



# LAPTEM

## ENGINEERING SOLUTIONS

HAZ-PRO CONDUIT SYSTEM | HALOCK TWIN PIPING SYSTEM  
PETROLEUM EQUIPMENT | HAZARDOUS AREA EQUIPMENT  
TANK GAUGING & INSTRUMENTATION





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**LAPTEM**



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# ABOUT LAPTEM

Our team of engineers, and industry professionals have been working hard to design and manufacture a range of products to support the automation and hazardous area industries in the Asia-Pacific region.

Our team of professional engineers have designed and manufactured industry leading components that ensure a safe and reliable solution to meet all of our client's circumstances.

Our range of products are suited to service providers in the oil and gas, petro-chemical or industrial Industry areas.

Our products include – termination products ranging from glands, adaptors and reducers to full hazardous area cabling systems including LAPTEM'S own manufactured continuous conduit for zone 1, 2, 21, & 22.

Certified to AS/NZS 2053.1.2001 and IEC 61386-1:2008 LAPTEM cable systems provide a safe and reliable solution to your cabling needs into and out of the hazardous zones.

Laptem distribute the Halock Twin Pipework System from Norway, Plasson Fusion & Compression Fittings and associated equipment Tank Gauging & Leak Detector Systems.





# LAPTEM



## INTERNATIONAL DISTRIBUTORS

### EUROPE

UNITED KINGDOM  
INPAC,  
Cambridge, UK

### ASIA

CHINA  
TISIA Technology Co. Id,  
Shanghai, China

KOREA  
Ex Tech,  
Busan, Korea

INDIA  
Laptem India Pvt Ltd  
Rajkot, Gujurat

### OCEANIA

AUSTRALIA  
Laptem Australia  
WA - Bassendean 6054  
QLD - Wacol 4076  
VIC - Bundoora 3083

NEW ZEALAND  
Industrial Electrical Supplies,  
Cantebury, NZ

# 32mm Haz-Pro Conduit

(AS/NZS 2053.1  
IEC 61386-1:2008)



- **Super Smooth Hydrocarbon Resistant HAZ-PRO barrier**
- **High-density Polyethylene (HDPE)**
- **Built Tough - PN16 Rating**

Certified to AS/NZS 2053.1:2001 and IEC 61386-1:2008 LAPTEM cable systems provide a safe and reliable solution to your cabling needs into and out of hazardous zones.

Manufactured from high density polyethylene material, LAPTEM has developed a continuous conduit system that flows joint free for the whole of its length. LAPTEM HAZ-PRO conduit is lined with a super smooth HAZ-PRO inner layer, reducing friction and providing additional level of protection. LAPTEM conduit has been inspected and tested to be impervious to hydrocarbons Diesel and Petroleum by an Australian based NATA certified laboratory.

Available in 100 metre rolls, LAPTEM ensures a point to point application for all user applications. Our wide range of fittings including joiners, adaptors and terminations are available in both compression and electrofusion welded options and accompany LAPTEM's industry standard and certified 32mm conduit.



SIZE	D	E	PART No.	MATERIAL	CERT.	PN
32	32	3	LCS - CC - 32	HDPE	AS/NZS 2053.1. IEC 61386-1:2008	PN16



**WARRANTY**

See LAPTEM warranty terms & conditions for full details



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# HAZ-PRO Barrier Technology



- **Ultra-high resistance to hydrocarbons and oils**
- **Super-smooth high gloss finish**
- **Out-performs traditional nylon barriers**

Laptem HAZ-PRO Barrier Technology is a protective conduit lining that provides an excellent resistance to hydrocarbons, oils and organic solvents.

The protective HAZ-PRO barrier is produced using multi-layer co-extrusion process with the HAZ-PRO copolymer resin. This is combined with the industrial strength and flexibility of our tough HDPE PN16 Conduit. The combined fuel barrier of HAZ-Pro is about 4,400 times better than that of HDPE alone.

HAZ-PRO Barrier Technology is recognized as the leading choice for high-barrier fuel resistant electrical conduit. HAZ- PRO's superior properties make it possible to comply with stringent international fuel permeability standards.

HAZ-PRO Barrier also features a super smooth lining finish. This eliminates the need for additional lubrication when pulling cables. It's high gloss, anti-static properties also help to reduce resist dust build-up.

