



BRIDGE DRAINAGE

KASI

CZECH MANUFACTURER OF GULLY GRATES

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.

INNOVATIONS AND NEW TECHNOLOGIES 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 constitute the core know-how that we offer our customers. This guarantees product quality and a flexible response to individual customer requirements. We perform any and all necessary tests of cast-iron and concrete components, as well as plastics and composites, on our in-house equipment. A test polygon with a swivel arm and a multi-tonne load also allows us to test the covers in real operation.



**IN-HOUSE FOUNDRIES
AND CONCRETE PLANT**



**EMPHASIS ON
TECHNOLOGY AND
PRODUCT INNOVATION**



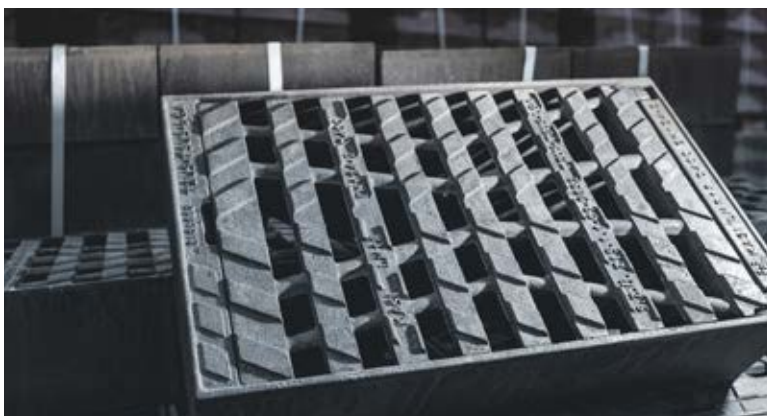
**PRODUCT
DEVELOPMENT
AND TESTING**



**AUTOMATED
AND OPTIMISED
PRODUCTION**



**CUSTOMER-SPECIFIC
SOLUTIONS**





CZECH
MANUFACTURER



ENVIRONMENTAL
PROTECTION

IN-HOUSE FOUNDRIES AND CONCRETE PLANT MAKE OUR PRODUCTION INDEPENDENT

Foundries near Nový Bydžov and in Chvaletice, and a concrete plant and engineering production in Přelouč, ensure our manufacturing independence. The facilities are equipped with the latest production technologies, including automated lines and robotic stations.

BROAD PRODUCT PORTFOLIO

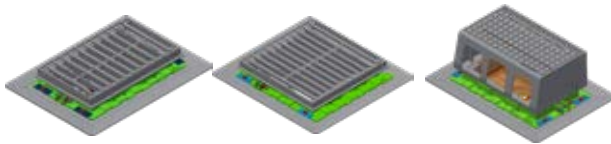
We offer a wide range of products in different shapes and sizes according to customer needs. We produce gully grates in both hinged and classic designs, plus special grates for atypical applications.



PRODUCT OVERVIEW FOR KASI BRIDGE DRAINAGE

KASI products for bridge drainage of roads reliably drain rainwater from the surface of bridges as well as water soaked through road layers to the surface of the insulation, and this function ensures safe traffic on bridges and protection of their structural parts against water damage.

BRIDGE DRAINS



MK35CZ Sub-curb bridge drainage system 300 x 500 mm	MK55CZ Sub-curb bridge drainage system 500 x 500 mm	MK035C Curb bridge drainage system 300 x 500 mm
--	--	--

DRAIN PIPES WITH FLANGE



MT150

MT100

ACCESSORIES



MU35
Dirt trap

MU55
Dirt trap

XSSM10x70A4 + XSP10A4
Locking bolt with washer

DRAINAGE PIPES



MOT50

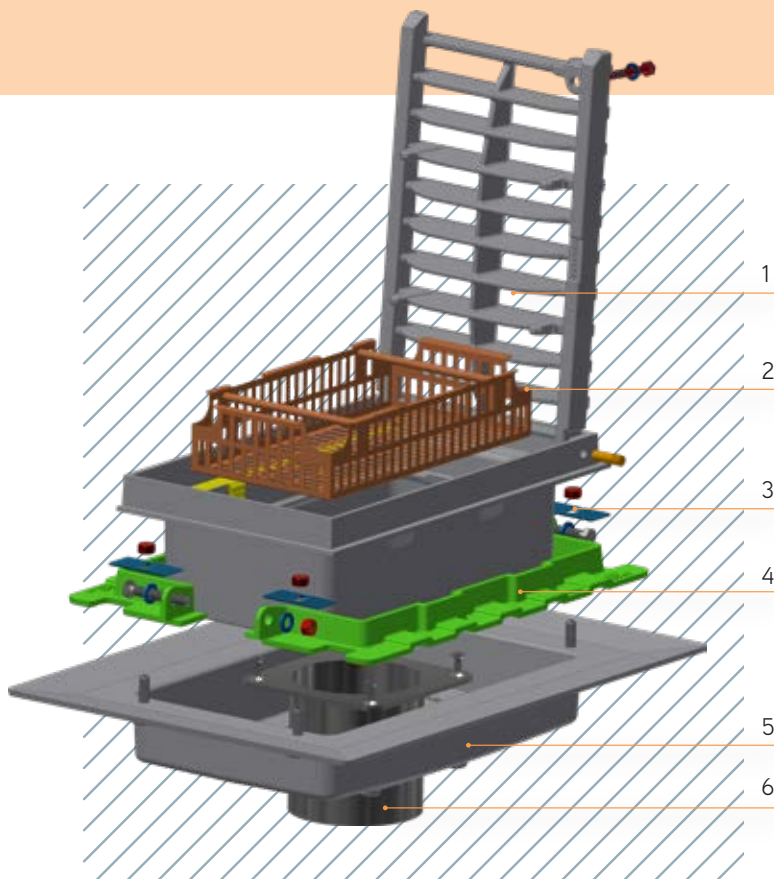
ADVANTAGES OF THE KASI BRIDGE DRAINAGE SYSTEM

- | Simple and reliable design
- | Easy installation and maintenance
- | Safe drainage of road bridges
- | Quality products with long service life
- | Czech production with good availability for construction projects
- | Meets the technical requirements for road bridge drainage

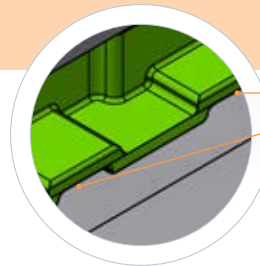
Functional advantages of bridge drainage systems:

- | Large inlet openings for maximum flow capacity
- | Height, side and angle rectification of the frame
- | Wide flange for insulation connection
- | Large drainage grooves for insulation surface drainage
- | Possibility of mounting the frame at a minimum ledge or curb distance
- | PUR damping insert in the frame resistant to oil and de-icing agents
- | Special PUR securing of grate
- | Stainless steel DN 150 and DN 100 drain pipe with flange for watertight connection
- | Removable dirt trap
- | Anti-theft protection
- | Locking option
- | Quiet operation
- | Black powder coated finish

