



KONECKIE
ZAKŁADY
ODLEWNICZE S.A.

*Socket
pipe
system*

Product catalogue

Socket cast iron pipe system





KONECKIE
ZAKŁADY
ODLEWNICZE S.A.

*Quality
is our priority!*

Dear Customers,

For decades, **KZO S.A.** has been the leading manufacturer of **socket cast iron pipes** and fittings. Long tradition and experience allowed us to achieve perfection in manufacturing these products.

Thanks to their properties, such as resistance to fire, exceptional durability and low level of acoustic noise, **socket pipes and fittings** are commonly used in the construction of gravitational sewage and water drainage systems for buildings. Excellent properties of grey cast iron combined with a traditional shape of pipes ensure a unique style and character of buildings.

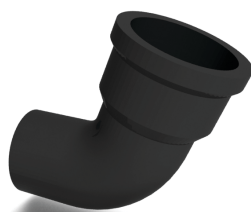
Socket cast iron pipes and fittings are eagerly used for renovations of historic buildings as well as for all types of reconstructions and patching of sewage and drainage systems. Our products do not disarrange the original character of renovated buildings, perfectly matching their style. The systems of socket cast iron pipes work best for tenement houses in town centers and beautiful rural manors. Such systems have been commonly used in residential and public buildings for decades and that makes them an obvious choice for renovation and extension of the existing sewage networks. Moreover, applying special "U-AK" seals facilitates assembly and saves time.

This catalogue demonstrates advantages of **socket cast iron pipes and fittings**. It also presents our products, along with their diagrams and main parameters. We encourage you to learn more about the offer of **KZO S.A.** and to choose the top quality based on long-lasting experience.

KZO S.A. Management Board



■ ADVANTAGES OF SOCKET PIPE SYSTEM



Classic form:
Fits well the architecture of renovated buildings.



Wide range of products:
Pipes, siphons, stormwater dampers, inspection pipes, rainwater mudboxes, branches, bends.



Resistance to fire:
The A1 fire reaction class means that cast iron products are non-combustible.



Chemical resistance:
Systems are highly resistant to municipal waste.



Anti-corrosion coatings:
Ecological, provide efficient protection of pipes against corrosion.



Low level of acoustic noise:
Products meet the requirements of PN-87/B-02151/02 standard on permitted noise level inside buildings



Low thermal expansion:
Not susceptible to temperature changes. Thermal expansion coefficient similar to concrete, so the pipes may be cemented.



Fast and easy assembly:
Using the "U-AK" seals.

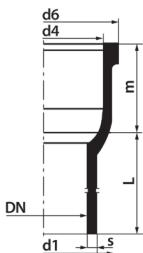


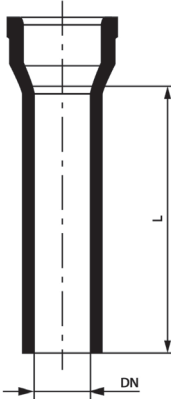
The material is 100% recyclable:
It may be re-melted in metallurgical furnace

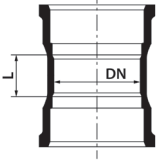


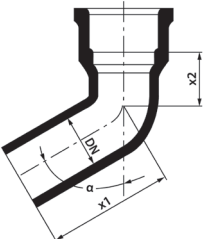
The highest durability:
Aesthetical looks that lasts

■ SOCKET PIPE SYSTEM

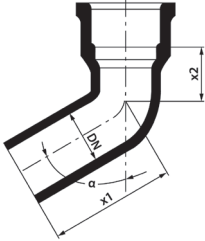
Construction dimensions	Nominal diameter DN	d1 [mm]	d4 [mm]	d6 [mm]	m [mm]	s [mm]
	50	60	72	90	55	3,5
	70	80	92	110	55	3,5
	100	112	124	144	60	4,0
	150	162	176	200	70	5,0
	200	212	226	252	80	6,0