#### Resistance to Fuels of HAZ-PRO versus Traditional Nylon Barrier

Permeation (grams.mil/100 in 224 hrs.atm at 40°C)

FUEL/COMPONENT	HAZ-PRO BARRIER	NYLON TYPE BARRIER
REF Fuel C	0.0009	0.015
CM15	0.61	5.0
MTBE 15	0.0007	0.012
MTBE 100	0.0002	0.003
Toluene	0.001	-
Isooctane	0.003	-

Note: REF Fuel C = 100% hydrocarbon  
CM 15 = Ref Fuel C + 15% Methanol  
MBTR15 = Ref Fuel C + 15% MTBE



# PP-M Compression Range

## Features:

- AS/NZ 4129 & IEC 61386-1:2008 Certified
- Zero Liquid Penetration
- Simple Installation
- UV Stabilized



RANGE: SUIT 32mm LAPTEM CONDUIT

MATERIAL: POLYPROPYLENE BODY

MATERIAL THREAD: NICKLE PLATED BRASS

WORKING PRESSURE: 200 PSI @23c

LAPTEM PP-M range of fittings feature a tough polypropylene body, with integrated nickel plated brass male BSP thread. This new hybrid fitting is designed to allow a direct seal with compatible y-seals, gland or barrier fittings.

LAPTEM's range of compression fittings are compatible with LAPTEM electrical conduit and come complete with Nitrile Buna rubber seals.

## Male adaptor

DxD1	DN	PN	PART No.	MATERIAL	O-RING
32x3/4"	25x20	PN16	L-C-M10.1	PP	NBR
32x1"	25x25	PN16	L-C-M11.1	PP	NBR



# Compression fittings

- Features:**
- AS/NZ 4129 & IEC 61386-1:2008 Certified
  - Zero Liquid Penetration
  - Simple Installation
  - UV Stablized

RANGE: SUIT 32 mm CONDUIT

MATERIAL: POLYPROPYLENE

WORKING PRESSURE: 200 PSI @23c

LAPTEM's range of polypropylene compression fittings are compatible with LAPTEM electrical conduit and come complete with Nitrile Buna rubber seals.



## Coupling

D	DN	PN	PART No.	MATERIAL	O-RING
32	25	PN16	L-C-F10	PP	NBR



## Plug

D	DN	PN	PART No.	MATERIAL	O-RING
32	25	PN16	L-C-F28	PP	NBR



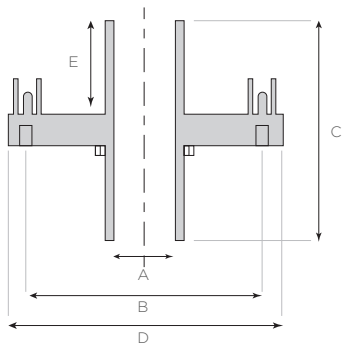
## Female adaptor

DxD1	DN	PN	PART No.	MATERIAL	O-RING
32x3/4"	25x20	PN16	L-C-F13	PP	NBR
32x1"	25x25	PN16	L-C-F14	PP	NBR

# Electrofusion fittings

Laptem stock a range of Electrofusion fittings to suit your application. Electrofusion, a process of the welding polyethylene(PE), is done by heating elements embedded in the PE fitting sockets. The sockets require an electrical input from a specialised welding machine to prepare and set the welded joint.

Electrofusion allows a safe, efficient and economic method to achieve a continuous installation and is suitable for both above and underground PE pipe solutions.



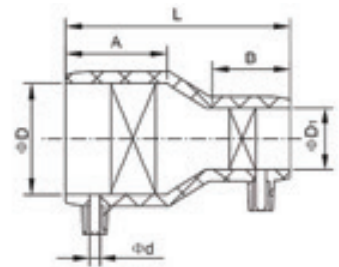
## Electrofusion entry boot (primary)

PART NO.	D	B	A	E	C	PN	MATERIAL
L-EF-FEB	140	120	32	48	111	PN16	HDPE(PE100)



## Electrofusion reducer (secondary)

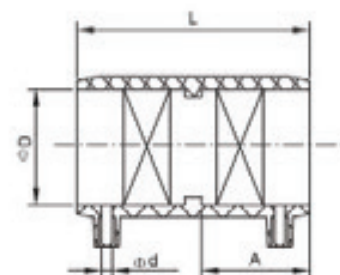
PART NO.	D	D1	A	L	B	d	PN	MATERIAL
L-EF-F100	40	32	50	100	45	4.7	PN16	HDPE(PE100)
L-EF-F110	32	25	50	94	45	4.7	PN16	HDPE(PE100)



# Electrofusion fittings

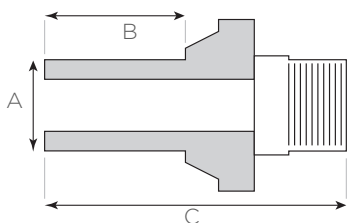
## Electrofusion coupler

PART NO.	D	A	L	d	PN	MATERIAL
L-EF-F10	32	44	90	4.7	PN16	HDPE(PE100)