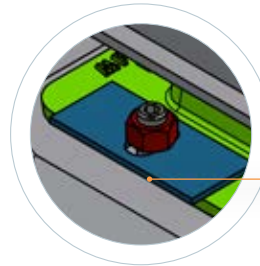
TECHNICAL SOLUTIONS OF KASI BRIDGE DRAINAGE



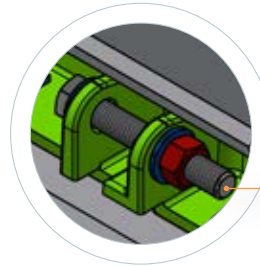
- 1 – Inlet grate
- 2 – Dirt trap
- 3 – Frame
- 4 – Fixation flange
- 5 – Bottom part
- 6 – Drain pipe with flange



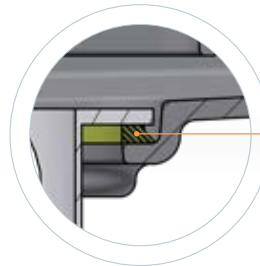
Drainage of insulation using grooves



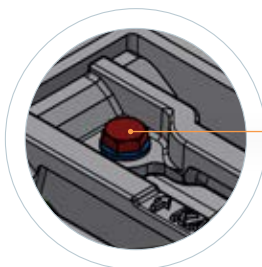
Pressure securing of insulation and lateral and angular frame rectification



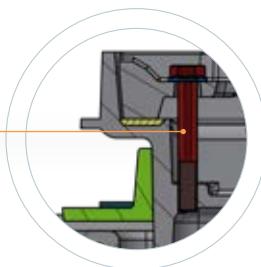
Height adjustment of frame – by fixation flange tightening



Integrated PUR seal under drain pipe flange



Grate lockable with bolt

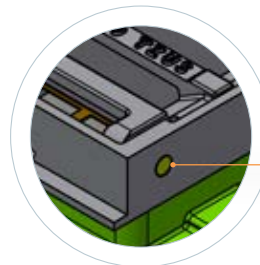
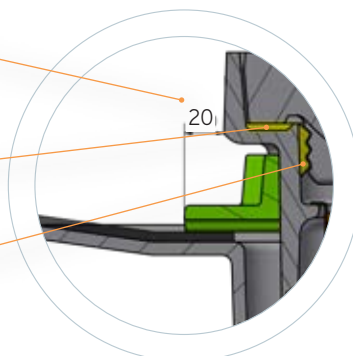


Grate and frame connected by hinges

Minimum distance from frame

Integrated PUR damping insert

Special PUR grate securing



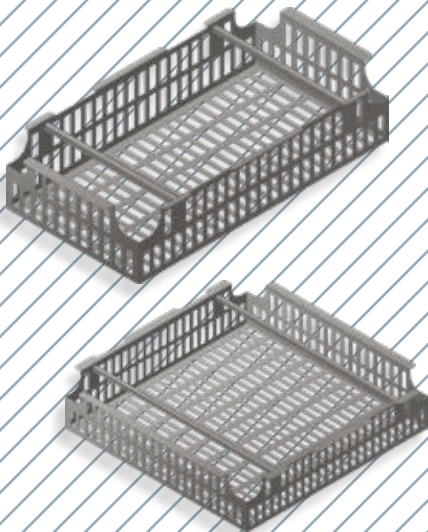
Openings in dirt trap corners to ensure drainage via overflow

ACCESSORIES OF KASI BRIDGE DRAINAGE SYSTEMS



Drain pipes with flange (drain fittings) MT150 and MT100 for bridge drainage systems

They are the tubular parts of bridge drainage systems to which they are connected by means of a flange and drain water from them either by free dripping directly into the area under the bridge or serve to connect another drain pipe. They are fitted from above by inserting them into the bottom part of the drainage system. The drain pipes are in the smooth-walled stainless steel design with an internal DN 150 or DN 100 diameter. They are straight in vertical or inclined design in the range of 0-20 ° for the DN 150 pipe or 0-30 ° for the DN 100 pipe. The lower end of the pipe is in the standard design with a mitre of at least 15°.



Dirt traps MU35 (for 300 × 500 mm drains) and MU55 (for 500 × 500 mm drainage systems)

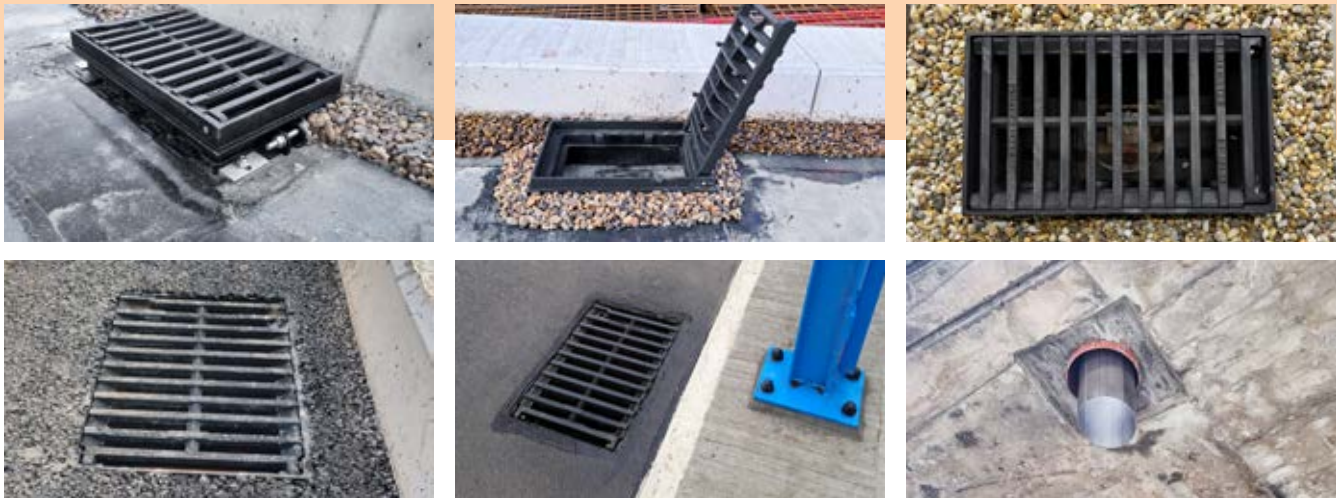
They are an optional accessory for bridge drainage systems. They are mainly installed in drainage systems where debris can clog the drainage pipes and are not usually installed in drainage systems with free drainage directly into the area under the bridge. They are made of galvanised steel.



