A consumer validated ***Superbrand in piping*** *category for* ***consecutive 4 years***

India's Most Trusted *Pipe Brand based on* ***TRA's Brand Trust Report for the 6th time***

ASTRAL PIPES

CIN NO: L25200GJ1996PLC029134

Registered & Corporate Office: Astral Limited

207/1, 'Astral House', B/h Rajpath Club, Off S. G. Highway, Ahmedabad - 380059.

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9001 • 14001 • 45001 CERTIFIED COMPANY By Bureau Veritas (India) Pvt.Ltd.

ASTRAL TOLL FREE 1800 233 7957

Please get in touch with us between 10 AM to 6 PM between Monday to Friday and the last Saturday of the month. We will remain closed on Public Holidays.

SC: PR07000021
ACHP/PC/002
REV. 08/24

ASTRAL PIPES

CHANNEL PRO

PP Surface Drainage Channels for efficient water drainage.

Contents

1st TO INTRODUCE CPVC IN INDIA

1st TO INTRODUCE UPVC LEAD FREE PIPES IN INDIA

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1st TO INTRODUCE LEAD FREE COLUMN PIPES IN INDIA

1st TO INTRODUCE POLYMER BASED INDUSTRIAL PIPING SYSTEM IN INDIA

1st TO INTRODUCE NSF APPROVED SOLVENT CEMENT IN INDIA

1st TO INTRODUCE CPVC PIPING FOR AUTOMATIC FIRE SPRINKLER SYSTEM IN INDIA

ASTRAL, INDIA'S PROGRESSIVE BUILDING MATERIALS COMPANY

Established in 1996 with the aim to manufacture best-in-globe plastic piping systems, Astral Pipes fulfils emerging piping needs of millions of houses and adds extra mileage to India's developing real estate fraternity with the hallmark of unbeaten quality and innovative piping solutions. Keeping itself ahead of the technology curve, Astral has always been a front runner in the piping category by bringing innovation and getting rid of old, primitive and ineffective plumbing methods. Bringing CPVC in India, and pioneering in this technology, have set Astral apart and its highest quality enabled it to obtain NSF approval for its CPVC pipes and fittings. Astral went beyond the category codes by launching many industry firsts, like launching India's first lead-free uPVC pipes for plumbing as well as for stream water, just to name a few.

Astral Pipes offers the widest product range across this category when it comes to product applications. Astral Pipes is equipped with production facilities at Santej and Dholka in Gujarat, Hosur in Tamil Nadu, Ghiloth in Rajasthan, Sangli & Aurangabad in Maharashtra, Cuttack in Odisha, Sitarganj in Uttarakhand and Guwahati in Assam to manufacture plumbing systems, drainage systems, agriculture systems, fire sprinkler piping systems, industrial piping and electrical conduit pipes with all kinds of necessary fittings.

Astral Pipes' Infrastructure division offers a comprehensive product range including corrugated piping for drainage and cables, polyolefin cable channels, sewage treatment plants, plastic sheathing ducts, suction hoses, and sub-surface drainage systems. This range helps Astral to establish a strong foothold in infrastructure and agriculture sector in the constantly evolving business of piping.

In 2014, Astral forayed into the adhesives category by acquiring UK-based Seal It Services Ltd. and Kanpur based Resinova Chemie Ltd., which manufacture adhesives, sealants and construction chemicals. With five manufacturing facilities now in this business segment, Astral has strengthened its presence in the category and made rapid inroads.

In the year 2020, Astral has expanded its product portfolio and entered into the Water Tanks Segment. The water tank segment is an expanded domain of plumbing and water supply with a huge nationwide potential. Astral Pipes manufactures water tanks from its Santej, Aurangabad, Cuttack, Hosur, Ghiloth & Guwahati manufacturing facilities. A wide range of water storage tanks has helped Astral to become a versatile player in the industry.

Extending the product portfolio further, in the year 2022 Astral forayed into the categories of Faucets and Sanitaryware, followed by acquisition of Bangalore based Gem Paints to enter in the Paints category. This expansion will help Astral march firmly towards becoming a holistic building materials company.

ADHESIVES

- EPOXY ADHESIVES & PUTTY
- SILICONE SEALANTS
- CONSTRUCTION CHEMICALS
- PVA
- CYANOACRYLATE
- SOLVENT CEMENTS
- TAPES
- POLYMERIC FILLING COMPOUND
- ANAEROBIC ADHESIVES
- INDUSTRIAL ADHESIVES
- INSTANT HAND SANITIZER
- SURFACE CLEANING PRODUCTS

PIPING

- PLUMBING PIPES & FITTINGS
- CPVC, PVC & PEX
- SEWERAGE DRAINAGE PIPES & FITTINGS
- AGRICULTURE PIPES & FITTINGS
- INDUSTRIAL PIPES & FITTINGS
- FIRE SPRINKLERS PIPES & FITTINGS
- CONDUIT & CABLE PROTECTION
- ANCILLARY PRODUCTS
- URBAN INFRASTRUCTURE
- DUCTING

