★ argo ★ night ★ sky

Low - noise house sewage system

Argonomy of low-noise house sewage system: because we enjoy the tranquility of living

argo

Argonomy of Connections

ARGO d.o.o. is a Slovenian company established in 1990 which deals with manufacturing and trade activities. Initially, it was engaged in designing and production of specialized nautical equipment, deck equipment of vessels for recreational and competitive sailing. More than 10 years ago nautical program was abandoned.

In 1991 we added “house sewage systems” to the nautical program. The program of the production of pipes and polypropylene fittings has successfully expanded and soon surpassed the nautical program. Today it represents 100% of the production.

We are operating in an area of 17,000 m2, 4,000 m2 of those are covered.

We produce approximately 3,000 tons of polypropylene annually. We also offer our clients a comprehensive program of pipe systems, including pipes and fittings for house sewage systems, street sewage systems, drainage, plumbing and so on.

Despite the fact that we are already successful in our activities we do not intend to rest. We are expanding, complementing and improving our offers. Therefore, it is no coincidence that we named our company Argo. In mythology Argo was the name of Jason’s ship that carried the fearless and daring sailors into the unknown world to find the Golden Fleece. Daring, bold and the desire to make new discoveries is the entrepreneurial spirit of the Argo- nauts that also pervades our company. This is why we constantly expand and upgrade our manufacturing capacities, invest in pro- fessional training, follow the world trends and develop innovative solutions.

All this enables us to reach our most important goal: customers satisfaction. We strive to offer every client not just products of high quality, but also solutions that are tailored to the client’s specific needs and wishes.

INDEX

Polypropylene – a modern story of success

Polypropylene is a polymer which is odorless and colorless, that is slightly transparent to opaque and can be colored in an easy way and in multiple hues. Its most important properties are high bruising resistance and resistance to most chemical substances, it is highly resistant to physical damage, detergents and tensioactive materials, even at high temperatures, to dissolve inorganic substances in water, low-concentration inorganic acids, basic solutions, alcohols and some oils. However, it is not resistant to strong oxidising agents, chlorine sulphuric acid, 100% oleum, to evaporating nitrate acid and to halogen hydrocarbons. It is also not suitable for adhesives.

It is resistant to almost every acid, base or salt even in high concentrations or in temperatures above 60°c. It also excels at being resistant to working temperatures, at washing away effluents due to a smooth inner wall, a great stable shape and good insulation. It only absorbs minimum quantities of water (less than 0.02%) which are on the surface layer only.

There are various types of polypropylene with different molecular structure, for industrial purposes, however, only the isostatic polymer is relevant. It is used to produce pipes and fittings used in house sewage systems to drain away domestic and faecal sewage and rain water in buildings.

A step forward in the development of house sewage systems

ARGO NIGHT SKY is a low-noise push-fit house sewage system. Its production is a result of our own know-how and years of experience in the production of house sewage systems.

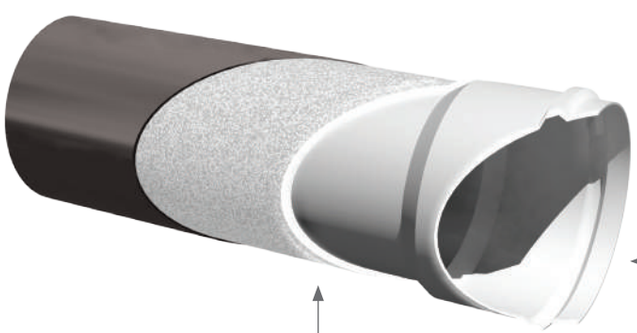
The exceptional quality and ease of use offer a possibility for the ARGO NIGHT SKY system to be used everywhere a higher quality of living and the reduction of environmental noise is required. We recommend ARGO NIGHT SKY system to be installed in hotels, hospitals, education facilities, multi residential buildings etc.

ARGO NIGHT SKY system is produced in seven different dimensions: DN40, DN50, DN75, DN110, DN125, DN160 and DN200, which enables wide variety of uses and 100% compatible with the classic house sewage systems.

Aplication area:

- plastic piping system for soil and waste discharge (low and high temperature) within the building structure (PP) (DIN EN 1451-1) and is intended for soil and waste discharge applications inside buildings (application area »B«) and also for ventilating part of pipework in association with discharge applications and also intended for rainwater pipework within the building structure.

ARGO NIGHT SKY pipes and connectors are manufactured in a recognizable black color, and the 3 layer composition is clearly visible on the pipe.



External Layer

Black PP provides excellent impact resistance and long term UV protection

Middle Layer

PP and PP-MD provide high mechanical resistance and excellent soundproofing performance

Internal Layer

White PP provides the best flow performance and high-definition contrast for visual inspection

Advantages of Argo pipe system

- a wide-ranging selection of fittings in various diameters, lengths and shapes enable the fastest and the most eco- nomical installation
- simple installation – no expensive adhesives and kits necessary
- easy to repair and potentially replace
- the manner of connecting and a wide range of special fittings allow for an easy and fast connection of various pipes
- highly stable pipe shapes allow for an effective, functional, long-lasting and safe connection to a rubber gasket
- impact resistance
- excellent resistance to boiling water effluents from washing machines and dishwashers
- the surface structure allows for drainage of waste water without the formation of crusts and sediments
- lower condensation due to a low thermal conductivity
- easy and fast installation without tools

Pipes, sockets, connectors, gaskets

Gaskets made of elastomer are already pre-installed in the suitable canal in the socket of the bottom part. They are made from materials that provide the best possible sealing, are the safest and have lifetime durability equal to those of pipes and fittings. They comply with the conditions, methodology and frequency of control in accordance with standard EN 1451.

