



Rectangular manhole covers
and kerb inlets

TETRA®



The product series

Developing the TETRA® series Wallner & Neubert achieved to define a new quality standard for rectangular and square manhole covers. Using ductile iron (SGCI) as basic material makes it possible to construct hinges and locking bars due to the steel-like resilience of SGCI. The finished product gives tremendous advantages in both quality and handling compared to manhole covers used so far.

The TETRA® product series is comprehensively laid out. The manhole tops are available in load classes A 015, B 125, C 250 and D 400. The product series ranges from clear opening 30 x 30 cm up to 100 x 100 cm. Optionally TETRA® can be equipped with pantographic-hinges and gas-pressurised springs for opening assistance (starts at size 60 x 60 cm).

Automatic-locking system



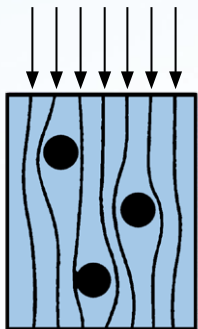
When closing covers are automatically and securely locked by the double-spring locking bar. The automatic-locking system provides water tightness even without bolting.

To resist high dynamical load or to provide backflow proofness all types of TETRA® covers can be bolted additionally by drilling the designated openings.



Ductile Iron

Ductile iron behaves elastically over a considerable stress range in both tension and compression. These attributes are caused by the spheroidal shaping of graphite in the material (see diagram). When exceedingly stressed, the material will be elastically deformed but will not break.



The spheroidal structure also provides a higher strength-to-weight ratio compared with the properties inherent with grey iron manufacture.

The benefits of ductile iron:

- Higher resistance and durability
- Ergonomic handling caused by less weight
- Construction of safety items such as hinges or locking systems.

The spheroidal shape of graphite in ductile iron optimizes the distribution of force lines in between the material.

Insertion of the cover

The construction of the frame allows the re-insertion of the cover without effort by using the slide rails on the seating areas. The cover can be pushed and pulled without contacting the sealings. Additionally this construction minimises the danger that the cover tumbles down the shaft.



Secure handling

TETRA® provides both easy and secure handling.

The automatically locked cover can only be reopened by competent staff and by using fitting tools. Unintentional opening (e.g. by playing children) or even wantonly removing of covers are eliminated.

Hinged cover with safety catch

The special construction of frame and cover allows to open the cover like using a hinge. This ensures economic handling both at installation and maintenance actions.

The cover opens to 100°, where it rests securely (standard feature of all types except in the dimensions 800x800 and 1000x1000 mm). This presents a tremendous ease for maintenance activities, especially when the cover just needs to be opened for a short time for inspection.







To get into the shaft the cover has to be engaged at 90° where it can be removed easily. Safety catch at 80° prevents accidental closure

Water-tight, odour-proof

Elastomer sealings are fixed in the frame. By closing the cover the double-spring locking-system generates enough pressure on sealings to ensure water-tightness even without bolting the cover. To resist to high dynamical load or to provide backflow-proof covers can be bolted additionally. Odour-proof can be obtained by cleaning sealings and seating areas carefully before every reinsertion of the cover.



Manhole tops and gully gratings are regulated by standard EN 124. Within areas subjected to pedestrian and/or vehicular traffic the standard classifies products according to their installation point in group 1 – 6:

Group 1 / Class A015  Areas which can only be used by pedestrians and cyclists	Group 2 / Class B125  Footways, pedestrian areas, car parks, car parking decks	Group 3 / Class C250  For gully tops installed in the area of kerbside channels of roads
Group 4 / Class D400  Carriageways of roads for all types of road vehicles	Group 5 / Class E600  Areas imposing high wheel loads, e.g. docks, industrial areas	Group 6 / Class F900  Areas imposing particularly high wheel loads, e.g. aircraft pavements

NOTE: The effective wheel load conforms to only 25-30% of the test load (loading class).
The group assigning of the standard is to be understood as a **MINIMUM RECOMMENDATION!**
In case of any doubt always decide for higher loading class.