WATER TANKS

PAINTS

FAUCETS

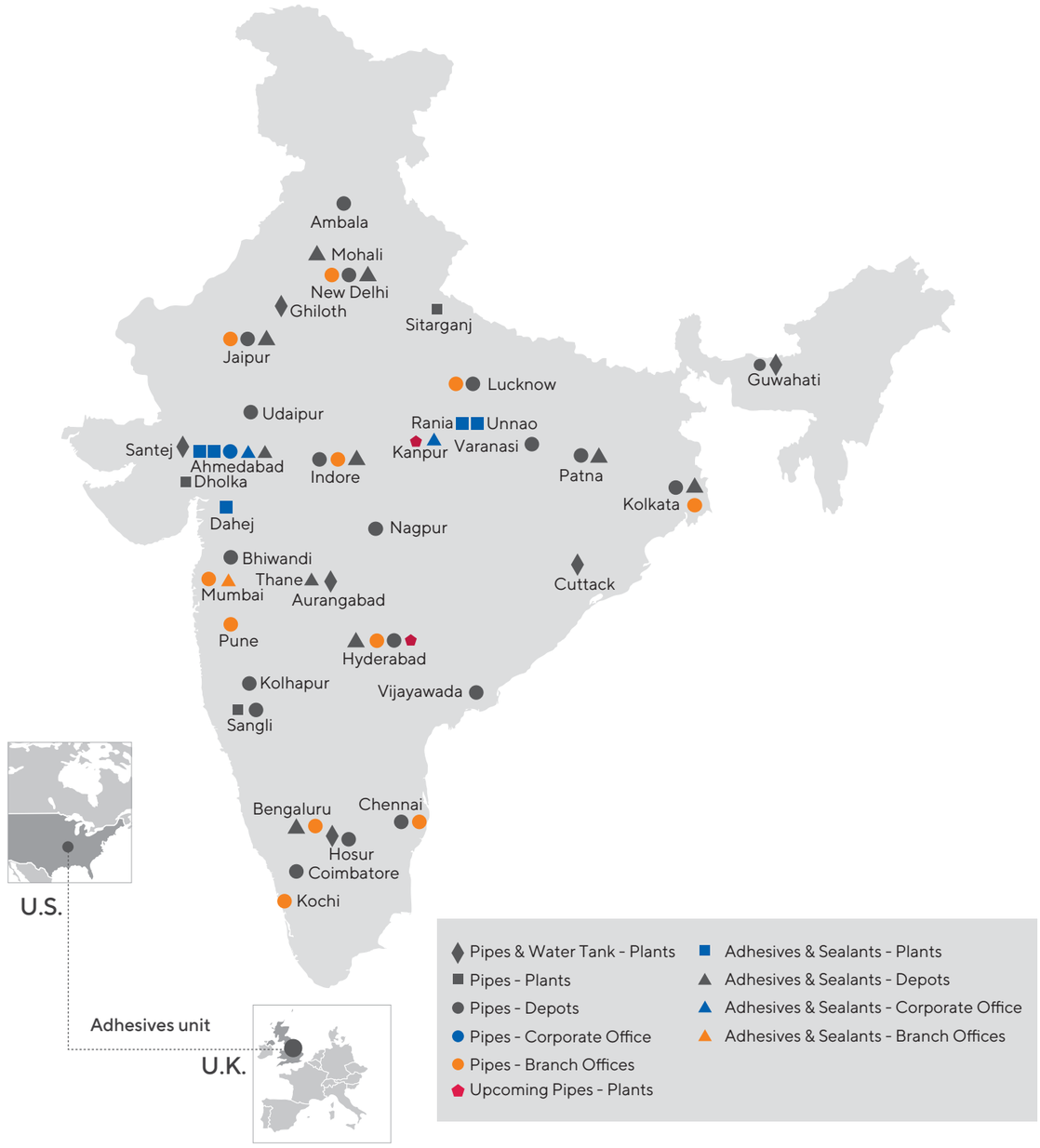
SANITARYWARE

INNOVATION & RECOGNITIONS

- First to introduce CPVC piping system in India (1999)
- First to launch lead free uPVC piping system in India (2004)
- Corp Excel- National SME Excellence Award (2006)
- First to get NSF Certification for CPVC piping system in India (2007)
- First to launch lead-free uPVC column pipes in India (2012)
- Enterprising Entrepreneur of the year (2012-13)
- Business Standard Star SME of the year (2013)
- Inc. India Innovative 100 for Smart Innovation under category of 'Technology' (2013)
- India's Most Promising Brand Award (2014)
- Value Creator Award during the first ever Fortune India Next 500 (2015)
- India's Most Trusted Pipe Brand Award (2016, 2019, 2020 & 2022)
- ET Inspiring Business Leaders of India Award (2016)
- India's Most Attractive Pipe Brand Award (2016)
- Fortune India 500 Company (2016)
- India's Most Desired Pipe Brand Award (2022)
- Consumer Validated Superbrands India (2017, 2019 & 2021-2022)

