KILLESHAL
TRUSTED SINCE 1969

COMPACT CHANNEL
KOMPAQDRAIN®

DRAINAGE SYSTEMS

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See more online at www.killeshal.com

ULMA
ARCHITECTURAL **SOLUTIONS**

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TERNUA
GROUP
Jesús López
600

WHO **WE ARE**

KILLESHAL
TRUSTED SINCE 1969

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Kol _rj_lncm_ [h^ _rj_lc_h]_ch **jl_`[\lc][n_^msmn_gm `il]ihmnlo]ncih** b[m f_^ omni ^_p_fij [qc^_l[ha_ i` jli^o]nm [cg_^ [n **`iol g[le_n** m_ag_hnm7

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OUR **MATERIAL**

COMPRESSIVE STRENGTH
The polymer concrete used in prefabricated systems is capable of withstanding compression forces greater than 1000kg/cm^2.

FLUID DRAINAGE
The polymeric nature of this material allows smooth surfaces with very low friction on prefabricated elements, thereby facilitating the rapid run-off of fluids and also offering a water absorption index which is virtually non-existent, compared with 5-10% of traditional concrete.

RESISTANCE TO CHEMICAL PRODUCTS
Polyester resin, one of the components of Polymer Concrete, is a material resistant to a very wide range of chemical products; it is an inert material and therefore does not react when it comes into contact with chemical compounds, no matter its concentration.

ABRASIVE WEAR
The hardness of silica aggregates ensures good preservation of structures exposed to road traffic, since polymer concrete shows optimal resistance to abrasion.

IMPACT RESISTANCE
The qualities of this material, together with its optimal prefabrication design, increase its capacity to withstand and absorb impact forces, making it highly resistant.

POLYMER CONCRETE is a **high performance** material made up of a **precise** combination of silica and quartz aggregates bonded by polyester resins.

POLYMER CONCRETE by ULMA

In addition to its **extremely high resistance to compression,** far greater than other traditional concretes, its polymer matrix ensures a high **resistance to most chemical products.** Moreover, the percentage of **water absorption is practically nonexistent,** ensuring its **stability during freeze-thaw cycles.** Its **great impact strength** and **low abrasive wear** are additional features that make polymer concrete the ideal material for the drainage of water and a wide variety of other fluids, even in such demanding environments as the industrial, food, chemical and pharmaceutical sectors.

PHYSICAL PROPERTIES	STANDARD	VALUE
Compressive strength	EN1433	>90 MPa
Resistance to bending	EN1433	>22 MPa
Water absorption	EN 14617-1	0.1%
Resistance to bending after freeze/thaw cycles	EN 14617-5	23.8 MPa
Resistance to abrasive wear	EN 14617-4	32.5 MPa
Resistance to impact	EN 14617-9	5 J
Density	EN 14617-1	2.1 g/cm3
Resistance to thermal change	EN 14617-6	23.6 MPa
Coefficient of linear thermal expansion	-	2.15-10^{-5}ºC^{-1}
Resistance to chemicals	EN 14617-10	C4

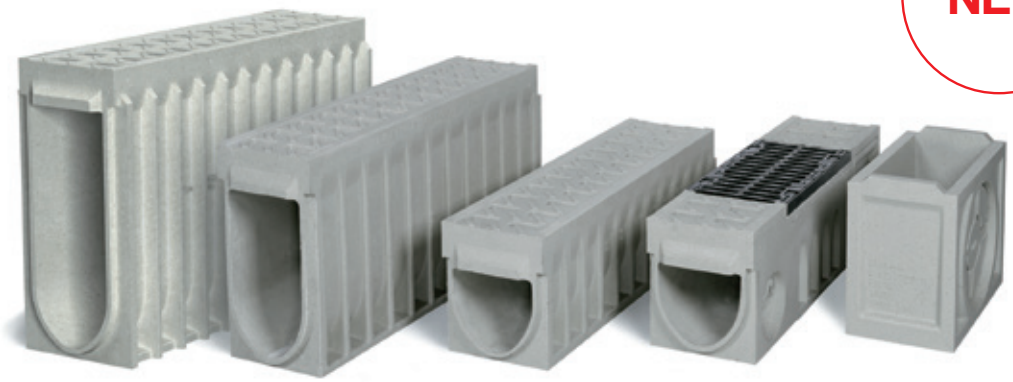
Compact Channel
KOMPAQDRAIN®
with **Max Flow**® system

Specially designed for areas with high traffic density by **ULMA Architectural Solutions,** specialists in drainage system, this novel compact channel made of polymer concrete, is suitable up to load class F900, according to standard EN-1433.