Figure 1: Typical profile of roads with several groups of installation points

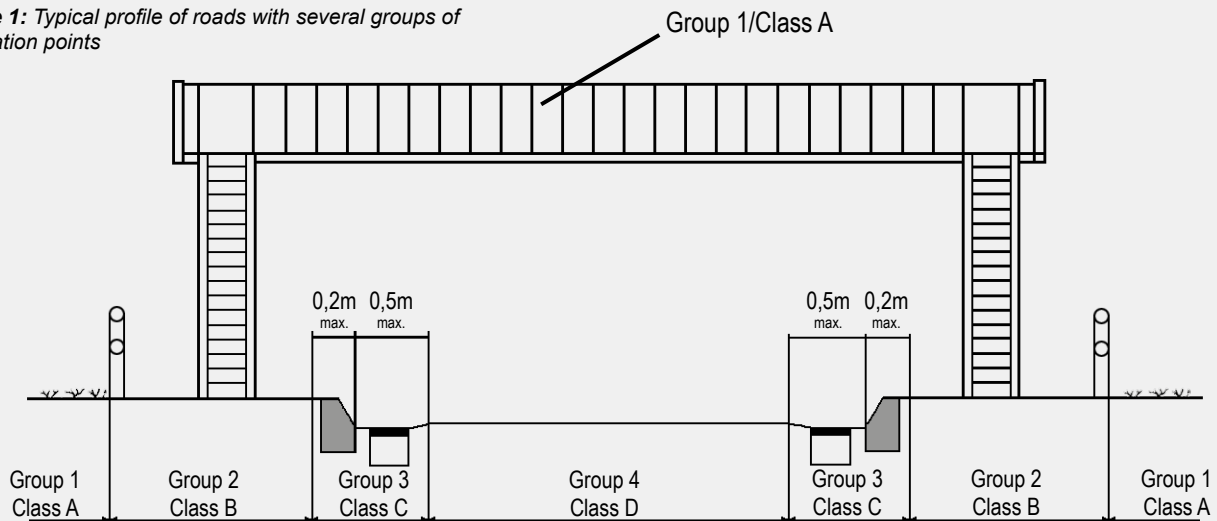
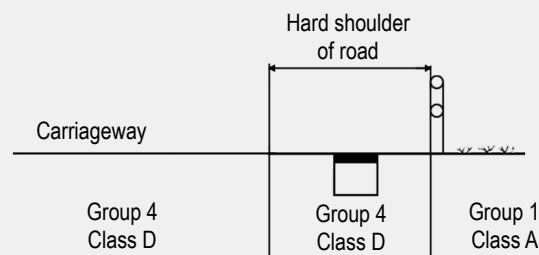


Figure 2: Typical detail of kerbs with several groups of installation points

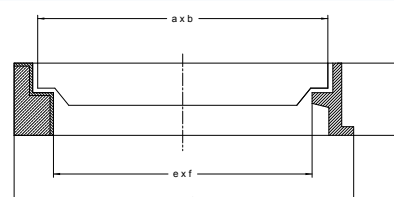


Legends, abbreviations in use

Following abbreviations are used in drawings:

- a (a x b)** ... outside dimension of cover/ grating
- e (e x f)** ... clear opening
- c (c x d)** ... outside dimension of frame
- h** ... overall frame height

Dimension drawing

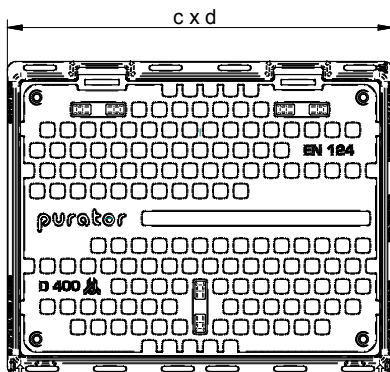
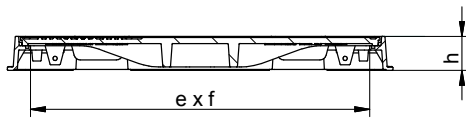




TETRA® rectangular standard

Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Water-tight without bolting through grouted elastomer-sealing
- Double spring locking bar, automatic-locking, hinge system – fixes cover in open position at 100°, safety catch at 80° prevents accidental closure
- Slide rails ensure secure reinsertion of the cover
- All types can be additionally bolted for backflow-proofness and additional security
- Ergonomic handling



Field of application:

For versatile usage suitable for all traffic loads up to D400 in private and public areas.