Argo can also provide you with numerous special elements needed for removing various installation problems: connectors made from various materials, special reducer elements including small sized reducer elements etc.
Warning: Do not expose the gaskets to direct sunlight as they are not UV-stabilised.

Proper use of pipes and connecting elements

A professional installer should plan and estimate every detail of the sewage system beforehand.

If a sewage system is to be installed outside the building, you should – before excavating – foresee a possibility of an unequal load on a part or parts of pipes due to possible eventual terrain subsidence. In such cases, we recommend you excavate in a straight line with curves that enable the installation of special elements with specific angles (15°, 30°, 45° etc.). We also recommend that you line the bottom of the excavation with a smooth concrete base with a suitable incline and with suitable pipe holders to prevent pipe load only on the area of connectors.

Vertical fitting should pose no problem as the installation procedure is simplified by the connector sockets that function as dilation clips. Installation can be mounted in two ways:

lay the pipe conduit so that the clips are cemented in the concrete slab of a storey:

- no additional securing is needed
- any pipe elongation under the concrete slab will be absorbed by the connector in the lower storey without any sheer load in the dilution element.
- to compensate for the elongation it is essential to determine the eventual pipe dilation beforehand
- place a clamp in each storey to secure the pipes so that sliding is possible
- as a free pipe conduit, for example in the auxiliary shaft;

Ensure the primary ventilation by extending the drainage pipe through the ceiling of the top storey in the building. The diameter of the ventilation pipe above the last drainage point should be equal to the diameter of the drainage pipe (usually 110mm).

A special muzzle protection above the ventilation pipe is not necessary, however, be sure to provide a protection that will prevent snow covering the muzzle in wintertime.

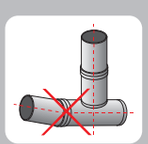
We also recommend that you follow the instructions below:

For pipe elongation, use a saw with fine teeth; saw at a right angle cut.

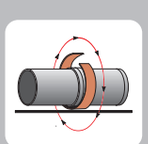
Brush the pipe ends with a special device or with a fine filer at the angle of 15°; the surface of the brushed part must be smooth, because this is the only way to prevent damage to the peripheral gasket in the neck of the pipe into which you will be inserting the new pipe.

The ends of connecting elements should never be shortened as the connector then becomes unreliable.

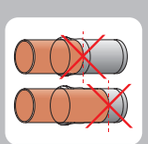
Always check the inside of the pipe socket, gasket and the new pipe end; intersperse the connectors with a material that allows sliding – soap water is also an option, but do not use mineral oil or grease.



Prevent excessive pipe movement as this can reduce the reliability of the pipe connector, and render the sealing incomplete.



We recommend that you cover the connectors so that the gaskets are protected from concrete which can damage them.



Insert the pipes in the socket – insert the bottom part relatively deep; determine the depth in accordance with the necessary expansion joint; if the pipe is not inserted deep enough the sealing will not be complete; however, if it is inserted too deep you will prevent pipe elongation.

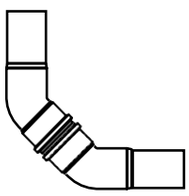
Installation instructions for ARGO NIGHT SKY low-noise system

1. Wherever standards and requirements regarding sound insulation must be met, installers must respect certain construction and installation rules.

2. For house sewage installation one must pay attention that the pipes are not laid directly on the massive walls without a sound insulation layer. The sound absorbing pipes, laid above the plaster are fixed using special clamps.

3. It is possible to influence the source of noise by carefully choosing and arranging the piping. The main source of noise is usually the point where the flow changes direction from vertical to horizontal.

4. At the point where the flow changes direction from vertical to horizontal two fittings at 45° should be used. By this the change of direction is alleviated and the noise reduced.



5. With vertical assemblies special pipe clamps which are coated with rubber are used. Their main role is to minimize the passage of sound and vibrations from the pipe to the construction.

Laying the pipes in concrete

1. Pipes and fittings can be laid directly in the concrete (vertically), but one must pay particular attention to the dilatation of the pipes and fittings. The slot between the pipe and the clamp is sealed to prevent any entry of the cement fluid.

2. With thicker concrete layer or with stronger vertical lading it is essential to carry out a static lading calculation.

Laying the pipes in brick wall (groove)

1. Laying the pipes in the brick walls is permitted only if the load capacity and stability is unaltered. The groove must be large enough to enable the correct function of the piping system. The pipes are fixed using special clamps, coated in rubber.

2. With the passage of the pipe through a wall or a ceiling one must pay attention to the contact between the pipe and the wall. If a direct contact occurs, it could cause vibrations and unwanted noise. To prevent this, the pipe must be coated in isolative material such as glass wool or armaflex.

3. With laying the pipes in the grooves one must pay attention to prevent “air bridges” which are a source of noise.

Requried groove dimensions for laying the pipes:

1. Laying the pipes in the brick walls is permitted only if the load capacity and stability is unaltered. The groove must be large enough to enable the correct function of the piping system. The pipes are fixed using special clamps, coated in rubber.

2. With the passage of the pipe through a wall or a ceiling one must pay attention to the contact between the pipe and the wall. If a direct contact occurs, it could cause vibrations and unwanted noise. To prevent this, the pipe must be coated in isolative material such as glass wool or armaflex.

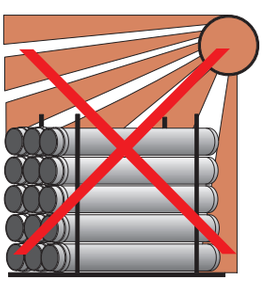
3. With laying the pipes in the grooves one must pay attention to prevent “air bridges” which are a source of noise.