KILLESHAL
TRUSTED SINCE 1969

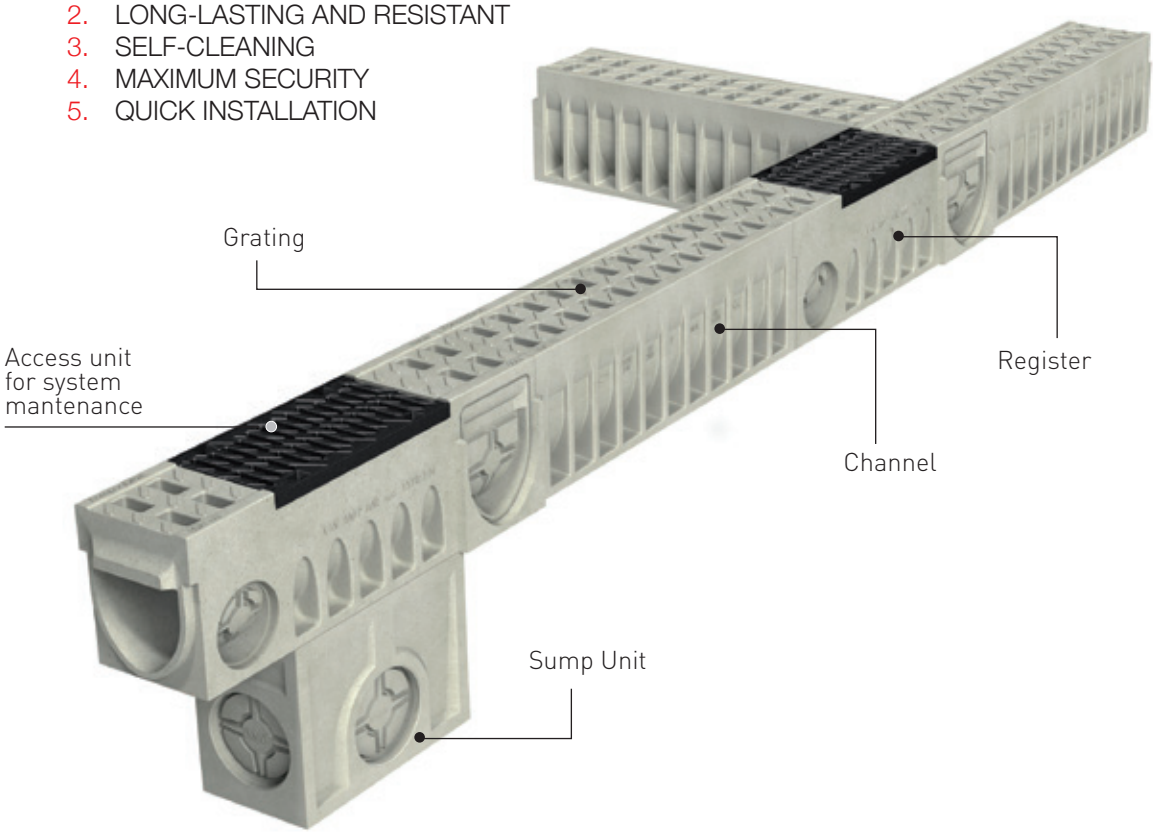
Motorways, airports, service stations and other intense traffic areas require high drainage and maximum safety, requirements to which **KOMPAQ**DRAIN® responds with a combination of features that make it unique on the market.

NEW

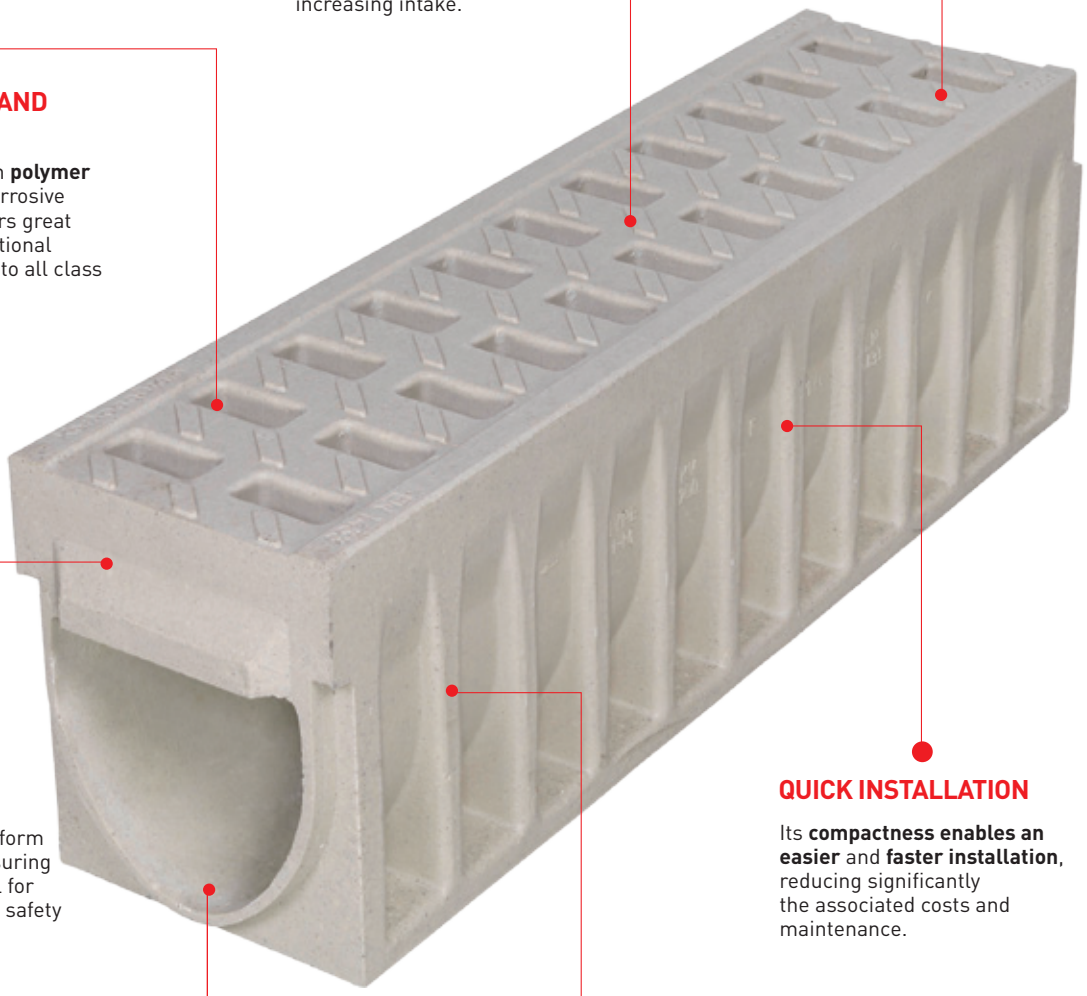


ADVANTAGES OF THE SYSTEM

1. COMPACT
2. LONG-LASTING AND RESISTANT
3. SELF-CLEANING
4. MAXIMUM SECURITY
5. QUICK INSTALLATION



KOMPAQDRAIN® ADVANTAGES



NON - SLIPPERY SURFACE

Special geometry to improve the grip.

DIRECTIONAL ELEMENTS

Drive water inwards, increasing intake.

LONG-LASTING AND RESISTANT

It is manufactured in **polymer concrete,** an anti-corrosive material, which offers great durability and exceptional resistance. Suitable to all class of loads.

IT IS COMPACT

Channel and grating form **a one-piece unit**, ensuring greater **rigidity.** Ideal for areas with maximum safety requirements.

QUICK INSTALLATION

Its **compactness enables an easier** and **faster installation**, reducing significantly the associated costs and maintenance.

