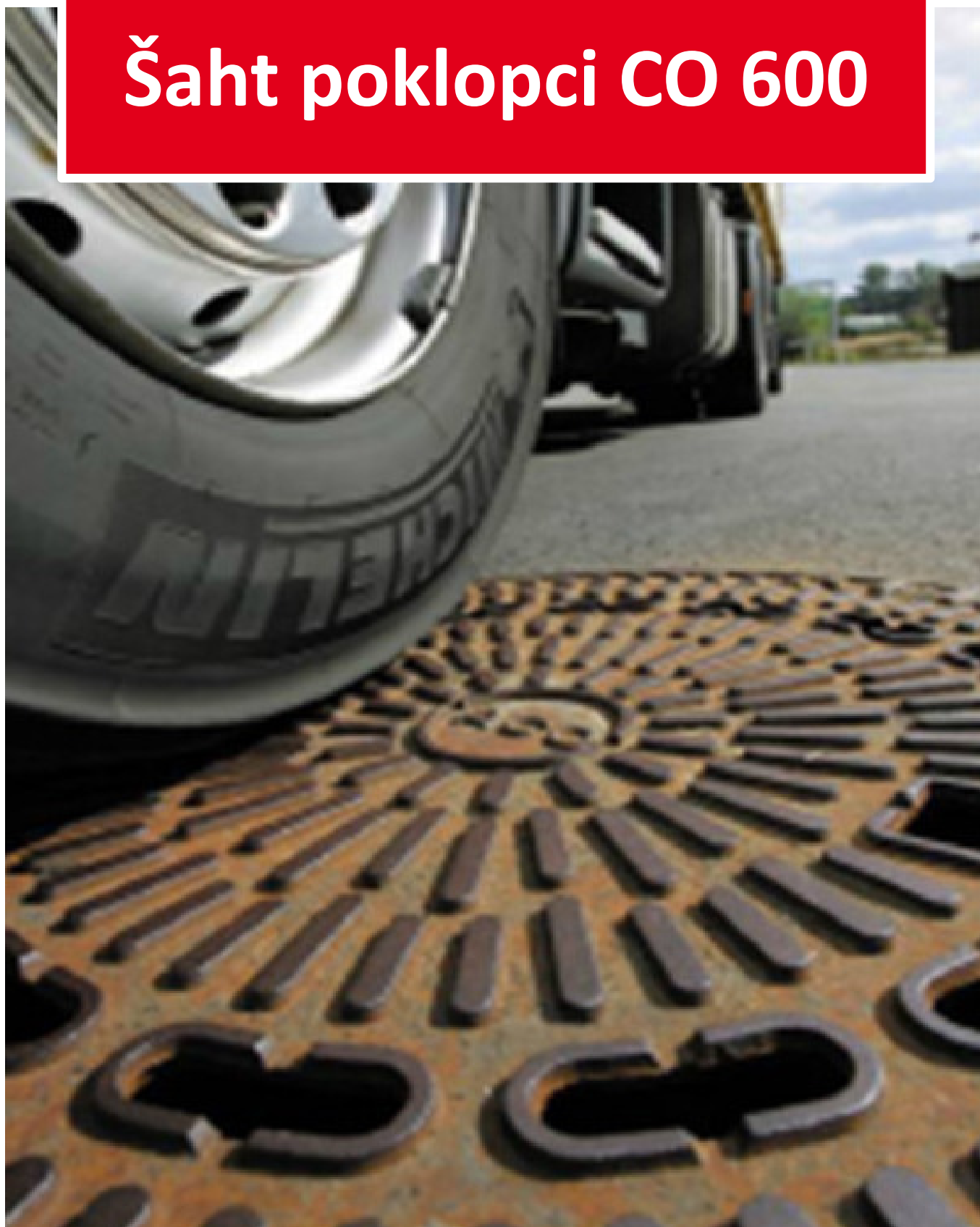


Šaht poklopci CO 600



How to choose the right product? (1)

As per EN 124 all these areas are load class D400!

Highway



> 29.000 vehicles per day
~30% truck share

Residential area



< 1.000 vehicles per day
< 2% truck share

Industrial area



> 3.000 vehicles per day
~80% truck share

Commercial area



> 4.000 vehicles per day
~5% truck share

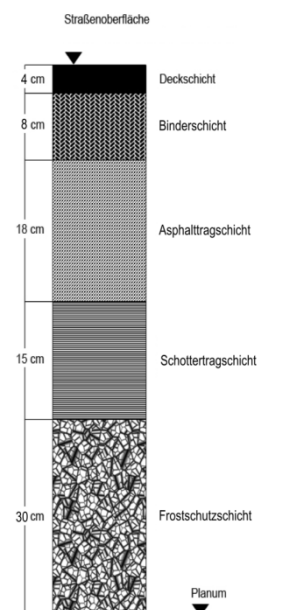
**Load class
D400**

How are these areas classified?

The german guideline for standardization of superstructures (**RStO**) contains a classification of roads depending on the different amount of 10-t axle transmissions.

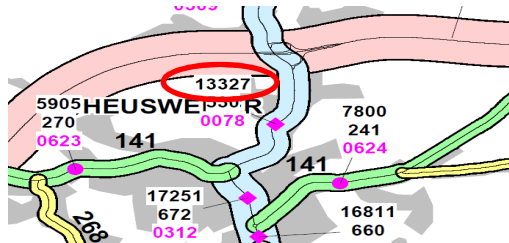
Using this model it's possible to separate the areas of application for the cast iron portfolio of **ACO Passavant Guss**.


