



U-PVC Column Pipes



Pipe and Fitting Industry Trade Inc.

DkyPlast Pipe and Fitting Industry Trade Inc. was established in 2023 in Kemalpaşa Organized Industrial Zone as the second industrial company within the Dikkaya Group. In order to meet the needs of infrastructure, industrial and agricultural irrigation projects, it completed its building, machinery and equipment investment in 2024 for the production of U-PVC pressurized clean water pipes and attachments and submersible pump column pipes and started production.

DkyPlast , which also closely follows the sector dynamics, successfully implements quality management systems, closely follows sector developments, technologies and fairs and continues its development by participating. As in the entire Dikkaya Group, on this path that it embarked on with the importance of institutionality, our main principle is reliability, and our main goal is to play a key role in Turkey by constantly developing new products and making R&D investments, and to establish a global network with new customers worldwide.



DİKKAYA GROUP MILESTONES

- 1988** Establishment of Dikkaya Technical Materials Ltd. in Izmir.
- 1997** Establishment of Dikkaya Water Control Systems . in Izmir.
- 1998** Beginning the journey of introducing control valves to the Turkish market.
- 2001** Establishment of the Dikkaya Marketing and Distribution Department in line with growth targets and the start of the first marketing activities.
- 2003** First export and entry into international markets.
- 2005** Production and sale of Dikkaya brand patented valves.
- 2008** Dikkaya Technical Materials Inc. logistics center and warehouse investment.
- 2009** Establishment of DKY Electronic Services Trading Ltd.
- 2011** Production and sale of DKY Valves and Control Brand Patented Valves.
- 2014** Dikkaya Water Control Systems valve factory investment.
- 2015** Opening of the first overseas representative office in Belarus.
- 2019** Manufacture of "DKYHoses" garden hose products under its own brand.
- 2020** Launch of the SMART WATER MANAGEMENT UNIT "HydroNYX" developed to reduce water loss and leakage, and acquisition of the brand patent.
- 2023** Creation of the DKY Plast brand, factory investment, and start of production.



U-PVC Column Pipes

DkyPlast U-PVC Column Pipes are specially designed for submersible pumps. These pipes are formulated with a high molecular structure to withstand the hydrostatic pressure on the pipe and the total weight of the water carried by the pipe, the pump, the electrical cable, and sudden water impacts. With high tensile strength and impact resistance, these pipes include self-threading and double seal construction for reliable performance..

DkyPlast Column Pipes are traditionally used in the drilling industry instead of galvanized and steel pipes; they are manufactured for use in submersible pumps with diameters ranging from 1 1/4" (32 mm) to 5" (125 mm). Every pipe manufactured under the DkyPlast brand undergoes strict quality control processes at every stage of production to ensure compliance with national and international standards.

Quality is the most defining feature of DkyPlast U-PVC Column Pipes.



U-PVC Column Pipes

Features and Advantages

- ▶ More economical compared to other piping methods.
- ▶ Long-lasting; can be used for 50 years without rusting or corroding.
- ▶ It has high impact resistance and rigidity.
- ▶ It is resistant to chemicals and aggressive soil conditions. It is not affected by the acidic or alkaline values of water.
- ▶ Its smooth inner surface ensures low friction and minimum pressure loss.
- ▶ Easy to install thanks to specially designed Stopper SEAL and Lip RING elastomeric gaskets, providing 100% leak-proof performance even under high pressure.
- ▶ Square-section tooth structure designed to withstand heavy loads and additional impact pressures.
- ▶ Thanks to the DkyPlast FusionBond LOCKED system, the permanent sleeve never separates from the wrong side.
- ▶ Insulating, does not conduct heat or electricity.
- ▶ Lighter than steel pipe; easy to transport and stack.
- ▶ Suitable for drinking water, hygienic.
- ▶ Maintenance-free.





U-PVC Column Pipes

Technical Details



Special Formulation

DkyPlast high tensile and impact resistant pipes, with their special raw material formulation, are resistant to high internal nominal pressure and also resist the axial weight of the column pipe and pump. The special formulation prevents the teeth from breaking and chipping, allowing for multiple safe assembly and disassembly operations throughout its lifetime.

