

Buyer's guide to choosing a waste shredder

**Key factors to consider when
choosing a waste shredder**

TANA
From Waste to Value®



Introduction

Considering investment into a new waste shredder? Great!

You are possibly after a better uptime and profitability? Would you benefit if the machine could handle various waste streams? Are you fed up with difficult and time-consuming maintenance or poor possibilities to optimize your daily processes based on real-time data?

Check this guide to see if TANA Shark would be the best choice for you too.

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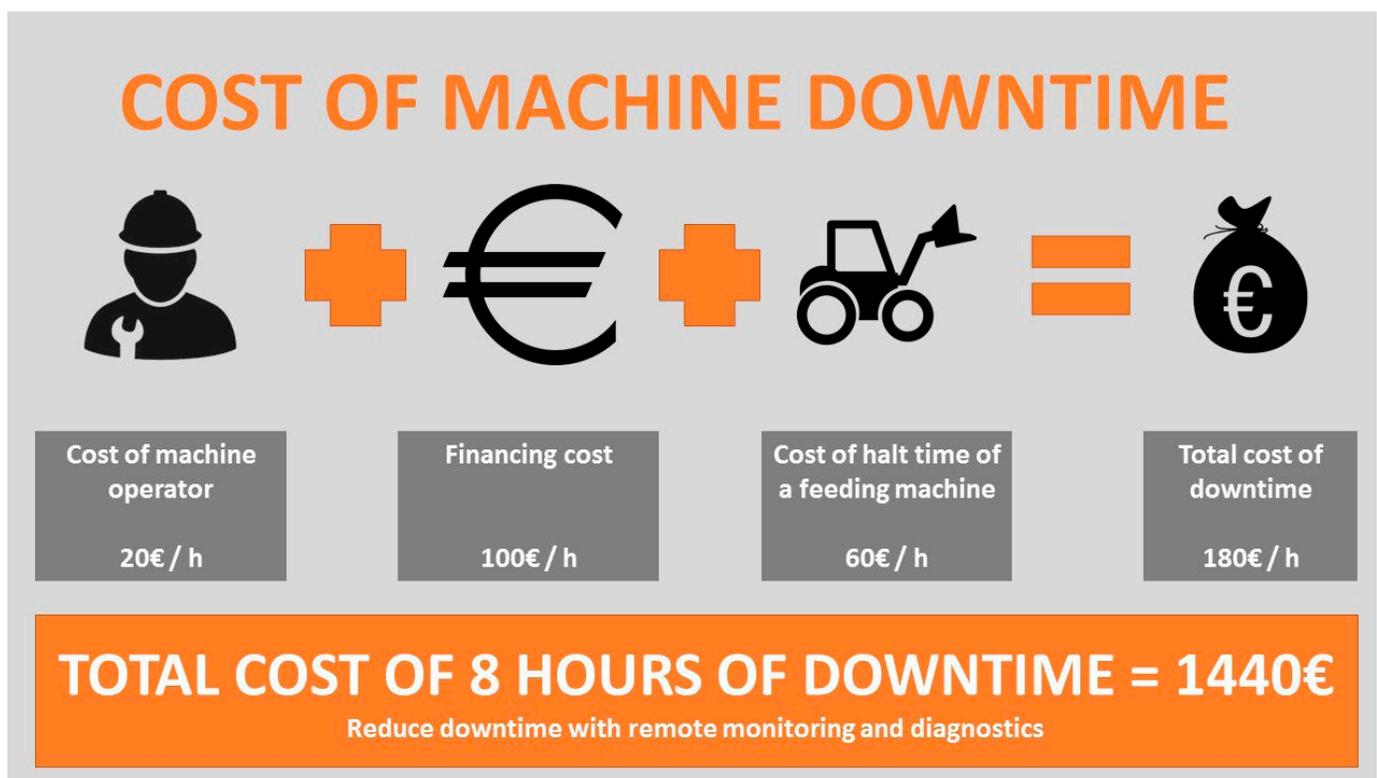


Consider at least these before purchasing a waste shredder

Any time a waste shredder is not working, the owner of the machine is losing profits. Maximizing the uptime of the shredder is dependent on several factors including the waste stream(s) coming in:

- The robustness of the machine
- Handling non-crushables
- Easy serviceability
- Quality and speed of service

The total cost of machine downtime is not only the reduction in sellable end product, but also the running costs that don't stop when the shredder goes down.