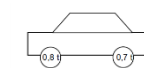
Million of equivalent 10-t axle transmissions	>32	BK100
	<32	BK32
	<10	BK10
	<3.2	BK3.2
	<1.8	BK1.8
	<1.0	BK1.0
	<0.3	BK0.3



How to choose the right product? (2)

What is the traffic load ?

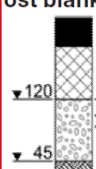
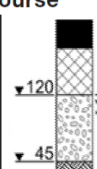
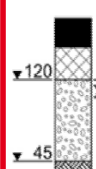
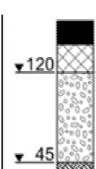
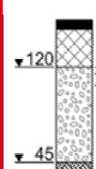
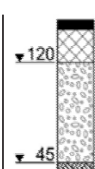
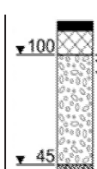






$$1 \times \text{Truck} = 67.667 \times \text{Car}$$



1 truck has the same impact than 68.000 cars !

(You will find a detail calculation in Chapter „Compendium“)

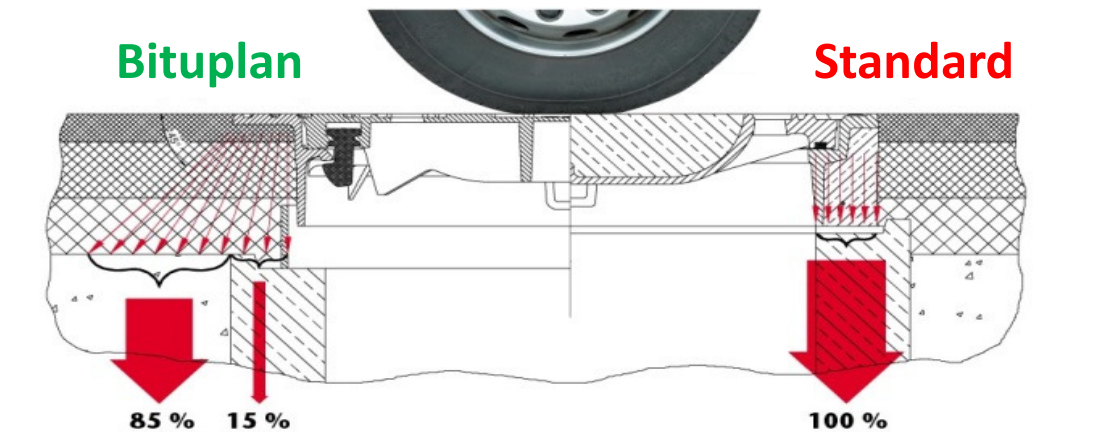
Right load class = road construction

Line	Load class	BK100				BK32				BK10				BK3.2				BK1.8				BK1.0				BK0.3			
	B [million of ESALs]	> 32				> 10 – 32				> 3.2 – 10				> 1.8 – 3.2				> 1.0 – 1.8				> 0.3 – 1.0				≤ 0.3			
	Thickness of frost resistant pavement structure ¹⁾	55	65	75	85	55	65	75	85	55	65	75	85	45	55	65	75	45	55	65	75	45	55	65	75	35	45	55	65
1	Asphalt base course on frost blanket course																												
	Asphalt surface course	12				12				12				10				4				4				4			
	Asphalt base course	22				18				14				12				16				14				10			
	Frost blanket course	Σ34				Σ30				Σ26				Σ22				Σ20				Σ18				Σ14			
	Thickness of frost blanket course	–	31 ²⁾	41	51	25 ³⁾	35	45	55	29 ³⁾	39	49	59	–	33 ²⁾	43	53	25 ³⁾	35	45	55	27	37	47	57	21	31	41	51
		heavy								mid								low											
																													

ACO Range Solution

How to choose the right product? (3)

How to choose the right frame?

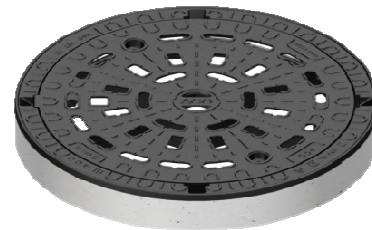


Less load into the concrete shaft:



The Bituplan frame

All time equivalent conditions between the frame and the surrounding asphalt is the perfect definition for the ACO Passavant Guss Bituplan frame. In respect of increased traffic volumes and the demand after a high durability, Bituplan is always the right solution.



The Lift frame

The combination of cast iron and concrete is a long-time proven solution in the field of standard installations of manhole covers. The concrete used for the frame corresponds to compressive strength class C 35/45 is conforming to the highest classification of exposure conditions with freeze-thaw and de-icing resistance.



The fix frame

A single frame that fits to the most of the given conditions in infrastructure installations is the fix frame. Not only mortared, but additionally fixed onto the top of the manhole shaft is this frame the most taken solution for urban areas.

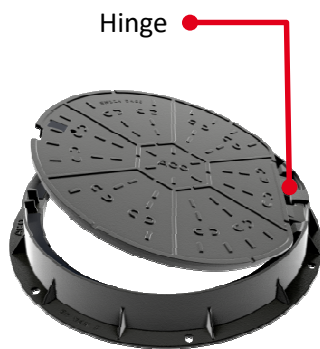
How to choose the right product? (4)

How to choose the right cover?