Locking bolt with washer XSSM10x70A4 + XSPP10A4

This is an optional accessory for bridge drainage systems that is used to lock the drainage system inlet grate to the frame. It is made of stainless steel, A4 class.

INSTALLATION PROCEDURE FOR KASI BRIDGE DRAINAGE SYSTEMS



1. The lower part is to be fitted directly during the concrete pouring of the bridge deck (if it is fitted afterwards, it is to be fitted in concrete of minimum strength class and with the same properties as the concrete of the bridge deck). The top surface of the lower section collar must not protrude above the top of the bridge deck concrete surface. It is necessary to prepare a protecting conduit in the opening for the drain pipe. Note: the lower part must be fitted as precisely as possible in relation to the ledge, transverse rectification, i.e., the displacement between the extreme positions of the frame in the direction to and from the ledge in the concreted lower part is possible within the range of max. 25 mm for 300 × 500 mm drainage systems and max. 40 mm for 500 × 500 mm drainage system.
2. Insert the drain pipe into the lower part. Clean the integrated seals and seating surfaces of the lower part and the pipe flange, remove the rubber thread plugs for the flange bolts and fix the pipe flange with the supplied bolts (4 pcs of M8x20). Alternatively, the drain pipe can be installed in the lower section after the bridge soffit has been removed.
3. Connect the insulation of the bridge deck to the collar of the bottom section in its entirety.
4. Before installing the upper part, expose the metal thread plugs for the set bolts in the collar of the lower part, unbolt the plugs and bolt in the supplied set bolts for rectification of the upper part (4 pcs of M12x45).
5. Fit the upper part, i.e., the frame with inlet grate and fixing flange or the frame with lid and fixing flange, to the lower part. The fixation flange with the frame is placed on the collar with the insulation connected (the set bolts define the position of the flange) and the required height of the frame is set according to the design height of the carriage way or the ledge border by evenly moving the frame vertically downwards in the flange (e.g. by tapping with a rubber mallet). Only then is the set height fixed by tightening the flange bolts on both sides of the flange. The exact transverse and longitudinal position of the frame is then set by horizontally moving the frame with the fixation flange and fixed together with the bridge deck insulation on the collar of the lower section using the nuts with washers on the set bolts provided. Note: The carriage way grate must be mounted so that its ribs are oriented perpendicular to the traffic direction and the hinges are on the approach side (according to the traffic direction arrows marked on the grate).
6. Provide a drainage and at the same time load-bearing layer of drainage polymer concrete around the entire frame (from the upper surface of the bridge deck insulation to under the extended top of the frame). The width of the polymer concrete drainage layer around the extended top of the frame is at least 30 mm, and this layer extends downwards towards the bridge deck insulation or the drainage strip layer, optimally at the angle of 45°. Recommendation: When installing the frame with the grate into the road with the minimum thickness of the carriage way surface, it is preferred to use drainage polymer concrete with an aggregate of a smaller 4-8 mm fraction for better filling of the space under the extended upper part of the frame.
7. After the ledge or curb and pavement layers and seal coat around the frame, remove any dirt from the visible portions of the drain and insert any debris trap into the frame. If the grate is to be locked to the frame with a bolt, the rubber thread plug in the frame must be removed and the grate locked to the frame with a locking bolt with washer (M10x70).

Sub-curb bridge drainage system

300 × 500 mm

Sub-curb bridge drainage systems are designed to be built into the carriage way, usually into a drainage strip under the curb of a ledge or pavement. Surface water flows into them vertically, and they are the most efficient from a hydraulic point of view.



- | Maximum inlet grate cross-section 665 cm²
- | Anti-theft grate with hinges
- | PUR damping insert
- | Special PUR locking to prevent the grate from opening spontaneously
- | Possibility of locking the grate with a bolt
- | Vertical adjustment within 85-165 mm
- | Transverse adjustment within 0-25 mm
- | Minimum possible distance of the frame with grate from the ledge or curb 20 mm
- | Black powder coated finish
- | Complies with EN124-2

BRIDGE DRAINAGE SYSTEM 300 × 500 D400 EN124-2 (SUB-CURB)

CODE	CLASS	PIN	PUR DAMPING INSERT	DIRT TRAP	ANTI-OPENING LOCK (PUR)	LOCKING BOLT	WEIGHT KG	PACKAGING PCS/PALLET
MK35CZ	D400	Yes	Yes	Optional	Yes	Optional	58	20/2

DRAIN PIPES WITH FLANGE FOR BRIDGE DRAINAGE SYSTEMS (DRAIN FITTINGS)

CODE	PIPE DN MM	LENGTH MM	STRAIGHT VERTICAL AND INCLINED DEGREES OF DEFLECTION	MATERIAL 1.4404 (AISI316)	WEIGHT KG	PACKAGING PCS/PALLET
MT150x500	150	≤500	0-20	Yes	≤4.3	On request
MT150x1000	150	501-1000	0-20	Yes	≤7.7	On request
MT100x500	100	≤500	0-30	Yes	≤3.7	On request
MT100x1000	100	501-1000	0-30	Yes	≤6.7	On request

Note Other lengths and angled pipes are made to order.

ACCESSORIES – DIRT TRAP FOR BRIDGE DRAINAGE SYSTEMS (SLUDGE BASKET)

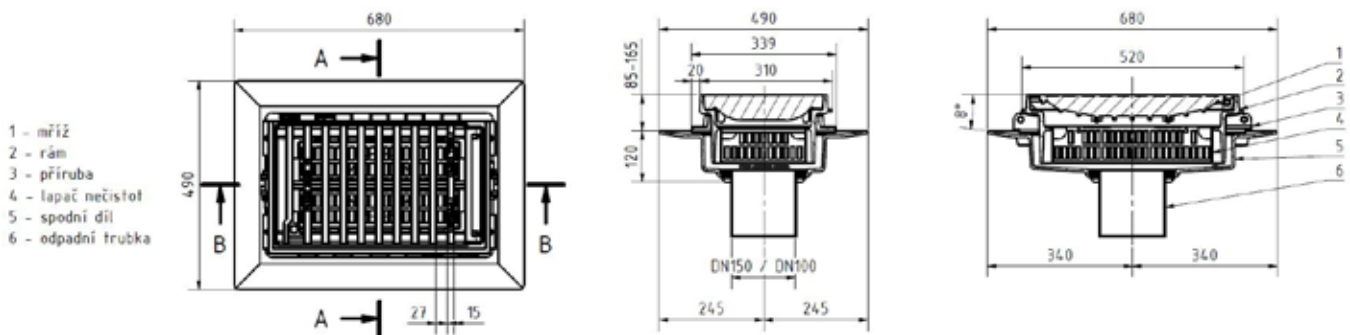
CODE	DRAINAGE SYSTEM DIMENSION MM	MATERIAL GALVANISED STEEL	WEIGHT KG	PACKAGING PCS/PALLET
MU35	300 × 500	Yes	1.2	50