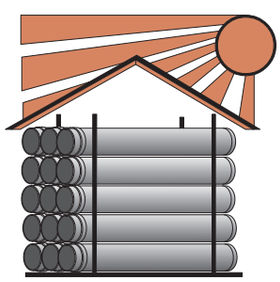
PIPE DIAMETER (DN)	GROOVE DEPTH WITHOUT ISOLATION	GROOVE DEPTH WITH ISOLATION
75	140x140	180x180
110	180x180	220x220
125	190x190	230x230
160	230x230	270x270

Transport and storing

Transport and store with care. Before transportation the pipes should be loaded horizontally and in such a manner which prevents the pipes from crossing. We recomend loading the pipes on to a palette before transpor- tation and also inserting the pipes into spacers in order to prevent any damage caused through movement.

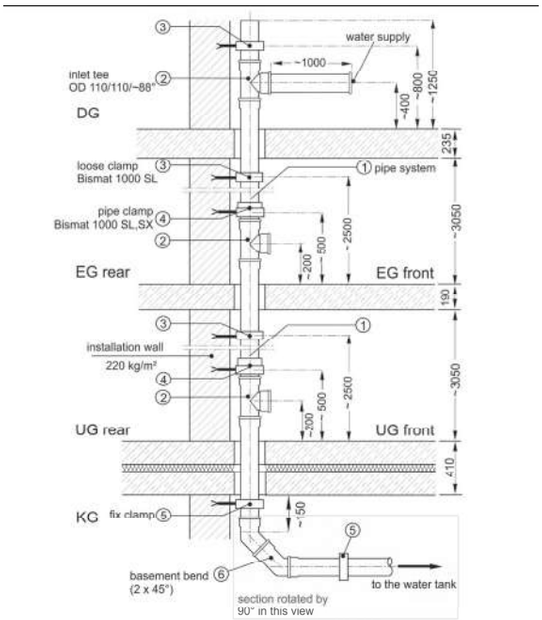
For optimal storage for pipes and fittings we suggest a closed or covered storage area which will prevent the pipes and fittings against low temperature,direct sunlight and any other such weather influences. This is crucial for when temperatures drop below zero degreen celsius due to their structure. All polymers,as well as polypropylene become brittle and less flexible when expose to such harh conditions. We recomend stacking pipes in a horizontal position on palettes. Do not stack pipes higher than 1.7 m. The pipes should not be exposed to any direct sunlight for more than 12 months.





The results of sound measurements

We had Argo Night Sky soundproof household waste water system tested at Fraunhofer Institute for Biophysics in Stuttgart which is a certified laboratory for measuring sound in buildings and noise insulating according to European and German standards DIN EN ISO/IEC 17025.



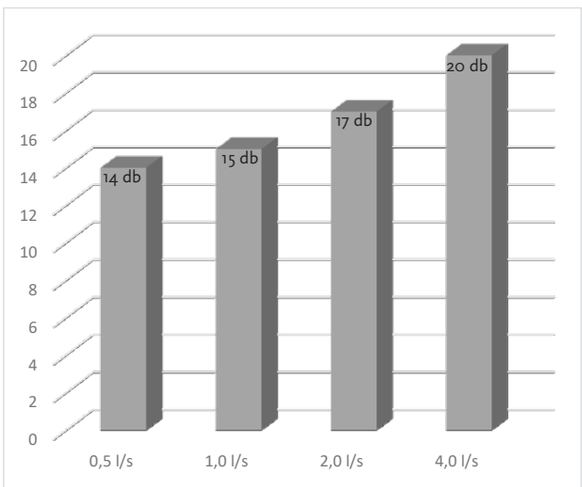
The boundary conditions are as follows:

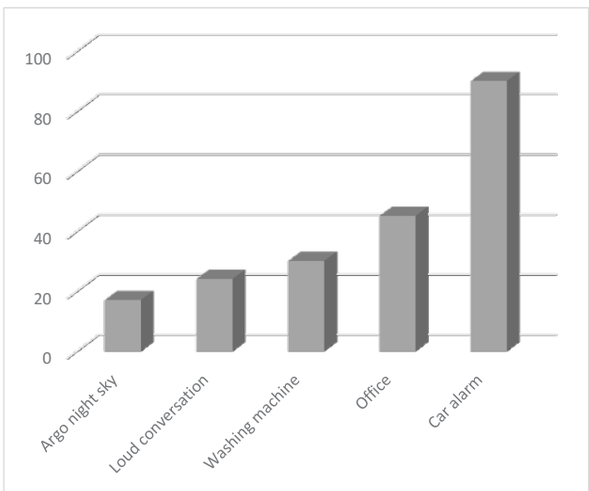
- measured flow in the waste an soil system
- pipe-line diameter DN110 (most frequent diameter)
- measurements taken on the lowest floor, in room UG rear
- assembly wall, weight 220 kg/m2

The measurements were done according to the standard DIN EN 14366: 2020-02 »Laboratory meas- urement of noise from waste water installations« in the laboratory of the already mentioned institute. The meas- urements refer to the UG rear room – ground floor rear (see the plan). Argo Night Sky pipes were installed on the wall which weight was 220 kg/m2, pipes nominal size DN110 with the use of clamps.

The results of measurements prove that the soundproof household waste water system Argo Night Sky corresponds to the strict European standards and demands used in all the projects that demand the installation and use of soundproof pipes (hotels, hospitals, schools, kindergartens, conference halls,)

It has to be taken into account that the measurements were done in a laboratory in the conditions stated above. Differences in the construction of installation wall, clamps or entire system might lead to noise levels different from the ones achieved during the test.





Technical specification argo night sky

Materials:
All materials comply with RoHS directive and are Halo- gen and Cadmium free.