Good

CityTop Q

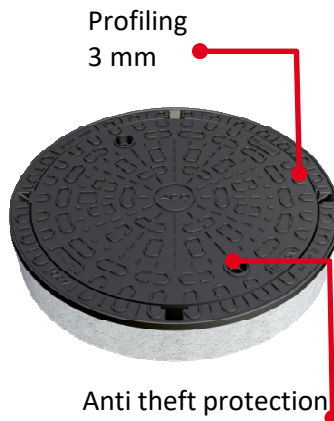
- Profiling 3 mm
- Very light cover
- Only non-ventilated
- Hinge possible



Better

CityTop S

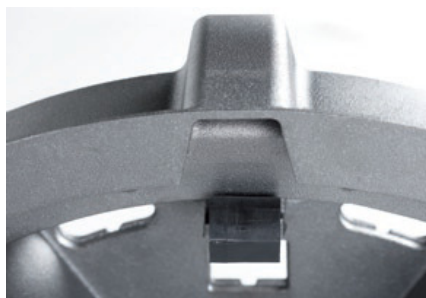
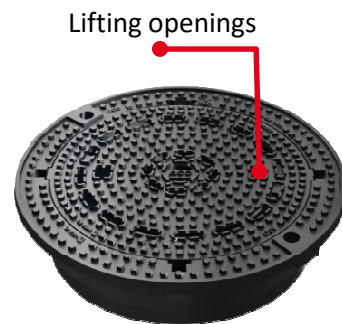
- Profiling 3 mm
- Anti theft protection
- Ventilated and non-ventilated



Best




CityTop P MultiTop plus

- Profiling 5 mm
- Lifting Openings
- Ventilated and non-ventilated



CityTop Q, CityTop S, CityTop P and MultiTop plus covers are secured within the frame with locking devices to avoid ejection and/or inappropriate movements. The screwless and non-integrally cast locking devices are engineered and tested to withstand highest vertical ejection forces. Contrary to screws or cast spring bars ACO securing features assure durable and reliable operation.

How to choose the right product? (6)







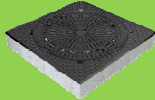






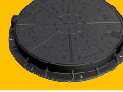
Road construction class		BK100 > 32	BK32 > 10 – 32	BK10 > 3.2 – 10	BK3.2 > 1.8 – 3.2	BK1.8 > 1.0 – 1.8	BK1.0 > 0.3 – 1.0	BK0.3 ≤ 0.3
		heavy 		mid 		low 		
Best Premium		<div>MultiTop</div>		MultiTop: <ul style="list-style-type: none"> Best grip Minimum noise impact Cover and frame machined 		<div>CityTop P</div>		
Better Standard		CityTop S: <ul style="list-style-type: none"> Optimized weight For most applications anti-theft-device 		<div>CityTop S</div>				
Good Basic				CityTop Q: <ul style="list-style-type: none"> Reduced to minimum weight Fixed frames 		<div>CityTop Q</div>		

- Long life performance
- Self leveling / floating (Bituplan)

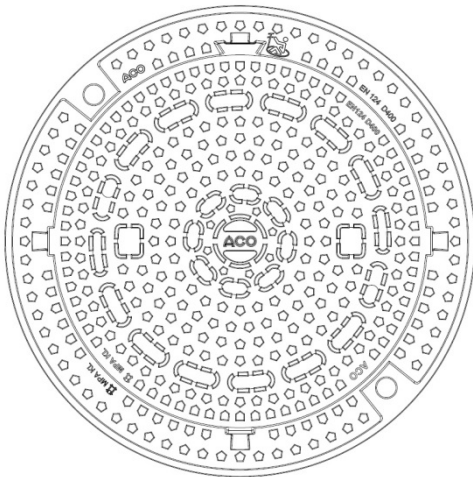
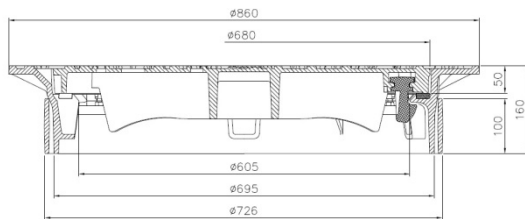
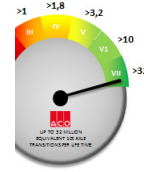
- Good performance
- Excellent value for money
- Cushioning inserts

- Price attractive
- No extra features

How to choose the right product? (7)

Road construction class		BK100 > 32	BK32 > 10 – 32	BK10 > 3.2 – 10	BK3.2 > 1.8 – 3.2	BK1.8 > 1.0 – 1.8	BK1.0 > 0.3 – 1.0	BK0.3 ≤ 0.3
		heavy 		mid 		low 		
Best Premium		 MultiTop plus Bituplan 160						
		 CityTop P Bituplan 160		 CityTop P Bituplan 140		 CityTop P BEGU square		
Better Standard								
						 CityTop S Bituplan 120  CityTop S Lift 125  CityTop S Fix 100  CityTop S Fix 75		
Good Basic								
						 CityTop Q+ hinge Fix 100  CityTop Q+ Fix 75  CityTop Q Fix 75		

MultiTop plus Bituplan 160



Product description

ACO MultiTop plus Bituplan manhole cover

Class D 400 according to DIN EN 124

MultiTop plus manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 44/ 47kg

Bituplan self-leveling frame, round, height 160 mm, external diameter 860 mm, max. bearing pressure 1,6 N/mm²,