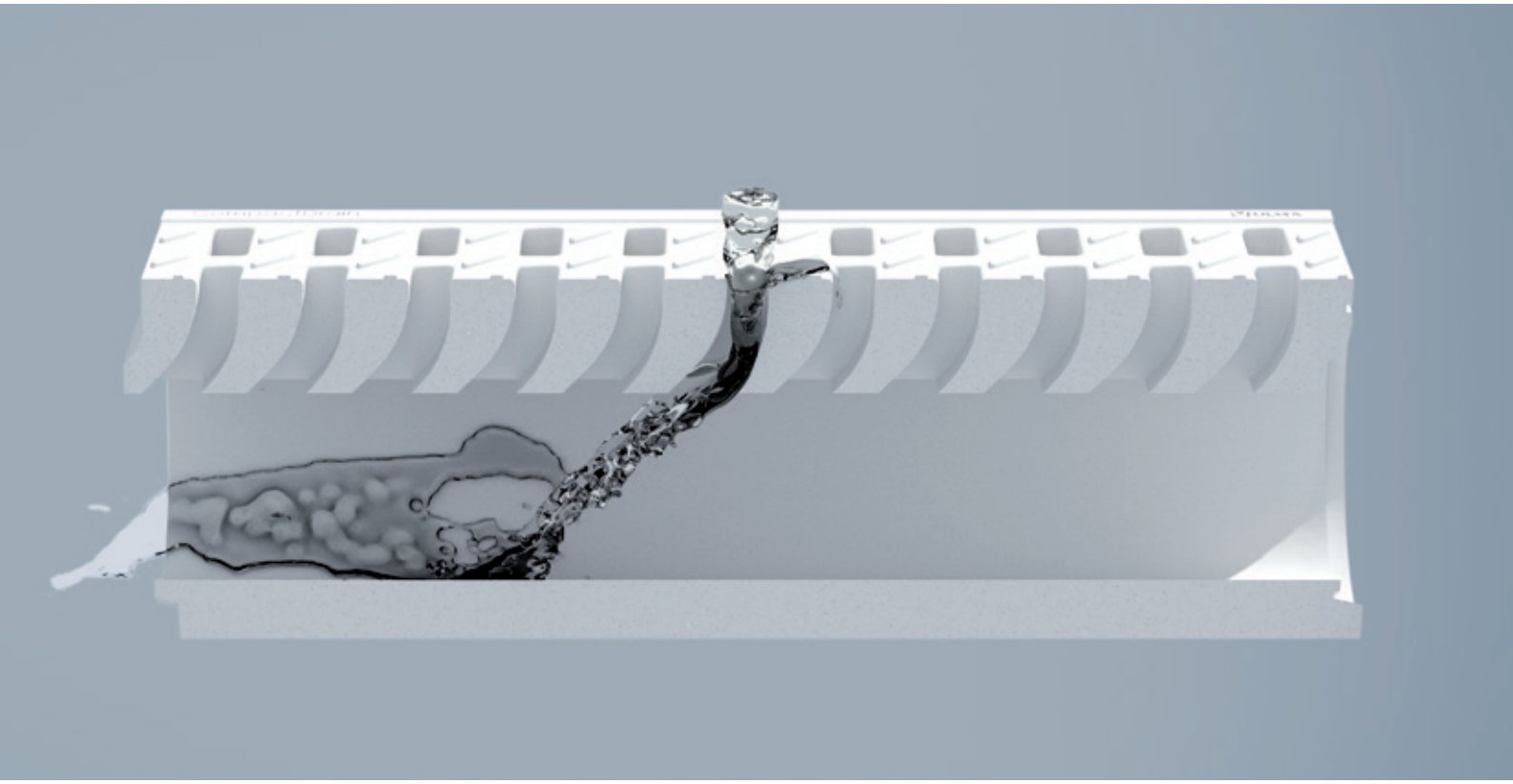
SELF-CLEANING

Its "V" optimized shape for greater hidraulic eficiency, avoid dirt blockage and ensures an efficient self-cleaning effect.

MAXIMUM SECURITY

Motorways, airports, service stations and other intense traffic areas require **maximum safety,** requirements to which **KOMPAQ**DRAIN® responds presenting the channel and grating in one piece.

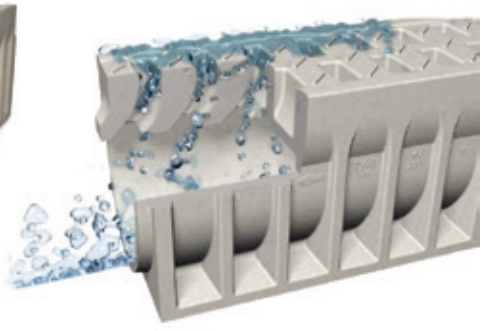
Max Flow® SYSTEM



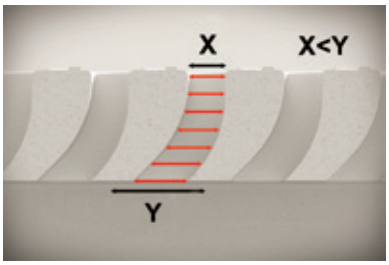
The original curved design of the inlets, together with the non-slip surface and water router, achieve the novel **Max Flow®** effect, **increasing the water speed and the drainage capacity**. Moreover, the progressive widening of the orifices helps the waste pass through more easily. Therefore **KOMPAQ**DRAIN® can drain the same volume of water with a smaller channel.

KOMPAQDRAIN® meets all requirements of the EN-1433 international standard of quality and reliability.

// CURVED DESIGN OF THE INLETS



// IT INCREASES THE WATER ENTRY SPEED AND THE DRAINAGE CAPACITY

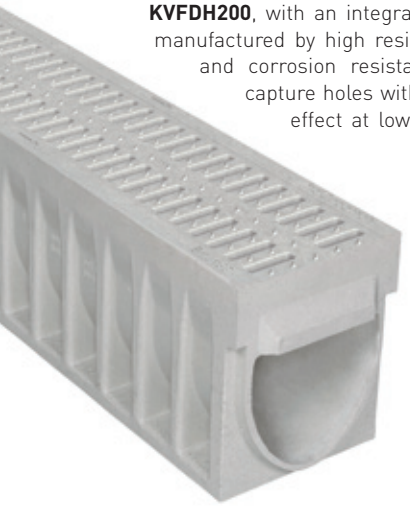


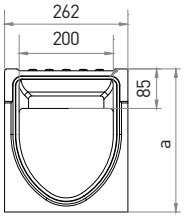
// PROGRESSIVE WIDENING TO PREVENT DIRT BLOCKAGE

