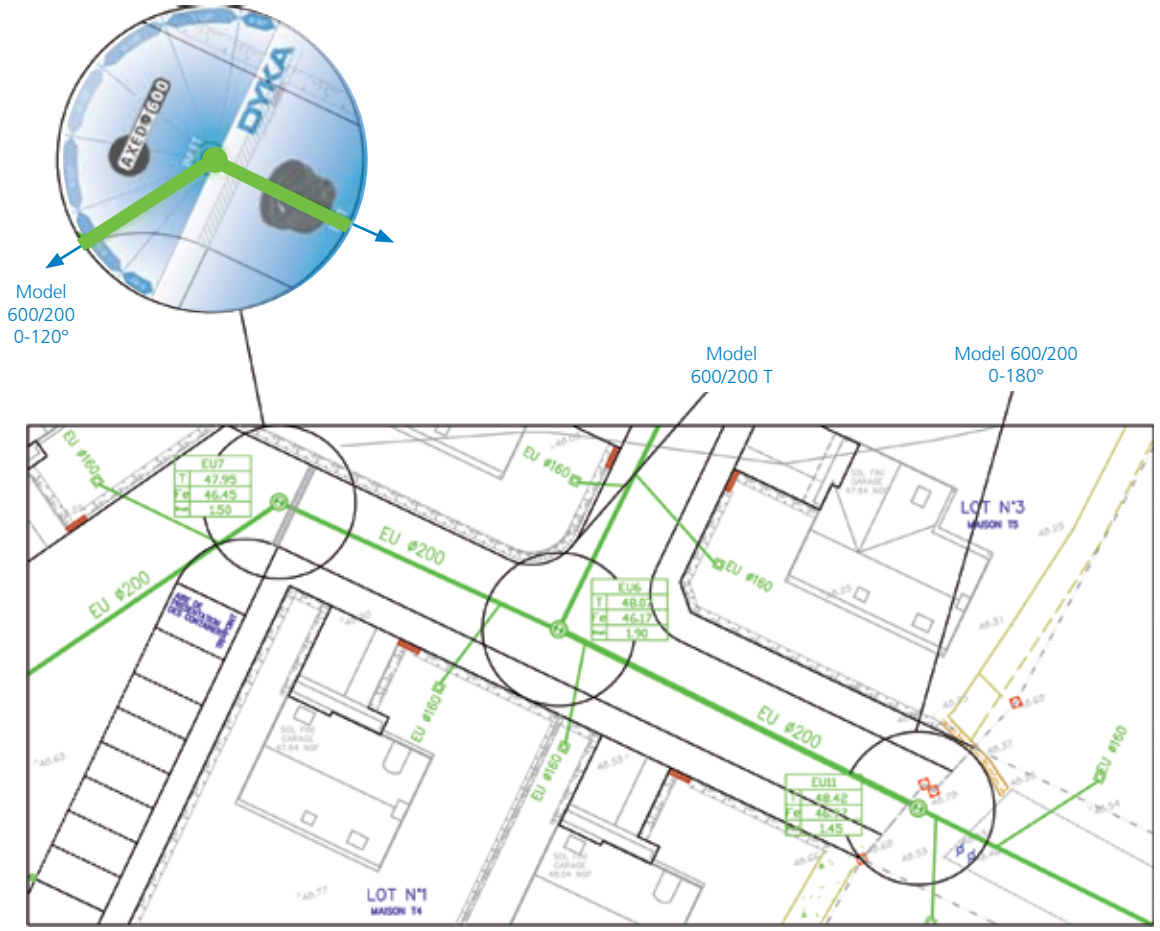
- For installations requiring direct access for inspection purposes, while not requiring access by personnel;
- For installations where there is a need to minimise earthworks or where working space is limited due to on-site conditions;
- For installations that require extremely high chemical resistance – wastewater drainage systems;
- In combination with synthetic sewers – completely watertight and easy to install system.

Possible connecting angles:

In order to select the right type (configuration) of the chamber on the basis of a plan, DYKA provides you with a simple tool: the AXEDO 600 chamber indicator.

User instructions: • Place the centre of the chamber indicator on the inspection chamber with the exit overlaid on the outgoing pipeline on your plan;

• Read off the angle of the incoming pipeline(s) on the chamber indicator.