Adapter ring of cast iron, h100 mm total weight approx. 106 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**
- Installation shuttering **210132**

Advantages

- Self-leveling frame with a max. bearing pressure of 1,6 N/mm²
- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 160mm Bituplan frame
- Durable PEWEPREN cushioning insert

✓ EN 124

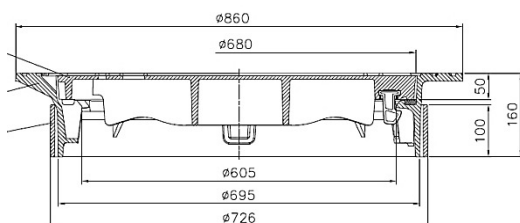
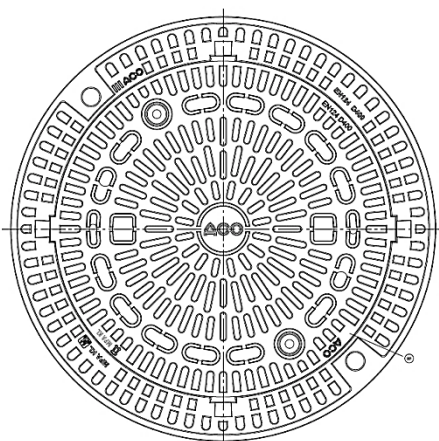
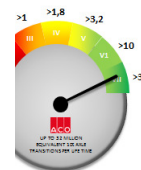
↓ D400

⊘ 605mm

△ Anti slip

Weight [kg]	Pcs / pallet	Ventilation holes	Black coating	Item-no. with adapter ring
106	5	x	-	210500
106	5	-	-	210501

CityTop P Bituplan 160



EN 124



D400



605mm



Anti-theft

Opis proizvoda

ACO CityTop P Bituplan šaht poklopac

Klasa opte. D 400 u skladu sa SRPS DIN EN 124

CityTop P šaht poklopac, okrugli, sa dva elementa za zaključavanje bez šrafljenja od poliuretana visoko otpornog na habanje koji obezbeđuje saobraćajnu sigurnost, poklopac od livenog gvožđa sferoidni grafit (GJS), Težina cc. 41/ 44kg

Bituplan samonivelišući- plivajući ram za ugradnju u asfalt, okrugli, visina 160 mm, spoljni prečnik 860 mm, max. nosivi pritisak 1,6 N/mm², ukupna težina cc. 103-106 kg.

Dodatne informacije

Opције

- Crni zaštitni sloj na vodenoj bazi
- Poklopac sa logom

Dodatni pribor

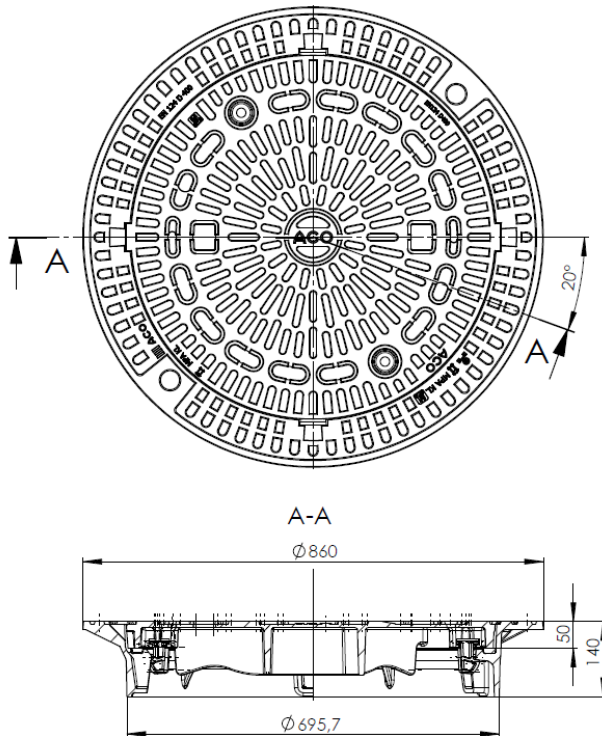
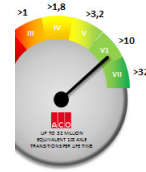
- Poluga za otvaranje **600643**
- Set za zaključavanje **210248**
- Adaptacioni prsten od livenog gvožđa, čelika i betona

Prednosti

- Self-leveling frame with a max. bearing pressure of 1,6 N/mm²
- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 140mm Bituplan frame
- Durable PEWEPREN cushioning insert

Weight [kg]	Pcs / pallet	Ventilation holes	Black coating	Item-no. with adapter ring
103	12	x	-	210313
106	12	-	-	210314
103	12	x	x	604045
106	12	-	x	604046

CityTop P Bituplan 140



EN 124



D400



605mm



Anti-theft

Product description

ACO CityTop P Bituplan manhole cover

Class D 400 according to DIN EN 124

CityTop P manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 41/ 44kg

Bituplan self-leveling frame, round, height 140 mm, external diameter 860 mm, max. bearing pressure 1,6 N/mm², total weight approx. 84-86 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**
- Anti-theft protection kit **210248**
- Adaptor ring of cast iron, steel or concrete

