



# Backfill Pipeline

Solutions



Your **One-Stop-Shop** For

**BACKFILL PIPELINE PRODUCTS**



**Your Representation in Southeast Asia**



**Schaeffer Trading & Consulting Co., Ltd.  
Thailand**

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# ABOUT US

Backfill Pipeline Solutions (BPS) specializes in the supply of underground mine backfill piping products.

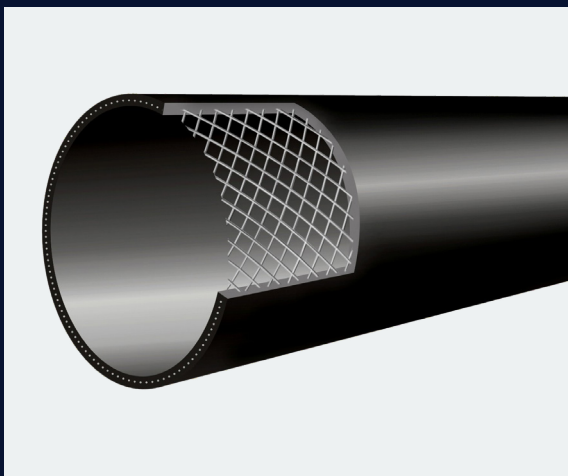
BPS's mission is simple; to supply the best mine backfill products at the best price.

BPS also has unrivalled service and product knowledge.

The directors of BPS; Mathew Revell, Richard Pearce and Jamie Chaffey collectively have over 35 years' experience designing, installing and operating backfill systems globally.



## OUR SPECIALTY



**STEEL WIRE REINFORCED  
PIPE (SRCP)**



**STEEL RUBBER LINED  
FLANGED PIPE**





### QUALITY CONTROL

Quality assurance documentation is supplied with all pipe, providing traceability & confidence in the long term product performance.



### EXPERTISE & SUPPORT

Full product support from our backfill systems experts is available for the life of the installation.



### INSTALLATION & EXPERTISE

The directors of BPS have over 35 years' experience designing, installing and operating backfill systems globally.



**ABRASION RESISTANT  
COMPOSITE PIPE**



**STEEL PIPE (CUT GROOVE &  
FABRICATED)**

# STEEL WIRE REINFORCED PIPE (SRCP)

## ■ INTRODUCTION OF A REVOLUTIONARY PIPE FOR MINE BACKFILL

Backfill Pipeline Solutions (BPS) is proud to introduce Steel Reinforced Composite Pipe (SRCP) to the global mining backfill sector, as a replacement for steel pipe. This provides the opportunity to significantly improve the safety of underground backfill pipe installation and massively reduce the cost of installation.

The pipe uses a hybrid structure of wire strands bonded inside an inner and outer layer of polyethylene PE100 material. The result being a relatively lightweight pipe compared to steel with near similar pressure ratings (SRCP maximum pressure rating of 7 Mpa).

SRCP has been used in Asia for many years throughout a range of industries as a cost-efficient solution when homogenous high density polyethylene (HDPE) cannot provide sufficient pressure rating. It is now in use across many Australian backfill operations, showing great results in durability.

## ■ INNOVATION WITH SRCP

Nearly all global backfill operations maximize the use of HDPE pipe due to its weight and small amount of flex resulting in significantly improved safety and cost of installation. However, since the pressure rating of HDPE is limited a large proportion of backfill piping is steel.

SRCP changes all this with a low weight pipe with small amounts of flex and sufficient pressure ratings to replace steel.

## ■ PRODUCT SPECIFICATION

SRCP is designed and supplied in accordance with a range of global standards. Technical Bulletin BPS-TB1 summarises the full composition of SRCP and the relevant standards. SRCP is subject to strict ongoing quality control testing that is similar to polyethylene pipe.

In addition to standard SRCP, SRCP is also available with an internal wear abrasive liner (white) for abrasive mine backfill and slurry materials.