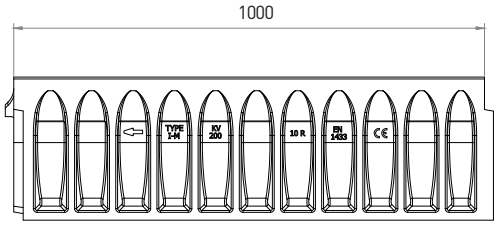
KOMPAQ200 CITY

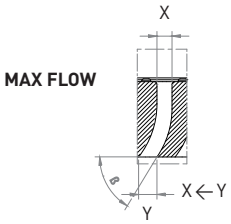
LOAD CLASS
UP TO D400
EN - 1433 STANDARD

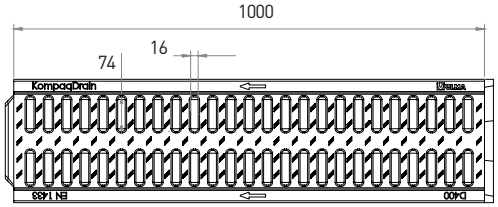
Linear Drainage Channel model **ULMA KompaqDrain® KVFDH200**, with an integral grating, presented in one-piece and manufactured by high resistant Polymer Concrete. Vandal-proof and corrosion resistant. With "V" optimized shaped and capture holes with MAX-FLOW® geometry: self cleaning effect at low flow, increase at maximum flow and positive opening in order to avoid dirt blockage, for areas without slope. Active surface for cutting of water sheet and for its driving to uptake holes, with non slippery protuberances. Male and female horizontal and vertical alignment and perimetral preformed groove to facilitate joint sealing in 360º.











CHANNELS

Channel Code	Length (mm)	Height (mm)	Channel width (mm)	
			External	Internal
KVFDH200.10R	1000	305	262	200
KVFDH200.30R	1000	505	262	200
KVFDH200.50R	1000	705	262	200

REGISTERS

Channel code	Length (mm)	Height (mm)	Channel width (mm)		Lateral Outlet (mm)		Vertical Outlet (mm)	T and + channel connection
			External	Internal				
AKVFDH200MF10R+D	1000	305	262	200	160	160	160	Yes
AKVFDH200MF30R+D	1000	505	262	200	315	315	200	Yes
AKVFDH200MF50R+D	1000	705	262	200	315	315	200	Yes

* Cast iron edges, galvanized and stainless steel edges available.

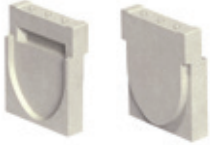
SUMP UNITS AND ACCESSORIES

Sump Unit Code	Length (mm)	Height (mm)	Channel width (mm)		Frontal Outlet (mm)	Lateral Outlet (mm)		Galvanized steel bucket
			Ext.	Int.				
AKVF200B	500	380	262	200	200	200	315	CKV200
AKVF200B+AKVF200I	500	760	262	200	200	200	315	CKV200

** The Sump unit can be higher incorporating an intermediate unit of 380mm.
*** More info about sump units and registers on page 12.

END CAPS

Channel	Code
KVFDH200.10R	TKVFDH20010C
KVFDH200.30R	TKVFDH20030C
KVFDH200.50R	TKVFDH20050C



CONNECTORS

Channel	Code
KVFDH200.10R	TCKVFDH20010FFA
	TCKVFDH20010MMA
KVFDH200.30R	TCKVFDH20030FFA
	TCKVFDH20030MMA
KVFDH200.50R	TCKVFDH20050FFA
	TCKVFDH20050MMA

Bucket
CKV200

Step unit
CEKV200

SLOPE DESIGNS

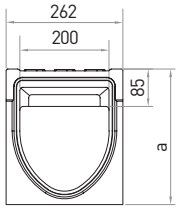
WITHOUT SLOPE

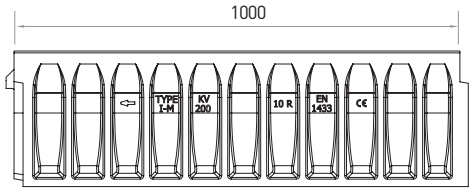
CASCADED SLOPE

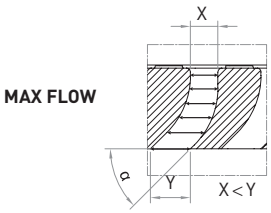
KOMPAQ200 TRAFFIC

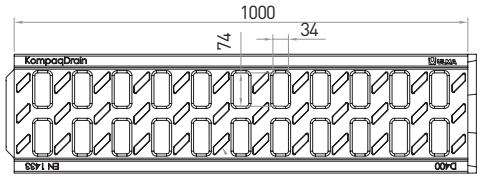
LOAD CLASS
UP TO D400
EN - 1433 STANDARD

Linear Drainage Channel model **ULMA KompaqDrain® Traffic KVFD200**, with an integral grating, presented in one-piece and manufactured by high resistant Polymer Concrete. Vandal-proof and corrosion resistant. With "V" optimized shaped and capture holes with MAX-FLOW® geometry: self cleaning effect at low flow, increase at maximum flow and positive opening in order to avoid dirt blockage, for areas without slope. Active surface for cutting of water sheet and for its driving to uptake holes, with non slippery protuberances. Male and female horizontal and vertical alignment and perimetral preformed groove to facilitate joint sealing in 360º.









CHANNELS

Channel Code	Length (mm)	Height (mm)	Channel width (mm)	
			External	Internal
KVFD200.10R	1000	305	262	200
KVFD200.30R	1000	505	262	200
KVFD200.50R	1000	705	262	200

REGISTERS

Channel code	Length (mm)	Height (mm)	Channel width (mm)		Lateral Outlet (mm)		Vertical Outlet (mm)	T and + channel connection
			External	Internal				
AKVFD200MF10R+D	1000	305	262	200	160	160	160	Yes
AKVFD200MF30R+D	1000	505	262	200	315	315	200	Yes
AKVFD200MF50R+D	1000	705	262	200	315	315	200	Yes

* Cast iron edges, galvanized and stainless steel edges available.