BI-Axial Molecular Orientation

BI-Axial Molecular Orientation: DkyPlast has developed a dual-axis production technique during extrusion. This method ensures that pipes have high tensile strength and impact resistance. This molecular orientation technique is exclusively the product of DkyPlast's R&D efforts.



Connection System

Developed by DkyPlast, the unique FusionBond LOCKED and robotic/fully autonomous assembly technology ensures that risks such as the sleeve loosening, the pipe slipping, or the sleeve being over-tightened during a potential disassembly process are completely eliminated.

FusionBond



LOCKED

Thick & Thin Construction

DkyPlast's unique innovative technique has been developed to compensate for the strength lost due to the amount of shavings removed from the threaded ends of the pipes. The remaining pipe thickness (t) after the threading process is the same as the thickness along the entire length of the pipe. Therefore, there is no loss of strength in the threaded areas.



Square-Cut Threads

The pipe joints are manufactured with a specially designed square-section thread structure to ensure proper grip and eliminate the possibility of loosening. These square-section threads provide a durable and secure connection thanks to their structure, which remains closed despite the constant forward and backward torque generated when the pump cycles on and off, and provides high friction under load.



Gasket

The silicone gaskets located on both the internal threaded sleeve side and the external threaded straight side of the pipe provide 100% leak-proof performance for years.



U-PVC Column Pipes

Comparison Table

Özellik	uPVC Column Pipe	Galvanized Pipe	HDPE Pipe
High Tensile Strength Gear Connections	Specially designed "Square-Section Threads" resist heavy loads, preventing corrosion even after 50 years of use. Special rubber gaskets provide 100% protection against leaks.	The threads are prone to rusting and corrosion. Without multi-layer galvanization, after 2-3 years of use, the threads wear down due to rust and new threads may need to be cut. This situation causes extra cost and effort. These pipes are neither pressure-resistant nor do they have rubber gaskets.	These pipes cannot be threaded due to their soft composition. Instead, they use a special "Push-Fit" connection that allows for effortless, manual assembly, ensuring a strong and dependable connection that is easy to disassemble if needed.
Pressure Loss Due to Friction	Due to its smooth inner surface, there is very low pressure loss. Water discharge is 10-30% higher.	The rough internal surface results in increased pressure loss	The inner surface is not as smooth as DkyPlast column pipes.
Transportation and Installation of Pipes	It is lightweight. Standard pipe length is 3 meters. It is easy to assemble and disassemble.	It is heavy. Installing and removing it requires a lot of effort. Heavy pipes are prone to accidents in deep wells.	It is hard and cannot be wrapped back during removal. It is pulled by a tractor and damages crops.
Durability & Service Life	It does not interact with alkaline or acidic water. It has a long service life inside the well.	It is prone to rust and corrosion. It needs to be constantly changed.	The material is not very durable, whereas thick pipes are required for this application. This significantly narrows the inner surface during water flow. Thin pipes have a maximum lifespan of 2-3 years in high-pressure applications.

U-PVC Column Pipes

Installation and Security

► The maximum pressure of the pump must be lower than the allowable hydrostatic pressure of the column pipes you will use.

► In areas where the yield of water from the borehole is lower, the pump will start to run dry after a while. An overheated pump and adapter can cause the DkyPlast column pipe to overheat and become damaged.

As a solution, the drilling well yield should be calculated correctly, a suitable pump should be selected, and level electrodes should be used to prevent the pump from running dry.

As an extra precaution, the first connection after the pump should be a 3-meter steel pipe, followed by a transition to PVC column pipe. This measure allows the heated pump to come into contact with the steel pipe and dissipate the heat before it reaches the column pipe.

► The DkyPlast column pipe sleeve never opens thanks to the FusionBond connection technique. Always ensure that the mounting fixture remains under the sleeve and suspends it.

► If the pump does not discharge directly at the wellhead, always use a check valve between the column pipe upper adapter and the continuing system.

