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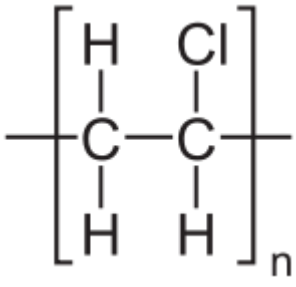
OPVC pipes that will change the pipig future fo the world now on. It is started.



Polyvinyl chloride, also called **Polychloroethene** or **PVC**, is a thermoplastic. It soft when heated and hard when cooled. Polyvinyl chloride is made by polymerization of the monomer vinyl chloride (chloroethene) CH_2=CHCl.

Making Orientation of PVC: It is a discontinuous technology (stretching after extrusion), but without a gap between the two operations. As a result, the Molecor process **reduces the length of the process by 80% and energy consumption by 85%.**

Orientation is achieved by controlled stretching and expansion of the PVC pipe.

Now coming to OPVC and its differences from other two in terms of manufacture and structure is that while it is made, it is made by realigning the PVC molecules by means of biaxial orientation. **The thickness gets reduced to up to 45%** and the greatest physical enhancement that it gets is of its impact resistance which increases eight times. The strength also gets doubled. These pipes have large bore capacity with increased hydraulic capacity. The use of OPVC has been increased in several folds in last seven years and has taken over UPVC. Whereas the leader in the market remains the MPVC which has got the highest spread of applications worldwide. In terms of Eco friendly factor, OPVC cleans sweeps off other two as it has been proved that the future of PVC types lies with OPVC as they are most Eco friendly pipes available. Some of the other features of OPVC which makes them stand alone are its high corrosion resistivity, light weight, smooth bore with lowest frictional losses, high strength and recyclable

The PVC pipe is altered at the molecular level to change the amorphous structure of UPVC into layered structure by Oriented process hence it is called O-PVC.

The softening point of OPVC is 82 deg C but we recommend usage up to 60 deg Celsius only. The ideal operating temperature for OPVC Pipes is from -25degrees to 60 degrees.

The life on minimum for O-PVC pipes is 50 years. ! Surprising Fact!

PVC-O is made by realigning the PVC molecules through a process of biaxial orientation. This greatly enhances the material properties - around twice the strength and ten times the impact resistance is achieved compared to traditional PVC-U material.

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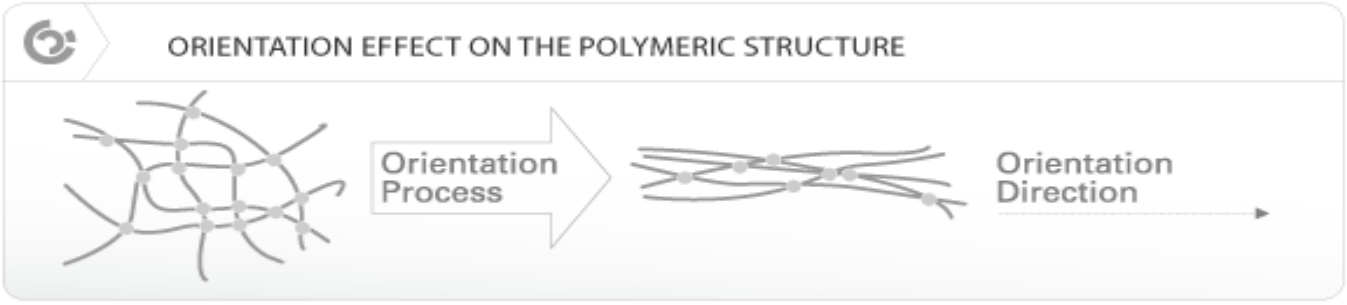
It means the wall thickness of PVC-O pipes can be reduced by up to 50% while maintaining the same pressure as that of the traditional PVC pipe. The result is that PVC-O has a larger bore offering greater hydraulic capacity; the pipe is manufactured with significantly less embodied energy and is more material efficient compared to other pipe options.

Although PVC-O pipes have been produced and used in Australia for over 20 years, recent manufacturing technology advances have seen greater availability in the last five years. Australia has been at the forefront of these significant advances and has the largest PVC-O pipe manufacturing capacity in the world.

