

MANHOLE STEPS



KASI

LEADING CZECH MANUFACTURER OF MANHOLE STEPS

KASI, spol. s r.o. was founded in 1992 as an engineering company operating in the field of concrete component production technology. Today, we are one of the most modern European producers of sewer components, supplying the whole of Central and Eastern Europe.

Our product portfolio includes:

- | manhole covers and gully grates
- | adjustment rings and street gullies
- | auxiliary installation material
- | manhole steps
- | accessories for concrete products

We also offer engineering production and technology for the manufacture of concrete components.

INNOVATION AND DEVELOPMENT ARE OUR DOMAIN

Our development and testing centre is equipped with the latest technology and equipment. Years of experience in product development and production technology are key to guaranteeing long-term product quality. Currently, our line is one of the most modern and environmentally friendly production lines for steps.



IN-HOUSE FOUNDRY AND CONCRETE PLANT



EMPHASIS ON TECHNOLOGY AND PRODUCT INNOVATIONS



PRODUCT DEVELOPMENT AND TESTING



AUTOMATED AND OPTIMISED PRODUCTION



CUSTOMER-SPECIFIC SOLUTIONS





CZECH
MANUFACTURER



ECOLOGY

PRODUCTION AUTONOMY

In the Přelouč plant, the complete process of manufacturing the steps is carried out from the input materials to the final product. The facility is equipped with state-of-the-art production technologies including robotic workstations. This guarantees the long-term quality of all our steps.

BROAD PRODUCT PORTFOLIO

We offer a wide range of products in different shapes and sizes according to customer needs. For all types of steps, the logo can be placed on the footplate, or the colour of the plastic coating can be changed when ordering higher series.



INTRODUCTION OF THE RANGE OF MANHOLE STEPS

Manhole steps are designed for direct installation, for installation with plugs or for additional installation into concrete parts. They are available with three different cores – steel, stainless steel and/or aluminium. The dimensions of manhole steps comply with CSN EN 13101.



Type “A”

SINGLE-ROW STEPS WITH TWO BENDS

In the long version, the steps are identical in shape and dimensions to the steps according to DIN 19555-A; in the Czech Republic, it corresponds to STA products. In the short version, the steps correspond to the products used in the Czech Republic with the designation STB. The SA type has a 27 mm diameter end, the SE type has a 26 mm diameter end.



Type “B”

SINGLE-ROW STEPS WITH ONE BEND

In the long version, the steps conform in shape and dimensions to DIN 19555-B. The SB type has a 27 mm diameter end, the SF type has a 26 mm diameter end.



Type “C”

SINGLE-ROW STEPS WITH ONE BEND

Based on the “B” type form in terms of shape. However, the steps are modified to offer a short version. This version is the most cost-effective of all available single-row steps.



Type “D”

DOUBLE-ROW STEPS WITH ONE BEND

The steps are used to create a double-row stepladder, with the basic parameters adopted from the German standard DIN 1212 E.



Wall plugs

Wall plugs are used for easy installation of manhole steps into prefabricated parts.



Pocket steps

FOR INSTALLATION INTO CONES AND OTHER TOP PARTS OF THE MANHOLE

Pocket steps are manufactured according to EN 13101 “Steps for underground man entry chambers”.



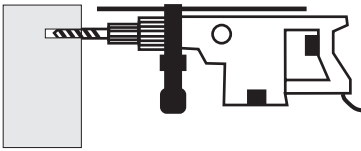
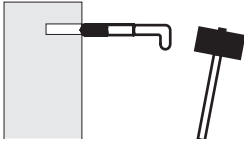

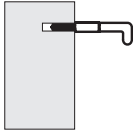
INSTALLATION OF STEPS

All types of steps can be built-in:
 | directly
 | using wall plugs
 | in additionally drilled holes

The steps are constructed so that when they are directly built into rings with wall thickness of 9 cm, the concrete material behind the wall plug is 3 cm. This minimises the risk of losing the watertightness of the ring.

All steps are manufactured from materials that meet the requirements of EN 13 101. The quality of the materials used is continuously checked. KASI has implemented the quality management system ČSN EN ISO 9001.