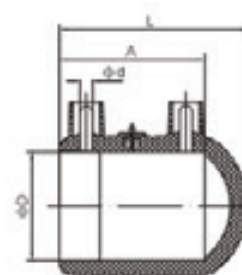
## Electrofusion Male Transition Adaptor

PART NO.	THREAD TYPE	A	B	C	PN	MATERIAL
L-EF-M10	3/4" BSP	25	45	87	PN16	HDPE(PE100)
L-EF-M11	1" BSP	32	50	100	PN16	HDPE(PE100)



## Electrofusion end cap

PART NO.	D	A	L	d	PN	MATERIAL
L-EF-F17	32	45	60	4.7	PN16	HDPE(PE100)



# Conduit Entry Boots



## Compression Entry Boot

- Single hole installation
- Moulded then CNC machined acetal body
- UV resistant acryln seal
- Stainless steel clamps
- Materials UL listed



## Bolt Flange Entry Boot

- Waterproof pipe and duct entries
- Installation on flat and round surfaces
- Nitrile rubber to BS2751
- Suitable for entries up to 15° from perpendicular
- Fully adjustable post installation
- Re-sealable

Laptem's range of entry boots are built tough and designed with simple installation in mind. Threads are machined as opposed to moulded, for increased integrity and ensures smooth and reliable fit each and every time. Conical shape allowing the penetration to seal to flat and curved surfaces. Suitable for both above and underground PE pipe solutions

PART NO.	DESCRIPTION	SIZE	MATERIAL	SEAL
CP-BOOT	COMPRESSION ENTRY BOOT	32mm	ACETAL	ACRLYN
BF-BOOT	BOLT FLANGE ENTRY BOOT	32mm	NITRILE	NITRILE

# HAZ-PRO LTL Liquid Tight Flexible Conduit



The flexible inner core is made from spiral wound corrosion resistant hot dipped galvanized steel and contains nylon core packing for added impact protection. Larger sizes are fully interlocked. Tested to IEC-61386 & AS/NZS 61386 Sizes 16 through 32 as standard, with larger sizes available on request. The smooth outer flexible PVC jacket has a wide temperature range.

## Application:

HAZ-PRO LTL Conduit can be used in the mining, oil & gas and industrial environments where flexibility is necessary for installation or where vibration and movement must be absorbed. Design for proofing against water, oil and dust ingress. A high tensile strength and twist resistance.

- Temperature Rating -10° C to + 80°C
- High Resistance to Oils, Mild Acids and Many Industrial Chemicals
- Sunlight (UV) Resistant
- Self Extinguishing / Flame Retardant
- Smooth Inner Surface for ease of pulling cables
- Intended for use with Liquid Tight Connectors – Wide range available
- Colours: Black (standard), grey on request.
- IP67 rating when installed with approved connectors

CAT#	SIZE	INNER DAIMETER	OUTER DIAMETER	COIL LENGTH	COLOUR
		(mm)		Metres/coil	
LTL-20	20mm	15.8-16.3mm	20.3-21.8mm	30M	BLACK
LTL-25	25mm	20.7-21.2mm	25.0-25.3mm	30M	BLACK
LTL-32	32mm	26.0-26.5mm	32.5-33.0mm	30M	BLACK
LTL-40	40mm	34.60-35.40mm	39.60-40.30mm	15M	BLACK
LTL-50	50mm	40.00-40.60mm	45.20-46.00mm	15M	BLACK

# HAZ-PRO LTL Conduit Fittings



Laptem Haz-Pro Liquid tight conduit fittings are used to terminate and seal Laptem Haz-Pro liquid tight flexible metallic conduit to an oiltight, raintight or liquid tight box or enclosure.

## Application:

Used in tough, mining, commercial and industrial applications.

## Design Features:

- Liquidtight, raintight, oiltight for protection and long life in wet, dusty environments
- Hex shaped gland nut allows for easy wrenching, providing a fast, tight installation
- Suitable for wet locations
- Reusable, long ferrule prevents pull-out and tight bend conduit pop-out
- Furnished with locknut and sealing ring
- Available in straight and 90 degree configurations

Designed to the toughest standards and integrating the latest technology, not only do you get a reliable and durable product, you also get one that reduces installation time and cost. Available to suit 20mm, 25mm, 32mm, 40mm and 50mm Laptem Haz-Pro Liquid Tight Flexible Metallic conduit, with larger sizing available on request.