Standards:
EN 1451-1: Polypropylene (PP) piping systems for soil and waste discharge (low and high temperature) within building structure
EN 14366: Laboratory measurement of noise from waste water installations
DIN EN 4102-2; Reaction to fire tests-Ignitability of bulding products subjected to direct impingement of flame

Temperature performance:
Hot water resistance –
95°C for long term (3000 hours/50 years = 10 min/ day).
98°C for short term (200 hours/50 years = 40 sec/day).
60°C for permanent load (90,000 hours/50 years = 5 hour/ day).

Chemical resistance:
System materials applicable of aggressive discharge media in the range of pH 2 to pH 12 according to DIN 8078 – for chemical list

Fire behavior:
The system meets the requirement of DIN EN 4102-2 with fire classification B2.

Ring stiffness:
Pipes ring stiffness tested according ISO 9969 and reached the following results for dimensions Ø40-200:
Night Sky - SN6 (at least 6.0 kN/m2).

Elastic modulus:
E-modulus tested according ISO 178 and reached the results of 2300 - 3000 for Night Sky pipes.

Elongation:
Coefficient of elongation tested and reached the results of 0.09 mm/°K for Night Sky.

COLOUR:
outer layer black RAL 9005, inner layer white RAL 9001

RANGE OF PRODUCTION:
- DN40
- DN50
- DN75
- DN110
- DN125
- DN160
- DN200

Other Characteristics:
- Fungus and bacteria resitant
- Electrical insulation
- Smooth surface
- Impact resistance
- Corosion resistance
- Long life-span
- Chemical Endurance: the product is resistant to a wide range of PH values

SOUNDPROOF LEVEL:
The sound isolation measurements were conducted at the Fraunhofer Institute, in correspondence to the EN 14366 norm and are quoted in the report nr. P-BA 90/2020e

Certificates

Fraunhofer IBP

Institution for testing, supervision and certification, officially recognized by the building supervisory authority. Approvals of new building materials, components and types of construction

Director
Prof. Dr. Philip Leistner
Prof. Dr. Klaus Peter Sedlbauer

Test Report P-BA 90/2020e

Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to EN 14366

Client: Argo proizvodnja cevi in opreme d.o.o.
Argo pipes and fittings Ltd.
Vrhniška cesta 30
1354 HORJUL
Slovenija

Test object: Wastewater system "argo night sky, DN 110 x 3.4, S-16, PP ML MD, 30.01.2020" (manufacturer: Argo). The wastewater system consisted of straight plastic pipes and fittings, and acoustic pipe clamps with elastic inlay "Bismat 1000" (manufacturer: Walraven).

Content:

Results sheet 1:	Summary of test results
Figures 1 to 3:	Detailed results
Figures 4 and 5:	Test set-up
Annex A:	Measurement set-up, noise excitation, acoustic parameters
Annex F:	Evaluation of measurements
Annex P:	Description of the test facility
Annex V:	Assessment according to VDI 4100

Test date: The measurement was carried out on March 3, 2020 in the test facilities of the Fraunhofer Institute for Building Physics in Stuttgart.

Stuttgart, April 7, 2020

Responsible Test Engineer: Dipl.-Ing.(FH) J. Mohr

Head of Laboratory: M.BP. Dipl.-Ing.(FH) S. Öhler

The test was carried out in a laboratory, accredited according to DIN EN ISO/IEC 17025:2018 by DAkkS. The accreditation certificate is D-PL-11140-11-01.

Fraunhofer-Institut für Bauphysik - Prüflabor Bauakustik und Schallimmissionsschutz
Nobelstraße 12, D-70569 Stuttgart
Telefon +49(0) 711/970-3314, Fax -3406
akustik@ibp.fraunhofer.de
www.pruefstellen.ibp.fraunhofer.de/de/akkreditierte-prueflabore.html

---

Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to EN 14366 — **P-BA 90/2020e** — **Results sheet 1**

Client: Argo proizvodnja cevi in opreme d.o.o., Argo pipes and fittings Ltd., Vrhniška cesta 30, 1354 HORJUL, Slovenija

Test specimen: Wastewater system "argo night sky, DN 110 x 3.4, S-16, PP ML MD, 30.01.2020" (manufacturer: Argo). The wastewater system consisted of straight plastic pipes and fittings, and acoustic pipe clamps with elastic inlay "Bismat 1000" (manufacturer: Walraven). Test object no.: 11567-01; see figure 4 and 5.

Test set-up:
- The pipe system was mounted according to figure 4 (see also Annex A).
- The system consisted of wastewater pipes (nominal size OD 110), three inlet tees (87°), two 45°-basement bends and a horizontal drain section. The inlet tees in the basement and in the ground floor were closed by lids supplied by the manufacturer.
  - Pipe system "argo night sky, DN 110 x 3.4, S-16, PP ML MD, 30.01.2020": Three layer pipes, pipes: Material PP, wall thickness 3.6 mm, weight 1.34 kg/m, density 1.16 g/cm³, values measured by IBP. One-layer fittings: Material PP, wall thickness 2.9 mm, density 1.32 g/cm³, values measured by IBP. Plug connection of the pipes and fittings (shaped pipe sockets).
  - Acoustic pipe clamps with elastic inlay "Bismat 1000" (manufacturer: Walraven). Structure-borne sound insulating support attachment consisting of Bismat SL loose clamps and Bismat SX socket clamps fixed to the installation wall with an adjustable wall plate with dowels and thread rods (figure 5). In every storey (EG and UG) respectively two clamps were installed. At the lower wall area one loose clamp (SL, DN 100) was mounted. At the upper wall area one double clamp consisting of supporting clamp (SL, DN 100) and fixing clamp (SX, DN 100) was installed. To prevent contact to the pipe, the loose clamp and the supporting clamp were mounted with 15 mm space between the locking tabs of the clamp (two 7.5 mm spacers on each side).