**THE REVOLUTIONARY MINE BACKFILL PIPE TO REPLACE STEEL AT ONE QUARTER OF THE WEIGHT**

## PN & SPEC OF PIPES

Nominal Outer Diameter (mm)	Mpa											
	0.8	1.0	1.25	1.6	2.0	2.5	3.0	3.5	4.0	5.0	6.3	7.0
	Minimum wall thickness (mm)											
50		4.5	4.5	4.5	5.0	5.5	5.5	5.5	6.0	8.5	9.0	9.0
63		4.5	4.5	4.5	5.0	5.5	5.5	5.5	6.5	8.5	9.0	10.0
75		5.0	5.0	5.0	5.0	5.5	6.0	6.0	9.5	9.5	9.5	10.5
90		5.0	5.0	5.5	5.5	6.0	6.0	6.0	10.0	10.5	10.5	11.5
110		5.5	5.5	7.0	7.0	7.5	8.5	8.5	11.0	12.0	12.0	12.0
125		5.5	5.5	7.5	8.0	8.5	9.5	9.5	11.0	11.0	12.0	12.0
140		5.5	5.5	8.0	8.5	9.0	9.5	9.5	11.0	11.0	13.0	13.0
160		6.0	6.0	9.0	9.5	10.0	10.5	10.5	11.0	12.0	14.0	14.0
200		6.0	6.0	9.5	10.5	11.0	12.0	12.5	13.0	13.0	15.0	15.0
225		8.0	8.0	10.0	10.5	11.0	12.0	13.0	13.0	13.0		
250		10.5	10.5	12.0	12.0	12.5	14.0	14.0	14.0	15.0		
280	9.5	11.0	11.0	13.0	13.0	15.0	15.0	17.0				
315	9.5	11.5	11.5	13.0	13.0	15.0	15.0	18.0				
355	10.0	12.0	12.0	14.0	14.0	17.0	17.0	19.0				
400	10.5	12.5	12.5	15.0	16.0	17.0	17.0					
450	11.5	13.5	13.5	16.0	18.0	18.0						
500	12.5	15.5	15.5	18.0	19.0	22.0						
560	17.0	20.0	20.0	22.0	22.0							
630	20.0	23.0	23.0	26.0	26.0							
710	23.0	26.0	29.0	30.0								
800	27.0	30.0	32.0	34.0								
900	29.0	33.5	35.0	38.0								
1000	34.0	37.0	40.0									

### PRODUCT RANGE

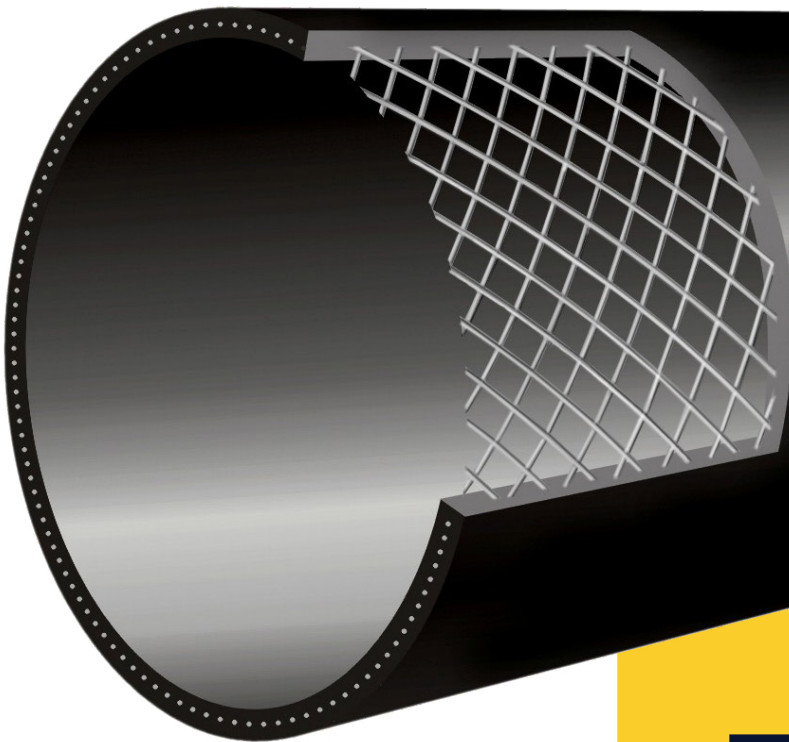
- ✓ Standard lengths (m): 5.8, 3 and 1
- ✓ Victaulic couplings compliant for seamless changeover from steel
- ✓ Pipe is colour coded for ease of identification between pressure grades



# A ADVANTAGES OF SRCP

## ■ ADVANTAGES OF SRCP IN BACKFILL OPERATIONS

- ✓ 65% – 75% lighter than Schedule 80 steel pipe.
- ✓ Light weight and convenient for both transportation and construction, it offers high overall reliability. Under normal conditions, it has a service life of up to 50 years
- ✓ Higher strength, rigidity and impact resistance compared to normal PE wall piping
- ✓ Mild flexibility afforded by the cross-woven steel wires provides increased ease of installation over steel pipe.