PART #	SIZE	THREAD	TYPE
LTL-S-M20	20mm	20mm Male	Straight male
LTL-S-M25	25mm	25mm Male	Straight male
LTL-S-M32	32mm	32mm Male	Straight male
LTL-S-M40	40mm	40mm Male	Straight male
LTL-S-M50	50mm	50mm Male	Straight male
LTL-E90-M20	20mm	20mm Male	Elbow 90 degree
LTL-E90-M25	25mm	25mm Male	Elbow 90 degree
LTL-E90-M32	32mm	32mm Male	Elbow 90 degree
LTL-F-M20	20mm	20mm Female	Straight Female
LTL-F-M25	25mm	25mm Female	Straight Female
LTL-F-M32	32mm	32mm Female	Straight Female

# HAZ-PRO Barrier Conduit Glands



The conduit glands of the LTL-EX series have been designed for the use with Haz-Pro LTL Liquid Tight Flexible Conduit. The conduit connector kit includes an easy to use two part epoxy resin, which is packed around the cables. Assembling the LTL-EX fitting on the conduit, packing the connection and installing the system is a simple and fast solution. Male metric threads as standard.

## Application:

Surface - Group II, Mines - Group I

## Approvals:

ATEX: CESI 14ATEX069X

IEC Ex: IECEX CES 15.0001X

EAC: RU C-IT.AЯ 45.B.00909

CCC Ex NEPSI Certificate: Nr. 2021322313003704

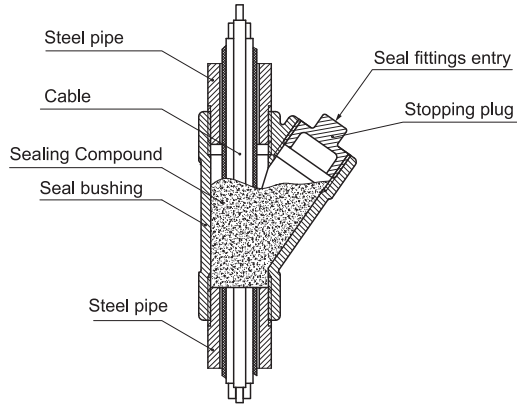
## Protection type:

Ex db IIC • Ex eb II (gas) • Ex tb IIIC (dusts) • Ex db I • Ex eb I (mines)

PART #	SIZE	THREAD	TYPE
LTL-S-M20-EX	20mm	20mm Male	Straight male
LTL-S-M25-EX	25mm	25mm Male	Straight male
LTL-S-M32-EX	32mm	32mm Male	Straight male



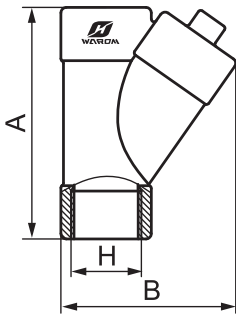
# IECEX Compliance Y-Seal



Laptem has secured exclusive manufacturing of full IECEx compliant Y-seal vapour barriers.

Rated to IP66 and made from powder coated copper-free aluminium. Laptem Y-Seal Vapour Barriers are built to last, with moulded IECEx identification markings and complete with certified stainless steel blanking plug. Suitable for Zones 1 & 2; 21 & 22.

Megapoxy Epoxy Resin available to purchase separately.



Type Z

PART NO.	TOP THREAD	BOTTOM THREAD (H)	DIMENSIONS (mm)		CABLE OUTER DIAMETER (mm)
			A	B	
BAG-Z-BSP3/4/M20	M20	BSP 3/4"	87	65	10-14
BAG-Z-BSP3/4/M25	M25	BSP 3/4"	87	65	10-14
BAG-Z-BSP1/M25	M25	BSP 1"	102	78	12-17
YSEAL-NPT3/4/M20	M20	NPT 3/4"	87	65	10-14
YSEAL-NPT3/4/M25	M25	NPT 3/4"	87	65	10-14
YSEAL-NPT1/M25	M25	NPT 1"	102	78	12-17
BAG-Z-M20/M20	M20	M20	87	65	10-14
BAG-Z-M25/M25	M25	M25	102	78	10-14
BAG-Z-M32/M32	M32	M32	102	78	12-17







## SEALS SAFE ZONE 1 HAZARDOUS AREA CONDUIT AND FITTINGS

Sealsafe provides a range of nickel plated brass barrier fittings for use with flexible braided PVC conduit, flexible metallic liquidtight conduit and rigid conduit.

Installation is fast and simple. All fittings can be easily attached to the conduit in the field eliminating the need for pre-assembled fixed length conduits. Similarly constructed fittings are available for use with either braided PVC or flexible metallic liquidtight conduit.

No mess no fuss, Sealsafe does away with the need for cumbersome potting liquids using a simple co-extruded epoxy putty packed into a conventional style fitting making installation possible at any angle.