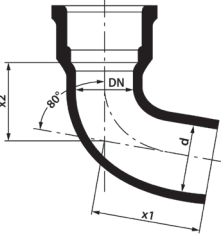
Socket pipes	Nominal diameter DN	Index no	Weight [kg]
	L = 1000 mm		
	50	000-0005-000	5,2
	70	000-0025-000	8,1
	100	000-0046-000	11,5
	150	000-0065-000	19,8
	200	000-0085-000	29,5
	L = 2000 mm		
	70	000-0123-000	15,7
	100	000-0143-000	21,5
	150	000-0163-000	36,4
	200	000-0183-000	54,0

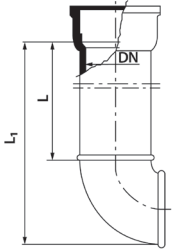
Double sockets	Nominal diameter DN	Index no	L [mm]	Weight [kg]
	100	000-0440-000	45	2,7
	150	000-0460-000	55	5,6
	200	000-0480-000	60	10,1

Bends	Nominal diameter DN	Index no	x1 [mm]	x2 [mm]	Weight [kg]
	α=45°				
	50	000-1002-000	107	38	1,5
	70	000-1022-000	117	43	2,1
	100	000-1042-000	132	51	3,1
	150	000-1062-000	155	68	6,3
	200	000-1082-000	190	82	11,3

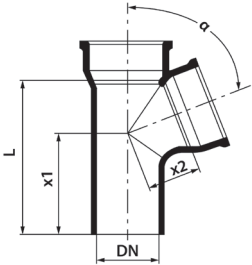
■ SOCKET PIPE SYSTEM

Bends	Nominal diameter DN	Index no	x1 [mm]	x2 [mm]	Weight [kg]
	$\alpha=70^\circ$				
	100	000-1044-000	152	72	3,8
	150	000-1064-000	185	95	7,2
	200	000-1084-000	225	116	13,0
	$\alpha=87^\circ$				
	50	000-1006-000	131	62	1,5
	70	000-1026-000	145	73	2,0
	100	000-1046-000	170	89	4,0
	150	000-1066-000	217	119	8,4

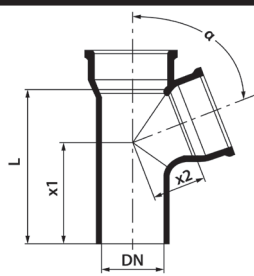
Reducing bend	Nominal diameter DN	Index no	d [mm]	x1 [mm]	x2 [mm]	Weight [kg]
	100	000-1146-00	150	190	102	5,5

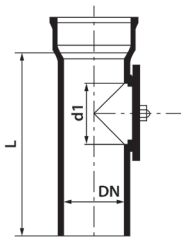
Elbow pipes	Nominal diameter DN	Index no	L [mm]	L ₁ [mm]	Weight [kg]
	70	101-1020-000	1000	1125	9,0
	70	101-1022-000	2000	2125	16,6
	100*	101-1040-000	1000	1150	13,0
	100*	101-1042-000	2000	2150	23,0

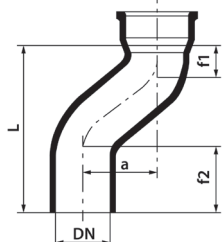
* Elbow pipes with a foot available on request.

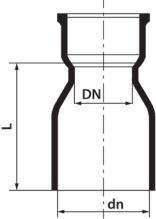
Branches	Nominal diameter DN	Index no	L [mm]	x1 [mm]	x2 [mm]	Weight [kg]
	α=45°					
	100 x 50	000-2010-000	210	98	122	3,8
	100 x 100	000-2016-000	285	137	148	5,9
	150 x 100	000-2037-000	295	118	187	9,4
	150 x 150	000-2043-000	365	153	212	12,7
	200 x 150	000-2058-000	385	150	245	17,0
	200 x 200	000-2061-000	460	180	280	22,4