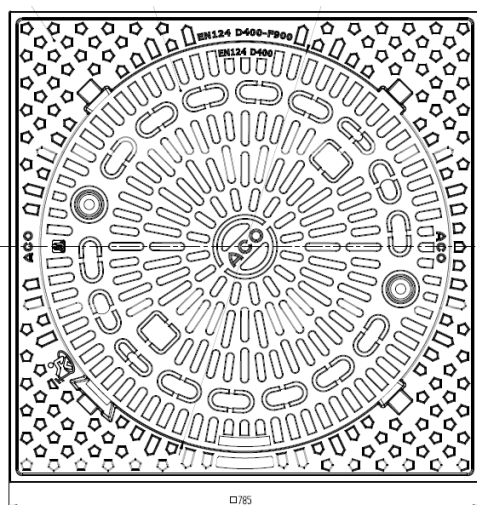
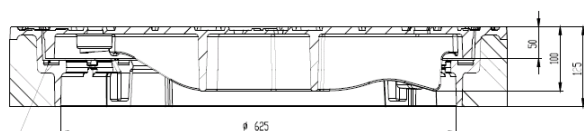
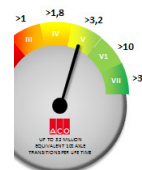
Advantages

- Self-leveling frame with a max. bearing pressure of 1,6 N/mm²
- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 140mm Bituplan frame
- Durable PEWEPREN cushioning insert

Weight [kg]	Pcs / pallet	Ventilation holes	Black coating	Item-no. w/o adapter ring
84	16	x	-	605157
86	16	-	-	605139
84	16	x	x	210320
86	16	-	x	210321

Item-nos for version with adapter ring on request

CityTop P BEGU squared



Product description

ACO CityTop P BEGU manhole cover

Class D 400 according to DIN EN 124

CityTop P manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, sludge basket option, cover made of spheroidal graphite cast iron (GJS),

weight approx. 36/41 kg

Lift frame, square, height 125 mm, external dimensions 785x785 mm, max. bearing pressure 3,6 N/mm², ventilation cross section 520 cm², total weight approx. 162-164 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Concrete C 35/45 is conforming to the highest classification of exposure conditions with freeze-thaw and deicing resistance
- Durable PEWEPREN cushioning insert



EN 124



D400



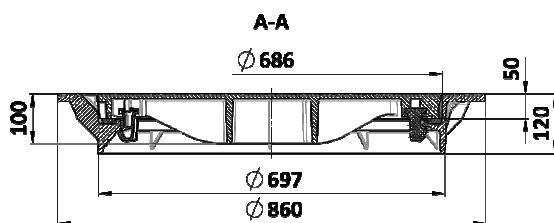
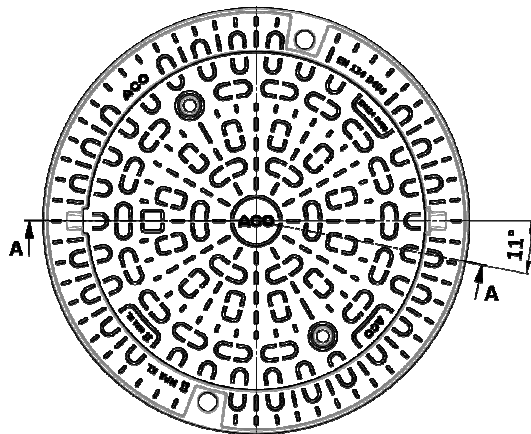
605mm



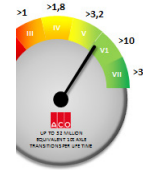
Anti-theft

Weight [kg]	Pcs./pallet	Ventilation holes	Sludge basket	Item no.
164	8	-	x	604288
162	8	x	x	604289

CityTop S Bituplan 120



- ✓ EN 124
- ↓ D400
- ⊘ 605mm
- ⬡ Anti-theft



Product description

ACO CityTop S Bituplan manhole cover

Class D 400 according to DIN EN 124

CityTop S manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 36/ 41kg

Bituplan self-leveling frame, round, height 120 mm, external diameter 860 mm, max. bearing pressure 1,6 N/mm², total weight approx. 78,5-81 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**
- Anti-theft protection kit **210248**
- Adaptor ring h80 of Cast iron, steel or concrete

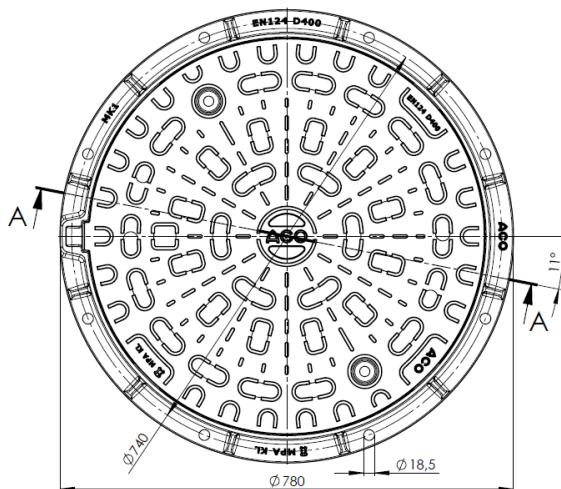
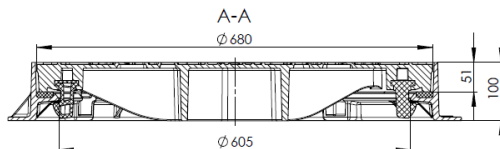
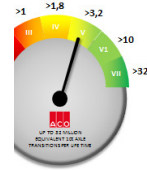
Advantages

- Self-leveling frame with a max. bearing pressure of 1,6 N/mm²
- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 120mm Bituplan frame
- Durable PEWEPREN cushioning insert

