

ANOTHER ACU-TECH® PIPING SOLUTION



# PRODUCT OVERVIEW



HDPE Piping Systems for Gas Transfer

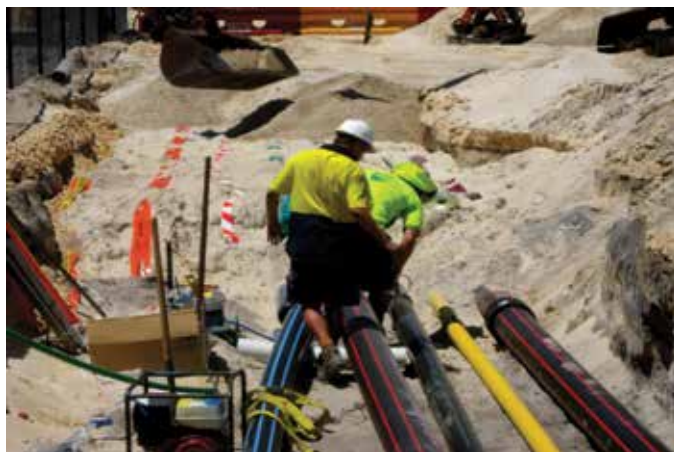
# ACU-GAS PIPING SYSTEMS

The Acu-Gas Piping System, manufactured from HDPE (High Density Polyethylene), is the system of choice for below-ground natural and LP gas mains and reticulation/ distribution pipelines. The gas distribution industry is an important sector for high integrity products, where the safe transport of gaseous fuels is of paramount importance.

Gas distribution was among the first applications of Polyethylene (PE) pipe, particularly in Europe and North America. In fact, many of the systems currently in use have been in continuous service since 1960 with great success. Today, it's estimated that over 90% of pipe installed worldwide for the natural gas distribution industry is Polyethylene.

## Leak-Proof System

Acu-Gas HDPE pipe is joined by heat fusion techniques. Leak-proof, fully-restrained heat fusion joins plain end pipes and fittings end to end or saddle fittings to the pipe sidewall. This does not add material to the joint or depend on friction, thrust blocks, seals, gaskets or mechanical devices to prevent leakage or disjoining. The Acu-Gas HDPE range includes flange, thread and weldable metallic transition fittings. As with any piping system, joints should always be made by trained and accredited tradespersons. Installation safety is increased because fusion joints are typically made on grade before placing the pipe in the trench; workers don't need to be down in the trench.



## Durable and Reliable

Acu-Tech HDPE pipe is tough and strong to withstand installation, internal pressure and external loads. This tough, resilient pipe can withstand temperature extremes, seismic conditions, vibrations, water hammer pressure surges, burial at extreme depths or continuous exposure on or above grade.



## Lightweight, Flexible and Cost Effective

Acu-Gas HDPE pipe is lighter than alternative piping materials, and is available in coils, which can result in significant savings in shipping, handling, and installation. Flexible Acu-Gas HDPE pipe will field bend to follow curves, contours and easements, reducing the need for directional fittings and lowering installation costs. Installation costs can be reduced with trenchless techniques that do not disrupt or require restoration of landscaping, roads or driveways. Trenchless installation techniques can place Acu-Gas HDPE pipes below roads and water bodies such as rivers. Slip-lining and pipe bursting can rehabilitate deteriorated pipelines with new, leak-free Acu-Gas HDPE, and pipe bursting can place a larger line through the old, deteriorated pipeline to increase capacity without removing the old pipeline.

# WHY ACU-GAS?

## Why Specify Acu-Tech Piping Systems?

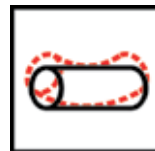
Simply stated... versatility and durability. For more than 50 years HDPE pipe has proved itself in numerous applications where a safe, leak-proof system is absolutely critical. Acu-Tech HDPE pipe is a proven performer above ground, on the surface, below ground and even underwater. It can transport drinking water, gas, or

some of the most hazardous waste materials safely and without leakage. These attributes make Acu-Tech HDPE piping systems the best solution for almost any method of installation, including direct burial, slip-lining, pipe bursting and directional drilling.