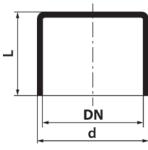
■ SOCKET PIPE SYSTEM

Branches	Nominal diameter DN	Index no	L [mm]	x1 [mm]	x2 [mm]	Weight [kg]
	α=70°					
	100 x 100	000-2017-000	245	157	88	5,2
	150 x 150	000-2044-000	310	184	126	10,9
	200 x 150	000-2059-000	360	220	160	16,2
	α=87°					
	100 x 100	000-2018-000	235	189	66	4,8

Inspection pipes	Nominal diameter DN	Index no	L [mm]	d1 [mm]	Weight [kg]
	100	000-3040-000	300	104	6,4
	150	000-3060-000	375	152	12,3
	200	000-3080-000	440	200	22,8

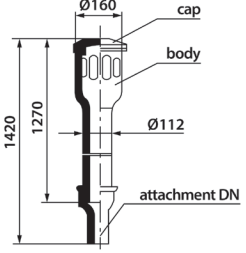
S Bends	Nominal diameter DN	Index no	f1 [mm]	f2 [mm]	a [mm]	L [mm]	Weight [kg]
	100	000-1340-000	50	125	65	252	4,3
	100	000-1341-000	55	125	130	307	5,3
	150	000-1360-000	73	163	65	290	8,8
	150	000-1361-000	73	163	130	345	10,6

Reducer	Nominal diameter DN	Index no	dn [mm]	L [mm]	Weight [kg]
	100	000-0246-000	150	180	3,8

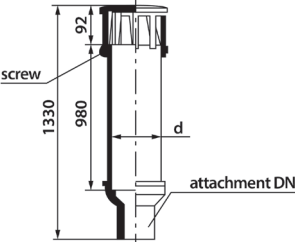
Plugs	Nominal diameter DN	Index no	d [mm]	L [mm]	Weight [kg]
	50	000-0500-000	60	65	0,5
	70	000-0520-000	80	65	0,8
	100	000-0540-000	112	70	1,4
	150	000-0560-000	162	80	2,8
	200	000-0580-000	212	90	5,1

■ SOCKET PIPE SYSTEM

Ventilated pipes make the last section of the ventilation pipeline, lead above a building roof and protect against rain, birds and rodents. Usually ventilated pipes should be wider than sewage pipes. The purpose of ventilated pipes is to carry away sewage gases resulting from rotting of waste as well as to supply air into the installation to allow free flow of waste.

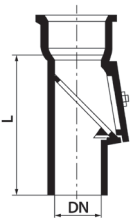
Ventilated pipes	Nominal diameter DN	Index no	Weight [kg]
	70	000-5200-000	15,6
	100	000-5400-000	13,5*

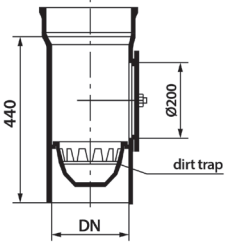
* without attachment.

Type "W" ventilated pipes	Nominal diameter DN	Index no	d [mm]	Weight [kg]
	70	000-6200-000	125	19,0
	100	000-6400-000	150	25,0
	150	000-6600-000	200	43,7
	200*	000-6700-000	200	45,5*

* made without attachment, body - socketless $\phi 200 \times 1500$.

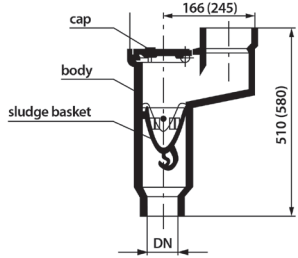
Rainwater mudboxes are fixed at the end of rainwater outlet pipe. Their task is to separate solid waste (leaves, sticks) carried by rainwater from roofs. In order to stop such waste, type DN 100 and DN 150 mudboxes have a 45° inclined cast iron grate installed inside the pipe, and type DN 200 mudbox is equipped with a dirt trap.