Weight [kg]	Pcs / pallet	Ventilation holes	Black coating	Item-no. w/o adapter ring
78,5	18	x	-	1202998
78,5	18	-	-	1202999
81	18	x	X	1203000
81	18	-	x	1203001

Item-nos for version with adapter ring on request

CityTop S Fix 100



Product description

ACO CityTop S Fix 100 manhole cover

Class D 400 according to DIN EN 124

CityTop S manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 36/41 kg

Fix flanged frame, round, height 100 mm external diameter 780 mm, max. bearing pressure 3,6 N/mm², ventilation cross section 520 cm², total weight approx. 61/65 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**
- Anti-theft protection kit **210248**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 100 mm fix frame
- Durable PEWEPREN cushioning insert

✓ **EN 124**

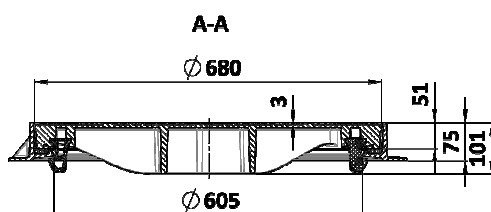
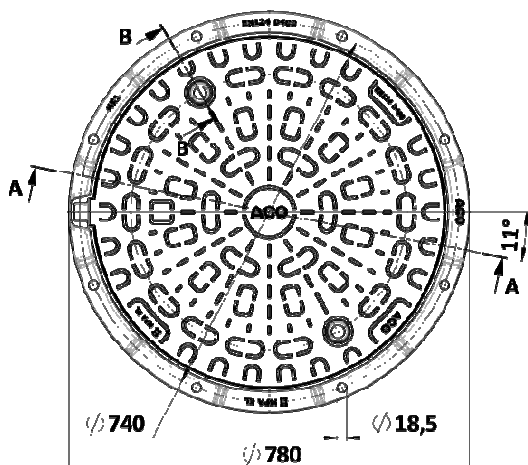
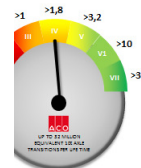
↓ **D400**

⊘ **605mm**

⬡ **Anti-theft**

Weight [kg]	Pcs./pallet	Ventilation holes	coating	Item no.
61	16	x	-	1203050
65	16	-	-	1203024
61	16	x	x	1203051
65	16	-	x	1203025

CityTop S Fix 75



Opis proizvoda

ACO CityTop S Fix 75 šaht poklopac

Klasa opte. D 400 u skladu sa SRPS EN 124

CityTop S šaht poklopac, okrugli, sa dva elementa za zaključavanje bez šrafljenja od poliuretana visoko otpornog na habanje koji obezbeđuje saobračajnu sigurnost, poklopac od livenog gvožđa sferoidni grafit(GJS), Težina cc. 36/41 kg

Fix tip rama, okrugli, visine 75 mm spoljni prečnik 780 mm, max. nosivi pritisak 3,6 N/mm², ventilacioni otvori 520 cm², ukupna težina cc. 56/61 kg

Dodatne informacije

Varijante

- Crni zaštitni sloj na vodenoj bazi
- Poklopac sa logom

Dodatni pribor

- Poluga za otvaranje **600643**
- Set za zaključavanje **210248**

Prednosti

- Sigurno pozicioniran poklopac u ramu zbog dodatnih žljebova za stabilizaciju
- Jednostavna ugradnja i pri rekonstrukciji sa 75 mm fix ramom
- Dugotrajni PEWEPREN jastučasti ulošci



EN 124



D400



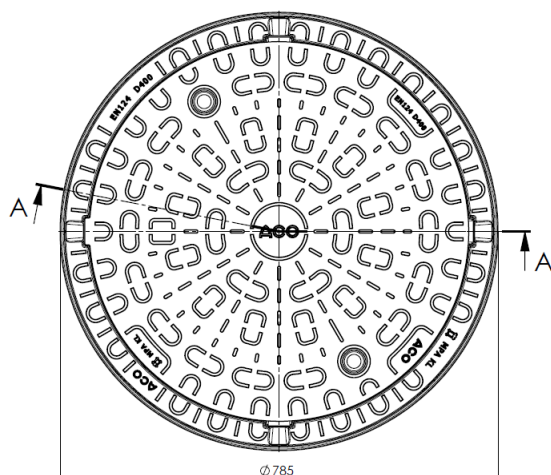
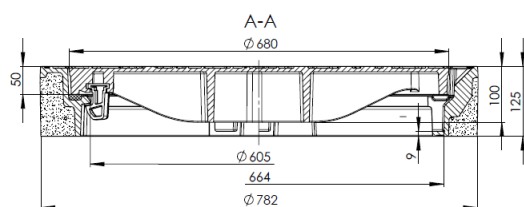
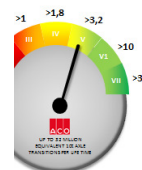
605mm



Anti-vandal

Težina [kg]	Kom./paleta	Ventilacioni otvori	Zaštitni sloj	Artikal br.
56	16	x	-	1015545
61	16	-	-	1201099
56	16	x	x	1015549
61	16	-	x	1201100

CityTop S Lift 125 with continuous cushioning insert



Product description

ACO CityTop S Lift 125 manhole cover

Class D 400 according to DIN EN 124

CityTop S manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing features made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 36/41 kg

Lift frame, round, height 125 mm, external diameter 785 mm, max. bearing pressure 3,6 N/mm², ventilation cross section 520 cm², total weight approx. 103-105 kg