Product **suite**

Basic element

		Diameter (mm)				
		160	200	250	315	400
Item number	0-180°	20034220	20034226	20034232	20034238	20034241
	0-90°	20034217	20034223	20034229	20034235	
	0-120°	20034218	20034224	20034230	20034236	
	0-150°	20034219	20034225	20034231	20034237	
	T	20034221	20034227	20034233	20034239	
	S. Cross	20048396	20049159	20048397	20048417	
	0°	20020683	20020684	20020685	20020686	

0-180°

0-150°

0-120°

0-90°

T

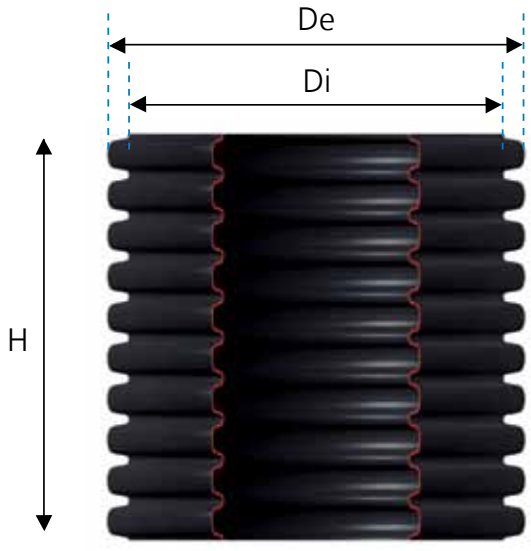
SweptCross

0°

	H (mm)	A (mm)	B (mm)	C (mm)
160	383.7	158.4	193.3	32.0
200	425.7	158.4	235.3	32.0
250	478.3	158.4	287.9	32.0
315	546.7	158.4	356.3	32.0
400	636.3	158.4	445.9	32.0

Raising piece

De (mm)	Di (mm)	Height (mm)	Item number
678	600	1000	20042548
678	600	1500	20042550
678	600	2000	20042551
678	600	3000	20042552
678	600	6000	20409070



Accessories

	Item number
Telescope	20408506
Telescope rubber sealing ring	20408509
Concrete rim	20034168
Concrete rim rubber sealing ring	20042547

Rubber ring

Concrete rim technical specifications
- Weight: 210 kg.
- Designed to provide resistance to heavy traffic.
- Concrete with a compression resistance of > 450 kN.
- Equipped with 4 anchors.

Concrete rim

Placement

Earthworks

Excavation must be performed in accordance with the EN1610 standard. The installation instructions specified in the EN1610 always prevail over the instructions specified below.
The dimensions of the excavation must be at least 30 cm larger than the outside dimensions of the inspection chamber. These dimensions must also take the characteristics of the substrate and the installation depth into account.
The dimensions of the excavation must provide safe access to the construction pit in order to ensure that the following actions can be performed:
- Connecting with the incoming and outgoing pipeline(s);
- Filling and compacting.

Substrate Profile

The inspection chamber must be placed on a stable foundation made of a suitable foundation material (sand, sand-cement, ...) with a minimum thickness of 10 cm.

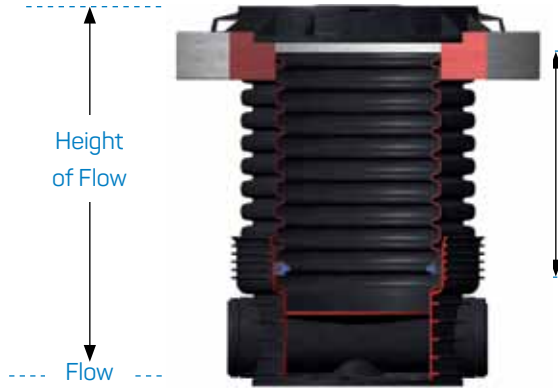
Installation of the Inspection Chamber

Preparation
Prior to its installation, the basic element ①
must be prepared as follows:
- Check the precision of the sealing elements;
- Grease the connections up to the sealing elements;
- Grease the male ends of the pipes,
which if necessary have already been bevelled.

Placement of the basic element
The basic element must be placed on a flat substrate (level) and must then be connected to the incoming and outgoing pipelines.
Note: the bottom of the basic element is lower than the connecting pipelines (see p. 8 – size C).