In the next chapters, you'll learn more about the impact of different factors on uptime.



Robustness of the machine brings you increased lifetime



Not all materials are created equal. The same can be said of waste shredders. A waste shredder needs to withstand a barrage of waste and continue to run smoothly in any situation. If the material strength is lacking or some other parts are not up to the task, uptime is compromised.

Therefore, the best shredders are made of durable material and easy to optimize to reduce unnecessary wear and tear. You can say a lot about a waste shredder just by comparing its size and weight. Steel and other durable material weighs and the weight of the machine correlates to the build quality and durability of a shredder.

The frame of the waste shredder is naturally not the only part of the machine that needs to be robust. If you're handling very strong or hard to shred material, a stronger rotor can significantly reduce wear and increase uptime and lifetime of the shredder.

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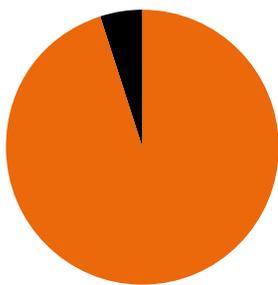


Easily remove non-crushables to maximize uptime.

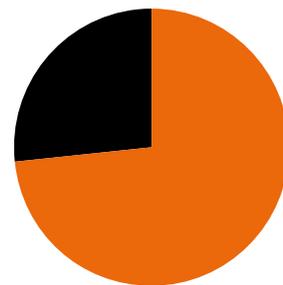
When a shredder is jammed or non-crushable particles cause trouble, the operator needs to stop the operation for emptying the hopper or feeding area which is very time consuming. Some machines have hydraulic counter knives that let the non-crushables go through to the shredded material. This can cause a lot of damage if there isn't another step in the process for removing the non-crushables from the shredded material.

There is however another way to do this. An opening sidewall enables the operator to simply spin the drum, open the sidewall, remove the offending material and continue shredding. All this can be done in five minutes, getting the shredder back to work very fast.

Reducing the time spent removing non-crushables directly increases uptime and thus profitability.



● Non productive time
● Waste processing



Shredder with a sidewall



Shredder without a sidewall

Opening sidewall – what is it used for?

- Remove non-crushables quickly
- Care and service wear parts easily
- Adjust tool setup on the fly

Opening sidewall saves time – and money.

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Superior maintainability saves you time

Maintaining a waste shredder and its wear part care are mandatory parts of the operation. It can be easy and fast or difficult and slow, again directly impacting uptime.

Wear part care is important to ensure the output and proper functioning of the machine. Easy accessibility to the maintenance points and machine design based on user experience accumulates to reduced downtime. If for example rotor knife change is done in a few hours instead of a couple of days, the total machine uptime is increased considerably.

The same applies to scheduled maintenances and filter change. If all service points are easily accessible, filters and accessories are provided with the machine as user friendly kits the necessary maintenance breaks are optimized and the machine is quickly back to productive work shredding waste.

Shredder with a side wall

- Opening sidewall gives quick access to counter & cutting knives
- Rotor knives are designed to be maintained quickly – No flame cutting or welding required

Shredder without a side wall

- Rotor needs to be lifted off to adjust counter knives and/or maintain rotor knives
- Rotor blades removed by flame cutting
- New rotor knives installed by welding