Product information

Variations

- Black hydro-based coating
- Logo cover

Accessories

- Operating tool **600643**
- Anti-theft protection kit **210248**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Concrete C 35/45 is conforming to the highest classification of exposure conditions with freeze-thaw and deicing resistance
- Durable PEWEPREN cushioning insert



EN 124



D400



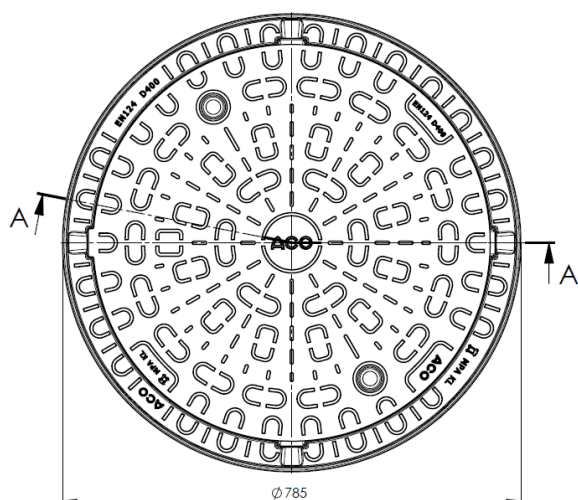
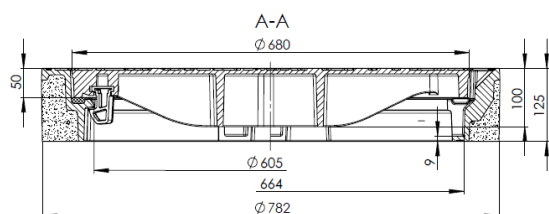
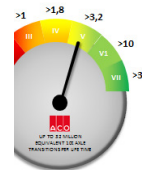
605mm



Anti-theft

Weight [kg]	Pcs./pallet	Ventilation holes	Sludge basket	Item no.
105	10	-	NO	1204010.

CityTop S Lift 125



EN 124



D400



605mm



Anti-vandal

Opis proizvoda

ACO CityTop S Lift 125 manhole cover

Klasa opte. D 400 u skladu sa SRPS EN 124

CityTop S šaht poklopac, okrugli, sa dva elementa za zaključavanje bez šrafljenja od poliuretana visoko otpornog na habanje koji obezbeđuje saobraćajnu sigurnost, poklopac od livenog gvožđa sferoidni grafit(GJS), Težina cc. 36/41 kg

Lift tip rama, okrugli, visine 125 mm spoljni prečnik 785 mm, max. nosivi pritisak 3,6 3,6 N/mm², ventilacioni otvori 520 cm², ukupna težina cc 103-105 kg

Dodatne informacije

Varijante

- Crni zaštitini sloj na vodenoj bazi
- Poklopac sa logom

Dodatni pribor

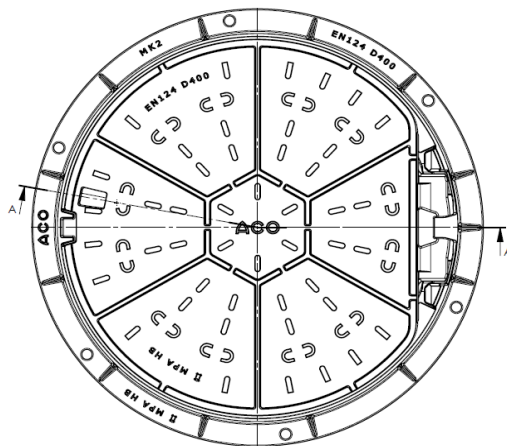
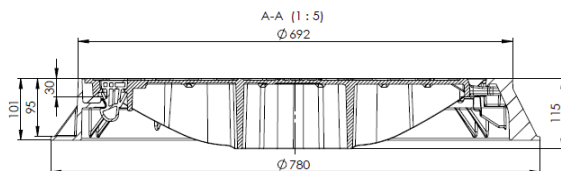
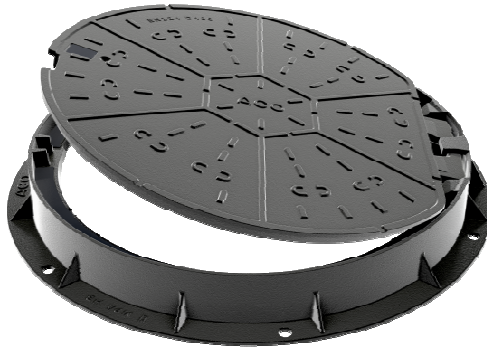
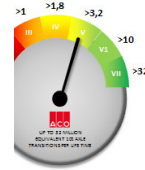
- Poluga za otvaranje **600643**
- Kanta za krupan talog

Prednosti

- Sigurno pozicioniran poklopac u ramu zbog dodatnih žljebova za stabilizaciju
- Beton klase C 35/45 u ramu osigurava odličnu otpornost u uslovima mržjenja
- Ravna površina rama sa bočnih strana omogućava jednostavnu ugradnju u popločanju
- Dugotrajni PEWEPREN jastučasti ulošci protiv buke

Težina [kg]	Kom./paleta	Ventilacioni otvori	Kanta za talog	Art.br.
105	10	-	x	1202823
103	10	x	x	1202822