PART NO.	DESCRIPTION	THREAD	CONDUIT
FHC-075	Female Barrier Fitting Ex d	3/4" BSP	FC - 16
FHC-100	Female Barrier Fitting Ex d	1" BSP	FC - 19
FHC-2003	Male Barrier Fitting Ex d	20 mm	FC - 16
FHC-2503	Male Barrier Fitting Ex d	25 mm	FC - 19
FHC-2002	Male Non-Barrier Fitting DIP	20 mm	FC - 16
FHC-2502	Male Non-Barrier Fitting DIP	25 mm	FC - 19



## PVC Braided Conduit

### Application:

Type FC Fibre Braid Reinforced Flexible PVC Conduit for use with Sealsafe type FHC conduit fittings.

### Description:

A synthetic reinforcing braid is woven over the flexible PVC core. A flexible outer PVC jacket is extruded over the reinforcing braid to produce a Tough, resilient flexible conduit.

### Core Material:

Black virgin PVC.

### Jacket Material:

Orange Anti Static Virgin PVC with good resistance to petroleum products (no significant change in properties following 1000 hours exposure to fuel vapour) Flame retardant jacket complies with clause 1.12.3 (flammability test) of AS 2053. Refer Test Report 4667/2.

### Degree of Protection:

IP68

### Installation:

Refer to type FHC fittings

PART NO.	BORE (mm)	USE WITH FITTINGS
FC-16	16.0	FHC-2002, 2003, 075
FC-19	19.0	FHC-2502, 2503, 100

# Explosion Protected Electrical Equipment

Laptem stock and distribute a wide range of high-quality Ex explosion protected electrical equipment to suit Zone 1, 2, 21 & 22. Laptem also have in-house Electrical Engineers available to discuss custom made Ex Electrical Engineering Solutions for your next project.

- **Ex Reducing Bushes**
- **Ex Adaptors & Thread Conversions**
- **Ex Emergency Stops**
- **Ex Isolator Switches**
- **Ex Junction Boxes**
- **Ex Terminal Boxes**



# Locknuts, Sealing Washers, Stopping plugs & Earth Tags

Laptem stocks a range of locknuts, sealing washers, stopping plugs and earth tags, designed to interface with cable glands and equipment for certified installations.

PART NO.	SIZE	MATERIAL	DESCRIPTION
LN-20	M20	NICKLE PLATED BRASS	LOCK NUT
LN-25	M25	NICKLE PLATED BRASS	LOCK NUT
LN-32	M32	NICKLE PLATED BRASS	LOCK NUT
ET-20	20mm	NICKLE PLATED BRASS	EARTH TAG
ET-25	25mm	NICKLE PLATED BRASS	EARTH TAG
ET-32	32mm	NICKLE PLATED BRASS	EARTH TAG
IP-20	20mm	NYLON	SEALING WASHER
IP-25	25mm	NYLON	SEALING WASHER
IP-32	32mm	NYLON	SEALING WASHER
SP-20	M20	CAST/NPB	STOPPING PLUG
SP-25	M25	CAST/NPB	STOPPING PLUG
SP-32	M32	CAST/NPB	STOPPING PLUG



# Lighting



## Canopy light

- Simple installation
- Light weight, low profile heat sink design with excellent thermal
- IP66 & IK08
- High brightness LED chips
- 5 year warranty
- Can be recessed (420x420 or 600x600) or surface mounted with install kits.
- 50,000 hour lifespan
- Glare reduction cover optional
- Available in 75W, 150W, 200W



## IECEX Lighting

IECEX Lighting available on request.

Please contact Lapterm for further information.

## Laptem LED Slimline Floodlight

**Power:** 100W, 150W, 200W –  
Additional sizes available on request

**IP Rating:** IP65

**LED Colour Temperature:** 6000K

**Lifespan :** 50000 Hours

**Body Material:** Aluminium

**Approvals:** SAA/C-tick, CE, RoHS

**Warranty:** 7 Years



No need for Halide floodlights, when you can utilise these LED Flood Lights, running half the energy and featuring high quality die-cast aluminium components. An IP65 rating rendering it safe for indoor and outdoor use. With a global certification process, this product carries CE, RoHS, SAA/C-tick (RCM) certification ensuring compliance.

PART NO.	WATTAGE	LUMEN OUTPUT
L-FL-100W	100W	12,500LM
L-FL-150W	150W	18,000LM
L-FL-200W	200W	24,600LM



# Plasson EF Electrofusion Fittings

PLASSON EF Fittings -  
Available at LAPTEM Australia

PLASSON ElectroFusion fittings are specifically designed for reliable, high performance pipe joining and long system life. This automated system has been proven to be most economical due to the low potential for operator error.