Rainwater mudboxes	Nominal diameter DN	Index no	L [mm]	Weight [kg]
	100	102-4000-000	290	6,6
	150	102-6000-000	330	11,4

Rainwater mudbox Ø200	Nominal diameter DN	Index no	Weight [kg]
	200	102-8000-000	24,9

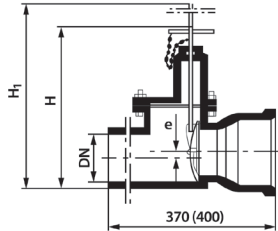
■ SOCKET PIPE SYSTEM

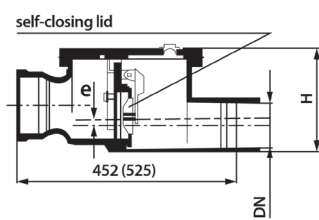
Geiger siphons (Siphons) are used to hold solid waste (e.g. sand, sludge) carried by rainwater. They also enable a periodic control of house drain.

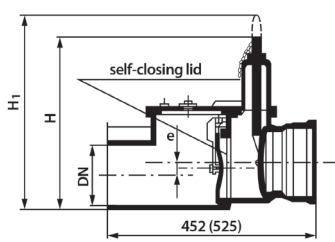
Geiger siphons - rainwater mudboxes	Nominal diameter DN	Index no	Weight [kg]
	100*	103-4000-000	17,2
	150	103-6000-000	24,7

* anti-odour flap available on request.

Stormwater dampers are the elements of drainage systems, protecting buildings against damage caused by flooding of premises located below flooding level. An overload of the external sewage system may cause a reverse flow - the "backwater", which pushes the wastewater back to the elements connected to the building internal installation and mounted below the flooding level. The dampers are mounted on the horizontal cumulative pipes that carry away waste from outlets, before connecting to main conduit. For ground-or-floor-seated pipelines, it is necessary to apply a box installation, which ensures easy access for control, maintenance and repair purposes. Two-level dampers are also equipped with hand-launched emergency gate that provides additional protection during renovation or expansion of the installation and during long absence of users or enables simple checking of a valve efficiency.

Stormwater damper	Nominal diameter DN	Index no	Typ	H [mm]	H1 [mm]	e [mm]	Weight [kg]
	100	000-4040-000	ZBS-100	290	400	12	13,0
	150	000-4060-000	ZBS-150	390	500	14	23,7

Single-level stormwater damper	Nominal diameter DN	Index no	Typ	H [mm]	e [mm]	Weight [kg]
	100	000-4240-000	ZBS-100-1	220	40	20,1
	150	000-4260-000	ZBS-150-1	260	28	27,2

Two-level stormwater damper	Nominal diameter DN	Index no	Typ	H [mm]	H1 [mm]	e [mm]	Weight [kg]
	100	000-4140-000	ZBS-100-2	335	435	40	22,3
	150	000-4160-000	ZBS-150-2	405	565	28	32,3