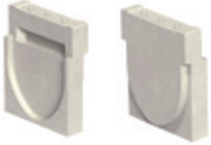
SUMP UNITS AND ACCESSORIES

Sump Unit Code	Length (mm)	Height (mm)	Channel width (mm)		Frontal Outlet (mm)	Lateral Outlet (mm)		Galvanized steel bucket
			Ext.	Int.				
AKVF200B	500	380	262	200	200	200	315	CKV200
AKVF200B+AKVF200I	500	760	262	200	200	200	315	CKV200

** The Sump unit can be higher incorporating an intermediate unit of 380mm.
*** More info about sump units and registers on page 12.

END CAPS

Channel	Code
KVFD200.10R	TKVFD20010C
KVFD200.30R	TKVFD20030C
KVFD200.50R	TKVFD20050C



CONNECTORS

Channel	Code
KVFD200.10R	TCKVFD20010FFA
	TCKVFD20010MMA
KVFD200.30R	TCKVFD20030FFA
	TCKVFD20030MMA
KVFD200.50R	TCKVFD20050FFA
	TCKVFD20050MMA

Bucket
CKV200

Step unit
CEKV200

SLOPE DESIGNS

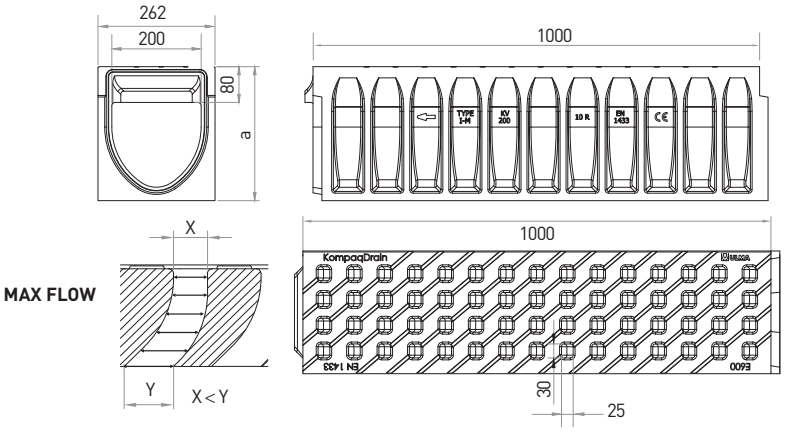
WITHOUT SLOPE

CASCADED SLOPE

KOMPAQ200 INDUSTRY

LOAD CLASS
UP TO E600
EN - 1433 STANDARD

Linear Drainage Channel model **ULMA KompaqDrain® Industry KVE200E2530**, with an integral grating, presented in one-piece and manufactured by high resistant Polymer Concrete. Vandal-proof and corrosion resistant. With "V" optimized shaped and capture holes with MAX-FLOW® geometry: self cleaning effect at low flow, increase at maximum flow and positive opening in order to avoid dirt blockage, for areas without slope. Active surface for cutting of water sheet and for its driving to uptake holes. Male and female horizontal and vertical alignment and perimetral preformed groove to facilitate joint sealing in 360º.



CHANNELS

Channel Code	Length (mm)	Height (mm)	Channel width (mm)	
			External	Internal
KVE200.10R	1000	300	262	200
KVE200.30R	1000	500	262	200
KVE200.50R	1000	700	262	200

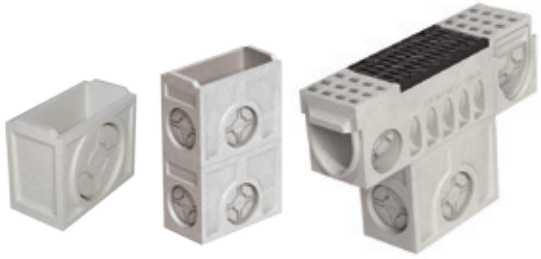
REGISTERS

Channel code	Length (mm)	Height (mm)	Channel width (mm)		Lateral Outlet (mm)		Vertical Outlet (mm)	T and + channel connection
			External	Internal				
AKVE200MF10R+E	1000	300	262	200	160	160	160	Yes
AKVE200MF30R+E	1000	500	262	200	315	315	200	Yes
AKVE200MF50R+E	1000	700	262	200	315	315	200	Yes

* Cast iron edges, galvanized and stainless steel edges available.

SUMP UNITS AND ACCESSORIES

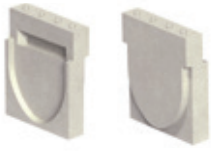
Sump Unit Code	Length (mm)	Height (mm)	Channel width (mm)		Frontal Outlet (mm)	Lateral Outlet (mm)		Galvanized steel bucket
			Ext.	Int.				
AKVF200B	500	380	262	200	200	200	315	CKV200
AKVF200B+AKVF200I	500	760	262	200	200	200	315	CKV200



** The Sump unit can be higher incorporating an intermediate unit of 380 mm.
*** More info about sump units and registers on page 12.

END CAPS

Channel	Code
KVE200.10R	TKVE20010C
KVE200.30R	TKVE20030C
KVE200.50R	TKVE20050C



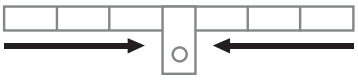
CONNECTORS

Channel	Code
KVE200.10R	TCKVE20010FFA
	TCKVE20010MMA
KVE200.30R	TCKVE20030FFA
	TCKVE20030MMA
KVE200.50R	TCKVE20050FFA
	TCKVE20050MMA