The wastewater installation system was mounted by a technician under the authority of Fraunhofer IBP.

Test facility: Installation test facility P12, mass per unit area of the installation wall: 220 kg/m², mass per unit area of the ceiling: 440 kg/m². Installation rooms: sub-basement (KG), basement (UG) front, ground floor (EG) front and top floor (DG), measuring rooms: UG front, UG rear (details in Annex P and DIN EN 14366: 2020-02)

Test method: The measurements were performed according to DIN EN 14366:2020-02; noise excitation by steady water flow with 0.5 l/s, 1.0 l/s, 2.0 l/s and 4.0 l/s. Additional evaluation for comparison with requirements following German standards DIN 4109:2018-01 and VDI 4100:2012-10 (details in Annexes A, F and V).

Result:

Test specimen: Wastewater system "argo night sky, DN 110 x 3.4, S-16, PP ML MD, 30.01.2020" (manufacturer: Argo). The wastewater system consisted of straight plastic pipes and fittings, and acoustic pipe clamps with elastic inlay "Bismat 1000" (manufacturer: Walraven).		Flow rate [l/s] 0.5	1.0	2.0	4.0
Airborne sound pressure level $L_{n,A}$ [dB(A)] **according to EN 14366** for the basement test-room	UG front	48	51	52	54
Structure-borne sound characteristic level $L_{ni,A}$ [dB(A)] **according to EN 14366** for the basement test-room	UG rear	14	15	17	20
Installation sound level $L_{AFeq,n}$ [dB(A)] **following DIN 4109** in the basement test-room	UG front	48	51	52	54
	UG rear	17	18	20	22
Installation sound level $\overline{L_{AFeq,nT}}$ [dB(A)] **following VDI 4100** in the basement test-room	UG front	46	48	50	52
	UG rear	13	14	17	19

Test date: March 3, 2020

Notes:
- For comparing test results with requirements note Annex A.
- The above-mentioned measurement results require careful assembly of the pipe clamps (see test set-up).

Fraunhofer IBP

The test was carried out in a laboratory, accredited according to DIN EN ISO/IEC 17025:2018 by DAkkS. The accreditation certificate is D-PL-11140-11-01.

Stuttgart, April 7, 2020
Head of Laboratory:

ZERTIFIKAT

SKZ

SKZ Testing GmbH awards the following company:

Argo proizvodnja cevi in opreme d.o.o.
Vrhniška cesta 30
1354 HORJUL
SLOVENIA

Production site: SLOVENIA

the right to use the SKZ testing and inspection mark

GEPRÜFT SKZ ÜBERWACHT

A 722

for the following plastic products

Waste water pipes and fittings made of PP with mineral filling within the building structure, DG 1 and 2

Trade name: Argo Night Sky

SKZ specification for tests and inspection: **HR 3.43**:2021-02
The requirements for this behaviour are met according to DIN 4102-02.

Users of the SKZ mark are obliged to observe the respective regulations for the production and testing of these products.

Date of initial certification: 16 April 2018

Date of expiry: 20 April 2026

Würzburg, 5 May 2021

SKZ - Testing GmbH International Accredited

Dipl.-Ing. Hans-Peter Krause
Head of Certification Body

The original language of this certificate is German. In case of doubt, the German version is obligatory.

SKZ - Testing GmbH, Friedrich-Bergius-Ring 22, 97076 Würzburg, Germany, Tel. +49 931 4104-0, testing@skz.de, www.skz.de

Certificates

Bureau Veritas Certification

Argo proizvodnja cevi in opreme d.o.o.

Vrhniška cesta 30, 1354 Horjul, Slovenia

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 45001:2018

Scope of certification

Production and sales of the systems for indoor and outdoor sewage, cable protection, drainage, drinking water and heating.

Original cycle start date:	**12-12-2019**
Expiry date of previous cycle:	**30-09-2023**
Certification / Recertification Audit date:	**02-06-2023**
Certification / Recertification cycle start date:	**01-10-2023**
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	**30-09-2026**

Certificate No.: **SI010454** Version: **2** Issue date: **22-08-2023**

UKAS MANAGEMENT SYSTEMS 0008

Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom

Local office: Linhartova cesta 49a, SI - 1000 Ljubljana, Slovenia

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +386 1 47 57 670

Bureau Veritas Certification

Argo proizvodnja cevi in opreme d.o.o.

Vrhniška cesta 30, 1354 Horjul, Slovenia

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Production and sales of the systems for indoor and outdoor sewage, cable protection, drainage, drinking water and heating.

Original cycle start date:	**12-08-2015**
Expiry date of previous cycle:	**30-09-2023**
Certification / Recertification Audit date:	**02-06-2023**
Certification / Recertification cycle start date:	**01-10-2023**
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	**30-09-2026**

Certificate No.: **SI010452** Version: **2** Issue date: **22-08-2023**

UKAS MANAGEMENT SYSTEMS 0008

Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom

Local office: Linhartova cesta 49a, SI - 1000 Ljubljana, Slovenia

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +386 1 47 57 670

Bureau Veritas Certification

Argo proizvodnja cevi in opreme d.o.o.

Vrhniška cesta 30, 1354 Horjul, Slovenia

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

Production and sales of the systems for indoor and outdoor sewage, cable protection, drainage, drinking water and heating.