■ INSTALLATION TIPS

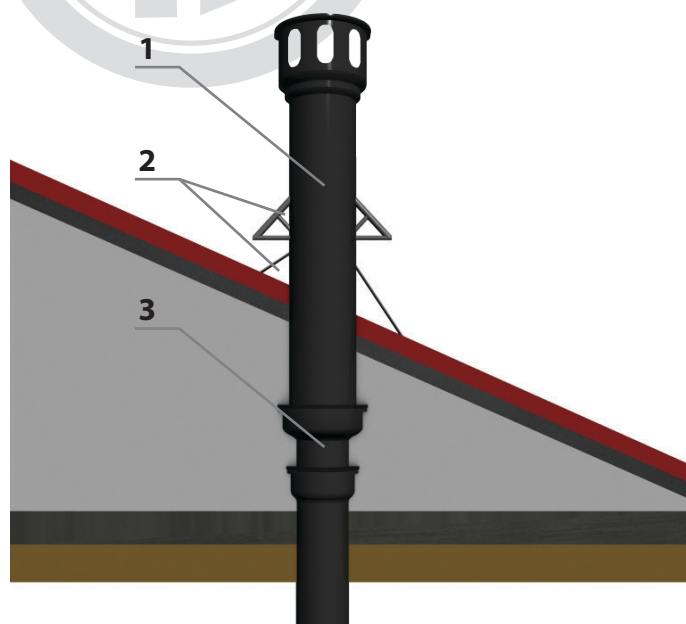


Fig.1 Installation of a ventilated pipe - example

- 1 - ventilated pipe
- 2 - plate processing
- 3 - ventilated pipe joiner

Installation of sewage ducts:

- A pipeline should have the same diameter along its full length.
- Any changes of the pipeline direction, arising from a building setoff, should be made using gentle bends of max. 45° angle.
- In the building objects higher than 15 meters or having more than five levels, pipelines should be equipped with a S bend and an inspection pipe above it.
- The top section of the pipeline above the elements of the highest level should be led above the roof and ended with a ventilated pipe (Fig.1).
- The pipes should be fixed to walls with hooks or carrying couplings, along with fixing elements and holders (intended for that purpose). The distance between fixing points must not exceed 1.5 m. If possible, the fixing elements should be mounted by the socket.
- When using holding couplings for the installation of socket pipes, the couplings with the following threaded connectors are recommended:
 - for DN 50 - 70 diameters: couplings with M8 threaded connectors,
 - for DN 100 - 150 diameters: couplings with M12 threaded connectors,
 - for DN 200 diameters: couplings with M16 threaded connectors.
- The above recommendations also apply to mounting of horizontal pipelines.
- At the transition between vertical and horizontal pipeline it is necessary to use inspection pipes, brought out 0.5 m above the floor level.

Installation of horizontal pipelines:

- Minimal decline of horizontal pipelines:
 - for DN 100 diameter pipes - 2%
 - for DN 125 diameter pipes - 1,7%
 - for DN 150 and DN 200 diameter pipes - 1,5%
- Curves in horizontal pipelines should be made with 45° bends. A 90° direction change may be obtained by using two 45° bends.
- A branching from a main pipeline should be made at 45° angle (Fig.2).

