



DATA SHEET FOR INFRAPIPE HDPE

SOLID WALL IN SDR 7.4-41

OD 473-2741 DN/ID 450-DN3200

APPLICATIONS - ALTERNATIVE TO FRP/GRP, DI, PVC, INLINE EXTRUDED HDPE

- ✓ Pressure sewer, WWTPs & WWPSs.
- ✓ Pressure stormwater/steep grades, outfalls.
- ✓ WWTP fittings and manifolds.
- ✓ KiwiRail or NZTA sites.
- ✓ Carrier pipes.
- ✓ Relining failed pipes.
- ✓ Pile liners, ports, mine shafts.
- ✓ Chambers & structures.

This product is perfect for short runs as it has no setup costs! To compare to traditional inline HDPE, choose the OD and SDR from the first table, this gives the ID in green. Then choose the most suitable ID in the green column in the second table and see the OD. At the back of this document is a matching table with cross sectional areas.

PN	25	20	16	12.5	10	8	6.3	4
OD / SDR	7.4	9	11	13.6	17	21	26	41
500	365	389	409	426	441	452	462	476
560	409	436	458	478	494	507	517	533
630	460	490	515	537	556	570	582	599
710	518	552	581	606	626	642	655	675
800	584	622	655	682	706	724	738	761
900	657	700	736	768	794	814	831	856
1000	730	778	818	853	882	905	923	951
1200	876	933	982	1024	1059	1086	1108	1141
1400	1022	1089	1145	1194	1235	1267	1292	1332
1600	1168	1244	1309	1365	1412	1448	1477	1522
1800	1314	1400	1473	1535	1588	1629	1662	1712
2000	1459	1556	1636	1706	1765	1810	1846	1902

PN	25	20	16	12.5	10	8	6.3	4
ID / SDR	7.4	9	11	13.6	17	21	26	41
450	617	579	550	528	510	497	488	473
525	719	675	642	616	595	580	569	552
600	822	771	733	703	680	663	650	631
700	959	900	856	821	793	774	758	736
800	1096	1029	978	938	907	884	867	841
900	1233	1157	1100	1055	1020	995	975	946
1000	1370	1286	1222	1172	1133	1105	1083	1051
1100	1507	1414	1344	1290	1247	1216	1192	1156
1200	1644	1543	1467	1407	1360	1326	1300	1262
1350	1850	1736	1650	1583	1530	1492	1463	1419
1500	2056	1929	1833	1759	1700	1658	1625	1577
1600	2193	2057	1956	1876	1813	1768	1733	1682
1800	2467	2314	2200	2110	2040	1989	1950	1892
2000	2741	2571	2444	2345	2267	2211	2167	2103



Spiral wound KRAH solid wall is a **fully certified alternative** to GRP/FRP, DI (ductile iron), PVC or inline extruded HDPE pressure pipe. Inline extruded HDPE pipe is manufactured using equipment which dictates the OD and then varies the ID to achieve the Wall Thickness (WT), and hence Pressure Rating (PN) required.



The state-of-the-art European KRAH plant operated by INFRAPIPE in NZ winds layers of PE100 onto a rotating mandrel of the required ID. For flexible pipes it adds a polypropylene core tube but for manholes, risers and solid wall pipes the pipe strength is created by adding additional layers of resin to achieve the desired WT and hence PN.

The pipe therefore has identical properties and bursting strength to inline extruded pipe but is **highly economical for short runs or more exotic requirements, as it has no substantial tool change costs**. Furthermore, it can be supplied pre-fitted with flanges, bends and made to the precise length or even delivered integrated into structures or manifolds.

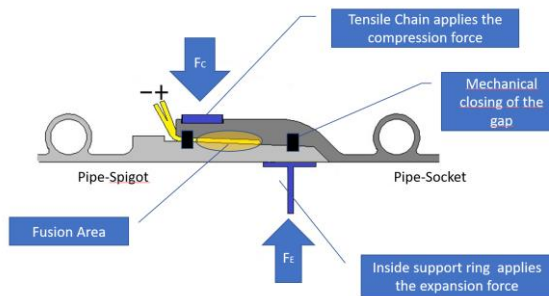
JOINING INFRAPIPE SOLID WALL PIPE

- ✓ The pipe can be supplied with plain ends and butt welded on site like plain inline HDPE.
- ✓ It can also be supplied with stub flanges, or with socket and spigot with rubber ring or extrusion weld.
- ✓ To join to other pipes or fittings, use slip couplers, PE Restraint coupler, shearbands or Hermetica clamps.
- ✓ **The preferred option, which inline HDPE cannot offer, is internal EF welding** where the pipe is supplied with wire installed in the socket. The join is easily braced internally and externally as shown below and a current applied for 30-45 minutes. This is standard practice in Europe.
- ✓ The result is a completely homogenous pipe with superb seismic resistance and no possibility of infiltration or failure. The process is quicker, cheaper and more reliable than butt welding.