MARKETING NETWORK

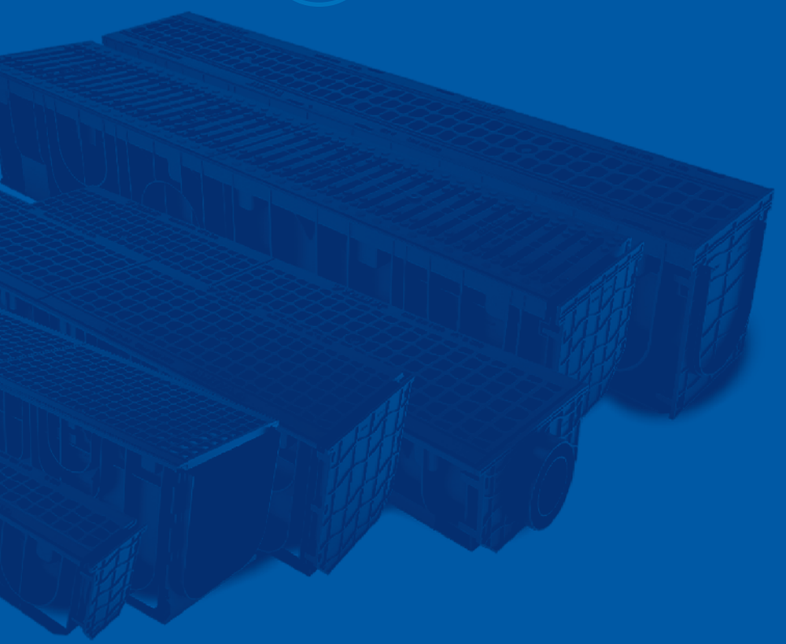
Astral has a marketing network of more than 800 distributors and 30,000 dealers spread all over India with branch offices at Mumbai, Pune, Delhi, Bengaluru, Chennai, Hyderabad, Jaipur, Lucknow and Kochi. Apart from that Astral has its own warehouses at Vijaywada, Hyderabad, Delhi, Kolhapur, Kolkata, Nagpur, Indore, Patna, Varanasi, Jaipur, Hosur & Guwahati to deliver the material as quick as possible. More than 400 techno marketing professionals and administrative personnel are on the board to coordinate with architects, plumbing contractors and plumbers to utilize the best plumbing techniques and to get the best from the products.



ABOUT **CHANNEL PRO**

Astral Channel Pro is an advanced drainage system specifically designed to efficiently collect and redirect surface water away from critical areas. By effectively managing water drainage, this system helps mitigate the risk of water accumulation and damage, which can cause significant structural issues and costly repairs. These drainage channels are integral to the comprehensive surface drainage system, as they prevent water accumulation that can lead to slippery and hazardous conditions. By maintaining walkways and driveways free from water accumulation, Astral Channel Pro not only protects infrastructure but also enhances overall safety for pedestrians and vehicles.

The selection of the appropriate size and type of surface drain channel depends on the specific application requirements. For instance, large parking areas necessitate channels with greater capacity and higher load classifications to accommodate significant volumes of water and withstand heavy vehicular traffic. The load class must be carefully chosen based on the anticipated traffic load to ensure durability and functionality. Astral Surface drain channels are manufactured in compliance with BS EN 1433 standards, guaranteeing their quality and performance.



THE HISTORY OF SURFACE DRAINAGE:

Surface drainage started with simple ditches, probably as early as 4000 BC. These early versions helped remove excess water from land of urban area & agriculture. A traditional surface drainage system is a system that uses open or covered ditches or channels to remove excess water from the surface. It is the most common type of drainage system and is used in a variety of settings, including urban area, agricultural fields & roads side.
Surface drainage in the early 1900s was not without its challenges. One of the biggest challenges was the cost of constructing and maintaining drainage systems. Another challenge was the impact of drainage systems on the nearby environment.

Revolution of Surface Drainage Systems.

Early Days (BC): - Simplest form - open ditches dug by hand to remove excess water from land. - Found in places like the Indus Valley Civilization and ancient Egypt.
Medieval Times (AD): - Ditches became more elaborate, with V-shaped designs for better flow. - Materials like wood and brick were used for rudimentary covered drains.
Modern Era (19th-20th C): - Land clearing machinery allowed for more efficient ditch construction. Advancement in materials like concrete, clay tiles, and perforated pipes for more durable and effective drainage systems.

Disadvantages of traditional surface drainage systems:

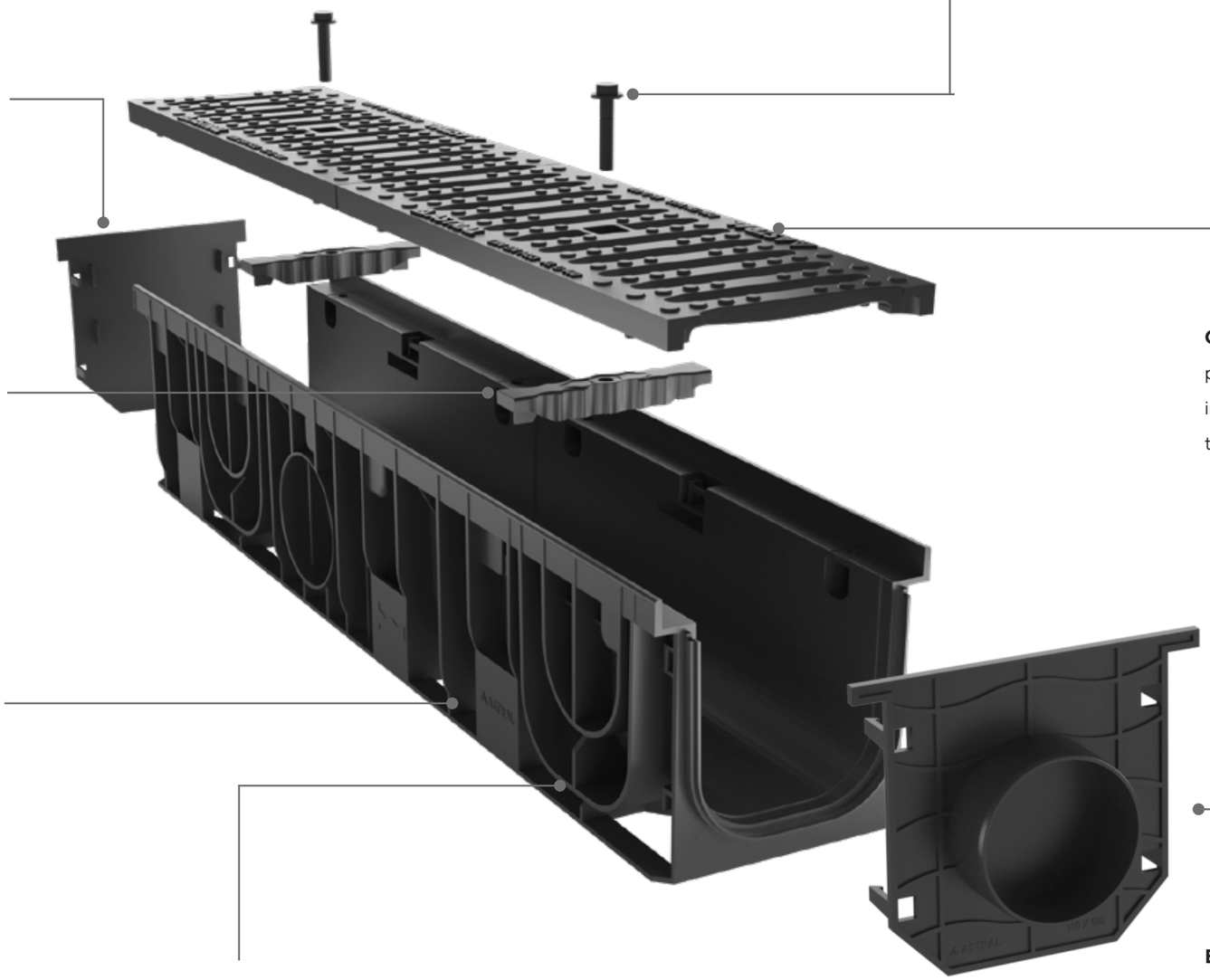
- Poor Hydraulic properties.
- Difficult for maintenance.
- Erosion of Trench surfaces due to weathering effect.
- They can contribute to soil erosion.
- They can be difficult to maintain in areas with heavy vegetation.
- Proven to clogging due to less cleaning.
- In clogged waterlogging causes infestation of mosquitos and insects.