Original cycle start date:	**16-11-2017**
Expiry date of previous cycle:	**30-09-2023**
Certification / Recertification Audit date:	**02-06-2023**
Certification / Recertification cycle start date:	**01-10-2023**
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	**30-09-2026**

Certificate No.: **SI010453** Version: **2** Issue date: **22-08-2023**

UKAS MANAGEMENT SYSTEMS 0008

Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom

Local office: Linhartova cesta 49a, SI - 1000 Ljubljana, Slovenia

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +386 1 47 57 670

PP LOW-NOISE PIPES ✱ argo ✱ night sky✱	OD Ø (mm)	L (mm)	EAN code	unit	units per palette
PP LOW-NOISE ONE SOCKET PIPE HTEM	40	3000	383 10205 1204 7	pcs	600
	50	3000	383 10205 1209 2	pcs	400
	75	3000	383 10205 1214 6	pcs	210
	110	3000	383 10205 1219 1	pcs	100
	125	3000	383 10205 1224 5	pcs	64
	160	3000	383 10205 1229 0	pcs	48

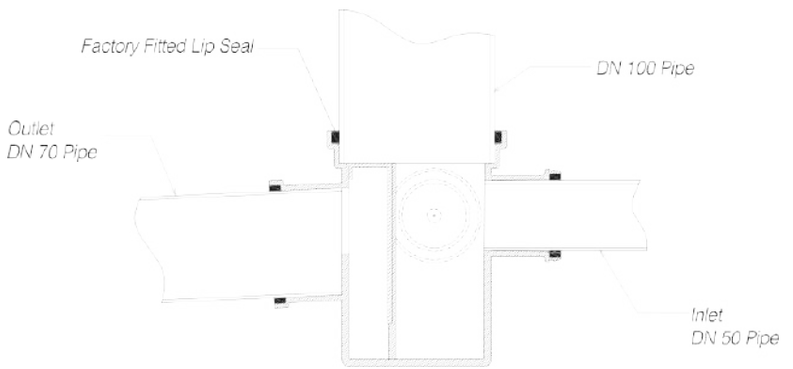
PP LOW-NOISE PIPES ✱ argo ✱ night sky✱	OD Ø (mm)	L (mm)	EAN code	unit	units per palette
PP LOW-NOISE PIPE WITHOUT SOCKET HTGL	40	3000	383 10205 2836 9	pcs	600
	40	5000	383 10205 2843 7	pcs	600
	50	3000	383 10205 1209 2	pcs	400
	50	5000	383 10205 3029 4	pcs	400
	75	3000	383 10205 1214 6	pcs	210
	75	5000	383 10205 3030 0	pcs	210
	110	3000	383 10205 1219 1	pcs	100
	110	5000	383 10205 2971 7	pcs	100
	160	3000	383 10205 1229 0	pcs	48
	160	5000	383 10205 3031 7	pcs	48
	200	5000	383 10205 2829 1	pcs	25

PP LOW-NOISE PIPES ✱ argo ✱ night sky✱	OD Ø (mm)	L (mm)	EAN code	unit	units per palette
BEND HTB 15°	40		383 10205 1270 2	pcs	50
	50		383 10205 1275 7	pcs	20
	75		383 10205 1280 1	pcs	20
	110		383 10205 1285 6	pcs	20
	125		383 10205 1290 0	pcs	20
	160		383 10205 1295 5	pcs	10
BEND HTB 30°	40		383 10205 1271 9	pcs	50
	50		383 10205 1276 4	pcs	20
	75		383 10205 1281 8	pcs	20
	110		383 10205 1286 3	pcs	20
	125		383 10205 1291 7	pcs	20
	160		383 10205 1296 2	pcs	10
BEND HTB 45°	40		383 10205 1272 6	pcs	50
	50		383 10205 1277 1	pcs	20
	75		383 10205 1282 5	pcs	20
	110		383 10205 1287 0	pcs	20
	125		383 10205 1292 4	pcs	20
	160		383 10205 1297 9	pcs	10
	200		383 10205 2830 7	pcs	3
BEND HTB 67°	40		383 10205 1273 3	pcs	50
	50		383 10205 1278 8	pcs	20
	75		383 10205 1283 2	pcs	20
	110		383 10205 1288 7	pcs	20
	125		383 10205 1293 1	pcs	20
BEND HTB 87°	40		383 10205 1274 0	pcs	50
	50		383 10205 1279 5	pcs	20
	75		383 10205 1284 9	pcs	20
	110		383 10205 1289 4	pcs	20
	125		383 10205 1294 8	pcs	20
	160		383 10205 1299 3	pcs	10
BRANCH HTEA 45°	40	40	383 10205 1300 6	pcs	20
	50	50	383 10205 1303 7	pcs	20
	75	75	383 10205 1308 2	pcs	20
	110	110	383 10205 1319 8	pcs	20
	125	125	383 10205 1324 2	pcs	20
	160	160	383 10205 1330 3	pcs	10
	200	200	383 10205 0952 8	pcs	17

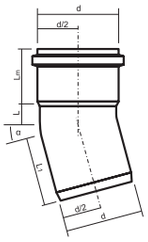
PP LOW-NOISE PIPES ★ argo ★ night sky★	OD Ø (mm)	OD Ø 1 (mm)	OD Ø 2 (mm)	EAN code	unit	units per box
BRANCH HTEA 67°	40	40		383 10205 1301 3	pcs	20
	50	50		383 10205 1304 4	pcs	20
	110	110		383 10205 1320 4	pcs	20
BRANCH HTEA 87°	40	40		383 10205 1302 0	pcs	20
	50	50		383 10205 1305 1	pcs	20
	75	75		383 10205 1309 9	pcs	20
	110	110		383 10205 1321 1	pcs	20
	125	125		383 10205 1325 9	pcs	10
	160	160		383 10205 1331 0	pcs	10
REDUCED BRANCH HTEA 45°	50	40		383 10205 1306 8	pcs	20
	75	50		383 10205 1310 5	pcs	20
	110	40		383 10205 1312 9	pcs	20
	110	50		383 10205 1314 3	pcs	20
	110	75		383 10205 1317 4	pcs	20
	125	110		383 10205 1322 8	pcs	10
	160	110		383 10205 1326 6	pcs	10
	160	125		383 10205 1328 0	pcs	10
	200	160		383 10205 2775 1	pcs	17
REDUCED BRANCH HTEA 67°	110	50		383 10205 1315 0	pcs	20
						