ACCESSORIES – LOCKING BOLT WITH WASHER FOR BRIDGE DRAINAGE SYSTEMS

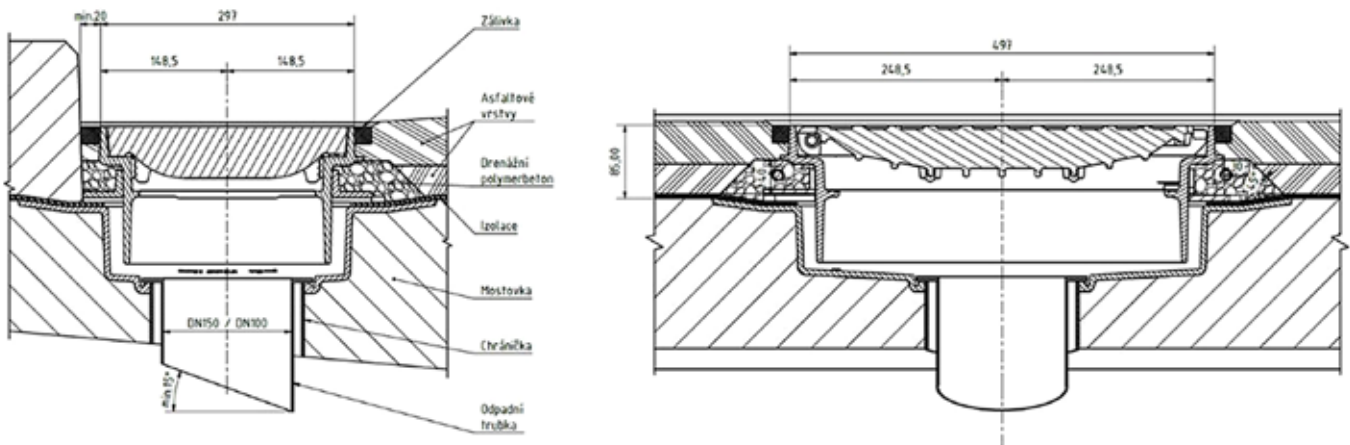
CODE	DIMENSION MM	MATERIAL A4	WEIGHT KG	PACKAGING PCS
XSSM10X70A4 BOLT	10 × 70	Yes	0.06	100
XSP10A4 WASHER	10	Yes	-	100

INSTALLATION DIAGRAM

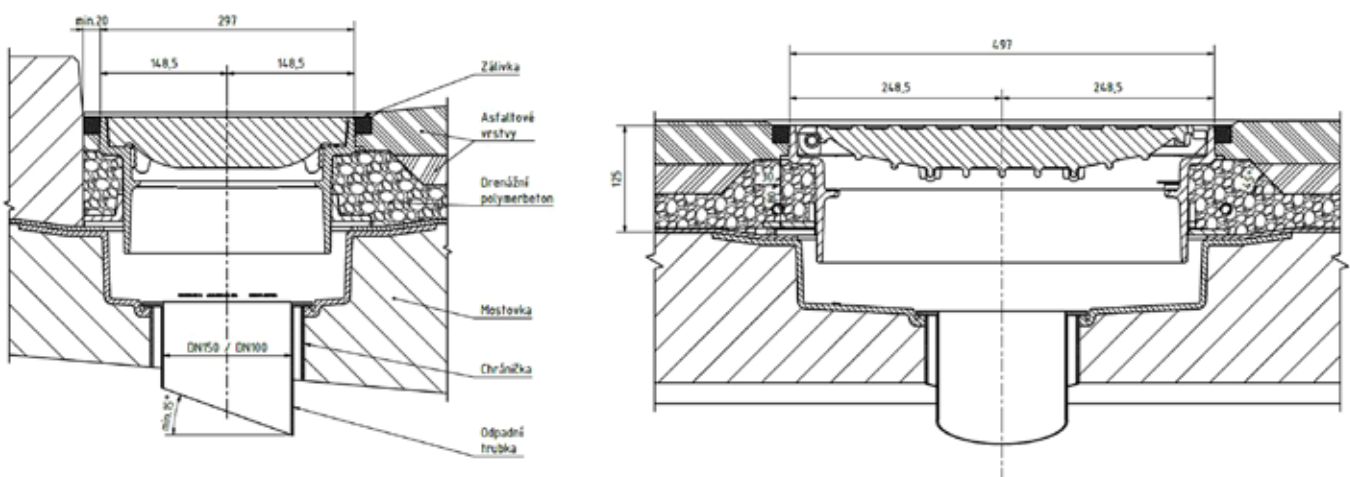
Easy installation and maintenance



INSTALLATION FOR HEIGHT 85 MM



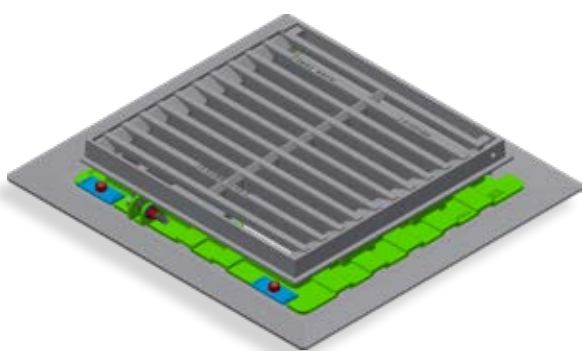
INSTALLATION FOR HEIGHT 125 MM



Sub-curb bridge drainage system

500 × 500 mm

Sub-curb bridge drainage systems are designed to be built into the carriage way, usually into a drainage strip under the curb of a ledge or pavement. Surface water flows into them vertically, and they are the most efficient from a hydraulic point of view.



- | Maximum inlet cross-section of the grate 1200 cm²
- | Anti-theft grate with hinges
- | PUR damping insert
- | Special PUR locking to prevent the grate from opening spontaneously
- | Possibility of locking the grate with a bolt
- | Vertical adjustment within 85-165 mm
- | Transverse rectification in the range of 0-40 mm, with flange rotation 0-60 mm
- | Minimum possible distance of the frame with grate from the ledge or curb 20 mm
- | Black powder coated finish
- | Complies with EN124-2

Bridge drainage systems **sub-curb 500 × 500 mm**

BRIDGE DRAINAGE SYSTEM 500 × 500 D400 EN124-2 (SUB-CURB)

CODE	CLASS	PIN	PUR DAMPING INSERT	DIRT TRAP	ANTI-OPENING LOCK (PUR)	LOCKING BOLT	WEIGHT KG	PACKAGING PCS/PALLET
MK55CZ	D400	Yes	Yes	Optional	Yes	Optional	92	12/2

DRAIN PIPES WITH FLANGE FOR BRIDGE DRAINAGE SYSTEMS (DRAIN FITTINGS)

CODE	PIPE DN MM	LENGTH MM	STRAIGHT VERTICAL AND INCLINED DEGREES OF DEFLECTION	MATERIAL 1.4404 (AISI316)	WEIGHT KG	PACKAGING PCS/PALLET
MT150x500	150	≤500	0-20	Yes	≤4.3	On request
MT150x1000	150	501-1000	0-20	Yes	≤7.7	On request
MT100x500	100	≤500	0-30	Yes	≤3.7	On request
MT100x1000	100	501-1000	0-30	Yes	≤6.7	On request

Note Other lengths and angled pipes are made to order.