## The Smart System - PLASSON ElectroFusion

All PLASSON products combine to form the latest state-of-the-art high performance pipe joining solution. PLASSON ElectroFusion fittings are part of a complete electrofusion smart system. The entire ElectroFusion process is executed and fully monitored by the computerized control box. Everything is computer-controlled ensuring safe, dependable connections.

PLASSON ElectroFusion fittings can be used with PLASSON's computerized smart-system control box or with standard barcode systems. Each PLASSON ElectroFusion fitting comes complete with a barcode.

### **PLASSON ElectroFusion Smart System Features:**

- Superior Fitting Design - increases joint integrity
- Automatic Controller - decreases potential operator error
- Computerized Data Retrieval - ensures quality control by Joint Data retrieval of measurements and records
- Compatibility between PLASSON ElectroFusion and other electrofusion systems through the computerized barcode system
- Easy Installation using PLASSON's simple practical tools
- High Standards are ensured by the latest product testing methods

# Electrofusion Welder



- **Elektra Light**
- **Universal adapter Ø 4,0 – 4,7 mm**
- **Laser scanner**
- **Transport bag**
- **Manual scraper**

ELEKTRA LIGHT is an universal electrofusion machine & recommend for Laptem Electrofusion fittings. Suitable for welding pipe/fittings for the transport of gas, water, cable systems (HDPE, PP, PP-R couplings from 8 to 48 V)

The Elektra Light machine is made in compliance with international standards. This welding machine's structure is light weight, making it easy to carry around site.

The Elektra Light has an in built memory with 325 welding cycles – with ability to export report PDF file (additional cable required) for transfer to a PC.



# LAPTEM Conduit Reel

## Conduit Reel

The LAPTEM Conduit Reel is designed to make dispensing rolls of conduit a breeze. LAPTEM Conduit Reel keeps conduit and PE pipe organised, and away from harmful site contaminants.

Suits LAPTEM 32mm 100m(300ft) Conduit coils or similar size conduit and PE pipe.

### Features & Benefits

- Save time & money during site installs
- Reduce risk of contamination of conduit
- Reduce risk of scratches and cuts to conduit
- Reduce the frustration associated with coiled conduit
- The reel can be dis-assembled for transport
- Wheels for mobility
- Adjustable size
- Made out of industrial painted mild



**INNER DIAMETER:** 550mm

**OUTER DIAMETER:** 1050mm

# HALOCK™ TWIN PIPING SYSTEM

**NOW AVAILABLE AT LAPTEM AUSTRALIA  
COMPLETE END TO END FUEL PIPE SYSTEM**

- ✓ SOLID, SAFE & RELIABLE
  - ✓ SINGLE & DOUBLE WALL FUEL PIPING
  - ✓ SUITABLE FOR ALL TYPES OF FUELS
  - ✓ EASY TO INSTALL
- ELECTROFUSION FITTINGS**



**HALOCK™**  
PIPING SYSTEM

The Halock™ Piping System has been developed to be a long lasting fuel station & chemical piping system. The system needs no maintenance and is easy to install via its complete range of electrofusion fittings. Available in single and double walled pipework options.



Halock™ Piping System has been around since 1997, and is specially made in Norway by Halingplast A.S, a world leader in high density polyethene flexible piping. The certified solution consists of different sizes of pipework for product lines, vent, vapour recovery and remote filling applications. The unique multilayer PBT liner is suitable for all types of fuels including petrol, diesel, biodiesel, ethanol, methanol, urea and a long list of chemical applications.

# Haz-Pro Safety Pipe



## HAZ-PRO Safety Pipe - innovative and proven in many applications.

### Safety through double-walled construction

The surveillance space between the inner and outer pipes enables permanent leak monitoring using approved leak detection devices operating either on the positive pressure or vacuum principle. The use of these systems is compliant with the highest European safety standards. The system is constructed with safety in mind and will detect any leak above or below the fluid level within a double-walled protective system.

### Safety through permanent monitoring and remote diagnostic systems

The leak detector online diagnosis (LOD) system enables safe and ongoing remote monitoring of a leak detection device. All operating parameters are recorded around the

clock, automatically transmitted to the LOD server and analyzed there. Any irregularities which may be detected in the leak detection system can already be recognized in this way even before the annual maintenance check is due and can therefore be pinpointed more easily and fixed, thus reducing costs.

When an alarm is given, all relevant stakeholders are informed by text message and/or email.

