



RISK & HAZARD MANAGEMENT

# 001 - Description of Proposed Changes

Saffil Ltd (also known as Unifrax/Alkegen)  
Line 4 Permit Variation



Safety Risk



Business Risk



Environment Risk

## Document History

Version	Issue	Date	Notes	Author	Reviewer
1-2	-	23/03/22	Working draft with client.	J. Carroll R. Nibbs	C. Nicholls
3	1	01/07/22	Issue as part of permit application.	J. Carroll R. Nibbs	C. Nicholls R. Ritchie R. Nibbs

## Contents

	Document History .....	1
1	Introduction .....	2
2	Proposed Changes.....	3

# 1 Introduction

---

This document provides the information required on Form C2 Section 2.

Please note that this document refers to the site as Unifrax Widnes and to the owning company as Unifrax. Unifrax was the name of the American company that owns Widnes site. A further complexity is added because due to a recent merger, Unifrax has changed its name to Alkegen. So, it is possible in correspondence or discussions that the site may be referred to as Alkegen.

The legal entity that owns the site at Widnes is however called Saffil Ltd and remains so despite the name changes to Unifrax and now Alkegen – and it is in this name that the EPR application is made on the accompanying forms.

## 2 Proposed Changes

---

This permit application is being made for the installation of a new production line (Line 4) at Unifrax Widnes, Pilkington Sullivan Site WA8 0US. The application also formally recognises that Line 1 (which was shut down in late 2018 and has not run since) will never be operated again to make fibre and will therefore be removed from the permit. Some of the product handling equipment including a reeling machine and a baler, previously associated with Line 1 will be retained for re-processing and packing of site generated material. Dust extraction systems serving this equipment will also be retained.

The new production line (Line 4) will be capable of making all the existing grades of fibre currently made on Lines 2 and 3. Line 4 however will also be capable of making a new, predominantly silica (silicon dioxide) fibre (henceforward referred to as silica fibre). Lines 2 and 3 remain unchanged from the previous permit variation granted in May 2011.

A Town Planning Application including Environmental Impact Assessment (EIA) is also being made to Halton Borough Council for this project and will be submitted alongside this EPR permit application. This is the same approach as used in 2011 for the previous Line 3 project at Widnes. A scoping opinion has already been published by Halton Borough Council which includes the EIA requirement.

Current production from Widnes serves a wide range of customers in industrial and automotive applications. Most customers are overseas.

Typical industrial applications include furnace linings and modules, specialist refractory boards and shapes and filtration applications. This together with other specialist markets.

Automotive applications form a larger part of the overall volume with the main application being gaskets in catalytic converters (autowraps). Fibre from Widnes is exported to sister factories in North Wales and South Africa for conversion into autowraps using a wet laid process. It is also supplied to other customers who operate similar processes. Other automotive applications include heat protection, battery separators, metal matrix reinforcement and diesel particulate filters.

Line 4 is being built to service demand for SiFAB™, a new silicon fibre product developed by Unifrax for use as an anode material in Lithium-ion rechargeable batteries. SiFAB™ offers significant advantages in charge density and physical battery size due to its chemistry and is a very significant opportunity to improve for example portable battery life, electric vehicle range and reduce weight in hand-held devices.

SiFAB™ is a pure silicon fibre made by converting the silica (silicon dioxide) fibre made at Widnes into the required silicon fibre by reduction. The first commercial production line for SiFAB™ is currently planned for installation in Indiana, USA. Silica fibre from Widnes will be exported to this facility and future capacity for conversion into SiFAB™.

Line 4 will also have capability to make other Saffil and M-Fil fibres in order to fill capacity and maintain sales revenue as the market for SiFAB™ develops.

The main differences between Line 3 and the proposed Line 4 are as follows

- Non-hazardous silica solution raw material.
- Capability to make, mill and bag silica fibre finished product.
- Nine fibre production (spinning) chambers in the manufacturing process, rather than the eight that are in service on Line 3.
- Heat treatment ovens and furnaces on Line 4 will likely be natural gas fired (compared with those on Lines 2 and 3, which are electrically fired).

The building currently housing Line 3 has space for a new production line. It is proposed to co-locate Line 4 in this building, which will be extended to the east.

Additional silica fibre processing and handling facilities will be added in a building extension to transport the fibre from the production line and jet mill to the product form required. An additional dust extraction stack (A12b) is therefore required in addition to the general Line 4 dust extraction stack (A12a).

A new dual natural gas/diesel fired boiler will also be installed in the existing boiler house to provide additional steam to support Line 4. The boiler exhaust will be through the existing three core stack (A13). There will also be a stack (A14) for the exhaust of natural gas combustion products from the indirect gas heating of the heat treatment ovens and furnaces as mentioned above.

The addition of Line 4 will increase the total output of the site by approximately 50%.

There will be four new emission points to air, which largely replicate the emission points for Line 3. They are A11 (Line 4 main stack), A12a and A12b (dust extraction and collection units), A13 (natural gas/diesel fired boiler) and A14 (indirect gas firing of ovens and furnaces). Emission points A1 (Line 1 main stack) and A8 (decommissioned standby oil fired boiler) will be removed from service. Emission point A2 (dust extraction and collection) will remain in service to support fibre reprocessing and repacking operations, unconnected with the operation of Line 1 – which will be permanently removed from service.

There will be a new Line 4 emission point to sewer S5, which will have very similar emissions to the corresponding Line 2 and Line 3 sewer connections S2 and S3. Emission point S1 will be retained in service to support closely defined washing operations. Discussions are ongoing with the industrial sewerage provider (United Utilities) in order to establish a revised site consent to discharge to industrial sewer from these emission points.

An updated cooling tower will be installed to serve the site as part of the Line 4 project, this will discharge to emission point W2 as previously. Existing stormwater drain networks W1 and W3 will remain in service to provide site drainage to controlled waters.

With regards to emissions to air, the new line 4 when operational is expected to be less polluting than the current line 1. So, in the simplest sense, the variation will result in a

lower overall environmental impact than the previous site operation of Lines 1, 2 and 3 together.