Considering their relative low weight, PVC-O pipes are strong and durable. It stays strong through a range of temperatures, resulting in fewer burst pipes and other maintenance issues. The long lists of benefits of PVC-O pipes include:

- Exceptional Strength and Ductility
- High Impact Resistance
- Larger Bore offering greater hydraulic capacity
- Smooth Bore offering Low flow resistance
- Corrosion Resistant making it ideal for water infrastructure durability
- Guaranteed minimum stiffness of SN9 (DN100 - DN300), SN10 (DN375 - DN600)
- Light Weight offers savings in transport, installation and structural support
- Material & Energy efficient – 100% Recyclable
- Manufactured with significantly less embodied energy



Molecular orientation process modifies the PVC structure by giving the polymers molecules a specific orientation.

This makes for a plastic with an unbeatable **tensile strength and fatigue, flexibility and resistance to impact.**

Improvements in design and physical properties include: Non-Corroding Ductile Iron Pipe O.D. Larger I.D. than Ductile Iron and Conventional PVC Lighter weight than Ductile Iron and conventional PVC Higher Impact Strength Greater Cyclic and Hoop Strength Higher Design Stress Superior Notch Resistance One of the Safest and Easiest Pressure Pipes to Tap Thicker Walls than all PC 350 and Special Thickness

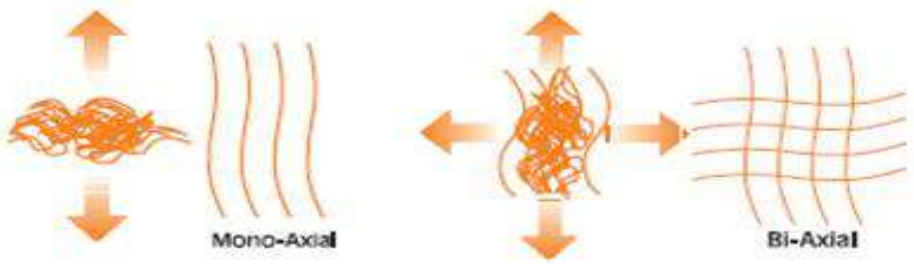


Figure 1. Mono-axial and Bi-axial Orientation

DN110mm-630mm
ISO16422

It totally rules out the possibility of using low-quality raw material in production and fully guarantees the property in terms of hygiene, and mechanics, etc.

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Dimensions

OD	0.8MPa		1.0MPa		1.25MPa		1.6MPa		2.0MPa	
(mm)	WallThickness (mm)	Tolerance (mm)	WallThickness (mm)	Tolerance (mm)	WallThickness (mm)	Tolerance (mm)	WallThickness (mm)	Tolerance (mm)	WallThickness (mm)	Tolerance (mm)
110	1.8	0.4	2.2	0.5	2.7	0.5	3.4	0.6	4.2	0.7
125	2	0.4	2.5	0.5	3.1	0.6	3.9	0.6	4.8	0.8
140	*2.2*	*0.5*	*2.8*	*0.5*	*3.5*	*0.6*	*4.3*	*0.7*	*5.4*	*0.9*
160	2.5	0.5	3.2	0.6	4	0.6	4.9	0.8	6.2	1
180	2.8	0.5	3.5	0.6	4.4	0.7	5.5	0.9	6.9	1.1
200	3.2	0.6	3.9	0.6	4.9	0.8	6.2	1	7.7	1.2
225	3.5	0.6	4.4	0.7	5.6	0.9	6.9	1.1	8.6	1.3
250	3.9	0.6	4.9	0.8	6.2	1	7.7	1.2	9.6	1.5
280	4.4	0.7	5.5	0.8	6.9	1.1	8.6	1.3	10.7	1.7
315	4.9	0.8	6.2	1	7.8	1.2	9.7	1.5	12.1	1.9
355	5.6	0.9	7	1.1	8.7	1.4	10.9	1.7	13.6	2.1
400	6.3	1	7.8	1.2	9.8	1.5	12.3	1.9	15.3	2.3
450	*7*	*1.1*	*8.8*	*1.4*	*11*	*1.7*	*13.8*	*2.1*	*17.2*	*2.6*
500	*7.8*	*1.2*	*9.8*	*1.5*	*12.3*	*1.9*	*15.2*	*2.3*	*19.2*	*2.9*

The range of pipes usually made from 40 mm to 110 mm, 110 mm to 500 mm mostly in two different machinery sets for the economy of production and scale.

The age old nuisance of adding much of CaCO3 to reduce the quality, distributing money among Government officers in achieving contracts and tenders, all such nuisance must stop though the quality pipes and assist to build better Nation, now on.

Jai HIND!

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All the figures are indicative and can change on the date of discussions.

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The Author, based at Ahmedabad, is a Professional consultant assisting to set up Lucrative / new

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