### HAZ-PRO® Safety Pipe - the features

General type approval:

Z-38.4-253

Dimensions: DN 12 – DN 150

Pressure range: 25 bar, PN 25

Temperatures: –10 °C to +50 °C

Laying: below ground and above ground

Applications: Transport of environmentally hazardous, flammable, toxic fluids and gases

### Universal connection fittings

The use of HAZ-PRO® Safety Pipe is designed for the transport of very diverse media. The demands placed by these require connection fittings which are just as reliably tested and certified. With the GRAPA®-modular system it is possible to offer a comprehensive range of different connections, all based on identical principles and workmanship.

In the course of technical modernization and development, the following joining techniques for the connections have proved to be the best:

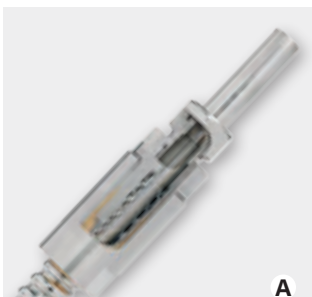
**A** graphite with cutting ring (non-welded)

**B** graphite with soldered end

**C** graphite with rubber seal (non-welded)

**D** TIG welding/hard-soldering

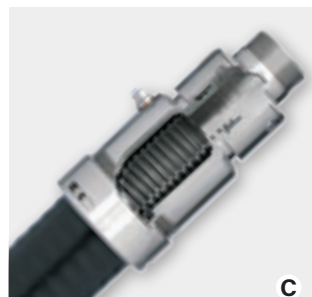
### HAZ-PRO® Safety Pipe - connection fittings



A



B



C



D

# Haz-Pro Safety Pipe



## HAZ-PRO® Safety Pipe - the pipe that protects the environment

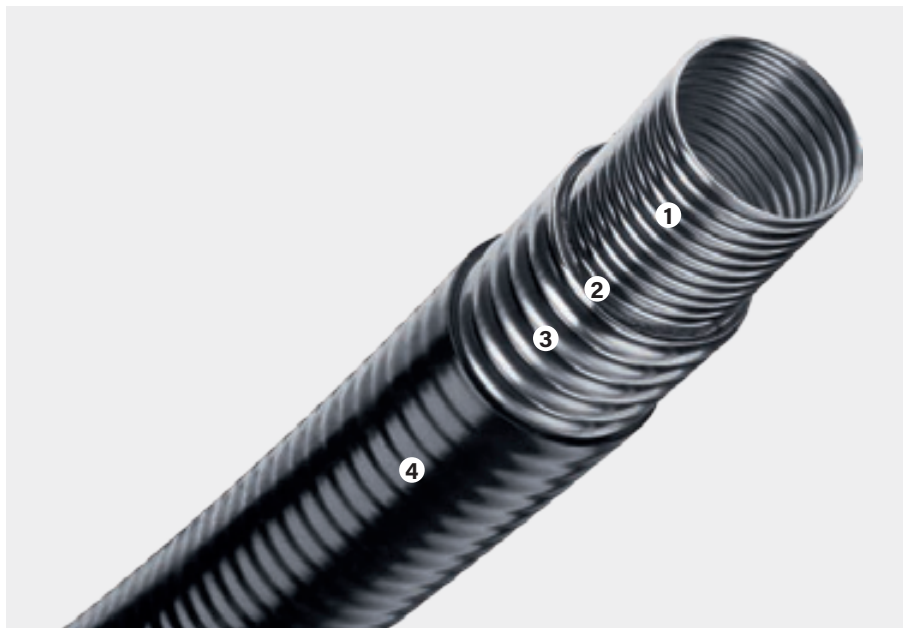
### Laying in protected areas

Interference with an existing ecosystem mostly involves high costs for preparation and also for the restoration of the original surface appearance of the site.

HAZ-PRO® Safety Pipe enables environmentally hazardous media to be transported safely even in nature reserves and water protection areas.

The piping, manufactured in endless lengths, can be laid direct off the drum through its whole length, simply and easily, so that no long construction times are needed. And there are no welded connections on the route and no construction and pressure tests during laying.

In combination with our approved leak monitoring systems Class 1, which can be used without additional requirements in all plants subject to acceptance tests (LAU/HBV). Compliant with all water protection law regulations and the requirements of fire and explosion safety.



### Transport of environmentally hazardous fluids

The material resistance of our products is certified and includes, among others, the following media:

- petrol DIN EN 228
  - diesel fuel DIN EN 590
  - kerosine, Jet A-1
  - heating oil DIN 51603
  - alternative fuels; Ad Blue, biodiesel
  - lubricating oils DIN 51501 ff
  - various alcohols; methanol, isopropanol
  - lyes
  - ammoniac in solution
- and many other media on request.