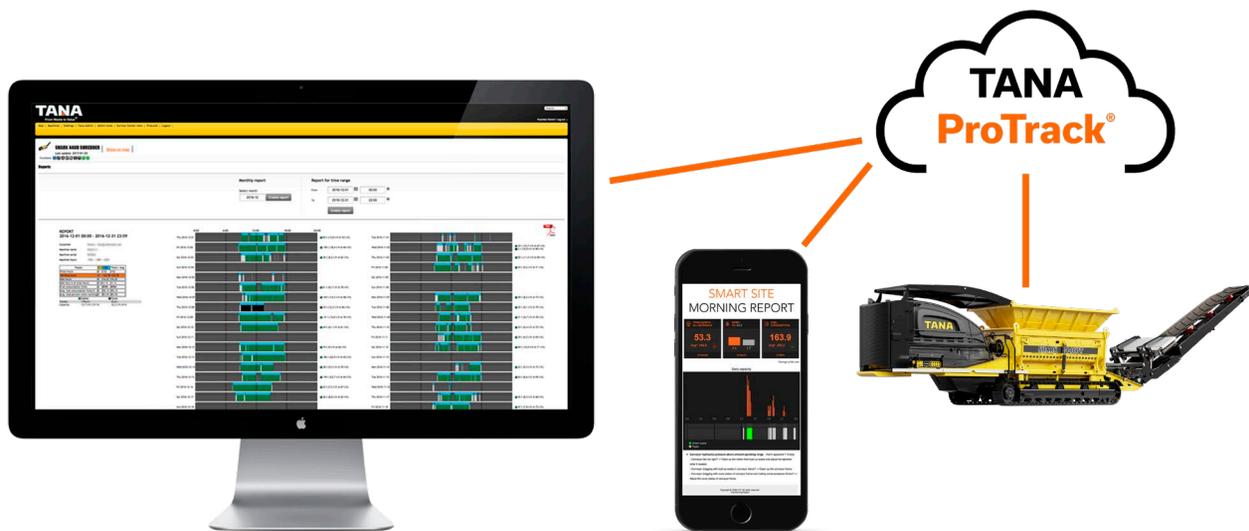


WHICH ONE WOULD YOU CHOOSE?

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We increase uptime with good customer care



A simple and clear service program is at the center of servicing a waste shredder. Managers and users need to know, when the shredder should be serviced to keep it running optimally and which items need to be checked and serviced and whose job it is. A reliable service partner is important in this regard. When the roles and service plans are jointly agreed and laid out, everyone can plan the service periods so that uptime is maximized.

Every waste shredder needs service at planned times, but unfortunately, things can brake outside the planned service schedule. In any service case the professionalism and capabilities of the service partner are the key to getting the shredder back to work.

Nothing replaces a qualified and experienced service personnel but smart solutions can help them solve problems faster and pre-emptively. New top of the line waste shredders can communicate with the manufacturer and local service partner in addition to sending operational data to the manager.

If a problem arises, the service personnel can remotely diagnose the problem and arrive at the site prepared and with the right parts, saving time and reducing downtime. The manufacturer can also pre-emptively guide the user, if they notice from the remote data, that the user is doing something dangerous or risky.

If service personnel have not encountered the problem before, most likely someone else around the world has. That's why it is a good idea to give solutions to known potential issues to the service personnel, so that they can access the full knowledge of the entire service network. This reduces downtime of the machine and increases profitability.

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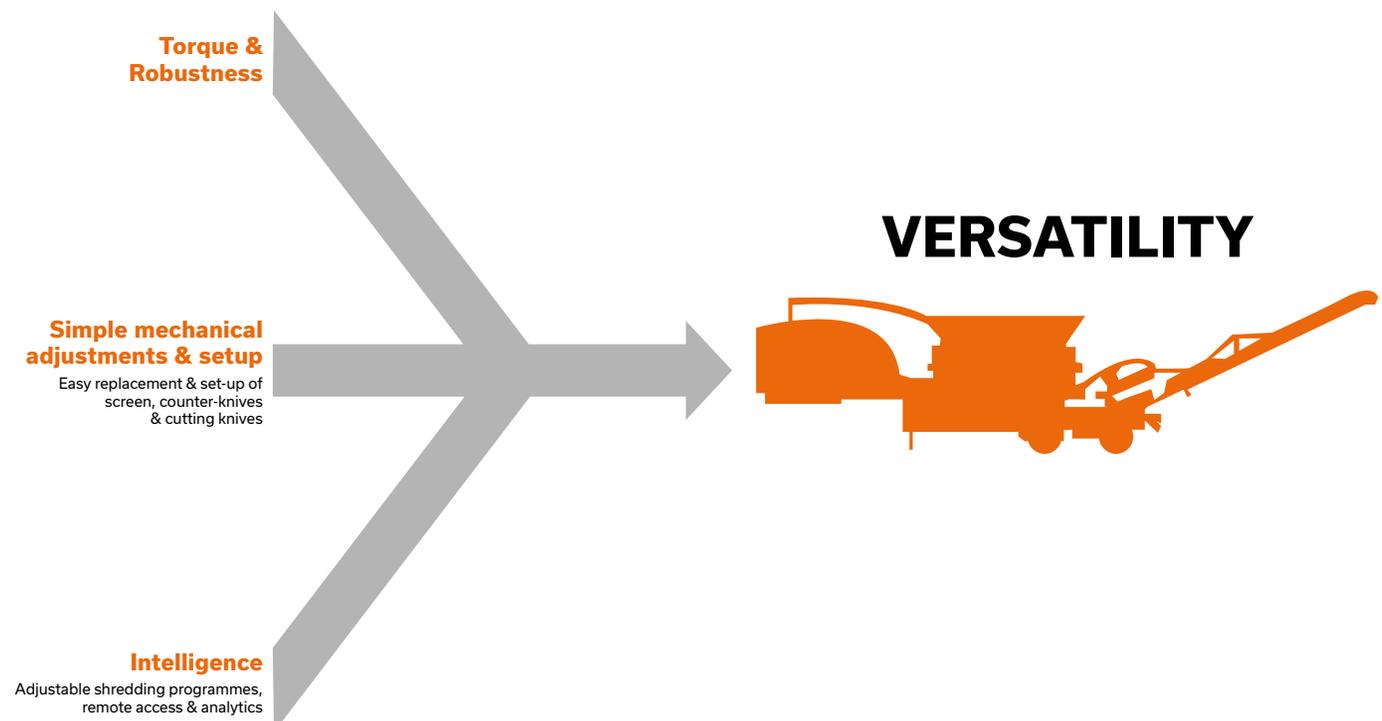