ACCESSORIES – DIRT TRAP FOR BRIDGE DRAINAGE SYSTEMS (SLUDGE BASKET)

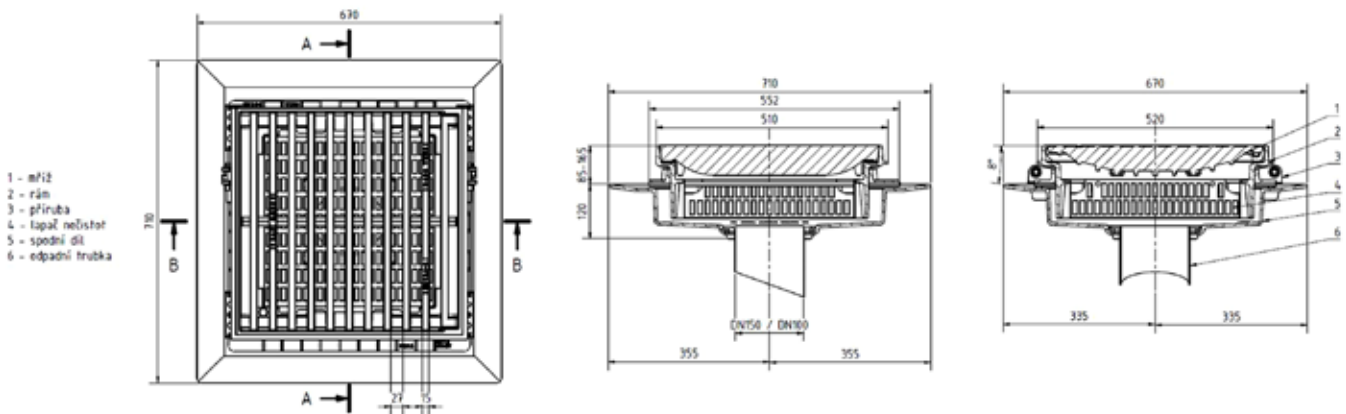
CODE	DRAINAGE SYSTEM DIMENSION MM	MATERIAL GALVANISED STEEL	WEIGHT KG	PACKAGING PCS/PALLET
MU55	500 × 500	Yes	1.8	30

ACCESSORIES – LOCKING BOLT WITH WASHER FOR BRIDGE DRAINAGE SYSTEMS

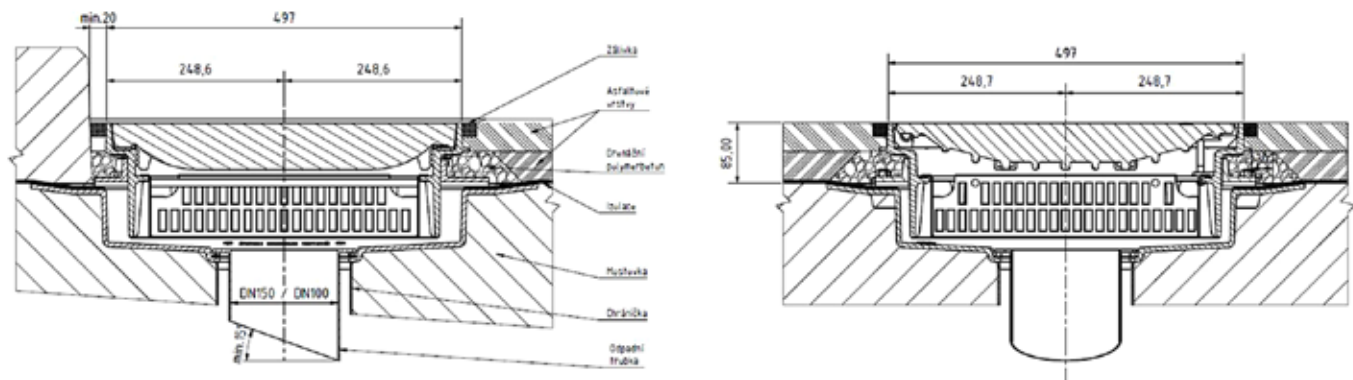
CODE	DIMENSION MM	MATERIAL A4	WEIGHT KG	PACKAGING PCS
XSSM10X70A4 BOLT	10 × 70	Yes	0.06	100
XSP10A4 WASHER	10	Yes	-	100

INSTALLATION DIAGRAM

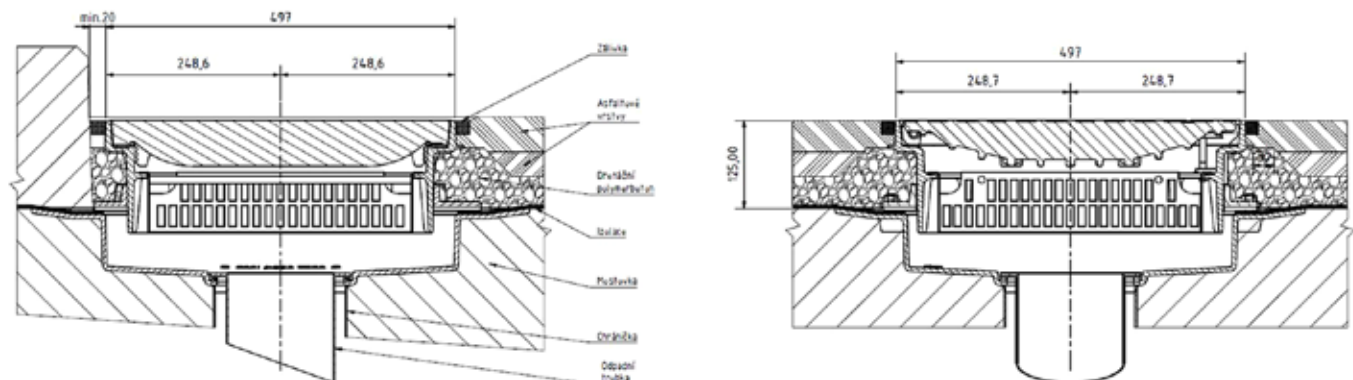
Easy installation and maintenance



INSTALLATION FOR HEIGHT 85 MM



INSTALLATION FOR HEIGHT 125 MM

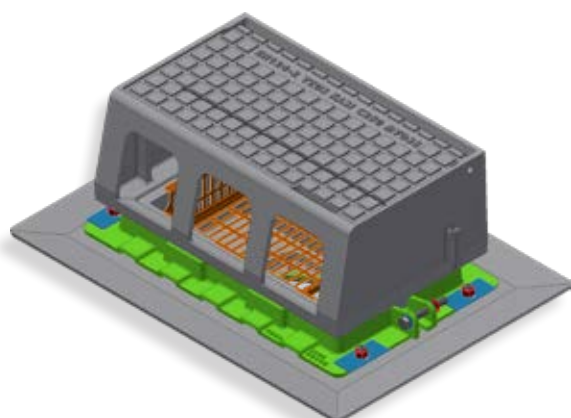


Bridge drainage systems **sub-curb 500 x 500 mm**

Curb bridge drainage system

300 × 500 mm

Curb bridge drainage systems are designed to be built into the curb of a ledge or pavement. Surface water flows into them through the side inlet and access to the drainage system is from above through the lid.