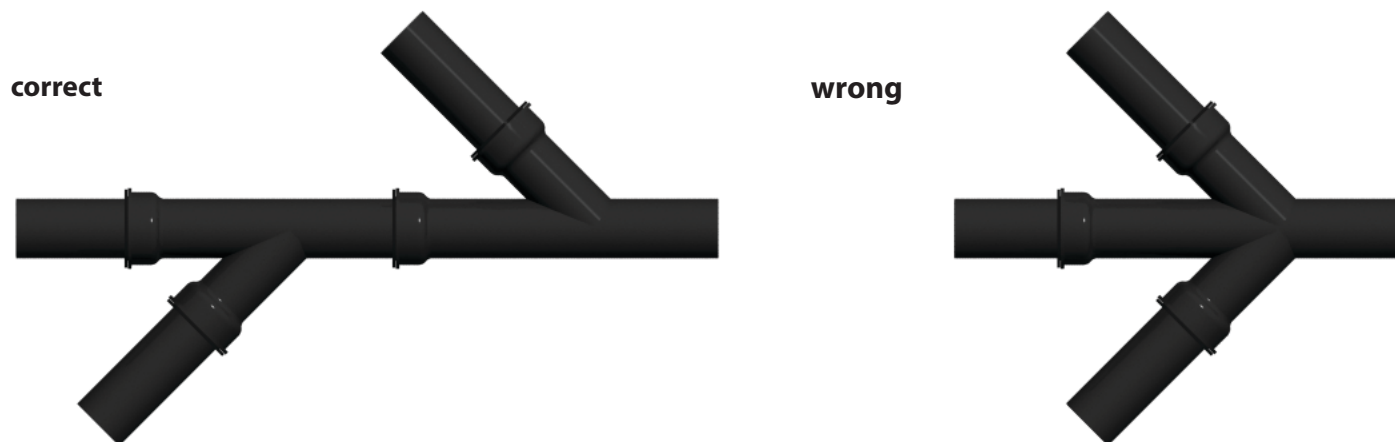


Fig.2 Horizontal pipeline- branching from the main pipeline

- Horizontal socket pipes led along cellar walls should be fixed with couplings, with an interspace not exceeding 1.5 m.
- For sanitary facilities and inlets installed below the maximum level of water waste in a combined sewage system, it is necessary to install **stormwater dampers** within outlet pipelines.
- In long horizontal sections it is necessary to apply inspection pipes with an interspace not larger than 15 m. Inspection pipes should also be applied before each horizontal offset.