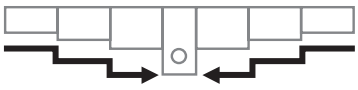
Bucket
CKV200

Step unit
CEKV200

SLOPE DESIGNS



WITHOUT SLOPE

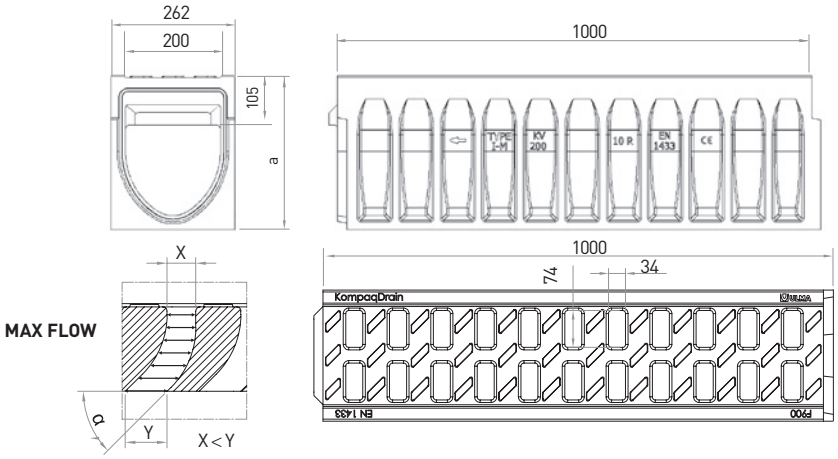


CASCADED SLOPE

KOMPAQ200 CIVIL

LOAD CLASS
UP TO F900
EN - 1433 STANDARD

Linear Drainage Channel model **ULMA KompaqDrain® Civil KVF200**, with an integral grating, presented in one-piece and manufactured by high resistant Polymer Concrete. Vandal-proof and corrosion resistant. With "V" optimized shaped and capture holes with MAX-FLOW® geometry: self cleaning effect at low flow, increase at maximum flow and positive opening in order to avoid dirt blockage, for areas without slope. Active surface for cutting of water sheet and for its driving to uptake holes and with non slippery protuberances. Male and female horizontal and vertical alignment and perimetral preformed groove to facilitate joint sealing in 360º.



CHANNELS

Channel Code	Length (mm)	Height (mm)	Channel width (mm)	
			External	Internal
KVF200.10R	1000	325	262	200
KVF200.30R	1000	525	262	200
KVF200.50R	1000	725	262	200

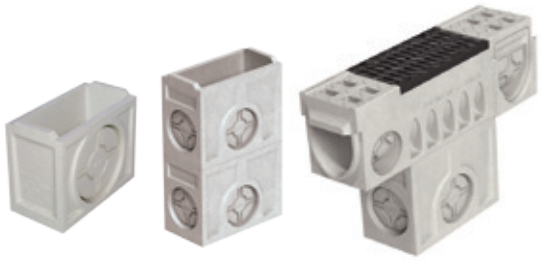
REGISTERS

Channel code	Length (mm)	Height (mm)	Channel width (mm)		Lateral Outlet (mm)		Vertical Outlet (mm)	T and + channel connection
			External	Internal				
AKVF200MF10R+F	1000	325	262	200	160	160	160	Yes
AKVF200MF30R+F	1000	525	262	200	315	315	200	Yes
AKVF200MF50R+F	1000	725	262	200	315	315	200	Yes

* Cast iron edges, galvanized and stainless steel edges available.

SUMP UNITS AND ACCESSORIES

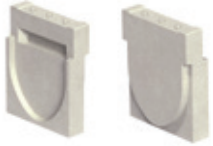
Sump Unit Code	Length (mm)	Height (mm)	Channel width (mm)		Frontal Outlet (mm)	Lateral Outlet (mm)		Galvanized steel bucket
			Ext.	Int.				
AKVF200B	500	380	262	200	200	200	315	CKV200
AKVF200B+AKVF200I	500	760	262	200	200	200	315	CKV200



** The Sump unit can be higher incorporating an intermediate unit of 380 mm.
*** More info about sump units and registers on page 12.

END CAPS

Channel	Code
KVF200.10R	TKVF20010C
KVF200.30R	TKVF20030C
KVF200.50R	TKVF20050C



CONNECTORS

Channel	Code
KVF200.10R	TCKVF20010FFA
	TCKVF20010MMA
KVF200.30R	TCKVF20030FFA
	TCKVF20030MMA
KVF200.50R	TCKVF20050FFA
	TCKVF20050MMA