Product details:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
600x400					
TET47-064-015	600x400	710x540	80	A 015	46,0
TET47-064-125	600x400	710x540	80	B 125	47,0
TET47-064-250	600x400	710x540	80	C 250	49,0
TET47-064-400S *	600x400	710x540	80	D 400	53,0
800x600					
TET47-086-015	800x600	940x740	80	A 015	81,0
TET47-086-125	800x600	940x740	80	B 125	82,0
TET47-086-250	800x600	940x740	80	C 250	86,0
TET47-086-400S *	800x600	940x740	80	D 400	88,0
1000x600					
TET47-106-015	1000x600	1110x740	80	A 015	92,0
TET47-106-125	1000x600	1110x740	80	B 125	101,0
TET47-106-250	1000x600	1110x740	80	C 250	106,0
TET47-106-400S *	1000x600	1110x740	80	D 400	122,0
* Manhole covers are delivered bolted.					

* Manhole covers are delivered bolted.

Tender specifications

Rectangular manhole frame & cover, produced and tested according to EN 124. Frame and cover of ductile iron, water-tight without bolting [class D400 bolted], with elastomer sealing, with double-spring locking-bar - automatic-locking, with hinge system - fixes cover in open position at 100° and with safety catch at 80° preventing accidental closure.
Clear opening, Class, frame-height, weight s. table above.



TETRA® square standard

Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Water-tight without bolting through grouted elastomer-sealing
- Double spring locking bar, automatic-locking, hinge system – fixes cover in open position at 100°, safety catch at 80° prevents accidental closure
- Slide rails ensure secure reinsertion of the cover
- All types can be additionally bolted for backflow-proofness and additional security
- Ergonomic handling

Field of application:

For versatile usage suitable for all traffic loads up to D400 in private and public areas.

Product details:

Product details:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
300x300 **					
TET48-033-125	300x300	440x410	80	B 125	25,0
TET48-033-400S *	300x300	440x410	80	D 400	27,0
400x400 **					
TET48-044-125	400x400	540x510	80	B 125	38,0
TET48-044-400S *	400x400	540x510	80	D 400	39,0
500x500 **					
TET48-055-125	500x500	640x610	80	B 125	47,0
TET48-055-400S *	500x500	640x610	80	D 400	53,0
600x600 **					
TET48-066-015	600x600	740x710	80	A 015	57,0
TET48-066-125	600x600	740x710	80	B 125	58,0
TET48-066-250	600x600	740x710	80	C 250	63,0
TET48-066-400S *	600x600	740x710	80	D 400	68,0
800x800					
TET48-088-015	800x800	940x910	80	A 015	109,0
TET48-088-125	800x800	940x910	80	B 125	113,0
TET48-088-250	800x800	940x910	80	C 250	116,0
TET48-088-400S *	800x800	940x910	80	D 400	117,0
1000x1000					
TET48-101-125S *	1000x1000	1140x1110	80	B 125	143,0
TET48-101-400S *	1000x1000	1140x1110	80	D 400	154,0

* Manhole covers are delivered bolted.

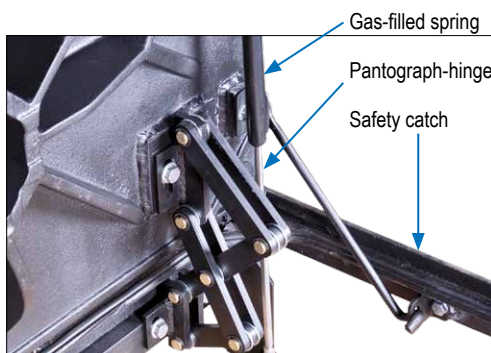
** Cover fixed in open position (100°), safety catch at 80°

Tender specifications

Square manhole frame & cover, produced and tested according to EN 124. Frame and cover of ductile iron, water-tight without bolting [class D400 bolted], with elastomer sealing, with double-spring locking-bar - automatic-locking, with hinge system (all dimensions with **) - fixes cover in open position at 100° and with safety catch at 80° preventing accidental closure.
Clear opening, Class, frame-height, weight s. table above.



