

Independent Audit
on
**The National Bicycle
Tyre Recycling Scheme**

30th October 2021



National Bicycle Tyre Recycling Scheme

Industry Audit 30 October 2021

Oaktree Environmental Limited has been engaged to conduct periodic independent audits on the National Bicycle Tyre Recycling Scheme run by Velorim Limited on behalf of the UK cycling industry.

The scope of this engagement is to audit the collection, aggregation and reprocessing of waste bicycle tyres and inner tubes and check that Velorim are delivering on the promises they are making to the cycling industry.

Specifically, these include the following statements, which have been revised and expanded since the last audit.

Zero Dumped in Landfill

We believe that too much material is mindlessly discarded into landfill across the world. The cycle trade has historically used this as the main end-of-life for its rubber products. We consider it our mission to bring this to an end. We may divert some material to alternative land covering uses such as safety surfaces, but never to landfill.

Zero Dumped Overseas

Moving waste into the developing world, just to pretend that it isn't our problem cannot be right, especially for rubber products. We know that automotive tyres are routinely shipped there to be used as cheap fuel often releasing toxic fumes as they are burned. We will have no part in this trade. We may export material for quality-controlled reprocessing or conversion into new products but only if we are able to monitor exactly what is happening and assure ourselves that no material is being dumped.

Zero Carbon Released

Whilst using scrap automotive tyres in industrial cement kilns might be a valid and popular end-of-life for them, we believe that bicycle rubber ought not contribute to greenhouse gas emissions. We feel sure that most environmentally conscious cyclists would agree. This means that we shall not use this disposal method even if available locally, unless it can be demonstrated that an effective carbon-capture system is in place.

Audit Assessment

Oversight

Velorim are an upper-tier waste broker (Reference CBDU334556) and oversee the entire process from collection to resale of reprocessed materials.

This appears to be in hand with internal systems developing alongside the growth of the operation.

Collection

Public collection points have been established at over 450 locations across England, Scotland, Wales and Northern Ireland with suitable containers for tyres and inner tubes being issued as required. The recording system that Velorim has in place is being upgraded in order to cope with the increasing activity.

Reputable national carriers who each hold waste carrier's licenses, are being used for the collection of tyre cages, tube bins and inner tube boxes. The collections of tyre bags is more fragmented using a variety of regional carriers. All movements are tracked and evidenced.

Waste Transfer Notes are being generated in regard to every collection and 12-month summaries are being issued to each customer reaching that term. All are available on request.

Aggregation

Bicycle tyres and inner tubes are being aggregated at twenty-six locations over the country, some of these only hold minor quantities being no more than regional interim storage points for tyre bags. All locations are secure from public ingress and have the appropriate Waste Exemptions in place.

Periodic stock-checks are carried out to ensure that the physical quantities held at these locations match the amounts recorded, with adjustments made as required.

Velorim is aware of the requirement to maintain these aggregations below the respective safe permissive tonnages.

An incident happened on 4th June 21 when a contractor, without Velorim's knowledge or permission removed a container that was used to hold bicycle tyres. As a consequence, this container was processed through that contractor's normal disposal route. Steps have been taken to ensure that this does not happen again.

Reprocessing

Due to the scale requirements of the planned reprocessing, much of the work carried out to date has been small-scale pre-production trials. However significant steps have been taken in securing environmentally positive outlets for the materials.

a) Inner Tubes

A process has been developed that will turn scrap inner tubes into Velo-butylene™ rubber, a part de-vulcanised raw material that can be substituted for virgin material. Successful trials have now been carried out at the UK's leading manufacturer of butyl rubber products who is desirous of including a significant volume of Velo-Butylene™ in their products. Work continues to achieve the commercialisation that will secure this high-volume outcome.

b) Tyres

The breaking down of bicycle tyres into recoverable and reusable materials is more complex than inner tubes. Several potential outcomes have been explored and trialled. The eventual method(s) to be employed will be subject to the specific commercial agreements secured.

The first step of all possible outcomes is to shred the tyres into 15-20mm pieces removing all traces of steel. The resultant material (termed "Veloshred") can then be used directly for surface applications as well as becoming a feedstock into the subsequent downstream processes planned.

The cost of moving bicycle tyres to a central location for shredding is prohibitively high. Velorim has therefore commissioned a unique mobile bicycle-tyre shredding machine (the "Velomax 2000") that will carry out the first-stage shred at multiple locations across the country and latterly overseas.

The first batch of tyres has now been successfully shredded by the Velomax 2000 allowing samples to be issued to the various parties involved in the next downstream recycling processes.