- | Maximum inlet cross-section
- | Hinged lid secured against theft
- | PUR damping insert
- | Locking to prevent the lid from opening by itself
- | Vertical adjustment within 85-150 mm
- | Transverse adjustment within 0-25 mm
- | Black powder coated finish
- | Complies with EN124-2

BRIDGE DRAINAGE SYSTEM 300 × 500 C250 EN124-2 (CURB)

CODE	CLASS	PIVOT	PUR DAMPING INSERT	DIRT TRAP	SECURED AGAINST OPENING	LOCKING BOLT	WEIGHT KG	PACKAGING PCS/PALLET
MKO35C	C250	Yes	Yes	Optional	Yes	No	73	12/2

DRAIN PIPES WITH FLANGE FOR BRIDGE DRAINAGE SYSTEMS (DRAIN FITTINGS)

CODE	PIPE DN MM	LENGTH MM	STRAIGHT VERTICAL AND INCLINED DEGREES OF DEFLECTION	MATERIAL 1.4404 (AISI316)	WEIGHT KG	PACKAGING PCS/PALLET
MT150x500	150	≤500	0-20	Yes	≤4.3	On request
MT150x1000	150	501-1000	0-20	Yes	≤7.7	On request
MT100x500	100	≤500	0-30	Yes	≤3.7	On request
MT100x1000	100	501-1000	0-30	Yes	≤6.7	On request

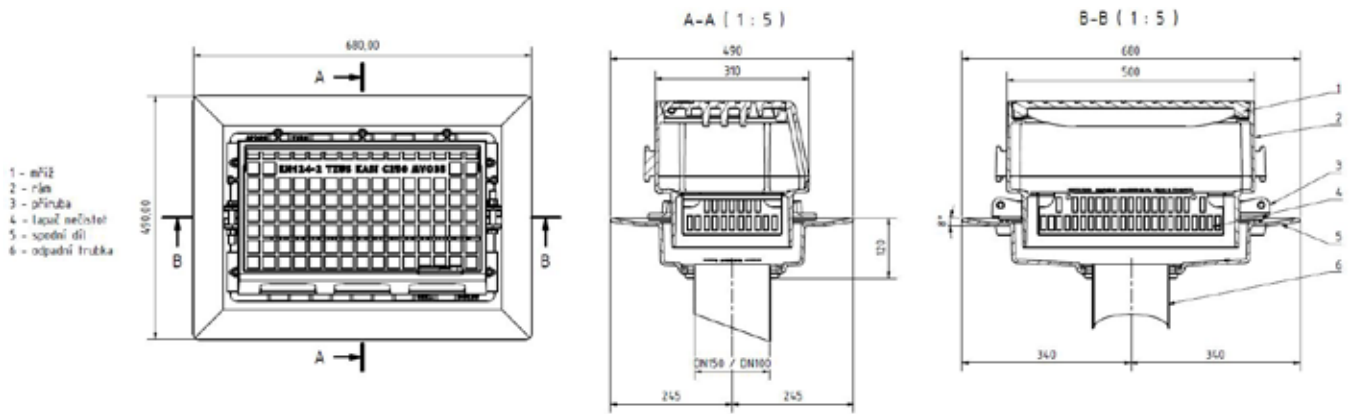
Note Other lengths and angled pipes are made to order.

ACCESSORIES – DIRT TRAP FOR BRIDGE DRAINAGE SYSTEMS (SLUDGE BASKET)

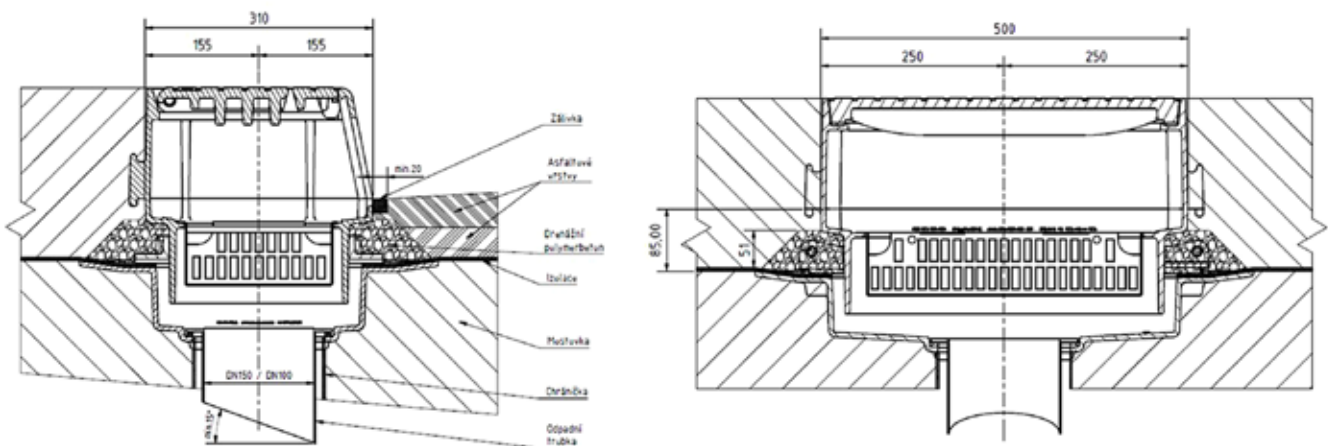
CODE	DRAINAGE SYSTEM DIMENSION MM	MATERIAL GALVANISED STEEL	WEIGHT KG	PACKAGING PCS/PALLET
MU35	300 × 500	Yes	1.2	50