## ■ CONNECTION MODE

- ✓ Victaulic grooved couplings (Style
- ✓ HP70-ES or 177) DN50 – DN300



## ■ PERFORMANCE FEATURES OF THE NEW SUPER ABRASION RESISTANT SRCP

The abrasive conditions that are inherent in backfill operations have a direct impact on the life cycle of backfill piping installations. The introduction of abrasive resistant SRCP increases the life cycle by up to 10 times that of steel installations. The inner abrasion layer greatly improves the abrasion resistance of the pipe during slurry and solid-medium conveying and therefore prolongs the service life of the pipe.

### **GOOD CORROSION RESISTANCE**

With double-sided corrosion resistance performance, it is not only resistant to acid, alkali and chemical corrosion, but can also resist electrochemical corrosion and does not produce the galvanic cell effect with the stray current of the environmental soil. Therefore, it is safe, reliable and proven effective for conveying paste throughout underground installations.

### **GOOD WEATHER RESISTANCE**

When used underground, it has the equivalent weather resistance to that of PE pipe and when operating at low temperatures of  $-40^{\circ}\text{C}$ , there is no physical property change or frost cracking. It can be used all year round, with no moisture condensation in winter and no need for heat protection of the outer wall in summer (the thermal conductivity is  $1/200$  of that of steel).

### **GOOD CONVEYING PERFORMANCE**

When compared with traditional pipe, such as steel pipe, this series of pipe has a smoother inner wall without scaling, reduced conveying resistance and better energy saving effects, thereby increasing the conveying capacity between 20-30%.

### **EASY INSTALLATION**

Due to its light weight and reduced jointing requirements, it can be easily and quickly installed. It has sufficient capacity to resist underground movement and end load, therefore, expensive anchoring methods normally required for installation are unnecessary.

# V ALVING AND INSTRUMENTS

## ■ UNIVERSAL PANEL FOR ALL VALVES

BPS is an official distributor of Victaulic and Proeger Flow Solution valving products which serve as dump and diversion valves in the mine backfill market.

To provide the control functionality required for these valves BPS offer a universal panel for the full product range of dump and diversion valves.

The panel is supplied with either pneumatic or electric actuation control (depending on customer choice) with the panel simply requiring UG mine power and comms input (and compressed air if pneumatic option is selected).

Pipeline instrumentation is also managed through the panel so that only a single panel is required for each location of equipment. The panels are linked together and then all data transmitted to the surface plant control room.

## ■ LOW VOLTAGE = LOW RISK

BPS's latest innovation is 48 V DC actuation of the Victaulic 725S. This low voltage solution provides an electrically safe system complete with full battery backup.

The fail-safe battery backup enables two valve cycles (1 open + 1 close) so the valve is always available to protect the backfill pipeline.



VICTAULIC 725S



PROESAFE





## KEY SPECIFICATIONS

### ELECTRICAL, PNEUMATIC & COMMS

- ✓ Supply – 1,000V 3Ph
- ✓ Valve Actuation – 48V DC
- ✓ Instrumentation – 24V DC
- ✓ Valve Actuator Batteries – 12V DC (4 OFF)
- ✓ PLC Battery Backup – 24V DC
- ✓ Pneumatic Supply – 6 Bar mine air
- ✓ Communications – Ethernet over Fibre backbone  
(Other Supply & Instrumentation voltages available upon request)

### PLC AND OPERATOR INTERFACE

- ✓ PLC – Allen Bradley CompactLogix 5370 Controller
- ✓ Operator Interface – Allen Bradley PanelView 800 HMI or Push-buttons with indication lights and digital displays
- ✓ Camera (Dump Valve) - Samsung 4MP IR. Allows for the dump valve to be viewed from the surface control room providing critical visual confirmation during a dump event.

### PANEL - GENERAL

- ✓ Rating – IP66
- ✓ Material - 316SS painted French Blue with protective cage
- ✓ Safety – Flashing beacon and siren for alert of nearby personnel to valve operation. Reflective tape for proximity protection



**KNIFE-GATE DUMP**

**A UNIVERSAL PANEL FOR CONTROL OF THE FULL RANGE OF DUMP AND DIVERSION VALVES OFFERED BY BPS**

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