■ U-AK SEALS

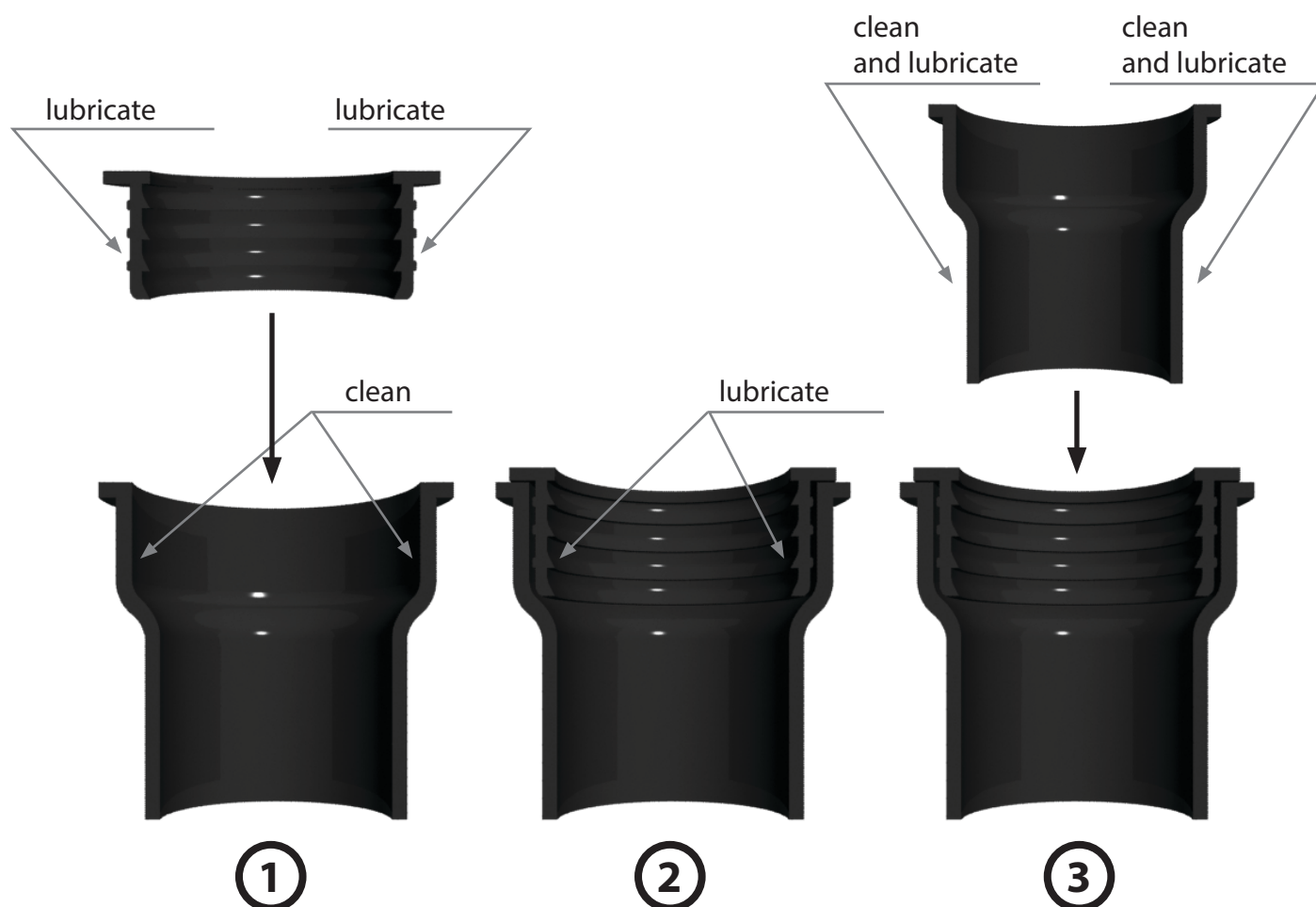


Nominal diameter DN	Index no
50	T0-000-960-6000-000
70	T0-000-960-6100-000
100	T0-000-960-6200-000
150	T0-000-960-6300-000
200	T0-000-960-6400-000

The **U-AK seals** are used to fix the joints between socket cast iron pipes and fittings in gravitational sewage systems used for disposing liquids out of buildings.

Making joints with **U-AK** seals is very simple. A seal should be inserted into the pipe socket so that the seal collar rests against the end of the pipe socket. Then, the naked end of the pipe and the inner section of the seal should be lubricated (e.g. with a dishwashing liquid or similar) and the pipe inserted into the seal. To ensure proper installation, mark the depth of insertion into the socket with the seal at the naked end of the pipe and then insert it to that depth.

■ INSTALLATION PROCEDURE





KONECKIE ZAKŁADY ODLEWNICZE S.A.



Krajowa Deklaracja Zgodności Nr 1.1/12

1. Producent wyrobu budowlanego: Koneckie Zakłady Odlewnicze S.A., 26-200 Końskie, ul. 1 Maja 57 tel. (41) 372 64 50 do 57, fax (41) 372 74 43
 2. Nazwa wyrobu budowlanego: żeliwne rury kanalizacyjne (kielichowe) o średnicach: DN 50, DN 70, DN 100, DN 125, DN 150, DN 200 mm i długościach: L 250-2000 mm
 3. Klasyfikacja wyrobu budowlanego: 24.51.20-00 (kod PKWiU)
 4. Przeznaczenie i zakres stosowania wyrobu budowlanego w instalacjach kanalizacyjnych w budynkach lub sieciach zewnętrznych.
 5. Specyfikacja techniczna: Aprobata Techniczna ITB nr AT-15-7520/2013 pt. „Rury i kształtki kielichowe KZO i elementy wyposażenia KZO, z żeliwa stosowane do budowy wewnętrznych systemów kanalizacji grawitacyjnej.”
 6. Deklarowane cechy techniczne typu wyrobu budowlanego: materiał rur – żeliwo klasy EN-GJL 150, wymiary wg AT-15-7520/2013
 7. Nazwa i numer akredytowanej jednostki certyfikującej lub laboratorium oraz numer certyfikatu lub numer raportu z badań typu, jeżeli taka jednostka brała udział w zastosowanym systemie oceny zgodności wyrobu budowlanego: deklarowanie zgodności wg systemu 4 (zgodnie z Rozporządzeniem Ministra Infrastruktury z dn. 11.08.2004r. w sprawie sposobów deklarowania zgodności wyrobów budowlanych oraz sposobu znakowania ich znakiem budowlanym.)
- Deklaruję: pełną odpowiedzialnością, że wyrób budowlany jest zgodny ze specyfikacją techniczną wskazaną w punkcie 5.

Pełnomocnik ds. Jakości
Doradca Techniczny
mgr inż. Zdzisław Gromniński

KZO S.A. Końskie dn. 15.10.2012 r.