INSTALLATION DIAGRAM

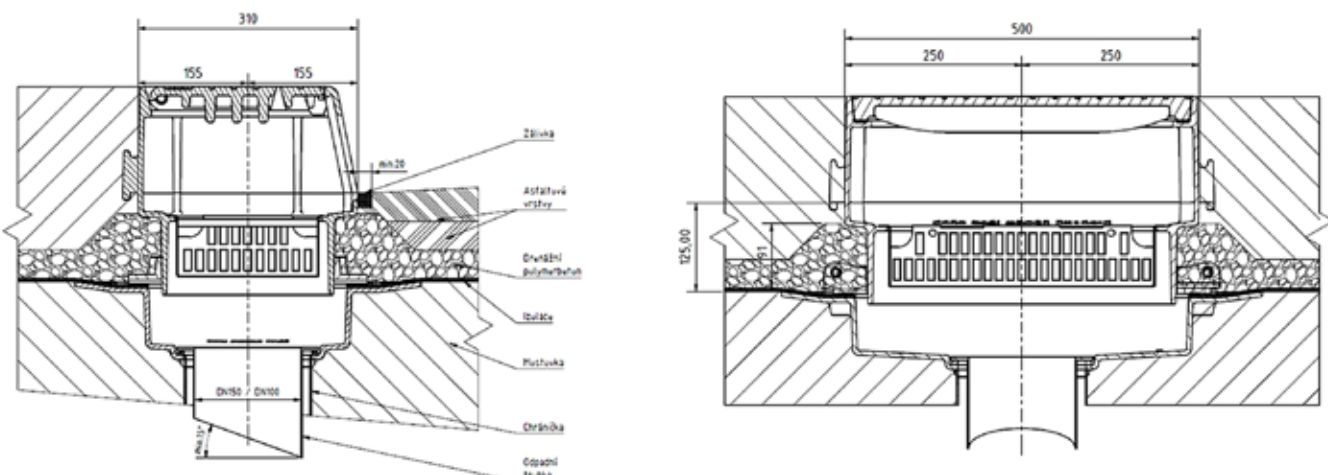
Easy installation and maintenance



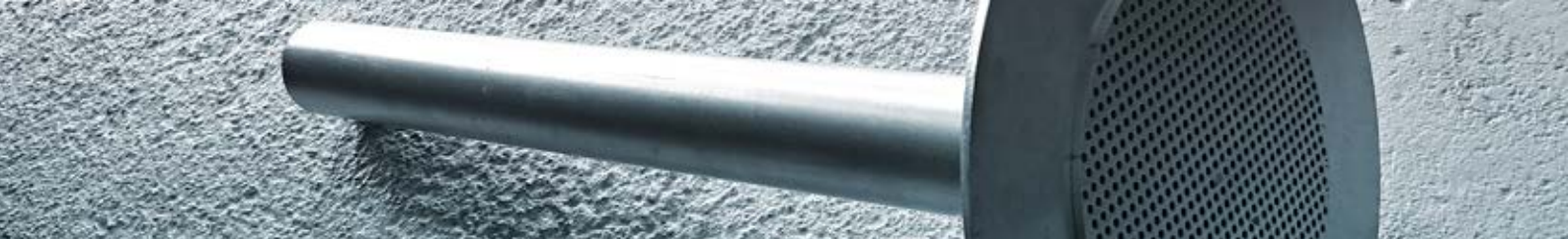
INSTALLATION FOR HEIGHT 85 MM



INSTALLATION FOR HEIGHT 125 MM



Bridge drainage systems **curb 300 x 500 mm**



Drainage pipe insulation DN50 with flange and grate

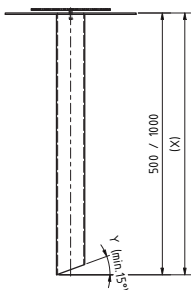
The insulation drainage pipes are designed to drain water from the surface of the bridge insulation layer or even from the surface of the protective layer of the bridge structures. They consist of the drainage pipe itself, topped with a flange for the connection of the bridge insulation, and a cover grid to prevent the material from falling from the carriage way layers above the pipe.



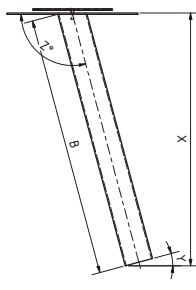
- Pipe DN 50 with the min. thickness of 2 mm with welded flange \varnothing 250 mm with min. thickness of 2.5 mm and with perforated inlet overlay (cover grate) \varnothing 150 mm with min. thickness of 2.5 mm with profile holes up to 10 mm wide
- Bottom end of the pipe in the standard design with a mitre of at least 15°

