



INFRAPIPE DATASHEET - SLIPLINING

WHAT IS SLIPLINING

Sliplining is the act of pulling a pipe through another pipe or structure, typically to renovate or preserve the existing pipeline

WHY IS SLIPLINING SO GOOD?

- ✓ Save money directly on excavation and fill
- ✓ Save money indirectly on traffic management and site costs
- ✓ Save money directly in pulling under existing services
- ✓ PE has 18% more hydraulic capacity than concrete
- ✓ Existing connections are easily integrated

HOW SUCCESSFUL IS IT – CASE STUDY

NELSON CITY COUNCIL STATED THAT SLIPLINING SAVED THEM A MILLION DOLLARS

[See the video](#) or [read the article](#)

Of the 149m of SN8 DN1800 used to replace an 80 year old concrete box culvert, 60m was sliplined under the State Highway in just 4 days – at 17m a day.

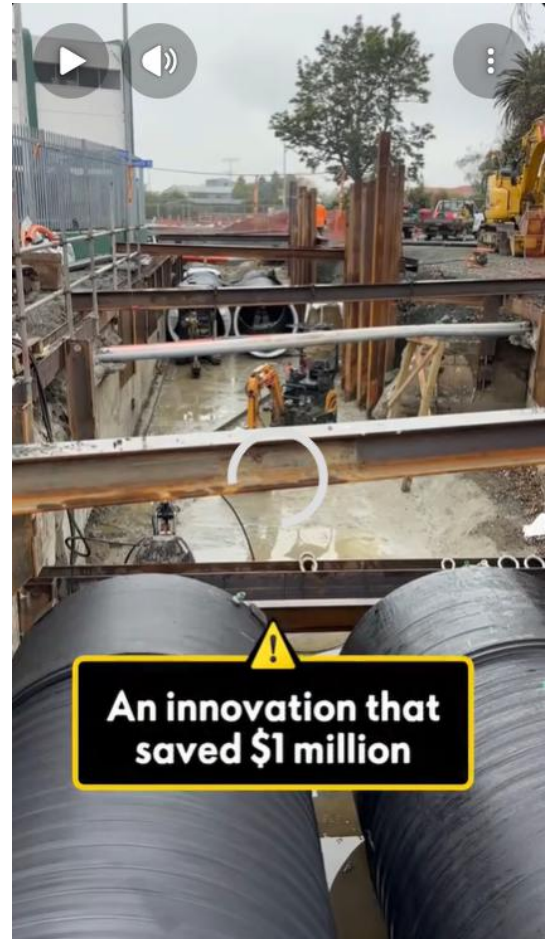
WHERE SHOULD IT BE USED?

- Anywhere the traffic management costs will be substantial
- Whenever an existing pipe is failing or has been condemned
- Wherever the asset manager needs to minimize disruption
- Where existing services present cost and risk

HOW IS IT DONE

1. Pits are dug at each end of the required pipeline
2. The pull pit contains the pulling machine with a strain gauge
3. The launch pit is large enough for the pipe lengths
4. Materials may be laid to reduce friction
5. The pipe or structure is inspected prior to pulling
6. The pulling head is laid and connected
7. The first pipe is welded to the pulling head
8. A brace at the end of the pipes is connected
9. The pulling machine pulls on the head and the brace
10. The next pipe is laid and welded
11. Repeat 8-10
12. Complete the terminations

If required slip couplers are used to weld the final pipes.
Pipes can be pulled into structures or concrete cast around them.





WHAT ARE THE FIRST STEPS TO CONSIDERING SLIPLINING?

1. Contact INFRAPIPE
2. Supply load & dimensions
3. INFRAPIPE calculates pipe size and confirms hydraulics
4. INFRAPIPE then calculates forces for length
5. INFRAPIPE designs pulling heads, terminations
6. Then an indicative quote can be prepared

HOW FAST IS SLIPLINING?