Expand your business opportunities with a versatile shredder

If you want to keep as many business opportunities open as possible, a versatile waste shredder is a good investment. While a purpose-built shredder for one waste stream can have a greater output with that particular waste type, if there are changes in the process or incoming waste, the shredder may need expensive parts or even be rendered useless.

Versatility as a term is used very differently by machine manufacturers and users. It is something which is equally important to all operators. When Tana speaks of versatility, it means:

- Capability to produce large range of particle sizes
- Ability to produce homogenous particle size
- Optimal particle size output ratio
- Versatility to shred a large variety of waste material
- Torque and robustness to shred toughest materials like shingles and big tires
- A versatile shredder excels in many roles in the process



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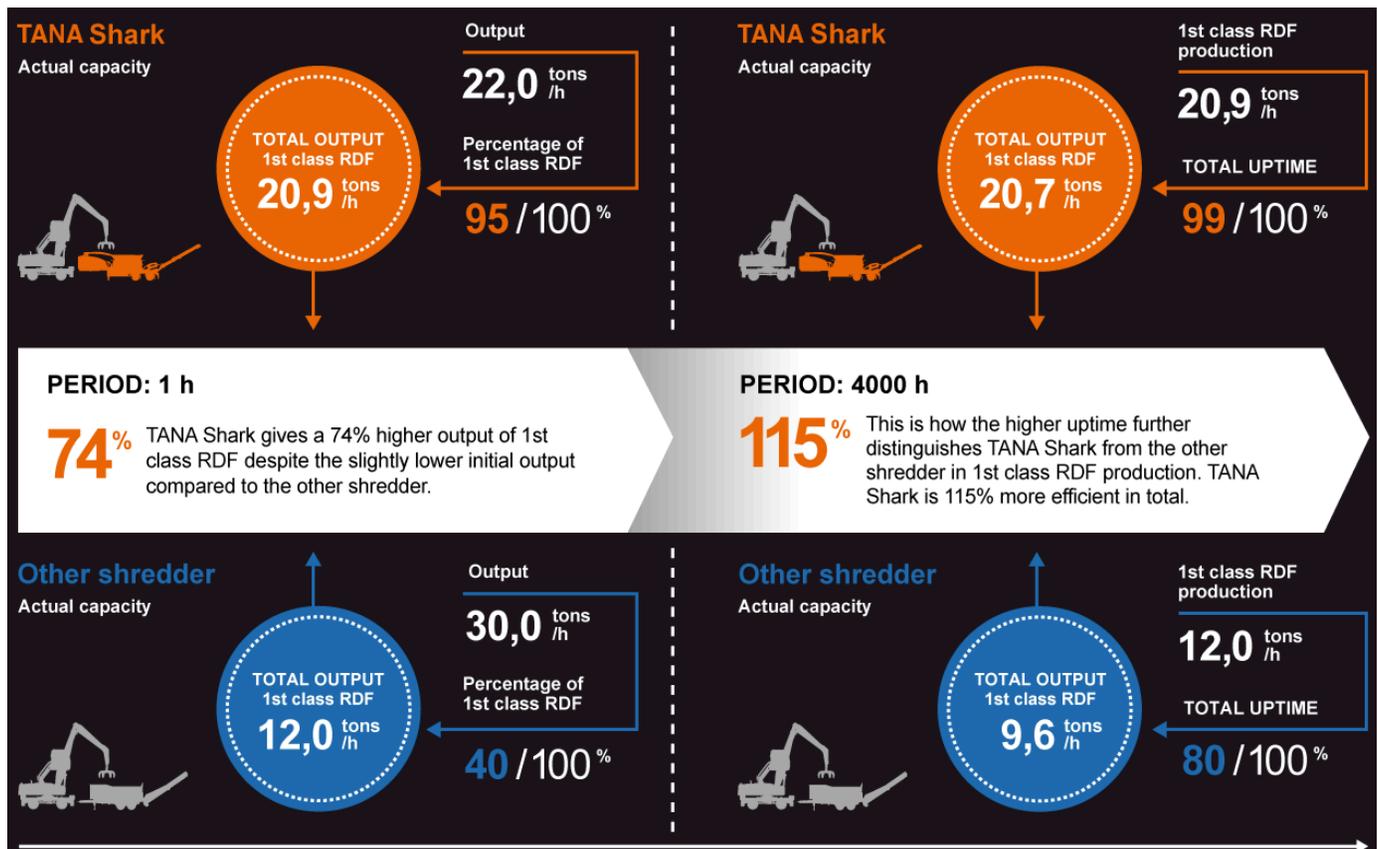


