



An Interview with EFNARC Specialist Louis Fraser about Shotcrete

Getting in-depth with a world leading EFNARC Assessor and the founder of tunnelling and mining experts T&M Specialists Ltd to see what advice he has for those in or wanting to be in the shotcrete business. *Interview by Daniel (Dan) Puzny, 7th May 2020*

Dan: Firstly, how many years have you been involved in shotcrete/sprayed concrete?

Louis: 22 Years and counting.

Dan: What was your first shotcrete project?

Louis: Falkirk Millennium Link, Canal Tunnel. The method of application was Hand Spray using Wet Mix.

Dan: Did you know much about the project before you began working on it?

Louis: The project was quite high profile, and my stepfather was already working there so, I knew a little about it and was very interested to learn more.

Dan: How did you feel when the project was complete knowing you had a hand building it?

Louis: I felt very proud to be part of this project, as it was my first tunnel project it was a different world and the feeling of satisfaction upon completion was overwhelming. However, there was still a lot of work



to do after my section was complete, so I never did see the final product. I always wanted to return upon the opening and go through the tunnel, but I still have never had a chance.

Dan: Is this where you learned to spray concrete?

Louis: This was where I began to learn how to apply sprayed concrete. But as there are so many different application methods for different scenarios, what I eventually learned was only the very basic stuff. I would say, you never stop learning with Sprayed Concrete. Everywhere you go you see new systems or even simple little tricks which people have implemented.

Dan: Did you make any mistakes the first time?

Louis: Making mistakes, like anything is a vital part of learning the trade. Complacency is probably the worst mistake you can make, and it still happens. The application can be exhausting and if you are working long shifts doing something so physical, it can easily cause mistakes.



Dan: Looking back at it now, what were the things that you learned that still hold true today?

Louis: My stepfather said on my first day, it is a very difficult trade but if you stick at it and work hard you will have a job for life. It is certainly not the most

appealing way to make a living but when you become good it is very satisfying to look back and see the artwork of your application. People take a lot of pride in this and I certainly do still to this day.

Dan: Was there anyone in particular that you remember as a teacher to you on that project?

Louis: Yes, my stepfather, Stephen Dodd, once I got used to him shouting at me that was. Things get very stressful in these situations and shouting is part of the game. It is always nice to enjoy a cold beer at the end of your shift and still have a laugh about it. I remember buying my first mobile phone at the time, a Nokia 3210, and after a long day, I would play the Snake game to relax and try to sleep.

Dan: Have you ever trained people in sprayed concrete?

Louis: I train more people now than I do apply myself. Training is one of the most satisfying parts of the job now. I have got myself into a position where I get to travel the world training people and certifying them so they can begin their journeys. I am now an EFNARC Certified Examiner which helps me pick up a lot of these projects globally.

Dan: What are the most important things to master?

Louis: The entire process is important; however, I would say the 2 most important things after safety are:

- PREPARATION – It is critical that you carry out all the preparation required prior to application, this includes – survey checks for underbreak – Scaling any loose rocks – Washing down (hydroscaling) – lubrication of hoses – pre-start checks on equipment – and ensure accelerator flow is correct. If all this is done correctly you will be set up much better.
- ASSESS THE MIX – It is vital that the mix is correct prior to attempting to pump it as if it's not you will have all sorts of troubles attempting to apply it.

Of course, application and cleaning are also critical but if you get the first 2 correct the rest will be much easier to master.

Dan: What advice would you give to young people getting into this business today?

Louis: Be prepared to work hard, sweat lots and get dirty. There is no easy way to avoid this if you wish to do this as a trade. Also, there are many hazards involved so be safe. Never take risks as it is not worth it.

For further information

T&M Specialists website: www.tandmspecialists.com

T&M Specialists Shotcrete Videos: www.tandmspecialists.com/videos

EFNARC website: <http://www.efnarc.org/>

Falkirk Wheel Video: <https://www.youtube.com/watch?v=rVYGG9TqsT4>



The **Falkirk Wheel** is a rotating boat lift in central Scotland, connecting the Forth and Clyde Canal with the Union Canal. The lift is named after Falkirk, the town in which it is located. It reconnects the two canals for the first time since the 1930s. It opened in 2002 as part of the Millennium Link project.

Construction of the canal required 250,000 m³ (8,800,000 cu ft) of excavation, a 160 m (520 ft) canal tunnel of 8 m (26 ft) diameter, aqueducts of 20 m (66 ft) and 120 m (390 ft), three sets of locks and a number of bridges, as well as 600 m (2,000 ft) of access roads.