CHANNELPRO COMPONENTS

End Cap: The end cap serves as a protective cover for the channel's end, preventing debris accumulation

Twist Lock: The twist lock mechanism facilitates secure connection between grating and channel body, ensuring stability and structural integrity of the entire channel.

Body: The body forms the main structure of the channel, designed to efficiently collect and redirect surface water away from the area, preventing water accumulation and damage.



Channel Connection: The channel connection point allows for seamless integration of multiple channels, enabling customization and scalability of the drainage system.

Locking Mechanism: The locking mechanism ensures the channel grating remains securely locked, eliminating the risk of damage due to external factors such as traffic or environmental conditions.

Grating: The grating covers the channel opening, preventing debris and large objects from entering inside drainage system and allows water to freely flow through.

End Cap with Outlet: The end cap with outlet serves as a connection point with drainage channel system, directing water towards the designated drainage pipe and ensures a leakproof connection.

KEY PROPERTIES AND BENEFITS

PREVENT WATER ACCUMULATION AND DAMAGE IN SURROUNDING AREA

Astral Channel Pro efficiently prevents water accumulation and damage in surrounding areas by swiftly diverting excess water away, ensuring the safety and integrity of nearby properties and landscapes.

IMPROVE SAFETY BY KEEPING WALKWAYS AND DRIVEWAYS CLEAR

It enhances safety by maintaining clear walkways and driveways, reducing the risk of accidents or damages caused by water accumulation during heavy rains or storms.

SMOOTH INTERNAL SURFACE, INCREASED HYDRAULIC DISCHARGE CAPACITY

With its smooth internal surface and enhanced hydraulic discharge capacity, Astral Channel Pro optimizes water flow efficiency, minimizing the risk of blockages and ensuring effective drainage even during peak flow periods.

WIDE RANGE ACCORDING TO APPLICATION

Astral Channel Pro offers a wide range of options tailored to specific applications,accommodating various drainage needs and load baring capacity across diverse environments.

EASY TO INSTALL AND MAINTAIN

Its design prioritizes ease of installation and maintenance, simplifying the process for users

UV RESISTANCE

Engineered with UV-resistant materials, Astral Channel Pro maintains its structural integrity and aesthetic appeal over time, even when exposed to prolonged sunlight and outdoor elements.

STRONG & DURABLE

Crafted from robust materials, Astral Channel Pro boasts exceptional strength and durability, capable of withstanding heavy loads and harsh environmental conditions without compromising performance.

LONG SERVICE LIFE

Thanks to its high-quality construction and resilient design, Astral Channel Pro ensures a long service life, providing reliable drainage solutions for years to come, thereby minimizing the need for frequent replacements and reducing long-term maintenance costs

APPLICATIONS OF SURFACE DRAIN CHANNELS

DRAINAGE OF PAVED SURFACES

- Roads, sidewalks & walkways
- Parking lots and driveways
- Podium garden, decks & balconies

OTHER APPLICATIONS

- Around fountains and other water features
- In parks and gardens

DRAINAGE OF INDUSTRIAL AND COMMERCIAL AREAS

- Warehouses and factories
- Loading docks and ramps
- Parking garages
- Tarrece

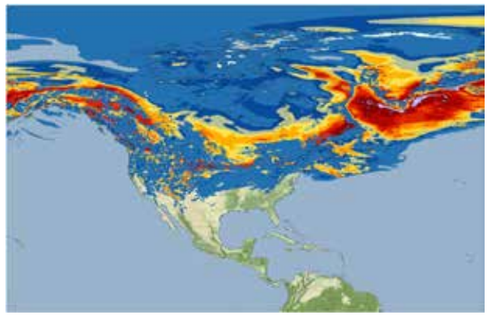
DRAINAGE OF LANDSCAPED AREAS

- Around buildings
- Planting beds and gardens
- Sports fields and playgrounds
- Around swimming pools and other
- water features

SELECTION OF ASTRAL CHANNEL PRO

Selecting the right surface drain channel for your project requires careful consideration of several factors. Here's a detailed breakdown to help you make an informed decision

GEOGRAPHICAL:



RAINFALL INTENSITY

Determine the average rainfall intensity in your area.