Koneckie Zakłady Odlewnicze S.A.
26-200 Końskie
ul. 1 Maja 57

Tel.: +48 41 372 64 50 do 53
Fax: +48 41 372 74 43
www.kzo.pl

KRS 0000101854
Kapitał akcyjny 16.400.000 zł
Regon 000027772

NIP 658-00-81-047
KODEKS SĄDOWY
081140202000000



Instytut Techniki Budowlanej

00-611 WARSZAWA | ul. FILTROWA 1 | tel.: (48 22) 825 04 71, (48 22) 825 76 55 | fax: (48 22) 825 52 86
Członek Europejskiej Unii Akceptacji Technicznej w Budownictwie – UEATC
Członek Europejskiej Organizacji ds. Aprobacji Technicznych – EOTA

Seria: APROBATY TECHNICZNE

APROBATA TECHNICZNA ITB AT-15-7520/2013

Na podstawie rozporządzenia Ministra Infrastruktury z dnia 8 listopada 2004 r. w sprawie aprobat technicznych oraz jednostek organizacyjnych upoważnionych do ich wydawania (Dz. U. Nr 249, poz. 2497), w wyniku postępowania aprobacyjnego dokonanego w Instytucie Techniki Budowlanej w Warszawie, na wniosek firmy:

Koneckie Zakłady Odlewnicze S.A. w Końskich
ul. 1 Maja 57, 26-200 Końskie

stwierdza się przydatność do stosowania w budownictwie wyrobów pod nazwą:

Rury i kształtki kielichowe KZO i elementy wyposażenia KZO, z żeliwa, stosowane do budowy wewnętrznych systemów kanalizacji grawitacyjnej

w zakresie i na zasadach określonych w Załączniku, który stanowi integralną część niniejszej Aprobaty Technicznej ITB.

Termin ważności:
14 stycznia 2018 r.

Załącznik:
Postanowienia ogólne i techniczne



DYREKTOR
Instytutu Techniki Budowlanej
Jan Bobrowicz

Warszawa, 14 stycznia 2013 r.

Aprobata Techniczna ITB AT-15-7520/2013 jest nowelizacją Aprobaty Technicznej ITB AT-15-7520/2008. Dokument Aprobata Techniczna ITB AT-15-7520/2013 zawiera 25 stron. Tekst tego dokumentu można kopiować tylko w całości, uzgodnienia z Instytutem Techniki Budowlanej.

CERTYFIKAT

Jednostka certyfikująca
TÜV SÜD Management Service GmbH
zaświadcza, że przedsiębiorstwo



Koneckie Zakłady Odlewnicze
Spółka Akcyjna
ul. 1 Maja 57
PL-26-200 Końskie

wdrożyło i stosuje
system zarządzania jakością w zakresie

Produkcja i sprzedaż
odlewnów żeliwnych

Na podstawie auditu, nr sprawozdania: 70062103
potwierdza się spełnienie
wymagań normy

ISO 9001:2008

Niniejszy certyfikat jest ważny do: 2013-02-25
Numer rejestracyjny certyfikatu 12 100 21799 TMS

M. Wogel

Monachium, 2010-03-17

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 65 • 80339 München

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that



Koneckie Zakłady Odlewnicze S.A.
ul. 1 Maja 57
PL-26-200 Końskie

has established and applies
a Quality Management System for

Production and sales of iron castings.

An audit was performed, Report No. 70062103
Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled. The certificate is valid until 2016-02-25
Certificate Registration No. 12 100 21799 TMS

M. Wogel

Munich, 2013-04-08



QMS-TGA-ZM-67-82

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 65 • 80339 München • Germany TÜV®



Koneckie Zakłady Odlewnicze S.A.
ul. 1 Maja 57
26-200 Końskie
Poland

www www.kzo.pl
e-mail kzo@kzo.pl
tel. +48 41 372 64 50
fax +48 41 372 74 43

*Quality
is our priority!*