Preparation of the raising piece ② and the cover
The supplied raising piece ② (shaft) can be cut to measure at the yard up to the desired/finished height (see Table on p. 11). Sealing elements ③ are placed between the basic element and the shaft and between the shaft and the concrete rim ④.The system is covered by placing a cast-iron cover ⑤ within/on the concrete rim.

NOTE: In addition a telescope with a separate sealing element can be used.



Example: AXEDO 600 inspection chamber with DN315 connections.
Height of flow is 1250 mm (1.25 m), height of cast-iron cover is 100 mm.
You must always use the next higher value in the table; in this case that is 1.28.
The height of the raising piece to be shortened is 790 mm or 12 ribs.

Elevation with Cover H = 200 mm		Elevation with Cover H = 100 mm		Inspection Chamber with DN160 Connection	Inspection Chamber with DN200 Connection	Inspection Chamber with DN250 Connection	Inspection Chamber with DN315 Connection	Inspection Chamber with DN400 Connection
Number of Rings (Units)	Length of Elevation Z (m)	Number of Rings (Units)	Length of Elevation Z (m)	Height of Flow (m)	Height of Flow (m)	Height of Flow (m)	Height of Flow (m)	Height of Flow (m)
		5	0.33	0.65	0.70	0.75	0.82	0.91
5	0.33	6	0.40	0.72	0.77	0.82	0.89	0.98
6	0.40	7	0.46	0.78	0.83	0.88	0.95	1.04
7	0.46	8	0.53	0.85	0.90	0.95	1.02	1.11
8	0.53	9	0.59	0.92	0.97	1.02	1.09	1.18
9	0.59	10	0.66	0.98	1.03	1.08	1.15	1.24
10	0.66	11	0.73	1.05	1.10	1.15	1.22	1.31
11	0.73	12	0.79	1.11	1.16	1.21	1.28	1.37
12	0.79	13	0.86	1.18	1.23	1.28	1.35	1.44
13	0.86	14	0.92	1.25	1.30	1.35	1.42	1.51
14	0.92	15	0.99	1.31	1.36	1.41	1.48	1.57
15	0.99	16	1.06	1.38	1.43	1.48	1.55	1.64
16	1.06	17	1.12	1.44	1.49	1.54	1.61	1.70
17	1.12	18	1.19	1.51	1.56	1.61	1.68	1.77
18	1.19	19	1.25	1.58	1.63	1.68	1.75	1.84
19	1.25	20	1.32	1.64	1.69	1.74	1.81	1.90
20	1.32	21	1.39	1.71	1.76	1.81	1.88	1.97
21	1.39	22	1.45	1.77	1.82	1.87	1.94	2.03
22	1.45	23	1.52	1.84	1.89	1.94	2.01	2.10
23	1.52	24	1.58	1.91	1.96	2.01	2.08	2.17
24	1.58	25	1.65	1.97	2.02	2.07	2.14	2.23
25	1.65	26	1.72	2.04	2.09	2.14	2.21	2.30
26	1.72	27	1.78	2.10	2.15	2.20	2.27	2.36
27	1.78	28	1.85	2.17	2.22	2.27	2.34	2.43
28	1.85	29	1.91	2.24	2.29	2.34	2.41	2.50
29	1.91	30	1.98	2.30	2.35	2.40	2.47	2.56
30	1.98	31	2.05	2.37	2.42	2.47	2.54	2.63
31	2.05	32	2.11	2.43	2.48	2.53	2.60	2.69
32	2.11	33	2.18	2.50	2.55	2.60	2.67	2.76
33	2.18	34	2.24	2.57	2.62	2.67	2.74	2.83
34	2.24	35	2.31	2.63	2.68	2.73	2.80	2.89
35	2.31	36	2.38	2.70	2.75	2.80	2.87	2.96

Placement

Installation of the raising piece ②
The sealing ring ⑤ must be placed in the first corrugation of the pipe. After that it must be greased.
The raising piece ② must be manually mounted on the basic element ①
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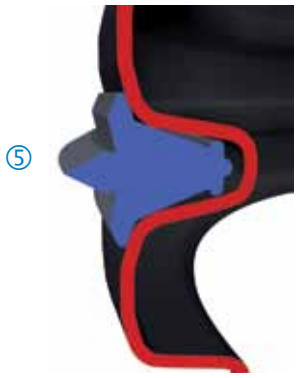


Fill

This work must be performed in accordance with the rules concerning the choice of materials and the compacting must be performed in accordance with the NBN ENV 1046 standard. The use of
suitable fill material is essential (sand, sand-cement, ...). Compacting must be done in layers of a maximum of 30 cm and by layer around the inspection chamber. For the compacting, the recommendations of the NBN ENV 1046 standard, as well as the Standard Specifications 250 must be adhered to.