SURFACE MATERIAL

Consider the type of surface the water will be draining from, such as concrete, asphalt, or grass.

CATCHMENT AREA SIZE

Calculate the area draining into the channel, including rooftops, paved surfaces, and landscaping.

GRADIENT

Assess the slope of the land where the channel will be installed.

LOAD BARING CAPACITY

Surface drain channels are most commonly classified by their load rating according to the EN 1433 standard. This standard defines different load classes, each capable of handling a specific maximum weight:

CLASS-A 15 15KN

Area accessible by pedestrian. not suited to vehicles. Walk way not accessible to vehicles

IDEAL FOR

CLASS-B 125 125KN

Private & Shared Residential Properties. Suitable for lightweight vehicle accessible drive ways. Low speed only.

IDEAL FOR

CLASS-C 250 250KN

Residential roads and cars parks trafficable to vehicles.

IDEAL FOR

CLASS-D 400 400KN

Major road including freeway and motorway shoulders Warehouses and loading docks.

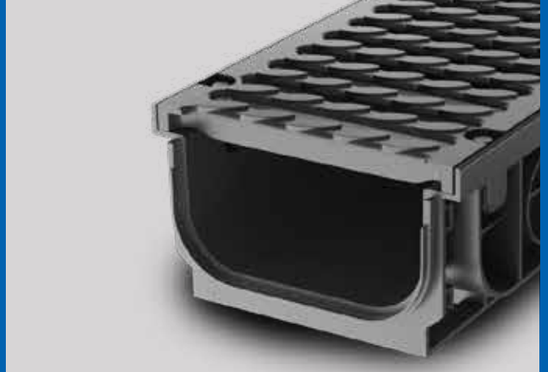
IDEAL FOR

CLASS-E 600 600KN

Freeway and motorway carriage ways. Suitable for all vehicles.

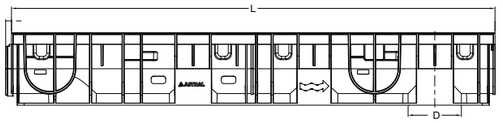
IDEAL FOR

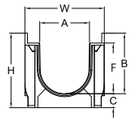
PRODUCT RANGE



SURFACE DRAINAGE CHANNEL
SIZE: 10.0 X 10.0 CM

TYPE	PRODUCT CODE	DIMENSION (mm)							
		L	W	H	A	B	C	D	F
Class-B	M56208101010B	1000	160	150	100	122	28	Ø110	100
Class-C	M56208101010C	1000	160	134	100	106	28	Ø110	100
Class-D	M56208101010D	1000	160	150	100	122	28	Ø110	100
Class-E	M56208101010E	1000	160	150	100	122	28	Ø110	100





Channel Body

Material: PP

Length: 1000 mm

TYPES OF GRATING

Class - B

Load Class: B125 kN
Material: Polyamide
Length: 500 mm
Design: Mesh Type-2

Class - C

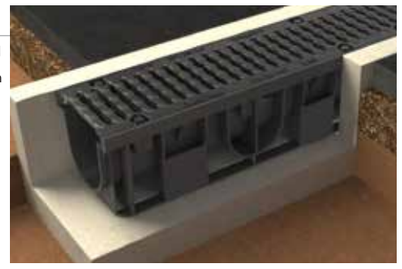
Load Class: C250 kN
Material: Ductile Iron
Length: 500 mm
Design: Mesh Type-3

Class - D

Load Class: D400 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Circle Type

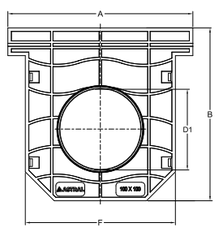
Class - E

Load Class: E600 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Oval Type



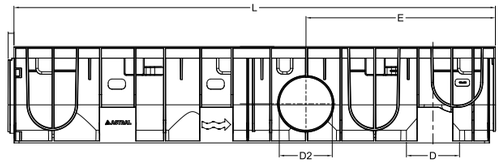
END CAPS

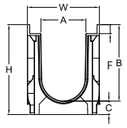
END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)			
			A	B	F	D1
With Outlet	B,D,E	M56212001010	160	149.5	129.8	75
	C	M56214001010	160	149.5	129.8	75
Without Outlet	B,D,E	M56212001010	160	149.5	129.8	-
	C	M56214001010	160	149.5	129.8	-



SURFACE DRAINAGE CHANNEL
SIZE: 10.0 X 15.0 CM

TYPE	PRODUCT CODE	DIMENSION (mm)									
		L	W	H	A	B	C	E	D1	D	F
Class-B	M56208101015B	1000	160	200	100	170	30	393	Ø110	Ø110	150
Class-C	M56208101015C	1000	160	184	100	154	30	393	Ø110	Ø110	150
Class-D	M56208101015D	1000	160	200	100	170	30	393	Ø110	Ø110	150
Class-E	M56208101015E	1000	160	200	100	170	30	393	Ø110	Ø110	150