Installation of steps:

<p>1.</p> 	<p>Drill two holes in the given wall for each step with a spacing of 328 mm or 150 mm, depending on the type of step, and 70 mm deep. When drilling, it is necessary to keep the holes axially parallel and aligned.</p> <p>The diameter of the holes for installation in concrete is 26 mm. The declared pull-out force depends on the properties of the wall material. The specified value applies to concrete of min. class B25.</p> <p>Drill a 25 mm diameter hole when installing the steps into soft materials (HEBEL blocks).</p>	
<p>2.</p> 	<p>Drive the step into the drilled and cleaned hole. The tips can be soaked in cement milk before driving them in.</p>	<p>Replacement of steps during repair</p> 
<p>3.</p> 	<p>The step must be driven in at least 60 mm (no notch of the tip may be outside the hole).</p>	

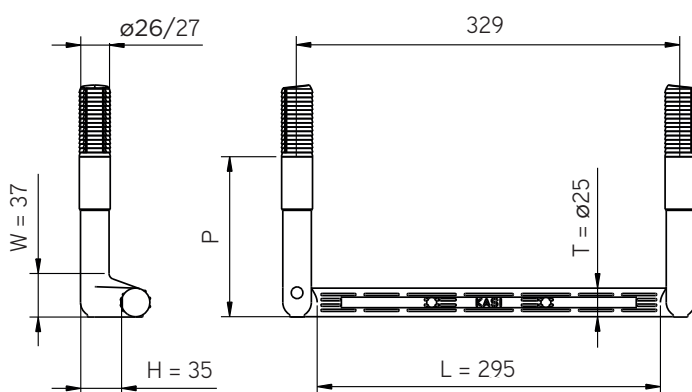


STEPS SA, SE

"A" type steps – single row with two bends

Type "A"

- | resistant PE-HD coating and anti-slip design
- | core made of steel, stainless steel or aluminium
- | 3 different step lengths
- | manufactured as per EN 13101



Vertical load: deformation ≤ 10 mm under a vertical load of 2 kN with permanent deformation ≤ 2 mm

Pull-out/anchoring: minimum force 5 kN

Impact: impact mass 20 kg from a height of 1 m

Curvature (flatness): ≤ 5 mm, measured along the leading edge of the step

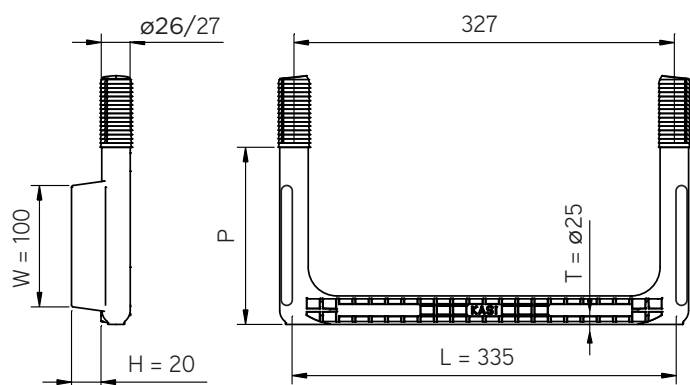
- | Steel with PE coating
- | Stainless steel with PE coating
- | Aluminium with PE coating

CODE	LENGTH "P"	MATERIAL	Ø OF THE END	COLOUR	STANDARD	CLASS
SAKS	127	steel	27	black	EN 13101 MSS DII	II
SAKA	127	aluminium	27	blue	EN 13101 ALS DII	II
SARS	137	steel	27	black	EN 13101 MSS DII	II
SERC	137	stainless steel	26	orange	EN 13101 SSS DI	I
SERA	137	aluminium	26	blue	EN 13101 ALS DII	II
SADS	162	steel	27	black	EN 13101 MSS DII	II
SEDSI	162	steel	26	black	EN 13101 MSS DII, DIN19555	II
SEDC	162	stainless steel	26	orange	EN 13101 SSS DI, DIN19555	I

"B" type steps – single row with one bend

- | resistant PE-HD coating and anti-slip design
- | stainless steel core
- | manufactured as per EN 13101

Type "B"



Vertical load: deformation ≤ 10 mm under a vertical load of 2 kN with permanent deformation ≤ 2 mm

Pull-out/anchoring: minimum force 5 kN

Impact: impact mass 20 kg from a height of 1 m

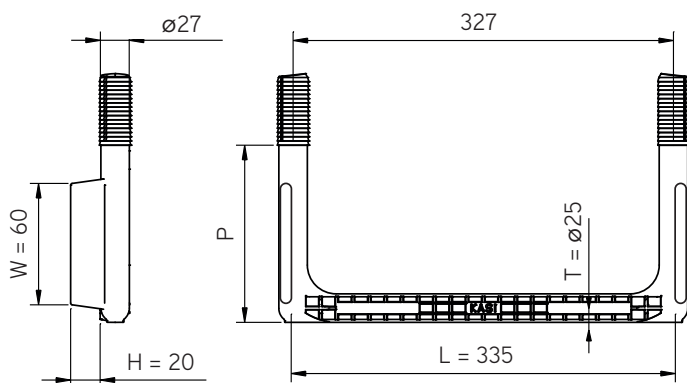
Curvature (flatness): ≤ 5 mm, measured along the leading edge of the step