The wire installed



The process



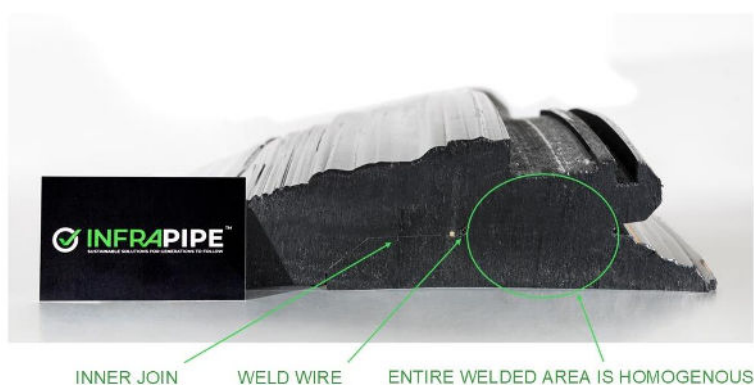
In progress



The wire installed



The results



- ✓ Pipes can be delivered in 11.8m, 15m or 18m lengths if transport will allow, reducing work on site.
- ✓ Pipes can be made with approved crack resistant resin.



TO SPECIFY THE PIPE

Write **INFRAPIPE SW DN x PN y** where x is the ID/DN and y is the PN – or use SDR instead of PN.

INTEGRATION INTO THE STRUCTURE

- The versatility of the KRAH solid wall system enables the designer or contractor to place the entire waterway in the hands of one manufacturer who can provide a seamless solution with no differentiation between pipe and fittings.
- This approach minimises installation cost, installation risk, lifetime risk and inspection/maintenance costs as points of failure are minimized, or with EF welding, removed entirely.
- This approach has worked successfully in WWTPs and with surge/overflow WW tanks.
- INFRAPIPE manufacture tanks from 10m³ to 1000m³ delivered (ID 3200mm) [see here for more details](#).



WHOLE OF LIFE COST

EF welded HDPE SOLID WALL INFRAPIPE has the lowest Whole of Life Cost of any infiltration-free solution:

- ✓ Low purchase price.
- ✓ Low install price (lay).
- ✓ Low install price (EF weld).
- ✓ Lowest seismic risk.
- ✓ Chemically inert.
- ✓ Does not decay.
- ✓ No maintenance required.
- ✓ 100yr life.
- ✓ Modification quick and easy.
- ✓ Product can be recycled at end of life.

COMPARISON AGAINST ALTERNATIVE MATERIALS:

Requirement	HDPE	Concrete	FRP/GRP	Ductile Iron (DI)	PVC
Material life	Very good	Satisfactory	Can decay	Can rust	Good
Abrasion resistance	Very good	Very poor	Poor	Very good	Good
Seismic performance	Very good	Poor	Poor	Good	Satisfactory
Hydraulic efficiency	Very good	Satisfactory	Very good	Very good	Very good
Weight	Light	Very heavy	Medium	Very heavy	Heavy
Design constraints	Few	Many	Many	Some	Some
Infiltration resistance	Very good	Very poor	Very poor	Poor	Poor
Homogeneity	Yes	Yes	No	Yes	Yes
Water permeability	No	Yes	Yes	No	No
Chemical resistance	Very good	Very poor	Good	Good	Good
Biological resistance	Very good	Poor	Very poor	Very good	Very good
Recycled in NZ	Very good	Rare	Nil	Very good	Rare
Ease of modification	Very good	Satisfactory	Poor	Poor	Poor
Brittleness	No	Some	Yes	No	Yes
Tensile Strength	Very good	Good	Satisfactory	Very good	Satisfactory
Compressive Strength	Good	Very good	Very good	Very good	Good
Deformation Recovery	Good	Nil	Nil	Little	Nil

ADVANTAGES TO THE ASSET OWNER OVER INLINE EXTRUDED HDPE:

- ✓ No setup fees or minimum run size.
- ✓ Can be produced to any length.
- ✓ Short lead time.
- ✓ Can be made to any SDR/PN.
- ✓ EF welding superior to butt welding.
- ✓ Can be supplied with bends or risers.
- ✓ Can be supplied fitted with flanges or many other connections.



SUSTAINABILITY

INFRAPIPE Solid wall HDPE and structures fabricated from it are the best solution for the environment:

- ✓ Lowest environmental impact material.
- ✓ Less freight, less setup waste.
- ✓ Less diggers, less cranes.
- ✓ Completely recyclable.
- ✓ All production waste is reprocessed.
- ✓ Less abrasion = less pollution.

STANDARDS

1. INFRAPIPE has been certified to AS/NZS 5065:2005 licence no. AMI 74961.
2. INFRAPIPE is certified to ISO 9001:2015 licence no. AMI 78044.
3. Pipes are tested by INFRAPIPE in their test lab in accordance with ISO 9969:2016 *Thermoplastic pipes – Determination of Ring Stiffness*.

CROSS SECTIONAL AREAS

The pipe has the following Cross Sectional Area (which does not vary with PN/SDR):

ID (DN)	CSA mm
450	158,963
525	216,366
600	282,600
700	384,650
800	502,400
900	635,850
1000	785,000
1100	949,850
1200	1,130,400
1350	1,430,663
1500	1,766,250
1600	2,009,600
1800	2,543,400
2000	3,140,000



INFRAPIPE solid wall is used for manholes

OTHER APPLICATIONS

INFRAPIPE solid wall pipe is used in combination with connections and other fittings to provide the optimum solution for the site. This example to the right combined manholes with **30m³ of water storage. Pump chambers, wetwells or terminal chambers** can be independent or supplied integrated into the pipeline or **tank** reducing complexity, cost and seismic or infiltration risk.



FOR MORE DETAIL

Visit [INFRAPIPE's website](#) or the [Downloads section for Design Manuals and Data Sheets](#) on INFRAPIPE for civil applications (storm and waste water), tanks, SN16 drainage, manholes and other structures.