## KEY BENEFITS



FUSION WELDED -  
EXTREME JOINT STRENGTH



EXTREME STRENGTH  
AND FLEXIBILITY



COMMON TRENCHING  
OF MAIN SERVICES



HIGH QUALITY AND  
INTEGRITY



VERSATILITY AND  
FLEXIBILITY OF DESIGN



COST EFFECTIVE  
AND DURABLE



FUSION WELDING  
TRAINING AND  
ACCREDITATION



EASE OF NEW  
CONNECTIONS  
UPGRADES & REPAIRS



NON-CORROSIVE  
MATERIALS



THE GREEN SOLUTION

# TECHNICAL INFORMATION

## REFERENCE STANDARDS

### Pipes and Fittings:

AS/NZS 4129: Fittings for polyethylene (PE) pipes for pressure applications

AS/NZS 4130: Polyethylene (PE) pipes for pressure applications

### Installation:

AS/NZS 5601.1: Gas installations - General installations

AS/NZS 4645.3: Gas distribution networks - Plastics pipe systems

AS/NZS 2033: Installation of polyethylene pipe systems

AS/NZS 2566.2: Buried flexible pipelines - Installation

All gas work must be carried out in accordance with the requirements of the relevant Technical Regulator, and other local regulatory authority requirements as applicable.

### Design:

AS/NZS 2566.1: Buried flexible pipelines - Structural design

## TABLE OF PHYSICAL PROPERTIES

The properties given below are typical for HDPE grades used to manufacture pipe. It should be noted that many of these properties are relative to temperature and the duration of stress application. Data should not be used for specification work.

Property		Value	Unit	Test Method	Test Specimen
Density at 23°C		0.958	g/cm <sup>3</sup>	ISO 1183	10mm x 10mm x 4mm
Viscosity Number		380	ml/g	ISO 1628-3	0.1% solution of granules in decahydronaphthalene
Melt Flow Rate	MFR 190/5	0.23	g/10min	ISO 1133	granules sample weight 3g to 6g
	MFR 190/21.6	6.5	g/10min		
Tensile Properties	Yield Stress	26	N/mm <sup>2</sup>	ISO 527, Test Rate 50mm/min	ISO 3167, 4mm thick (test specimen no. 3, 4mm thick according to DIN 53 455)
	Elongation at Yield Stress	10	%	ISO 527, Test Rate 50mm/min	
	Tensile modulus of Elasticity (secant between 0.05 & 0.25% strain)	900	N/mm <sup>2</sup>	ISO 527	
	Tensile Creep Modulus (1 hour value)	650	N/mm <sup>2</sup>	ISO 899, Test Load 2M/mm <sup>2</sup>	
Flexural Properties	Flexural Creep Modulus (1 min value)	1100	N/mm <sup>2</sup>	DIN 54852-Z4 $\sigma_b=2N/mm^2$	110mm x 10mm x 4mm loaded flat
	Flexural Stress (3.5% deflection)	20	N/mm <sup>2</sup>	ISO 178, Test Rate 2mm/min	80mm x 10mm x 4mm
Stiffness in Torsion		180	N/mm <sup>2</sup>	DIN 53447	60mm x 6.35mm x 3mm
Hardness	Ball Indentation Hardness	41	N/mm <sup>2</sup>	ISO 2039 part 1 Test Load 132N	4mm sheet
	Shore Hardness D (3 sec value)	61	~	ISO 868	6mm sheet
	Shore Hardness D (15 sec value)	59	~		
Notched Impact Strength acN (test specimen from compression moulded sheet)	at 23°C	20	kJ/m <sup>2</sup>	ISO 179/1eA	80mm x 10mm x 4mm
	at -30°C	10	kJ/m <sup>2</sup>		
Vicat softening Point VST/B/50		67	°C	ISO 306	4mm sheet
Oxidation Induction Time	200°C in O <sub>2</sub>	>=60	min	ISO TR 10837	granules

# ACU-GAS PIPE DIMENSIONS to AS/NZS 4130:2009 Series 2



Pipe Size O.D. (mm)	Mean Inside Diameter (mm)	SDR Rating	Nominal Pressure Rating in Bar (Design Safety Factor =2) <sup>1</sup>	Available Lengths (m)
20	14.0	9	10	200
40	33.6	13.6	7.8	6
40	33.6	13.6	7.8	100
63	54.9	17	6	6
63	54.9	17	6	100
110	96.4	17	6	6
110	96.4	17	6	12
110	96.4	17	6	50
110	89.3	11	10	6*
110	89.3	11	10	12*
110	89.3	11	10	50*
160	140.6	17	6	6
160	140.6	17	6	12
160	129.9	11	10	6*
160	129.9	11	10	12*
225	197.6	17	6	6*
225	197.6	17	6	12*
225	182.7	11	10	6*
225	182.7	11	10	12*

<sup>1</sup> Pressure ratings are subject to limitations imposed by application standards and local regulatory authorities, and must be verified by the project engineer for the particular application conditions.