- | Steel with PE coating
- | Stainless steel with PE coating

CODE	LENGTH "P"	MATERIAL	Ø OF THE END	COLOUR	STANDARD	CLASS
SFDSI	162	steel	26	black	EN 13101 MSS DI, DIN 19555-B-MSS	I
SFDC	162	stainless steel	26	orange	EN 13101 SSS DI, DIN 19555-B-SSS	I
SFDN	162	stainless steel V4	26	orange	EN 13101 SSS DI, DIN 19555-B-SSS	I

"C" type steps – single row with one bend

- | resistant PE-HD coating and anti-slip design
- | steel core
- | 2 different step lengths
- | manufactured as per EN 13101



Vertical load: deformation ≤ 10 mm under a vertical load of 2 kN with permanent deformation ≤ 2 mm

Pulling-out/anchoring: minimum force 5 kN

Impact: impact mass 20 kg from a height of 1 m

Curvature (flatness): ≤ 5 mm, measured along the leading edge of the step

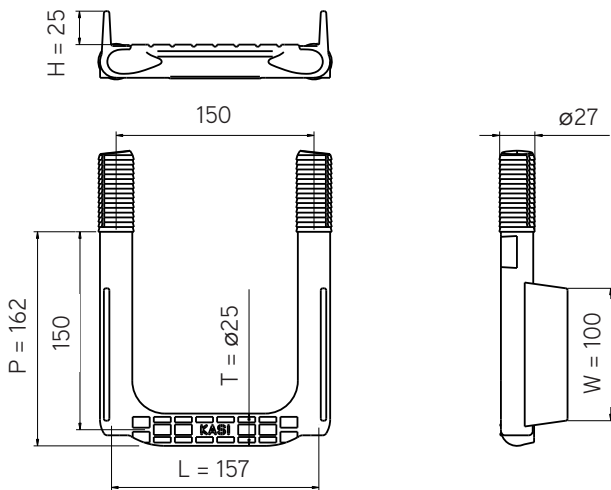
- | Steel with PE coating

CODE	LENGTH "P"	MATERIAL	Ø OF THE END	COLOUR	STANDARD	CLASS
SCKS	127	steel	27	black	EN 13101 MSS DII	II
SCKSO	127	steel	27	orange	EN 13101 MSS DII	II
SCSS	152	steel	27	black	EN 13101 MSS DII	II
SCSSO	152	steel	27	orange	EN 13101 MSS DII	II

"D" type steps – double row with one bend

- | resistant PE-HD coating and anti-slip design
- | stainless steel core
- | manufactured as per EN 13101

Type "D"



Vertical load:

- | deformation ≤ 10 mm under a vertical load of 2 kN with permanent deformation ≤ 2 mm
- | permanent deformation ≤ 10 mm at vertical load 4 kN

Pull-out/anchoring: minimum force 5 kN

Impact: impact mass 20 kg from a height of 1 m

Curvature (flatness): ≤ 5 mm, measured along the leading edge of the step

- | Steel with PE coating
- | Stainless steel with PE coating

CODE	LENGTH "P"	MATERIAL	Ø OF THE END	COLOUR	STANDARD
SDDS	162	steel	27	black	EN 13101 MSS DII
SDDC	162	stainless steel	27	orange	EN 13101 SSS DII

