

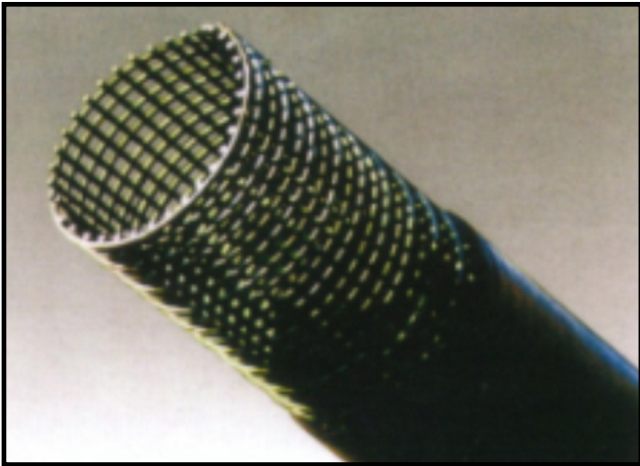
ARMOURCORE™

Steel Reinforced Polyethylene Piping Systems

Steel reinforced HDPE piping comes as two product variants each of which combines the strength attributes of steel with the extreme corrosion and abrasion resistance of HDPE. The products have an inner and outer layer of HDPE covering an internal steel skeleton.

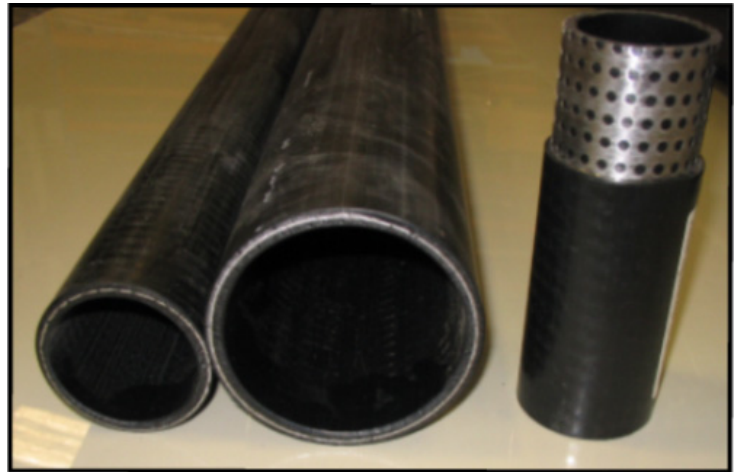
Steel Wire Mesh ArmourCore

- Primarily selected for pipeline applications
- Sizes DN50 to DN600 (DN is ID)
- Pressures range from 4.0MPa for DN50 through 2.5MPa for DN200 to 1.6MPa for DN600
- Used with steel reinforced fittings
- May be connected by butt welding, electrofusion coupler, flange or rubber ring joint.



Steel Plate ArmourCore

- Primarily selected for piperack / spanning applications
- Sizes DN50 to DN400 (DN is OD)
- Pressure standardized at 1.6 MPa apart from DN315 & DN400 which are 1.25MPa
- Used with standard electrofusion fittings
- Can be used with socket weld or compression fittings in smaller sizes, if required.



Applications include transportation of water, waste water, sea water, process chemicals, slurries, gas, crude oil, solids (grain or pharmaceuticals) and pretty much any material compatible with HDPE. Nominal service life is 50 years and products are UV resistant. Standard spool length is 11.8 metres.

Benefits Over Non-Reinforced HDPE Piping

- Inherent stiffness allows wider scope of application, including pipe rack mounting
- Design pressure is much less sensitive to temperature
- Lower wall thickness and greater internal diameter for equivalent nominal diameter and pressure rating
- Rate of thermal expansion is 1/6 of non reinforced HDPE.
- Less expensive than HDPE in larger sizes
- Higher design pressures are possible
- Higher rigidity and mechanical integrity
- Superior impact resistance
- Enhanced creep resistance and resistance to crack propagation

Benefits Over Steel Piping

- Total installed cost is approximately half of steel process plant piping
- Wear resistance is superior to steel pipe
- Inner wall is smooth, clean and resistant to scale
- Hydraulic head loss is less than steel for equivalent ID
- Two sided anti-corrosion without any additional surface treatment
- Lower heat conductivity
- Reduced Opex costs due to potentially zero maintenance
- Lower skill level required for installation
- Requirement for smaller scale construction equipment than for steel piping.

ARMOURCORE™ DIMENSIONS & RATINGS

The following tables define the wall thickness for standard ArmourCore piping sizes. Details of alternative pressure and wall thickness combinations are available upon request.

Steel Wire Reinforced ArmourCore

DN (mm) [Internal Diameter]	50	65	80	100	125	150	200	250	300	350	400	500	600
Wall Thickness (mm)	9.0	9.0	9.0	9.0	10.0	12.0	12.5	12.5	12.5	15.0	15.0	16.0	20.0
Design Pressure for Water (MPa)	4.0	4.0	3.5	3.0	3.0	2.5	2.5	2.0	2.0	2.0	1.6	1.6	1.6
Design Pressure for Gas (MPa)	1.0	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Horizontal Span (m)	2.5	2.5	3.0	3.0	3.5	3.5	4.0	4.5	5.0	5.0	5.0	6.0	6.0

Steel Plate Reinforced ArmourCore

DN (mm) [Outside Diameter]	50	63	75	90	110	140	160	200	250	315	400
Wall Thickness (mm)	4.0	4.5	5.0	5.5	6.0	8.0	10.0	11.0	12.0	13.0	15.0
Design Pressure for Water (MPa)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.3	1.3
Design Pressure for Gas (MPa)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.8
Horizontal Span (m)	2.5	2.5	2.5	3.0	4.0	4.0	4.0	5.0	5.0	6.0	6.0
Vertical Span (m)	4.0	4.0	4.0	4.5	4.5	5.0	5.0	5.5	6.0	6.0	6.0

Pressure De-rating with Temperature

Temperature (°C)	0<t<20	20<t<30	30<t<40	40<t<50	50<t<60	60<t<70
Temperature Derating Multiplier – Steel Wire	1.0	0.95	0.90	0.86	0.81	0.76
Temperature Derating Multiplier – Steel Plate	1.0	0.95	0.90			

ARMOURCORE™

‘Half the price of steel piping and zero maintenance’

ARMOURCORE PIPING SYSTEMS PTY LTD

ACN 120 730 869

35 Stiles Avenue, Burswood Western Australia 6100

Phone: (61) 8 9470 3799 Fax: (61) 8 9362 6952

Web: www.armourcore.com.au Email: sales@armourcore.com.au

ACOr1