TETRA® spring-assist design



Product features:

- Spring assist with pantograph-hinge and gas-filled spring
- Mechanical safety-catch
- Optional: emergency-escape device can be operated from above and below the covers

Field of application:

For frequently opened covers or if covers have to be opened by single persons

Product details:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
TET48-066-400H	600x600	740x710	90	D 400	83
TET47-086-400H	800x600	940x740	90	D 400	103
TET48-088-400H	800x800	990x910	90	D 400	132
TET47-106-400H	1000x600	1110x740	90	D 400	137
TET48-101-400H	1000x1000	1195x1110	90	D 400	169

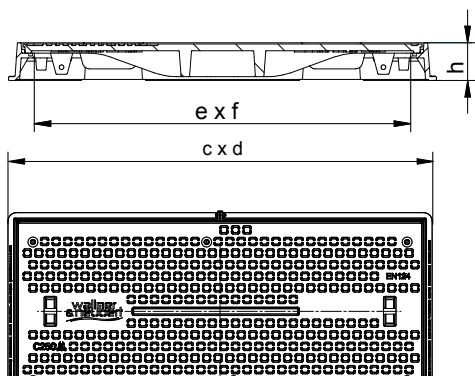
• NOTE! Covers have to be bolted when closed!

Additional tender specifications

Spring-assist device with double pantograph-hinges and mechanical safety catch.
Optional: emergency-escape device operable from above and below.



TETRA® special design for tunnels



Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Frame in two pieces with flanged connection, one-piece cover
- Water-tight through grouted elastomer-sealing
- Fixed with six securing-bolts

Field of application:

for all traffic loads up to class C250

Product details:

Art.No.	Dimensions mm			Class	Weight ca. kg
	e x f	c x d	h		
TET47-146-125S	600x1400	698x1500	80	B 125	114,0
TET47-146-250S	600x1400	698x1500	80	C 250	114,0

• Please ask for more loading-class variations

Tender specifications

Rectangular manhole frame & cover, produced and tested according to EN 124. Frame and cover made of ductile iron, water-tight with elastomer sealing, fixed by six securing-bolts.
Dimensions s. table above.

The product series

TETRA® kerb inlets define a new quality standard in their product range. Using ductile iron (SGCI) as basic material makes it possible to construct hinges and locking bars due to the steel-like resilience of SGCI.

The finished product gives tremendous advantages in both quality and handling compared to kerb inlets used so far.

Secure handling

TETRA® provides both easy and secure handling. The automatically locked cover can only be reopened by competent staff and by using fitting tools. Unintentional opening (e.g. by playing children) or even wantonly removing of covers are eliminated.

Automatic-locking system



When closing covers are automatically and securely locked by the spring locking bar. To reopen cover a fitting tool is to be hooked in the opening slot at the cover side. With an effectual jerk the cover can be detached from the locking device. The locking force

of the system can be adjusted by bending the locking bar through gently tapping.

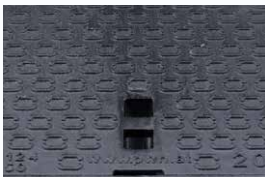
Hinged covers



Cover and frame are connected by hinges, which are kept together by stainless-steel pins. To remove the cover the pins can be pulled out of the hinge easily in open position. In closed position loads are transmitted to the contact areas of the frame, hinges and pins are not directly

stressed.

Opening slots



Covers are provided with amply dimensioned opening slots, which make them simply to clean. The slots are closed to bottom. An additional opening slot for detaching the locking device is situated at the cover side.

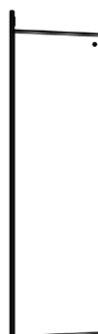
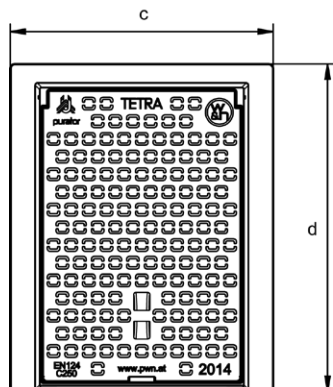
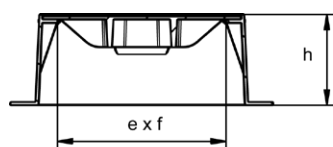




TETRA® Kerb inlet **NEW!**

Model „Wien“

Rectangular design



Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Cover with slip-resistant surface
- Spring locking bar, automatic-locking
- 2 hinges with removable stainless-steel pins for easy opening
- Straight inlet front, suitable for standard kerbstones
- Ergonomic and secure handling

Field of application:

For kerb sides of all traffic areas

Tender specifications:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
TET-925G4565SPH	490x630	610x759	210	C 250	64,0

Tender specifications:

Rectangular kerb inlet, class C250, produced and tested according to EN 124. Frame and cover made of ductile iron, with spring locking-bar, automatic-locking, with 2 hinges with removable stainless-steel pins. Cover with slip-resistant surface. Dimensions see table above.