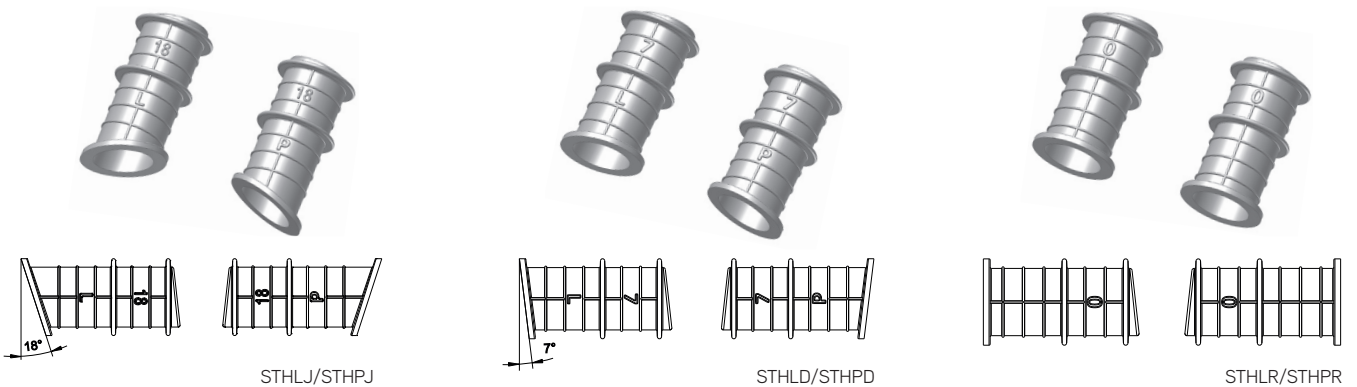


FOR SIMPLE INSTALLATION OF MANHOLE STEPS INTO PREFABRICATED PARTS

Wall plugs

Wall plugs

- | simple production of the concrete element
- | installation of steps into completed concrete elements
- | made out of resistant PE-HD
- | minimised watertightness loss of the ring seal



CODE	ORIENTATION	DIAMETER	ANGLE	APPLICATION ACCORDING TO MANHOLE
STHLJ	left	27	18	DN800-1500 single-row ladder
STHPJ	right	27	18	DN800-1500 single-row ladder
STHLJ26	left	26	18	DN800-1500 single-row ladder
STHPJ26	right	26	18	DN800-1500 single-row ladder
STHLD	left	27	7	DN800-1500 double-row and DN2000-3000 single-row ladder
STHPD	right	27	7	DN800-1500 double-row and DN2000-3000 single-row ladder
STHLD26	left	26	7	DN800-1500 double-row and DN2000-3000 single-row ladder
STHPD26	right	26	7	DN800-1500 double-row and DN2000-3000 single-row ladder
STHLR	left	27	0	straight walls
STHPR	right	27	0	straight walls
STHL26	left	26	18	DN800-1500 single-row ladder, extended version
STHP26	right	26	18	DN800-1500 single-row ladder, extended version



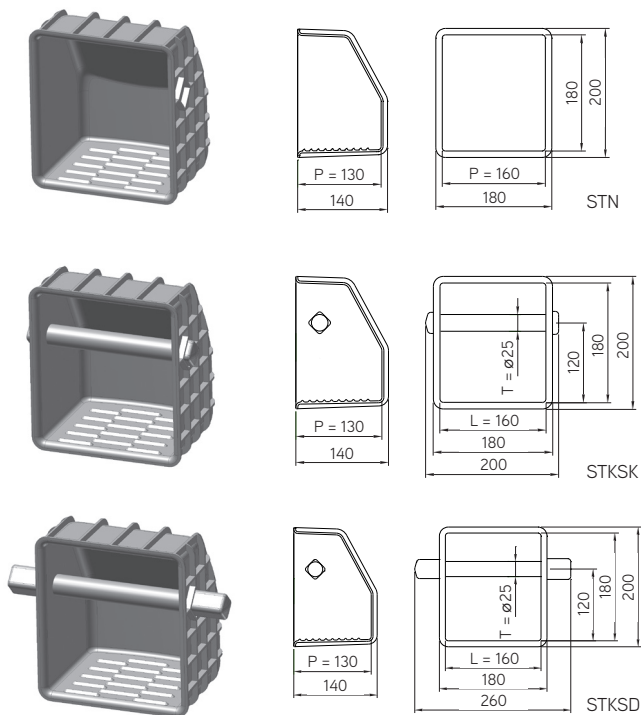
FOR INSTALLATION INTO CONES AND OTHER TOP PARTS OF THE MANHOLE

Pocket steps

Pocket steps

- | Ideal water drainage from the flier
- | resistant PE-HD coating

- | Anti-slip design



The pocket steps are manufactured according to KASI specifications. The basis for the specifications is standard EN 13101 "Steps for underground man entry chambers".

The following items are defined in the specifications according to EN 13101:

- | tests and supervision
- | material used for the manufacture of the steps, including stainless steel material of minimum grade X6CrNiTi 18-10 - austenitic steel according to EN10083-1 or -3
- | dimensions of the steps:
 - P:** depth = 130 mm (minimum value permissible by the standard = 120 mm)
 - T:** width of the bearing member = 25 mm (minimum value permissible by the standard = 20 mm)
 - L:** length of flier for double-row ladder 160 mm (minimum value permissible by the standard = 145 mm)

Anti-slip protrusions in the tread surface create a safer tread, their positioning optimises water drainage from the surface.

The surface of the handle is equipped with non-slip protrusions for a more secure grip.