Channel Body

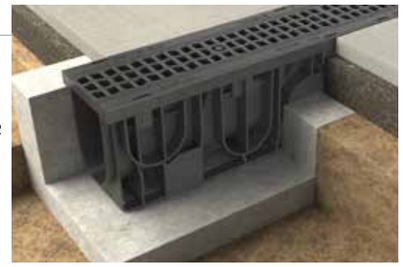
Material: PP

Length: 1000 mm

TYPES OF GRATING

Class - B

Load Class: B125 kN
Material: Polyamide
Length: 500 mm
Design: Mesh Type-2



Class - C

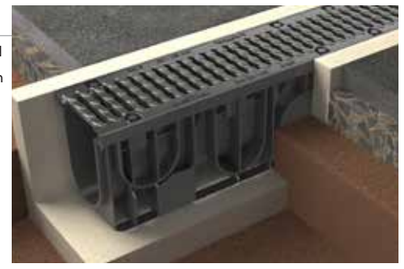
Load Class: C250 kN
Material: Ductile Iron
Length: 500 mm
Design: Mesh Type-3

Class - D

Load Class: D400 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Circle Type

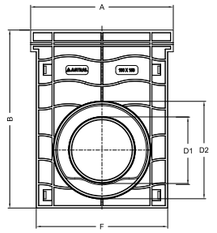
Class - E

Load Class: E600 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Oval Type



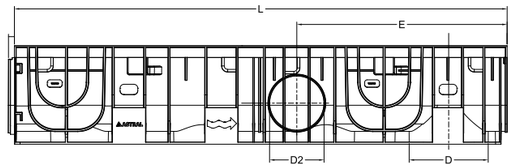
END CAPS

END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)				
			A	B	F	D1	D2
With Outlet	B,D,E	M56212001015	160.5	200.2	147.9	75	110
	C	M56214001015	160.5	200.2	147.9	75	110
Without Outlet	B,D,E	M56212001015	160.5	200.2	147.9	-	-
	C	M56214001015	160.5	200.2	147.9	-	-



SURFACE DRAINAGE CHANNEL
SIZE: 15.0 X15.0 CM

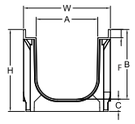
TYPE	PRODUCT CODE	DIMENSION (mm)									
		L	W	H	A	B	C	E	D	D2	F
Class-B	M56208101515B	1000	212	200	150	170	30	426	Ø160/Ø110	Ø110	150
Class-C	M56208101515C	1000	212	184	150	154	30	426	Ø160/Ø110	Ø110	150
Class-D	M56208101515D	1000	212	200	150	170	30	426	Ø160/Ø110	Ø110	150
Class-E	M56208101515E	1000	212	200	150	170	30	426	Ø160/Ø110	Ø110	150



Channel Body

Material: PP

Length: 1000 mm



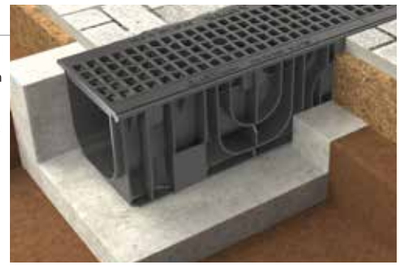
TYPES OF GRATING

Class - B

Load Class: B125 kN
Material: Polyamide
Length: 500 mm
Design: Slotted & Circle Type-2

Class - C

Load Class: C250 kN
Material: Ductile Iron
Length: 500 mm
Design: Mesh Type-3



Class - D

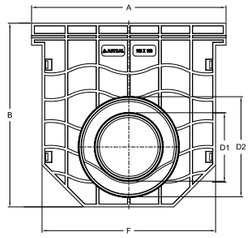
Load Class: D400 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Circle Type

Class - E

Load Class: E600 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Oval Type

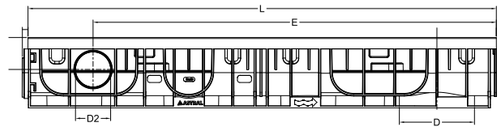
END CAPS

END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)				
			A	B	F	D1	D2
With Outlet	B,D,E	M56212001515	212	200.3	189.2	75	110
	C	M56214001515	212	200.3	189.2	75	110
Without Outlet	B,D,E	M56212001515	212	200.3	189.2	-	-
	C	M56214001515	212	200.3	189.2	-	-



SURFACE DRAINAGE CHANNEL
SIZE: 20.0 X 10.0 CM

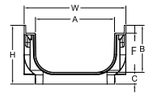
TYPE	PRODUCT CODE	DIMENSION (mm)									
		L	W	H	A	B	C	E	D	D2	F
Class-C	M562081020 10C	1000	260	134	202	104	30	860	Ø160/Ø110	Ø75	100
Class-D	M562081020 10D	1000	260	150	202	120	30	860	Ø160/Ø110	Ø75	100
Class-E	M562081020 10E	1000	260	150	202	120	30	860	Ø160/Ø110	Ø75	100



Channel Body

Material: PP

Length: 1000 mm



TYPES OF GRATING

Class - C

Load Class: C250 kN
Material: Ductile Iron
Length: 500 mm
Design: Mesh Type-3

Class - D

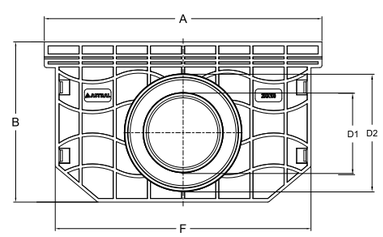
Load Class: D400 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Circle Type