Placement of the Concrete Rim

The concrete rim must rest on the surrounding fill material to ensure that no load is exerted on the inspection chamber. According to the same principle used for the basic element, the seal between the raising piece ② and the concrete rim ③ is provided through means of a rubber sealing ring ⑤.

Project Study

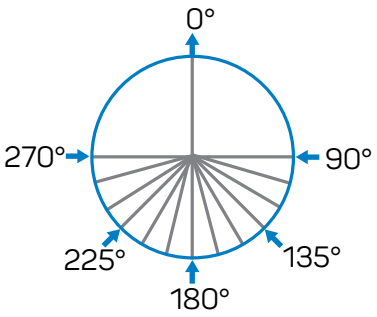
AXEDO 600 PP Inspection Chamber – Request for Information – Chamber Calculations

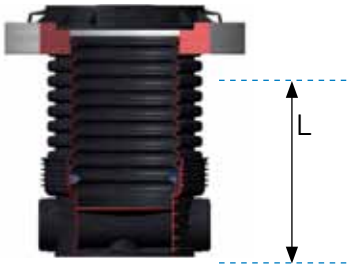
Date

Customer number

Requestor

Project ref. no.





Inspection chamber no.	Height of Flow	Exit (at 0°) DN (mm)	Inlet no. 1		Inlet no. 2		Inlet no. 3	
			DN (mm)	Angle (°)	DN (mm)	Angle (°)	DN (mm)	Angle (°)

Comments

Return fully completed, together with any additional/other relevant project information:
via e-mail: dyka.export@dyka.com

Load Specifications/ Other Specifications

AXEDO 600 Inspection Chamber

The characteristics of the PP inspection chamber are as follows:

- Basic element is PP, manufactured in accordance with the NBN EN 13598-2 standard and carries the BENOR & NF quality mark;
- Inside diameter: 600 mm;
- Sleeve connectors with a possible angular displacement of 7.5°;
- PP raising piece min. SN2 (EN ISO9969), including EPDM sealing elements in accordance with the EN681;
- Concrete rim in reinforced concrete;
- Installation depth is max. 6 m with a 5 m water column (groundwater level);
- Suitable for carrying traffic loads (SLW60).

Placement

Earthworks and fill

Excavation must be performed in accordance with the EN1610 and ENV1046 standards, and the Standard Specifications 250. The dimensions of the excavation must be at least 30 cm larger than the outside dimensions of the inspection chamber. These dimensions must also take the characteristics of the substrate and the installation depth into account.
The dimensions of the excavation must provide safe access to the construction pit in order to ensure that the following actions can be performed:

- Connecting with the incoming and outgoing pipelines;
- Filling and compacting.

Substrate profile

The inspection chamber must be placed on a stable foundation made of a suitable foundation material (sand, sand-cement, ...) with a minimum thickness of 10 cm.

Installation of the inspection chamber

- Preparation

  Prior to its installation, the basic element must be prepared as follows:
  - Check the precision of the sealing elements;
  - Grease the connections up to the sealing elements;
  - Grease the male ends of the pipes, which if necessary have already been bevelled.
- Placement of the basic element

  The base must be placed on a flat substrate and must then be connected to the incoming and outgoing pipeline(s).
- Preparation of the raising piece and cover

  The supplied raising piece (shaft) can be cut to measure at the yard up to the desired/finished height. Sealing elements are placed between the basic element and the shaft and between the shaft and the concrete rim. The system is covered by placing a cast-iron cover on the concrete rim.

  NOTE: In addition a telescope with a separate sealing element can be used.

PP Inspection Chamber

Axedo

... certified quality for your sewer systems.

The design and the extensive assortment provide a comprehensive and cohesive product suite.

Product with BENOR & NF quality mark, in accordance with the European NBN EN 13598-2 standard.

Technical assistance (study service): guidance/support in making the right choice for your project.

The full benefits of synthetic materials

- Light and therefore ease of use;
- Watertight;
- Chemical and corrosion resistant;
- Recyclable
- Easy to inspect and maintain.

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