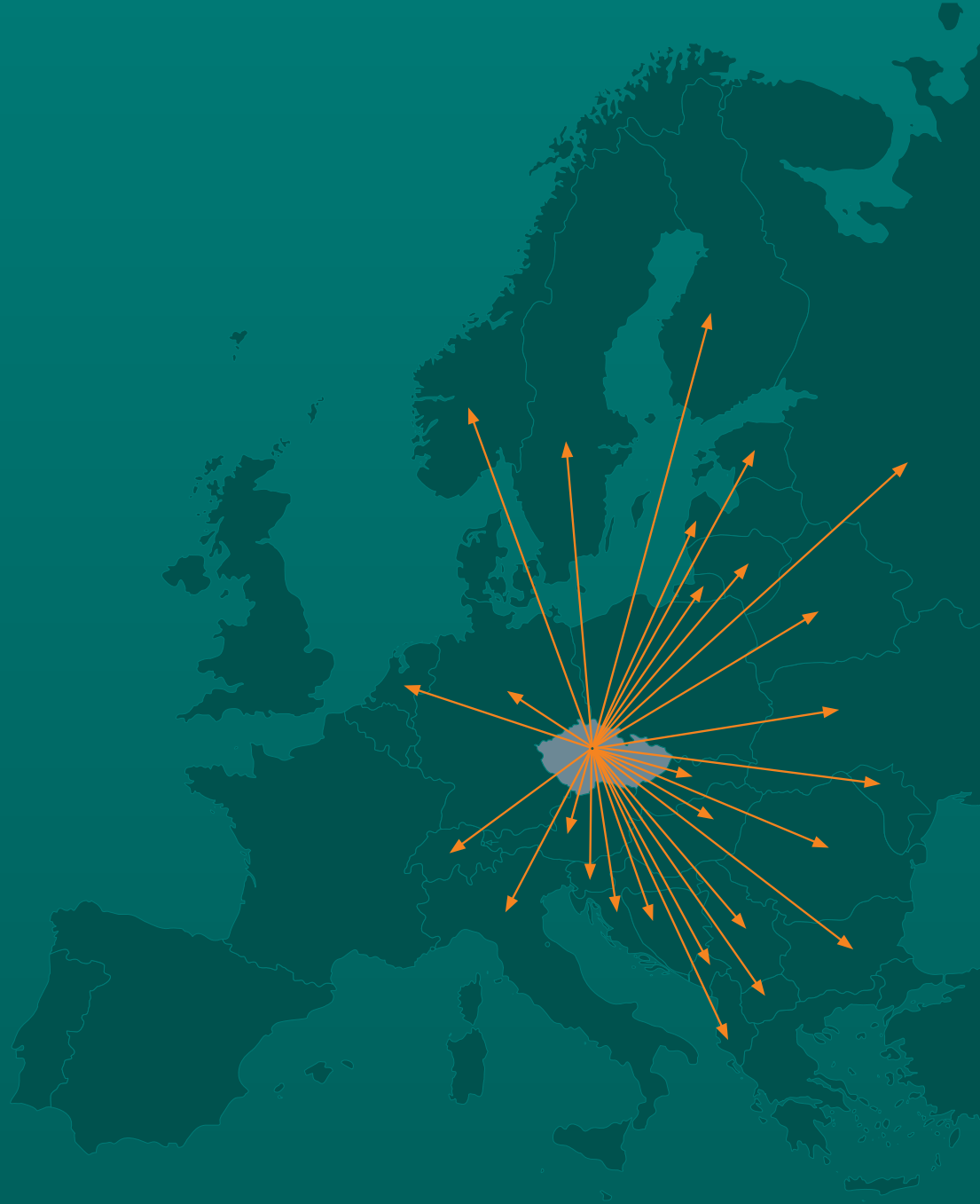
CODE	DESCRIPTION	HANDLE	HANDLE MATERIAL	POCKET MATERIAL
STN	flier	no	without handle	PE-HD
STKSK	short step	yes	steel with polyethylene coating	PE-HD
STKSD	long step	yes	steel with polyethylene coating	PE-HD

KASI

KASI, spol. s r.o.

Chrudimská 1602
Přelouč 535 01
Czech Republic
Phone: +420 466 501 755
e-mail: export@kasi.cz

www.kasi.cz



The KASI catalogue range also includes:

- Manhole covers STANDARD and Adjustment rings
- Manhole covers EUROPA
- Recommended products
- Leaflet containing accessories and installation aids
- Rectangular manhole covers
- Street gullies and gully grates
- Bridge drainage