Class - E

Load Class: E600 kN
Material: Ductile Iron
Length: 500 mm
Design: Slotted & Oval Type

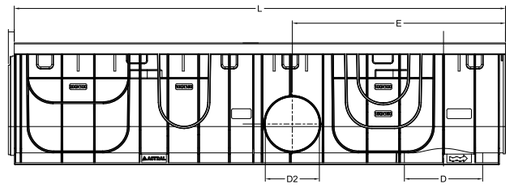
END CAPS

END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)				
			A	B	F	D1	D2
With Outlet	B,D,E	M56212002010	260	150	239.5	75	110
	C	M56214002010	260	150	239.5	75	110
Without Outlet	B,D,E	M56212002010	260	150	239.5	-	-
	C	M56214002010	260	150	239.5	-	-



SURFACE DRAINAGE CHANNEL
SIZE: 20.0 X 20.0 CM

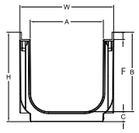
TYPE	PRODUCT CODE	DIMENSION (mm)									
		L	W	H	A	B	C	E	D	D2	F
Class-C	M562081020 20C	1000	260	232	203	204	28	434	Ø160/Ø110	Ø110	200
Class-D	M562081020 20D	1000	260	248	203	220	28	434	Ø160/Ø110	Ø110	200
Class-E	M562081020 20E	1000	260	248	203	220	28	434	Ø160/Ø110	Ø110	200



Channel Body

Material: PP

Length: 1000 mm



TYPES OF GRATING

Class - C

Load Class: C250 kN

Material: Ductile Iron

Length: 500 mm

Design: Mesh Type-3

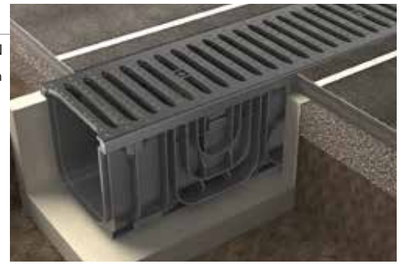
Class - D

Load Class: D400 kN

Material: Ductile Iron

Length: 500 mm

Design: Slotted & Circle Type



Class - E

Load Class: E600 kN

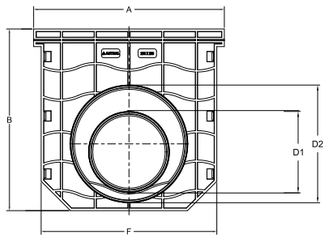
Material: Ductile Iron

Length: 500 mm

Design: Slotted & Oval Type

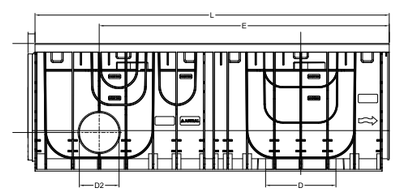
END CAPS

END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)				
			A	B	F	D1	D2
With Outlet	B,D,E	M562120020 20	260	247.6	239.5	110	160
	C	M562140020 20	260	247.6	239.5	110	160
Without Outlet	B,D,E	M562120020 20	260	247.6	239.5	-	-
	C	M562140020 20	260	247.6	239.5	-	-



SURFACE DRAINAGE CHANNEL
SIZE: 30.0 X 30.0 CM

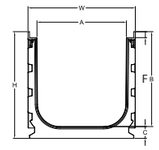
TYPE	PRODUCT CODE	DIMENSION (mm)									
		L	W	H	A	B	C	E	D	D2	F
Class-C	M562081030 30C	1000	362	346	302	306	40	818	Ø200/Ø160	Ø110	300
Class-D	M562081030 30D	1000	362	360	302	320	40	818	Ø200/Ø160	Ø110	300
Class-E	M562081030 30E	1000	362	360	302	320	40	818	Ø200/Ø160	Ø110	300



Channel Body

Material: PP

Length: 1000 mm



TYPES OF GRATING

Class - C

Load Class: C250 kN

Material: Ductile Iron

Length: 500 mm

Design: Mesh Type-3

Class - D

Load Class: D400 kN

Material: Ductile Iron

Length: 500 mm

Design: Slotted & Circle Type

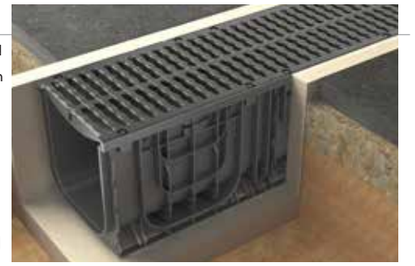
Class - E

Load Class: E600 kN

Material: Ductile Iron

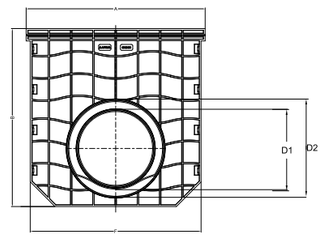
Length: 500 mm

Design: Slotted & Oval Type



END CAPS

END CAP	TYPE	PRODUCT CODE	DIMENSION (mm)				
			A	B	F	D1	D2
With Outlet	B,D,E	M562120030 30	362	360	345.4	160	200
	C	M562140030 30	362	360	345.4	160	200
Without Outlet	B,D,E	M562120030 30	362	360	345.4	-	-
	C	M562140030 30	362	360	345.4	-	-

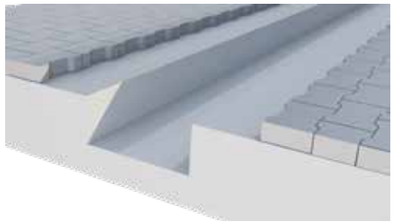


INSTALLATION

The suitability of the Astral Channel Pro for your project depends on several factors. Consider the volume of water to be drained, influenced by surface area, geographic conditions, historical rainfall data, and the necessary slope for efficient drainage. Additionally, evaluate the anticipated load and traffic frequency over the channel to determine the appropriate material and load-bearing capacity.