This plan appears to be viable, sustainable, and environmentally preferable to landfill, export or open incineration as it will allow the recycling or recovery of the materials.

Conclusion

Based on evidence from Waste Transfer Notes generated to date and with the exception of one batch of tyres that were processed by a third-party in error, I can confirm that Velorim has fulfilled its promises:

- Zero Dumped in Landfill
- Zero Dumped Overseas
- Zero Carbon Released through Incineration



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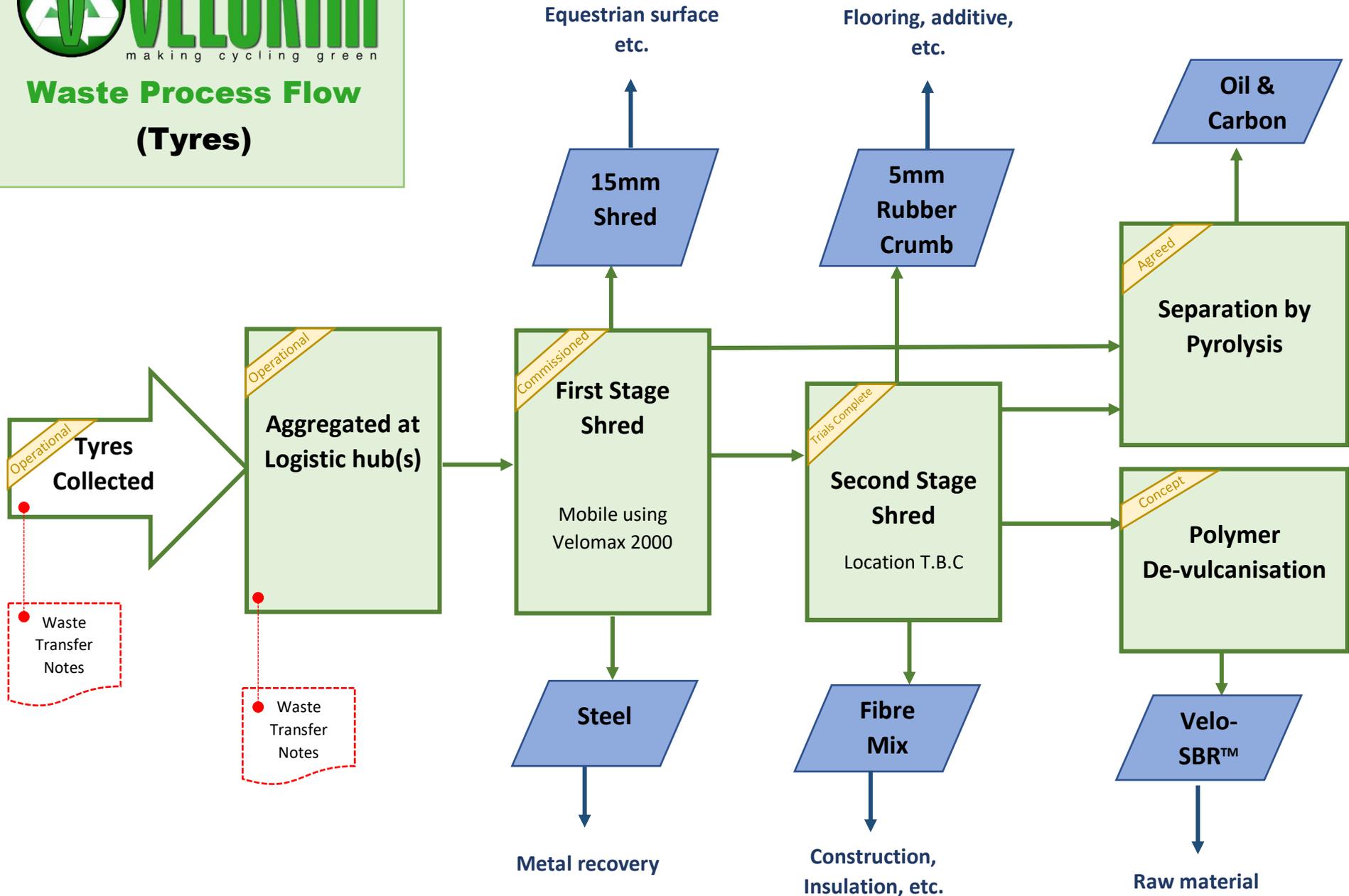


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VELORIM
making cycling green

Waste Process Flow (Tyres)





Waste Process Flow (Tubes)