Bucket
CKV200

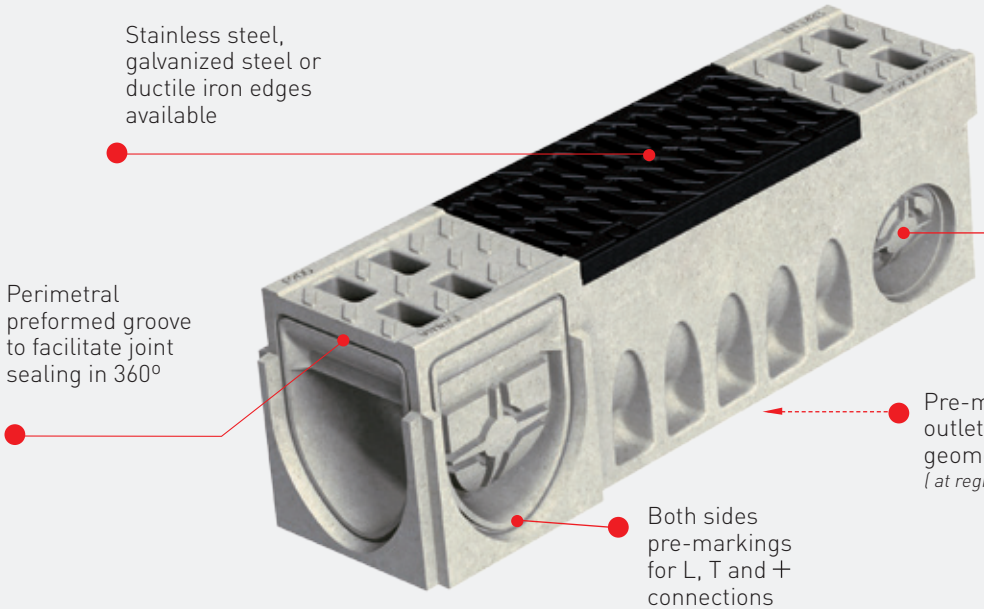
Step unit
CEKV200

SLOPE DESIGNS

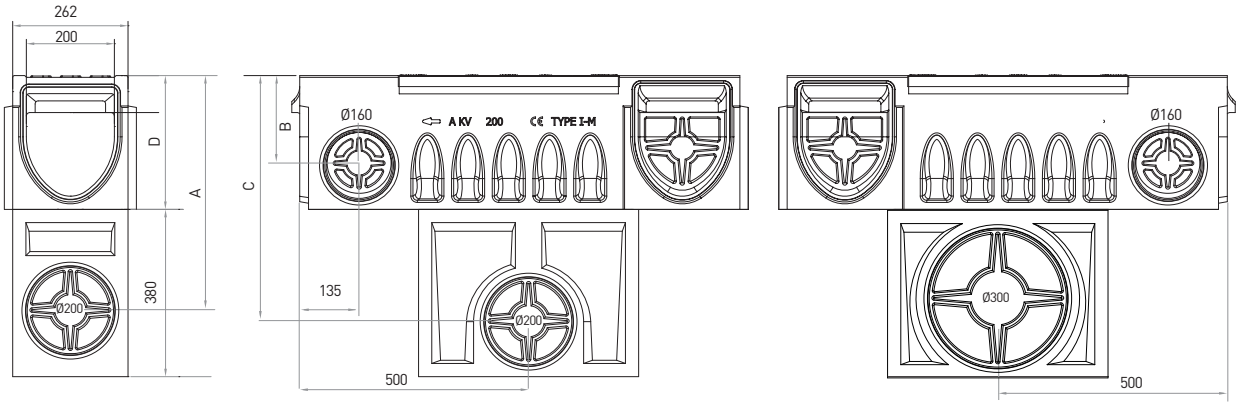
WITHOUT SLOPE

CASCADED SLOPE

REGISTER

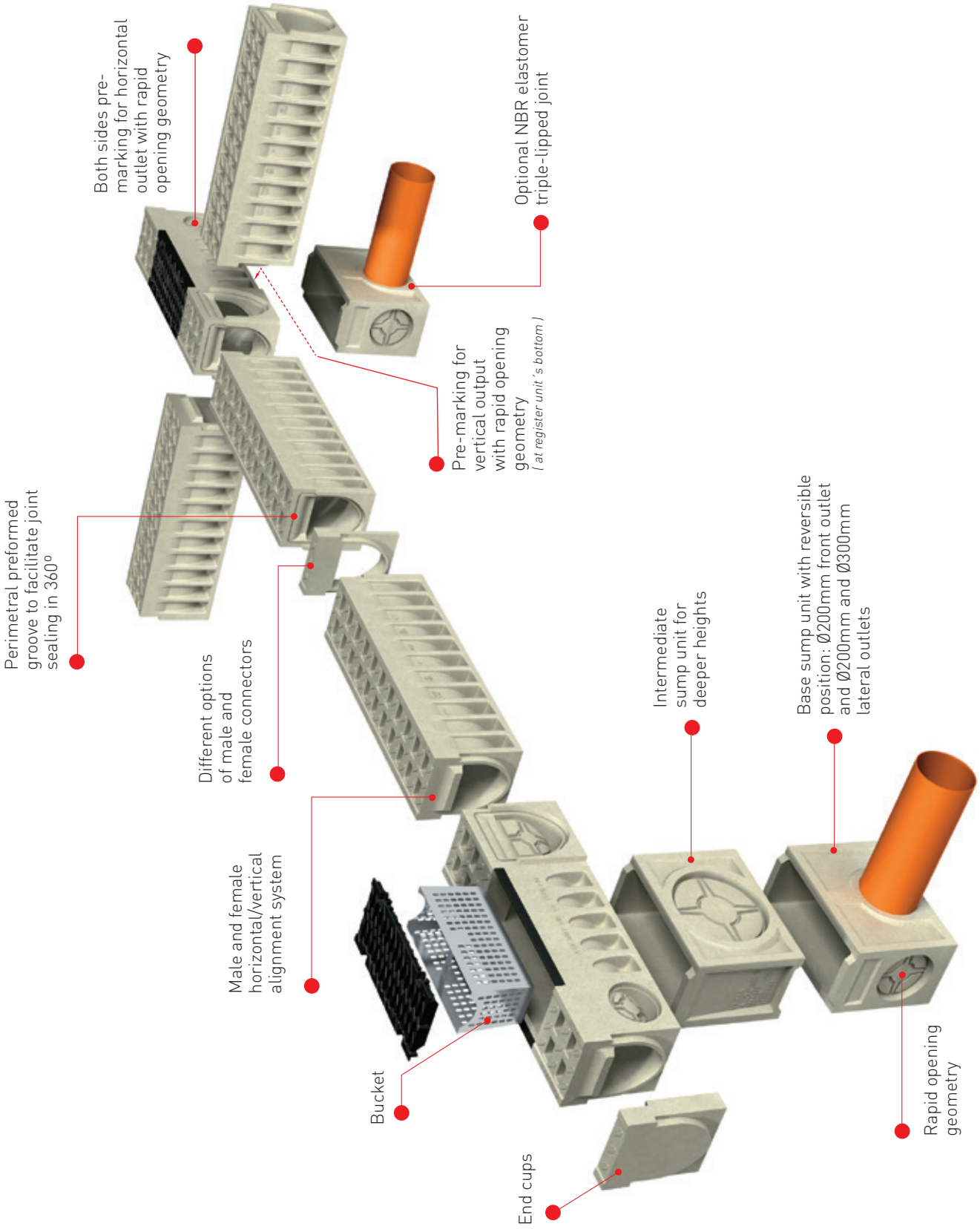


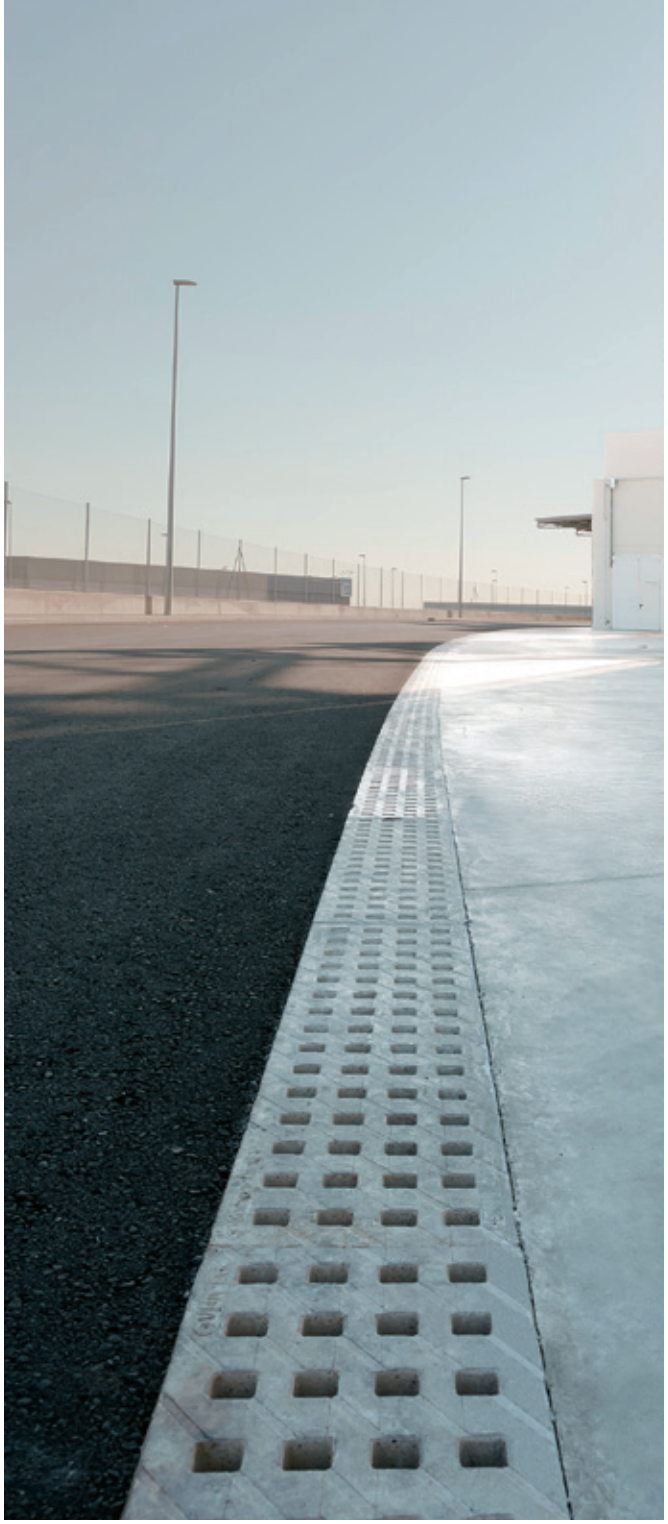
SUMP UNITS

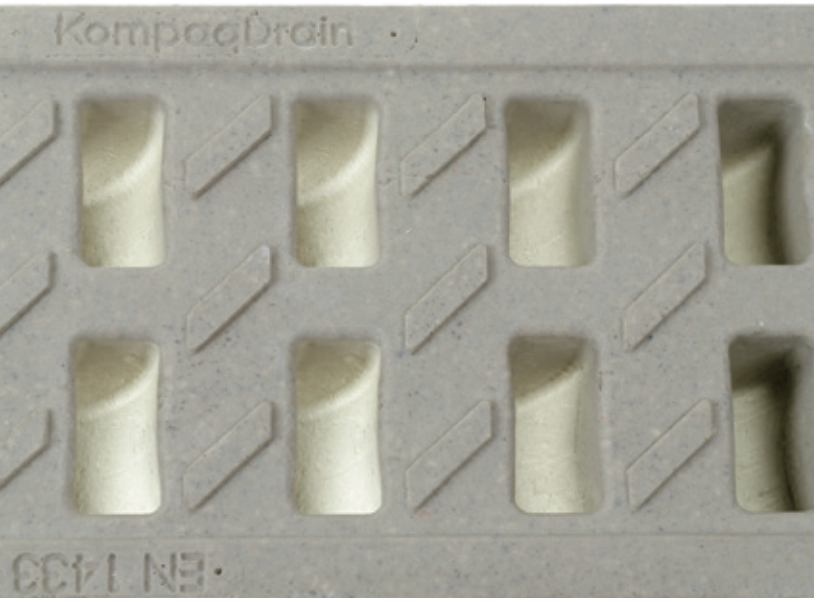


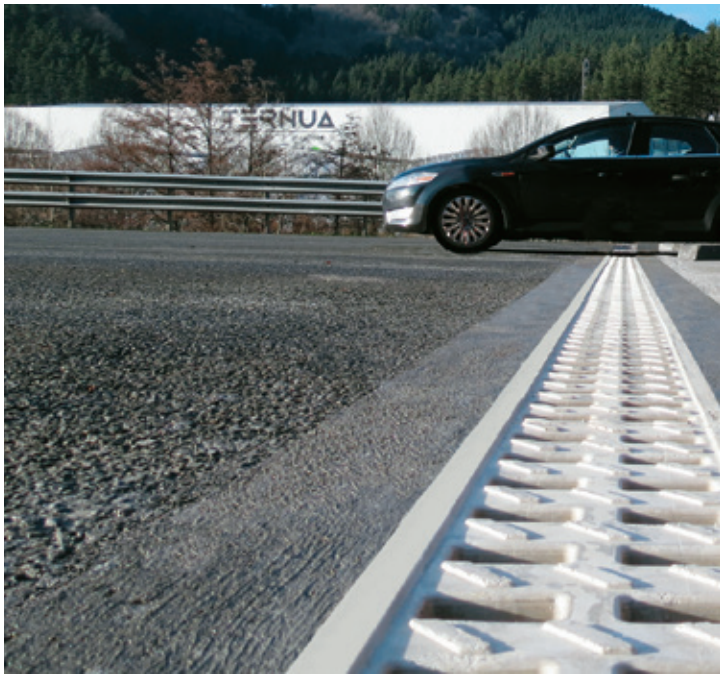
	SUMP UNITS SUPERIOR + BASE				
	Code	A	B	C	D
KVFDH	AKVFDH200MF10RS+B+D	535	205	505	305
	AKVFDH200MF30RS+B+D	735	405	705	505
	AKVFDH200MF50RS+B+D	935	605	905	705
KVFD	AKVFD200MF10RS+B+D	535	205	505	305
	AKVFD200MF30RS+B+D	735	405	705	505
	AKVFD200MF50RS+B+D	935	605	905	705
KVE	AKVE200MF10RS+B+E	530	200	500	300
	AKVE200MF30RS+B+E	730	400	700	500
	AKVE200MF50RS+B+E	930	600	900	700
KVF	AKVF200MF10RS+B+F	555	225	525	325
	AKVF200MF30RS+B+F	755	425	725	525
	AKVF200MF50RS+B+F	955	625	925	725

KOMPAQDRAIN®
OVERVIEW






KompactDrain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