1. Trench Preparation: Mark the trench location and excavate it to the specified dimensions.

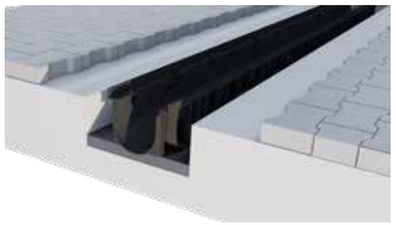
2. Trench Excavation: Ensure the trench is deep and wide enough to accommodate both the channel and bedding material. Keep the trench level and free of debris.



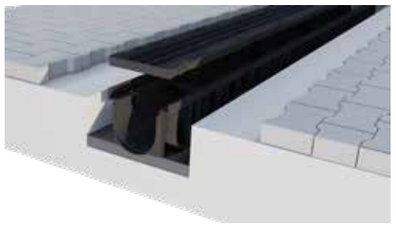
3. Concrete Application: Apply and compact a layer of concrete at the trench base. This foundation enhances drainage efficiency and prevents soil settlement beneath the channel.

4. Connect Outlet: Start channel installation from the end point by connecting the channel outlet according to site requirement.

5. Body Installation: Fix the channel body with concrete and align it properly.

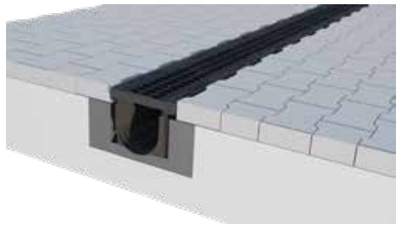


6. Grating Installation: Securely affix the grating onto the channel, ensuring it rests evenly and aligns correctly.



7. Trench Backfilling: Backfill the trench sides with concrete, compacting it firmly to provide structural stability.

8. Final Adjustments: Ensure the grating is 3-5mm below the finished surface to complete the installation.



Ensuring a professional and effective installation of the Astral Channel Pro involves following these steps meticulously. By doing so, the project can meet all requirements with precision and enduring quality.

ASTRAL CHANNEL PRO V/S COMPARISON WITH IN CAST IN SITU

Aspect	Astral Channel Pro	Cast in Situ Surface Drain Channel
Cost	Quick, easy installation; estimated up to 3 times quicker to install compared with cast-in-situ channels. Cost reductions achieved by: • Smaller trench excavation on site • Less sub-base material required • Lightweight, modular units • Less installation procedures on-site • Edge-frame integral within channel body • Gratings pre-fitted to channels	Time-consuming, costly and difficult installation process. Increased costs due to: • Wider trench excavation • Additional sub-base material • Complex shuttering system • Steel reinforcement within concrete walls • Additional construction procedures, angle-frame installation etc. • Wider channel system (room for site work); more concrete, wider gratings; higher costs
Load Class	A15 (pedestrian) to E600kN (heavy vehicles) available	Designed to meet specific load requirements
Dimension	Accurate dimensions, reduced excavation cost	Required wider trench excavation, higher cost
Hydraulic Capacity	Superior due to smooth surface finish, lower manning coefficient.	Poor surface finish and higher Manning's and coefficient reduced hydraulic properties.
Grating	Material: Ductile iron & Poly propylene	Material: Same as pre-fabricated channels, or customized fabricated.
Manpower	Required less manpower	Higher manpower required.
Installation time	Fast and Easy	Time taking almost 3 times higher
Aesthetics	Available in various grating design and material with surface finish	Not possible
Chemical resistance	High chemical resistance	Poor chemical resistance.
Maintenance Cost	Periodic cleaning of channel, Lower cost	Over time, periodic cleaning, the formation of cracks, and reduced surface finish can lead to higher maintenance costs due to complex repairs.
Durability	Strong and durable, higher impact resistance, never corrode hence meant for long life performance	Performance deteriorates due to tendency to corrode and weather effect, over period of time reduced durability and strength.

DO & DON'TS:

Do	Don'ts
Proper Installation: Ensure that the Channel Pro are properly installed with the correct alignment to facilitate efficient drainage	**Using Wrong Load Class & Size:** Don't use Load Class & Size that are not suitable for drainage area, as they may corrode or deteriorate quickly, leading to system failure.
Correct Sizing: Choose the appropriate size of drain channels based on the expected volume of water runoff to prevent overflow during heavy rains.	**Ignoring Maintenance:** Neglecting regular maintenance can lead to the build-up of sediment, which can reduce the capacity of the drain channels and compromise their effectiveness.
Load Class: Select proper load class of channel as per traffic condition.	**Ignoring Surrounding Landscape:** Don't overlook the importance of proper landscaping around the drain channels, as inadequate grading or vegetation can affect water flow and cause erosion.
Landscaping Considerations: Plan landscaping around the drain channels to direct water flow towards them and prevent soil erosion.	**Blockage:** Don't allow debris, leaves, or trash to accumulate in or around the drain channels, as this can obstruct water flow and lead to flooding.
Regular Maintenance: Regularly inspect and clean the surface drain channels to ensure they are free from debris, leaves, and other obstructions that can block water flow.	

DISCLAIMER:

NOTES