► DkyPlast column pipes are shipped with thread protection caps. Never use pipes with caps that have been removed beforehand or with square-cut threads that have been damaged. Damaged threads can damage the thread structure of the opposite connection or break under excessive load. Only install with DkyPlast lower/upper adapters.

► DkyPlast pipes are processed in high-precision robotic/fully autonomous processing centers. They are easy to assemble. During installation, any dust, dirt, or mud should only be cleaned with a clean cloth. Never use chemicals or grease.

► Ensure that the LipRing EPDM gasket on the pipe is properly and securely installed. During installation, the LipRing EPDM gasket (ring) should be tightened only after it is fully inserted into the sleeve socket.

► The number of internal and external threads on DkyPlast Column Pipes is standard. Thanks to the Sealing Stopper and LipRing double gasket system, they are completely leak-proof. Over-tightening the joints can cause breakage or cracking at the pipe ends.

Pipes that are installed and secured in full compliance with all installation and safety standards are covered by a 3-year warranty against manufacturing defects.



**Easy
Installation**



**Low Labour
Cost**



Corrosion



Strong



Leak Proof

U-PVC Column Pipes



Proper Handling of Pipes

- ▶ When receiving the pipes, please check and inspect if there is any transport damage due to the shifting of loads or improper handling/processing.
- ▶ Visually inspect the pipe ends for cracks or damage.
- ▶ Do not throw or drop the pipes from the vehicle. Avoid dragging or pushing the pipes against the truck bed. Any contact of the pipes with sharp objects must be completely avoided.



Package Quantities

Size (")	Size Ø	Package Quantity (pcs)
1 1/4"	42	12
1 1/2"	48	10
2"	60	7
2 1/2"	75	4
3"	88	3
4"	113	2

Storage of Pipes

- ▶ Pipes should be stored on a flat surface free of sharp objects and indoors.
- ▶ DkyPlast column pipes can be requested either packaged or unpackaged. If indoor storage is not possible, please request packaged product. Still, to prevent prolonged exposure to sunlight and reduce UV radiation effects, please ensure the pipes are covered.
- ▶ The maximum stacking height for single-direction piles is 120 cm; for double-direction (stacked crosswise every 90 degrees), maximum stacking height is 220 cm.
- ▶ If pipes of the same diameter but different classes are stacked together, place the thicker/heavier pipes at the bottom. In other words, heavier pipes at the bottom and lighter/thinner pipes on top.

Quality Control Procedures

DkyPlast subjects all products to rigorous quality control tests before market release, ensuring high standards. When used according to installation and assembly instructions, pipes are covered by a 3-year warranty.

Applied Tests

Test Standard

Hydrostatic Pressure Test

IS 4985-1988

Impact Resistance Test

IS 4985-2000

Tensile Strength Test

IS 1218-1992

Coupling Pressure Test

IS 12235-2004

Density Test

IS 12818-1992



U-PVC Column Pipes



The Poseidon series, distinguished by its durability and high pressure resistance, delivers superior performance in your water and liquid transport applications thanks to its 16 bar working pressure. With modern production technology and high-quality materials, it offers long-lasting, reliable, and economical solutions.



Designed for projects requiring high performance and superior durability, the Ares series offers powerful and reliable water transport solutions with a working pressure of 21 bar. Manufactured to industrial standards and featuring a robust construction, it delivers maximum efficiency even under demanding conditions.



Designed for demanding conditions and high-pressure applications, the Hercules series delivers maximum durability and reliability with a working pressure of 26 bar. With its robust construction and superior quality standards, it delivers outstanding performance in your industrial and infrastructure projects.



The Zeus series, specially designed for high-pressure and demanding water transport applications, offers superior durability and performance with a working pressure of 26 bar. Thanks to its robust construction and advanced manufacturing processes, it provides long-lasting, reliable, and cost-effective solutions.