TETRA® Kerb inlet

Model „Wien“
Square design

NEW!

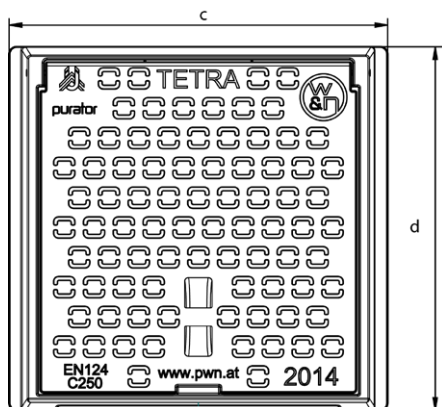
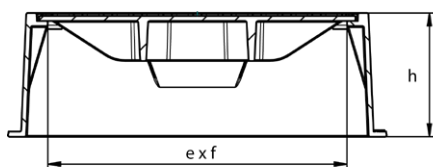


Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Cover with slip-resistant surface
- Spring locking bar, automatic-locking
- 2 hinges with removable stainless-steel pins for easy opening
- Straight inlet front, suitable for standard kerbstones
- Ergonomic and secure handling

Field of application:

For kerb sides of all traffic areas



Product details:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
TET-925G45SPH-F	410x435	520x500	170	C 250	37,0

Tender specifications:

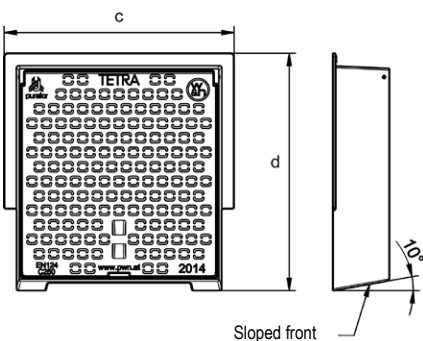
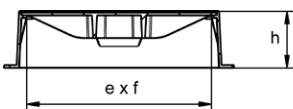
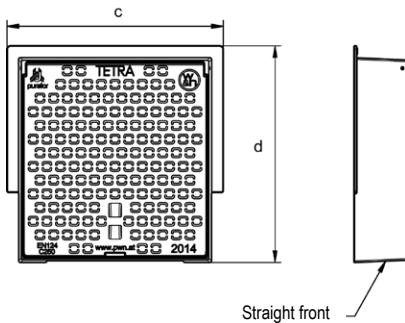
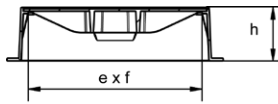
Square kerb inlet, class C250, produced and tested according to EN 124. Frame and cover made of ductile iron, with spring locking-bar, automatic-locking, with 2 hinges with removable stainless-steel pins. Cover with slip-resistant surface.
Dimensions see table above.



TETRA® Kerb inlet

Model „Vorarlberg“
Square design

NEW!



Product features:

- Produced and tested according to EN 124
- Cover and frame: ductile iron
- Cover with slip-resistant surface
- Spring locking bar, automatic-locking
- 2 hinges with removable stainless-steel pins for easy opening
- Straight inlet front, suitable for standard kerbstones
- Ergonomic and secure handling

Field of application:

For kerb sides of all traffic areas

Product details:

Art.No.	Dimensions mm			Class	Weight kg
	e x f	c x d	h		
Straight front					
TET-925VLBG-G	550x530	650x670	160	C 250	49,0
Sloped front					
TET-925VLBG-S	550x530	650x670	160	C 250	49,0

Tender specifications

Rectangular kerb inlet, class C250 with straight/ sloped inlet front, produced and tested according to EN 124. Frame and cover made of ductile iron, with spring locking-bar, automatic-locking, with 2 hinges with removable stainless-steel pins. Cover with slip-resistant surface. Dimensions see table above.

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