Why to consider **particle sizes**

For a waste shredder, output per hour may seem like a straightforward number to compare between models for any waste stream. But the reality is more complex. The meaningful numbers to consider are:

- The percentage of homogenous quality product output
- Output of homogenous quality end product per hour
- Fuel consumption per hour

Only by consistently producing quality homogenous particles in a wide range of sizes can a shredder protect the sizable investment that was made to purchase it. Since a poor quality shredded particle either requires a new pass or extra process steps to finish, profits are reduced or lost altogether.



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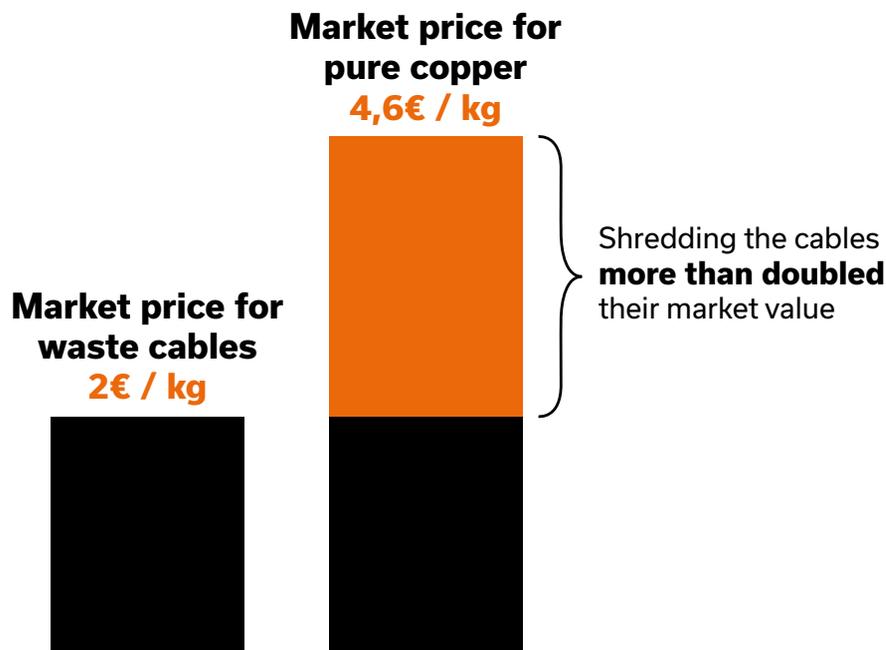
Expand your business opportunities with the ability to treat a variety of materials

A fast speed shredder is often very specialized to one waste type. Many slow speed shredders are good for 3-5 different materials. The best slow speed shredders can handle almost any material that typically exists in the waste management processes.

Pre-set programming, powerful cutting knives combined with easy adjustability gives the best shredders the ability to change the shredded material quickly. This makes it possible to shred several waste types with minimal downtime for the machine.