REDUCED BRANCH HTEA 87°	50	40		383 10205 1307 5	pcs	20
	75	50		383 10205 1311 2	pcs	20
	110	40		383 10205 1313 6	pcs	20
	110	50		383 10205 1316 7	pcs	20
	110	75		383 10205 1318 1	pcs	20
	125	110		383 10205 1323 5	pcs	10
	160	110		383 10205 1327 3	pcs	10
	160	125		383 10205 1329 7	pcs	10
DOUBLE BRANCH HTDA 45°	110	50	50	383 10205 2642 6	pcs	20
	110	110	110	383 10205 1830 8	pcs	20
DOUBLE BRANCH HTDA 87°	110	50	50	383 10205 2980 9	pcs	10
	110	110	110	383 10205 1834 6	pcs	10

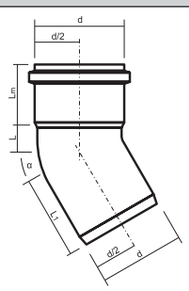
PP LOW-NOISE PIPES ✱ argo ✱ night sky✱	OD Ø (mm)	OD Ø 1 (mm)	EAN code	unit	units per box
SLIP COUPLER HTU 	40		383 10205 1340 2		50
	50		383 10205 1341 9		20
	75		383 10205 1342 6		20
	110		383 10205 1343 3		20
	125		383 10205 1344 0		20
	160		383 10205 1345 7		10
COUPLER HTMM 	40		383 10205 1346 4		50
	50		383 10205 1347 1		20
	75		383 10205 1348 8		20
	110		383 10205 1349 5		20
	125		383 10205 1350 1		20
	160		383 10205 1351 8		10
	200		383 10205 0953 5		8
REDUCER HTR 	50	40	383 10205 1358 7		50
	75	50	383 10205 1359 4		20
	110	50	383 10205 1360 0		20
	110	75	383 10205 1361 7		20
	125	110	383 10205 1362 4		20
	160	110	383 10205 1363 1		20
	160	125	383 10205 1364 8		20
	200	160	383 10205 0951 1		6
CLOSING CAP HTM 	40		383 10205 1352 5		100
	50		383 10205 1353 2		50
	75		383 10205 1354 9		20
	110		383 10205 1355 6		20
	125		383 10205 1356 3		20
	160		383 10205 1357 0		10
	200		383 10205 0954 2		25

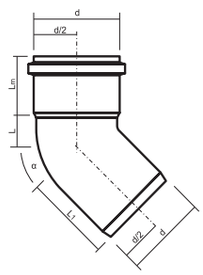
TEHNICAL DETAILS	
Description	Floor Trap
Material	Polypropylene
Top Connection	110 mm
Outlet Connection	75 mm
Inlet Connection(Max. 3 intel	50 mm
Sealing Type	Push Fit
Water Seal	75 mm

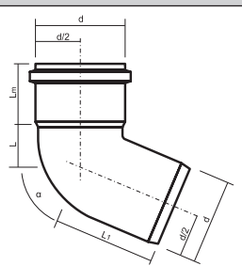


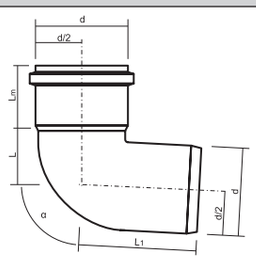
Technical data

			d	a	L	L1	Lm	w
HTB d/15°	BEND		40	15°	63	55	53	
			50	15°	60	57	52	
			110	15°	82	77	70	

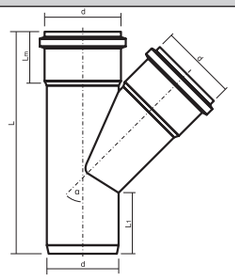
			d	a	L	L1	Lm	w
HTB d/30°	BEND		40	30°	60	57	53	
			50	30°	61	59	56	
			110	30°	90	77	67	

			d	a	L	L1	Lm	w
HTB d/45°	BEND		40	45°	170	54	54	
			50	45°	183	53	52	
			75	45°	225	62	57	
			110	45°	287	63	65	
			125	45°	320	71	70	
			160	45°	411	88	85	

			d	a	L	L1	Lm	w
HTB d/67°	BEND		40	67° 30	69	64	53	
			50		69	66	53	
			110		110	100	68	

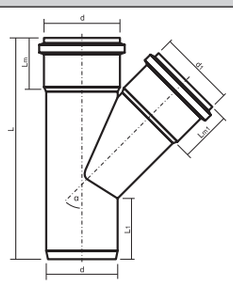
			d	a	L	L1	Lm	w
HTB d/87°	BEND		40	'87°30	25	70	47	
			50		32	78	48	
			75		46	108	57	
			110		62	124	68	
			125		72	136	70	
			160		92	155	86	

HTEA d/ d/45° SINGLE BRANCH FITTING



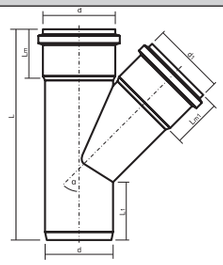
d	a	L	L1	Lm	w
40	45°	170	54	54	
50	45°	183	53	52	
75	45°	225	62	57	
110	45°	287	63	65	
125	45°	320	71	70	
160	45°	411	88	85	