\* Non-standard item, please contact Acu-Tech for availability.

# ACU-GAS FITTING RANGE

ACU-GAS PIPE



ELECTROFUSION COUPLER



ELECTROFUSION REDUCER



ELECTROFUSION 90° ELBOW



ELECTROFUSION 45° ELBOW



ELECTROFUSION EQUAL TEE



ELECTROFUSION REDUCING TEE



ELECTROFUSION TAPPING SADDLE



ELECTROFUSION BRANCH SADDLE



ELECTROFUSION END CAP



EF TEST END CAP WITH BRASS MALE  
BSP THREAD



BRASS MALE BSP EF ADAPTOR



BRASS FEMALE BSP EF ADAPTOR



BRASS MALE TRANSITION INSERT



BRASS FEMALE TRANSITION INSERT



PE MALE BSP SPIGOT ADAPTOR



PE FEMALE BSP SPIGOT ADAPTOR



SPIGOT STUB FLANGE



BACKING RING TABLE D



BACKING RING TABLE E



BACKING RING TABLE ANSI 150



BLIND FLANGE



BOLT SET - PE TO TABLE D  
STEEL FLANGE CONNECTION



BOLT SET - PE TO TABLE E  
STEEL FLANGE CONNECTION



BOLT SET - PE TO ANSI 150  
STEEL FLANGE CONNECTION



ELECTROFUSION WELDERS



PIPE PREPARATION EQUIPMENT



ELECTROFUSION EQUIPMENT



WELDING WIPES



ANCILLARY PIPELINE PRODUCTS



PE TO COPPER ADAPTORS



MARKER TAPE & TRACER WIRE



FOAM PIG



REPAIR BANDS



90° SPIGOT ELBOW



45° SPIGOT ELBOW



SPIGOT REDUCER



SPIGOT END CAP



SPIGOT EQUAL TEE



SPIGOT REDUCING TEE



*If you need advice or guidance  
we're here to help*

Acu-Tech Piping Systems' sales team have extensive experience in the supply of HDPE pipe systems to gasfitters and utilities. We encourage you to tap into this wealth of knowledge for advice and guidance. Our sales office is ready to take your call on **(08) 9238 8000** and will ensure that your enquiry is dealt with promptly.

Alternatively, feel free to email us at:  
[sales@acu-tech.com.au](mailto:sales@acu-tech.com.au)

As always with Acu-Tech technical information, we supply it as a guide in the interest of better understanding of technical properties of our products. It represents the best information available to us at the time of publication. However, the application of such information may involve engineering judgements which cannot be correctly made without intimate knowledge of all the conditions pertaining to a specific installation. Acu-Tech does not act as a consultant in this regard; the responsibility for the use of any information or advice contained herein rests solely with the user. No warranty, expressed or implied, (other than Statutory Warranty) is given as to the information or results obtained by the use thereof, and Acu-Tech will not be held liable for any costs, direct or indirect, that may arise therefrom. All pressure ratings given are subject to applicable regulations and standards. For further information please contact our Technical team or check with your local regulatory authority.

Company policy is one of continual improvement, therefore changes in product dimensions, specifications and performance data may be made without prior notice and with out incurring liability. All dimensions shown in this catalogue are intended as a guide only. If exact measurements are required, please contact our sales team.

Acu-Tech Piping Systems is a leading manufacturer and supplier of high performance, thermoplastic pipe systems and solutions for fluid and gas transfer. Our systems are utilised in a wide range of applications across the plumbing, mining, civil and mechanical services markets.

## Our Vision

*To be recognised by engineers and contractors  
as the industry leader in **pipeline solutions***

## Our Mission

- To provide the pipeline industry with systems of the **highest quality, integrity and innovation**, and in doing so, to ensure that **Acu-Tech** “adds value” to our customers’ business.
- To provide **outstanding service, training and technical support** to our customers, and in that way be considered as an integral part of their enterprises.
- To encourage **forward thinking and innovation**.
- To continuously look for ways to **improve** our performance.
- To maintain a **comprehensive stock inventory** to ensure that every project runs smoothly.
- To put our **values** at the centre of everything we do, now and in the future.



*For more information, please contact the sales team at:*



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