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Technical Specifications Table

Nominal Diameter (inch)	Nominal Diameter (DN)	Outer Diameter (DN)	Safe allowable hydrostatic pressure (kg/cm ²)	Type	Pipe End Wall thickness (mm)		Pipe Middle Wall thickness (mm)		Pipe Full Length (mm)	Safe Total Pump Delivery Head (m)	Ultimate breaking load (kgf)	Safe pulling load with chain pulley (kgf)
1 1/4"	32	42,00	16	POSEDION	4,50	5,40	2,40	3,15	3050/+-10	160	1550	900
1 1/4"	32	42,00	21	ARES	4,95	5,60	3,20	3,60	3050/+-10	210	1800	1050
1 1/4"	32	42,00	26	HERCULES	6,50	7,50	3,50	4,10	3050/+-10	260	2550	1500
1 1/4"	32	42,00	35	ZEUS	8,30	9,60	4,70	5,40	3050/+-10	350	3100	1800
1 1/2"	40	48,00	16	POSEDION	4,85	5,75	2,75	3,65	3050/+-10	160	1700	1000
1 1/2"	40	48,00	21	ARES	5,35	6,15	3,70	4,10	3050/+-10	210	2500	1500
1 1/2"	40	48,00	26	HERCULES	7,20	8,30	4,00	4,80	3050/+-10	260	2950	1700
1 1/2"	40	48,00	35	ZEUS	9,30	10,70	5,40	6,30	3050/+-10	350	4050	2350
2"	50	60,00	16	POSEDION	5,50	6,50	3,00	3,40	3050/+-10	160	3150	1850
2"	50	60,00	21	ARES	6,40	7,90	4,10	4,50	3050/+-10	210	3600	2100
2"	50	60,00	26	HERCULES	8,80	10,00	5,30	6,10	3050/+-10	260	4700	2800
2"	50	60,00	35	ZEUS	11,10	12,80	6,70	7,70	3050/+-10	350	5650	3350
2 1/2"	65	75,00	16	POSEDION	6,50	8,00	3,80	4,20	3050/+-10	160	4650	2700
2 1/2"	65	75,00	21	ARES	7,90	9,20	5,20	6,20	3050/+-10	210	5900	3500
2 1/2"	65	75,00	26	HERCULES	10,40	12,00	6,30	7,20	3050/+-10	260	7000	4200
2 1/2"	65	75,00	35	ZEUS	13,50	15,50	8,40	9,70	3050/+-10	350	9000	5300
3"	80	88,00	16	POSEDION	7,50	9,00	4,50	4,90	3050/+-10	160	6800	4000
3"	80	88,00	21	ARES	8,70	10,30	6,20	7,30	3050/+-10	210	8200	4850
3"	80	88,00	26	HERCULES	11,60	13,30	7,30	8,40	3050/+-10	260	9600	5650
3"	80	88,00	35	ZEUS	15,20	17,50	9,80	11,30	3050/+-10	350	12400	7300
4"	100	113,00	16	POSEDION	8,20	9,80	5,70	7,20	3050/+-10	160	10200	5900
4"	100	113,00	21	ARES	10,40	12,20	7,60	9,10	3050/+-10	210	13000	7650
4"	100	113,00	26	HERCULES	14,00	16,00	9,40	11,50	3050/+-10	260	15900	9350
4"	100	113,00	35	ZEUS	19,00	21,00	12,60	15,00	3050/+-10	350	20600	12150
5"	125	140,00	16	POSEDION	11,50	13,20	7,60	9,10	3050/+-10	160	16400	9650
5"	125	140,00	21	ARES	14,40	16,60	9,80	11,70	3050/+-10	210	20800	12250
5"	125	140,00	26	HERCULES	17,30	19,90	11,90	14,20	3050/+-10	260	24000	14600
5"	125	140,00	35	ZEUS	23,00	26,50	15,60	18,00	3050/+-10	350	30500	18600
6"	150	165,00	16	POSEDION	13,10	15,10	8,60	9,90	3050/+-10	160	17100	10200
6"	150	165,00	21	ARES	16,60	19,10	12,00	12,90	3050/+-10	210	22200	13600
6"	150	165,00	26	HERCULES	20,10	23,10	14,00	15,70	3050/+-10	260	27500	15100
6"	150	165,00	35	ZEUS	26,90	31,00	19,40	21,20	3050/+-10	350	40000	23500

Notes:



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