HTEA d/ d1/45° SINGLE REDUCED BRANCH FITTING



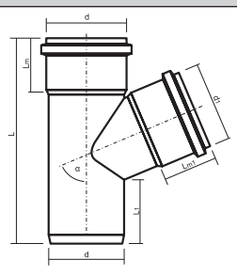
d	d1	a	L	L1	Lm	Lm1
50	40	45°	167	52	52	55
75	50	45°	193	60	55	52
110	40	45°	200	68	68	53
110	50	45°	200	65	60	50
110	75	45°	239	66	65	55
125	110	45°	301	71	64	61
160	110	45°	342	94	85	69

HTEA d/ d1/45° SINGLE REDUCED BRANCH FITTING



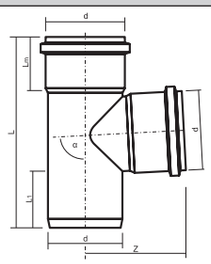
d	d1	a	L	L1	Lm	Lm1
160	125	45°	370	94	85	70

HTEA d/ d1/67° SINGLE BRANCH FITTING and SINGLE REDUCED BRANCH FITTING



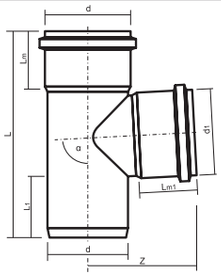
d	d1	a	L	L1	Lm	Lm1
110	50	‘67°30	185	60	65	50

HTEA d/ d1/87° SINGLE BRANCH FITTING



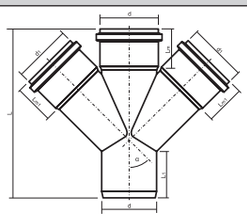
d	a	L	L1	Lm	Z
40	‘87°30	153	56	53	80
50		160	52	51	85
75		195	59	57	103
110		241	60	66	133
125		269	68	70	146
160		340	86	85	187

HTEA d/d/87° SINGLE REDUCED BRANCH FITTING



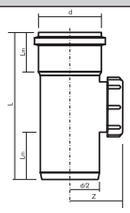
d	d1	a	L	L1	Lm	Lm1
75	50	‘87°30	179	62	57	52
110	40		185	68	69	55
110	50		188	70	61	50
110	75		212	70	62	56
125	110		208	72	70	70
160	110		292	90	85	70
160	125		322	95	85	70

HTDA d/d1/d1/45° DOUBLE BRANCH FITTING



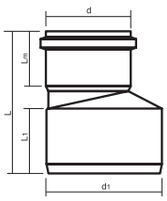
d	d1	a	L	L1	Lm	Lm1
110	50	45°	215	68	68	52
110	110	45°	300	70	69	69

HTRE d ACCESS PIPE



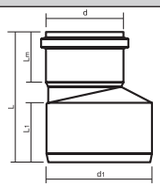
d	L	L1	Lm	Z
50	195	52	54	61
75	210	62	57	73
110	257	70	68	96
125	268	78	73	103
160	292	90	85	127

HTR d1/d ECCENTRIC PIECE



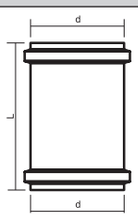
d	d1	L	L1	Lm
40	50	109	53	44
50	75	128	65	50
50	110	130	68	50
75	110	146	65	55
110	125	158	73	71

HTR d1/d ECCENTRIC PIECE

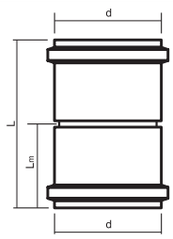


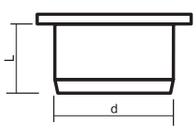
d	d1	L	L1	Lm

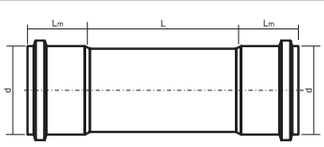
HTU d SLIDE COUPLER

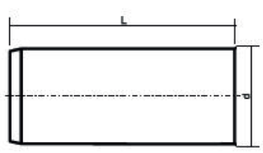


d	L	w
40	110	
50	116	
75	122	
110	150	
125	166	
160	180	

			d	L	Lm
HTMM d	CONNECTOR WITH EDGE		40	110	55
			50	116	58
			75	122	61
			110	150	75
			125	166	83
			160	180	90

			d	L	w
HTM d	CLOSING CAP		40	33	
			50	31	
			75	34	
			110	37	
			125	42	
			160	48	

			d	Lm	L
HTEM d/L	PIPE WITH SINGLE NECK SOCKET		40	53	250 500 1000 1500 2000 2500 3000
			50	54	250 500 1000 1500 2000 2500 3000 4000
			75	57	250 500 1000 1500 2000 2500 3000 4000 6000
			110	65	250 500 1000 1500 2000 2500 3000 4000 6000
			125	69	250 500 1000 1500 2000 2500 3000 4000 6000
			160	82	250 500 1000 1500 2000 2500 3000 4000 6000

			d	L
HTGL d/L	PIPE WITHOUT SOCKET		40	250 500 1000 1500 2000 2500 3000
			50	250 500 1000 1500 2000 2500 3000 4000
			75	250 500 1000 1500 2000 2500 3000 4000 6000
			110	250 500 1000 1500 2000 2500 3000 4000 6000
			125	250 500 1000 1500 2000 2500 3000 4000 6000
			160	250 500 1000 1500 2000 2500 3000 4000 6000
			200	1000 3000 5000

Notes

Notes

argo

Argonomy of Connections

ARGO PROIZVODNJA CEVI IN OPREME d.o.o.
Vrhniška cesta 30 SI - 1354 Horjul Slovenija

t. +386 1 7591 700
f. +386 1 7591 720
e. info@argo.si
w. www.argo.si