### HAZ-PRO® Safety Pipe - the construction

- 1 corrugated stainless steel inner pipe (1.4404/1.4571)
- 2 monitoring space
- 3 corrugated stainless steel outer pipe (1.4301)
- 4 polyethylene jacket

# Haz-Pro Safety Pipe



**HAZ-PRO® Safety Pipe -  
the pipe that bends and turns  
every which way**

## Applications

The outer protective jacket of the HAZ-PRO® Safety Pipe is made of UV-resistant polyethylene.

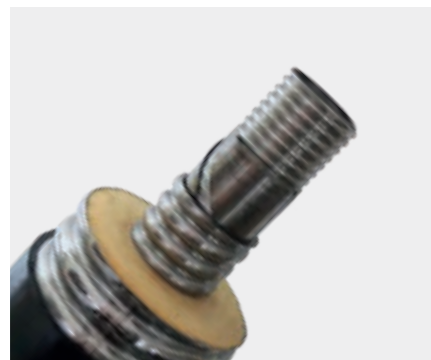
There are no limits to your flexibility in laying it. Whether inside the building through the walls, in crawl space in sub-basements or exposed to the elements above ground.

The pipe construction and the materials used allow HAZ-PRO® Safety Pipe to be operated safely in all areas in which it is necessary to transport environmentally hazardous fluids and gases.

## References/Use cases

Here are just a few examples:

- supply lines for fuelling ships through water
- fuel lines for fuelling aircraft, helicopters
- oil supply lines in power stations
- propane supply for propane fireplaces
- fill pipes for emergency power systems



# Haz-Pro Safety Pipe



## System advantages

### Laying in endless lengths

- less downtime through shorter installation work
- no welding needed in the trench
- environmentally friendly

### Laying options

- below/above ground
- in a duct or protective pipe
- in buildings
- in water protection areas
- in areas threatened by earthquakes

### Connection technology

- TIG welding/hard-soldering, PN 25
- GRAPA® compression joint/hard-soldering, PN 10
- GRAPA® compression joint/screwed connection, PN 25, non-welded

### Flexible

- no elbow fittings needed under ground
- ex-works corrosion proofing along the entire length
- can be laid in areas prone to subsidence and on slopes without any special precautions being needed

### Transport

- as a coil
- on a drum
- as a straight line

## Monitoring

- positive pressure
- vacuum
- LOD - remote leak detector online diagnosis

## Integrated fittings

- stays monitorable even when the route is extended
- moulded fittings
- monitorable flanged connection fittings

## Fire protection

- R90 or R120

## Minimal costs for drainage

- safe laying even in waterlogged ground and where there is a high ground water table
- no need to lower the ground water table
- can be used when crossing rivers and other bodies of water

## Minimal costs for excavation work

- narrower trenches and shorter routing
- less spoil
- reduced costs for restoring the surface appearance
- cost reductions for securing the site and for road and pedestrian bridges

## Just go around obstacles

- crossings underneath and over obstacles with no extra costs
- no additional unplanned work through re-routing existing lines

## Environmentally friendly laying

- can be exactly fitted to the local circumstances
- trees and bushes can be given a wide berth

## Technical data HAZ-PRO® Safety Pipe

Type FSR ID/OD	DN	PN	Weight kg/m	Min. bending radius cm	Max. length deliverable m
13/ 25	DN 12	25	0.52	30	500
30/ 48	DN 25	25	1.40	50	1000
39/ 60	DN 32	25	2.00	60	1000
48/ 71	DN 40	25	2.90	60	1000
60/ 83	DN 50	25	3.80	70	1000
75/107	DN 65	25	6.20	90	500
98/134	DN 80	25	9.00	120	500
127/175	DN 100	25	18.10	150	250
200/262	DN 150	25	29.00	400	250

# Tank Gauges, Alarms & Leak Detection

## Tank Gauges

Laptem stock a range of Digital Tank gauges suitable for Diesel, Oil, Water and other liquids. From basic local tank gauging, to remote and modbus output for BMS. Custom level sensors, pressure transducers, and level switches are also available.



T5020 Digital Fuel Tank Gauge



C2020 Digital Fuel Tank Gauge



4-20mA Pressure Transducer Level Sensor

## Tank Alarms

Laptem stock a wide range of level alarms for your tank application. Single, Multi-stage switches are available in battery and 230v, with local visual and audible indicators, and optional relay outputs.



IECEX Fuel Tank Alarm Kits - Premium



IECEX High Level Tank Alarm - Basic



High Level Diesel Tank Alarm

## Leak Detection Systems

Leak Detection System to Monitor the interstitial space in double wall pipework systems. The leak detector works on the pressure principle. Visual and audible alarms are triggered by a pressure drop as a result of leaks in the pipework.



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