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2023 TECHNICAL AWARDS ENTRY FORM

Entry Deadline: Thursday 30th March 2023

Please tick which categories you are entering (entries may be submitted in multiple categories using the same entry form)

- | | |
|-------------------------------------|-------------------------------------|
| Landbased Pipeline Project Award | <input type="checkbox"/> |
| Landbased Pipeline Technology Award | <input checked="" type="checkbox"/> |
| Utility Pipeline Project Award | <input type="checkbox"/> |
| Utility Pipeline Technology Award | <input checked="" type="checkbox"/> |
| Subsea Pipeline Project Award | <input type="checkbox"/> |
| Subsea Pipeline Technology Award | <input type="checkbox"/> |
| iICE Award | <input checked="" type="checkbox"/> |

1. Brief title of entry: LaySAFE[®] Coiled Pipe Safety Installation Device

2. Company name: Innoflow

3. Signed: 

4. Date: 30/03/2023

5. Company contact name: Jack Simpson

6. Telephone: 01325 238 328

7. Email: jack@innoflow.co.uk

8. **Precis of your entry (50 words):** LaySAFE[®] is a new innovative solution offered by Innoflow which addresses a major safety problem relating to the release of stored energy within coiled pipes, which has been a challenge in the industry since the introduction of coiled pipe more than 25 years ago.



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9. Summary of entry:

Background:

Since the introduction of coiled HDPE pipe into the industry over 25 years ago, the industry has been plagued with health and safety incidents due to the recoil effect of the pipe when it is installed and being pulled from its coiled state into its straight in-service state. In particular the whipping up of the tail end as it leaves the pipe coil trailer. Lacerations to the face, broken jaws, missing teeth, concussion, to name a few of the reported incidents. There are also reported/documented incidents where members of the public have also been struck by recoiling pipe, resulting in hospitalization and near fatalities.

Numerous methods have been used to try and address this challenge, including strapping to the trailer, strapping to an excavator/digger, using a pipe pusher, using a pipe clamp. However, incidents are still happening as these all rely on human intervention and mistakes/inconsistencies happen. Also, all of these methods only seek to restrain the pipe and are not actually reducing the stored energy in the pipe, so when the strap/pusher/clamp is released, there is still a problem with stored energy.

Solution:

The LaySAFE® solution works by removing the stored kinetic energy from the pipe automatically as it is removed from the existing pipe installation trailer. It does this using its novel patent pending design which reduces the curvature of the pipe by up to 3 times its original coiled state, and does so without the need for any complicated hydraulics or electronics thereby providing a simple, robust, maintenance free solution. This requires less operator training offering more flexibility in workforce.

The solution was first tested full scale in late 2020 and underwent further optimization and testing throughout early 2021. Since then LaySAFE® has supported with the installation of more than 100,000m of coiled pipe across multiple projects in the UK.

For the projects which utilized the LaySAFE® solution, they reported no health and safety incidents, a significantly more efficient installation (Northumbrian Water calculated a £4,500 saving per 100 meters of pipe installed using LaySAFE® over the “stick” installation alternative) and improved handling jointing and termination of the pipe due to the reduced curvatures.

Please visit www.laysafe.co to see the system in action.

2022 Submission:

The LaySAFE solution was also entered into the 2022 pipeline guild awards however was unsuccessful. The feedback was that this technology already exists in the market from the likes of Steve Vick in the UK or Line Tamer in the US. This is something we'd like to address in our submission this year. For us there is a clear distinction in these technologies.

Starting with the technologies such as pipe pushers, pipe handlers, pipe clamps. These products are first and foremost pipe pushers, pipe handlers and pipe clamps, designed and intended for their purpose. Not devices for removing the stored energy from pipe and are not effective nor have a track record in doing so, despite sometimes being advertised as such.

The only similar technology to LaySAFE is the US based Linetamer which seeks to achieve the same goal as LaySAFE as its primary purpose. However this technology has not been successful in the UK. This is because the system is a complicated hydraulic solution which (in the UK) requires separate transportation (more vehicles, more cost, more pollution), a skilled and experienced operator, hands on maintenance and is of a cost not desirable to many contractors. Also due to the way such products apply hydraulic load to the pipe, its easy to overload the pipe causing ovalisation, which is a common problem. As a result such solutions are not commonly used in the UK.

LaySAFE is a simple solution, which is transported and connected to the pipe trailer, which automatically reduces the stored energy as it leaves the pipe trailer. It requires no setup and uses the same method and equipment as before so no specific training or skillset is required.

Conclusion:

LaySAFE is provided the industry with a solution which it did not have before by extending the limit of current technology. It is now adopted within the water industry with possible future applications in gas. It has provided a clear and identifiable step forward in cost reduction (compared with “stick” installation as documented by NWG). It has also provided a clear and identifiable step forward in safety (incidents were widespread before, whereas non have been reported with LaySAFE).

Innoflow is a small technology business and our roll out of LaySAFE has been modest to date however the technology is now being used on projects across Northumbrian Water, Anglian Water, Severn Trent and Welsh Water. We're now in cooperation with a large hire business (Sunbelt) as well as a trailer manufacturer (ATE) meaning that in 2023 the roll out and general awareness of the technology should reach a much wider UK coverage.

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Ancillary Entry Information

(Entry restricted to normal type face and font size on this form plus no more than 3 pages of A4 drawings or photographs)

Track Record

10,000's km of pipe
From Ø90 – 180mm

Water Companies



Contractors



Pipe Manufacturers



Innoflow lay flat system

JC Jackson, Craig (02) <Craig.Jackson2@balfourbeatty.com>
To: Jack Simpson

Today at 08:23

Hi Jack

Just a quick note to say thanks for all your help with your lay flat system for the pipe coil trailers, I would like to pass back some positive feedback from the team on site who have been using this daily as we have had around 30 x 100m coils of 180mm SDR 11 pipe through your system and some 125mm SDR 11 pipe on a separate scheme.

The team have said how good it is at removing the stored energy from the coiled pipe which as we all know is quite brutal when pulling pipe from a coil trailer, once the pipe was pulled off the trailer through your system it is a pretty straight pipe that can be laid out and butt fused together with no threat to the operatives working with the pipe.

As I explained we have had incidents in the past where individuals have been quite seriously injured so this is definitely something we on the Anglian water @one alliance will be looking to use on a regular basis moving forward with all coiled pipe to keep our employees safe.

Thanks again for your help and I look forward to working with you again.

Regards
Craig

Craig Jackson
Site Manager

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"LaySAFE now allows us to lay pipes far much more efficiently, and more importantly eliminates the historic Health and Safety risks associated with pulling coiled pipes from trailers. We provided feedback in the early development of the product, and used it in early trials throughout 2021. LaySAFE will go onto be a huge benefit to the whole pipe laying industry."



21/11/2022 – Business Case

What our people say:

"The trailer and LaySAFE were absolutely perfect for use of 180mm coil pipe. It pulled the large pipe off straight from the trailer and it laid perfectly straight which made connections easy to do. It was impressive." Craig Tooze, Morrison Water Services Project Manager.



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