Whilst a weld can take as little as an hour (including cooling), it is common to double-weld sliplined pipes so progress is up to 4 * 5.8m lengths in an 8 hour shift.

If the launchpit permits, sections can be welded into 12m lengths prior to being laid, giving a potential speed of 45m/day (or longer with overtime).



WHAT DOES INFRAPIPE PROVIDE

- The pipe design with pulling head
- Pulling stress calculations
- PS1 / engineering signoff
- Onsite welding team with equipment and generators
- Pipes, pulling head, pulling shackles and strops
- Friction reducing materials (PE sheet or rod)
- Weld testing equipment

Note that the pipe and pulling head design and pulling stress calculations remain the intellectual property of INFRAPIPE and may not be shared with other suppliers or used in any way for the design, evaluation or installation for the project.



WHAT DOES THE CONTRACTOR PROVIDE

- Pulling machine
- Back brace
- Shelter
- Lifting equipment for pipes

WHAT ABOUT TERMINATIONS?

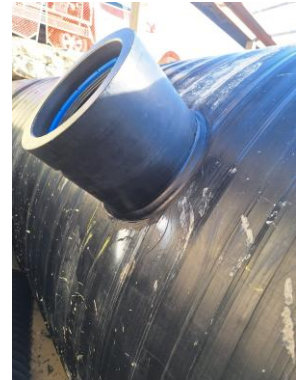
- ✓ **Anything can be done as normal.**
- ✓ For Nelson, pipe shorts were precast into the outfall.
- ✓ At one end, pulling heads were joined to the existing pipeline string using split slip couplers after the final pull was achieved with an excavator (only 8T lift).
- ✓ At the other end, a grit sump and access riser was laid with a subsequent pipe then being cast in a mixing box and cut to suit (mixing box can be PE chamber).





WHAT ABOUT LATERALS?

As shown to the right, laterals of any type can be incorporated into the flow by either cutting an aperture, joining to the lateral and then cutting to length and welding, or by incorporating a fitting into the pipe which accepts the lateral (often with a shearband or similar coupling).



IS SLIPLINING A COMMON PROCEDURE?

In the rest of the world – yes, but not in NZ where concrete pipe limitations have always shaped the market expectation of innovation. Some examples are the renovation of a 160m of old steel coolant pipe in an Estonian power station with DN1400 (as shown above), and a 379m long concrete waste water line in the UK.



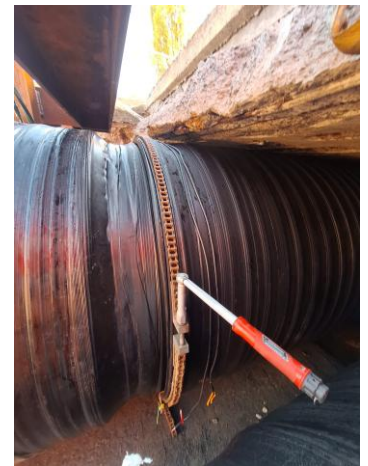
WHAT ABOUT EXISTING SERVICES?

The beauty of sliplining is that existing services are unaffected, saving huge sums of money, disruption and risk!

Nor is there any significant vibration or impact to affect them or the soil around.

WHAT ARE THE TOLERANCES

INFRAPIPE would typically work with a 10mm clearance.



IS SLIPLINING THE SAME AS THRUSTING OR DRILLING?

No sliplining requires an existing pathway down which the pipe can be pulled. However solid wall HDPE pipes can be used for thrusting typically up to 100m.

CAN SLIPLINING BE DONE FOR PRESSURE PIPES?

Yes and no – it can be achieved from a pipelaying perspective but there is less commonly an hydraulic advantage however if the flow can be maintained by running at higher pressure then yes sliplining is an option.





SOME COOL PROJECTS ✓ **INFRAPIPE™** ✓ **INFRA TANK**
SUSTAINABLE SOLUTIONS FOR GENERATIONS TO FOLLOW BEEST DELIVERED UNDERGROUND TANKS IN NZ



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