CityTop Q⁺ Hinge



Product description

ACO CityTop Q manhole cover with hinge

Class D 400 according to DIN EN 124

CityTop Q manhole cover, round, with one maintenance free, screwless, non-integrally cast and traffic-safe securing feature made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), to be hinged up to 110° or removable up to an angle of 30° weight approx. 28 kg

Fix flanged frame, round, with hinge, height 100 mm external diameter 780 mm, max. bearing pressure 3,6 N/mm², total weight approx. 53 kg

Product information

Variations

- Black hydro-based coating

Accessories

- Operating tool **600643**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Easy installation also in case of refurbishment with the 100 mm Fix frame
- Durable PEWEPREN cushioning insert

✓ **EN 124**

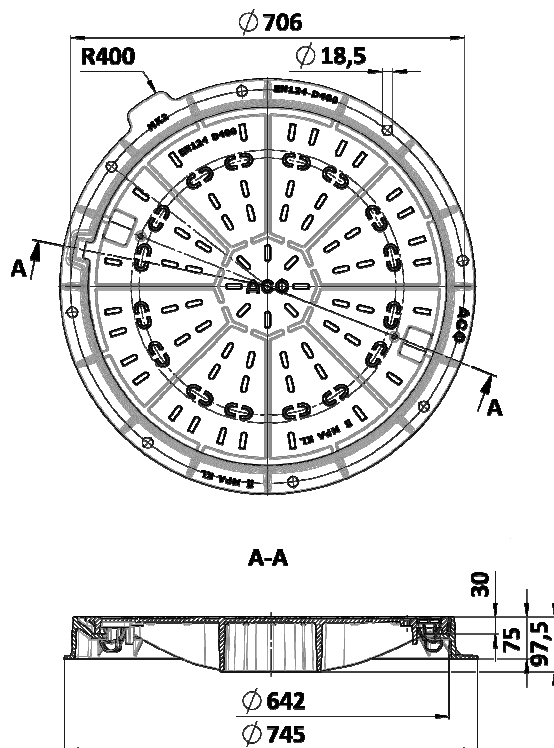
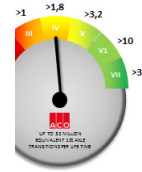
↓ **D400**

⊘ **605mm**

⬡ **Anti-theft**

Weight (kg)	Pcs./pallet	Ventilation holes	Coating	Item-no.
53	16	NO	-	1202931
53	16	NO	X	1202932

CityTop Q+ Full Round



Product description

ACO CityTop Q Fix manhole cover

Class D 400 according to DIN EN 124

CityTop Q manhole cover, round, with two maintenance free, screwless, non-integrally cast and traffic-safe securing feature made of high-strength plastic, cover made of spheroidal graphite cast iron (GJS), weight approx. 25kg

Fix frame, round, height 75 mm, external diameter 745 mm, total weight approx. 41kg

Product information

Variations

- Black hydro-based coating

Accessories

- Operating tool **600643**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Special designed CityTop Q locking element
- Easy to handle light weight cover with 25kg
- machined contact surfaces of frame and cover + **Cushioning insert**

✓ EN 124

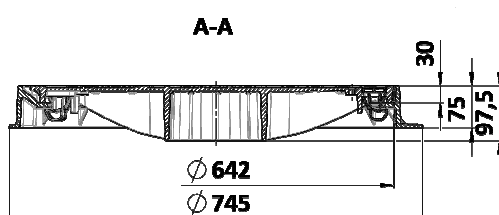
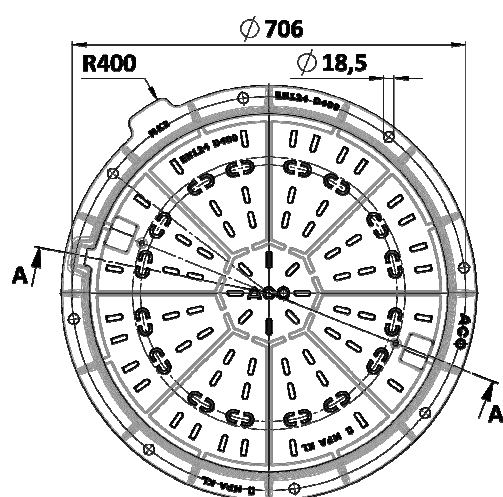
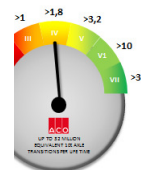
↓ D400

⊘ 605mm

⬡ Anti-theft

Weight (kg)	Pcs./pallet	Ventilation holes	Coating	Item-no.
41	16	NO	-	1203586
41	16	NO	X	1203587

CityTop Q Full Round



EN 124



D400



605mm



Anti-theft

Product description

ACO CityTop Q Fix manhole cover
Class D 400 according to DIN EN 124
CityTop Q manhole cover, round,
with two maintenance free, screwless,
non-integrally cast and traffic-safe securing
feature made of high-strength plastic, cover
made of spheroidal graphite cast iron (GJS),
weight approx. 25kg
Fix frame, round, height 75 mm, external
diameter 745 mm,
total weight approx. 41kg

Product information

Variations

- Black hydro-based coating

Accessories

- Operating tool **600643**

Advantages

- Safe positioning of the cover due to an additional stabilization groove
- Special designed CityTop Q locking element
- Easy to handle light weight cover with 25kg
- machined contact surfaces of frame and cover

Weight (kg)	Pcs./pallet	Ventilation holes	Coating	Item-no.
41	16	NO	-	1202953
41	16	NO	X	1202954