Drainage pipe

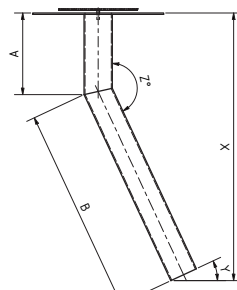
DESIGN TYPES



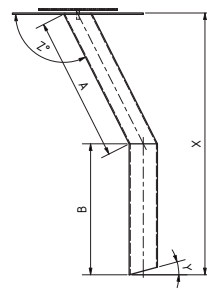
T1-STRAIGHT VERTICAL



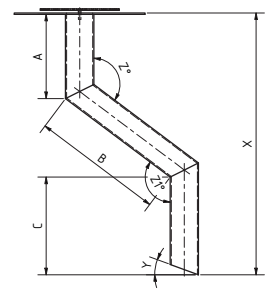
T2-STRAIGHT INCLINED



T3-VERTICAL KINKED



T4-INCLINED KINKED



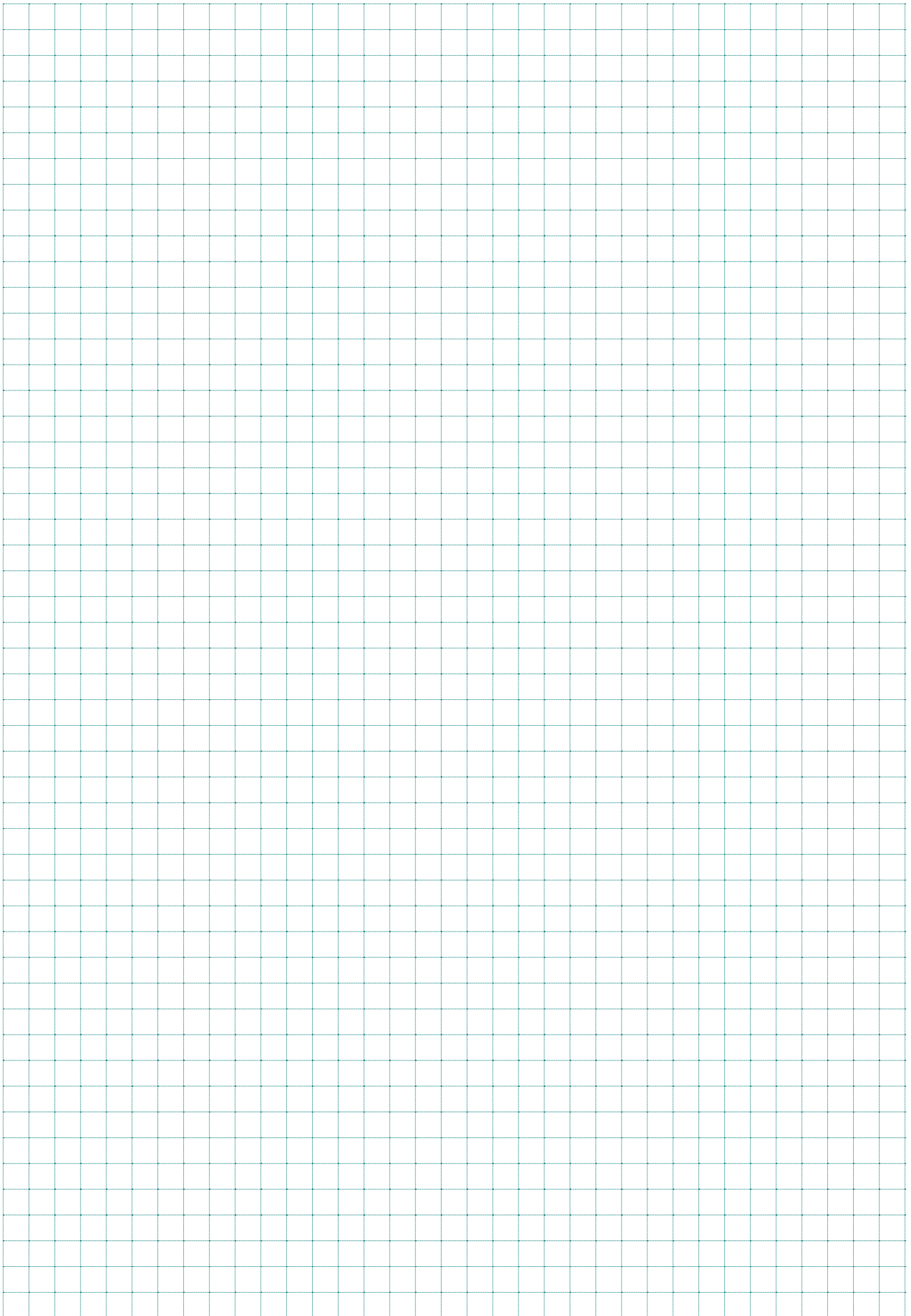
T5-KINKED

INSULATION DRAINAGE PIPES WITH FLANGE AND GRATE

CODE	PIPE DN MM	LENGTH MM	DESIGN TYPES	MATERIAL 1.4404 (AISI316)	WEIGHT KG	PACKAGING PCS/PALLET
MOT50x500	50	≤500	T1, T2, T3, T4, T5	Yes	≤2.5	On request
MOT50x1000	50	501-1000	T1, T2, T3, T4, T5	Yes	≤4.5	On request

Note Other pipe lengths and shapes T2, T3, T4 and T5 are produced on request.

NOTES



KASI

KASI, spol. s r.o.

Chrudimská 1602

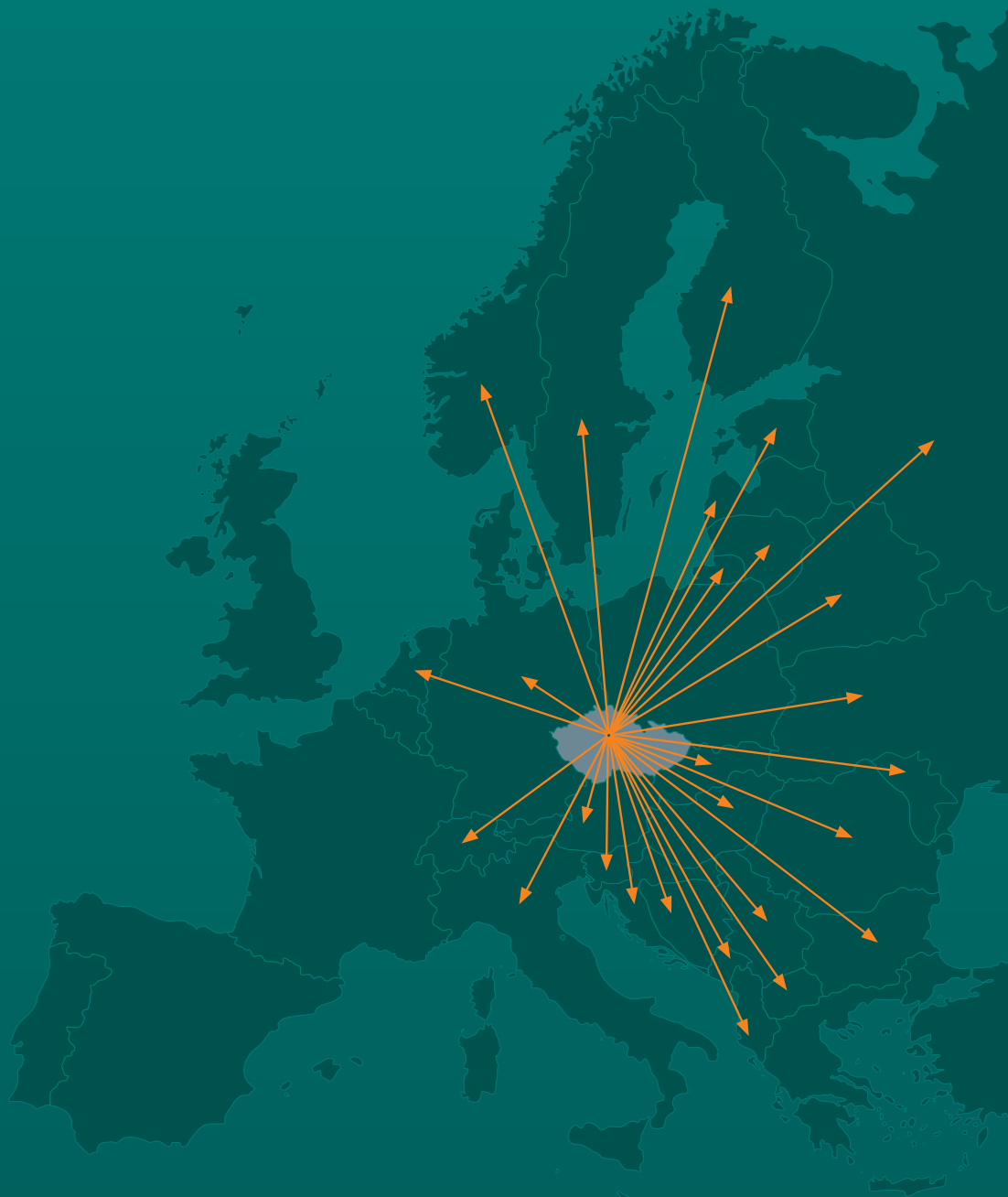
Přelouč 535 01

Czech Republic

tel.: +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
- | Manhole steps