Robust waste shredders can handle a large variety of materials, including thick material such as railway sleepers. The best shredders can also handle material that wraps easily around the rotor causing jams. Cables and films are a couple of examples of these difficult to handle materials that a good shredder has no problems with.

Another benefit of the versatility of a waste shredder is the ability test with new waste streams or expand the business without necessarily purchasing a new specialized shredder.



A customer processing mainly RDF also had sea cables, that most shredders could not process. A single TANA Shark did the job, and more than doubled the income from the cables, as now the pure copper could be sold.

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Buy just **one machine**

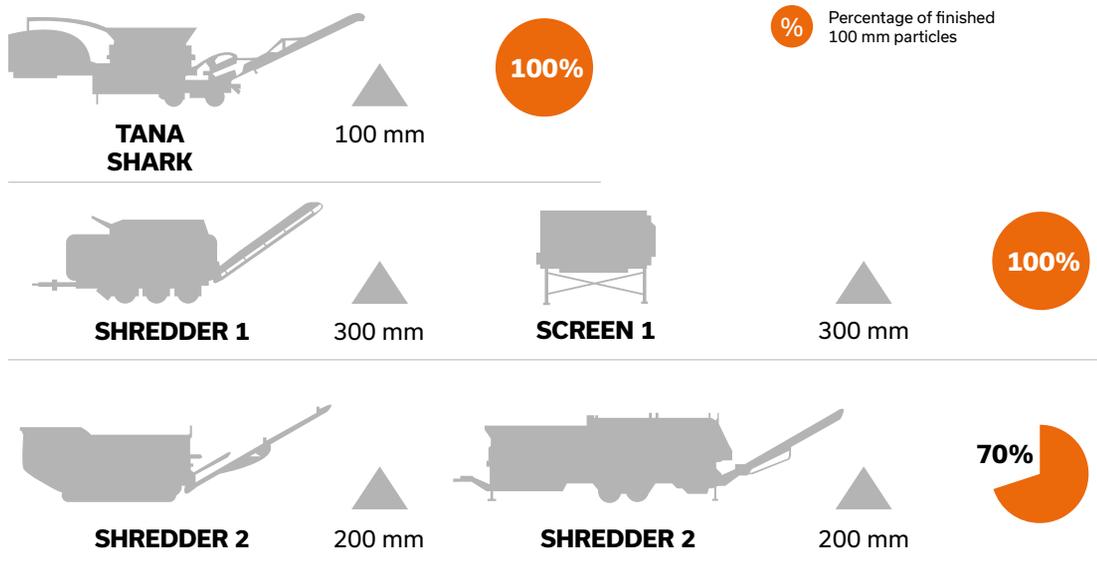
When purchasing a waste shredder, you can select either a specialized machine that is excellent in a particular role for one waste type. You can also select a highly versatile shredder that can perform at a high level in any step of the shredding process.

A good indication of the versatility is also whether you need just the shredder or do you still have to purchase additional machines to get the desired particle size.

A shredder can usually find its place in of these processes:

- Pre-shredding
- Primary shredding
- Two-time shredding
- Inline system
- Small particle size shredding

100 mm particles





Optimizing the shredding process improves your profitability

Optimizing the shredding process can help you turn a marginally profitable business into one that not only generates profit but also frees time from the machine for additional work. By choosing a shredder with state of the art setup and reporting tools, you can find the relevant information needed to make changes to the waste shredding process.

The optimization of a TANA waste shredder is based on several factors including:

- Easy operator interface via TCS (TANA Control System)
- Pre-programmed setups for different material
- Easy setup of counter knives and screens
- The advanced information and reporting enabled by TANA ProTrack®



Easy operation

- TANA Control System (TCS)
- 12 preset programmes for different materials
- User-friendly man-to-machine interface
- Remote control from a safe distance



TANA ProTrack®

- Weekly & Monthly reporting (option)
- More accurate trouble-shooting
- Maximize uptime with smart monitoring



Optimize your production

- Pre-programmed shredding programs help optimize your shredding process
- Examples of programs:
 - CABLES**
 - TYRES**
 - TEXTILE**
 - GREEN WASTE**



Easy mechanical setup

- Quick counter-knife setup and adjustment with opening sidewall and smarth design
- Easy to swap screens
- Removal of non-crushables through the opening sidewall



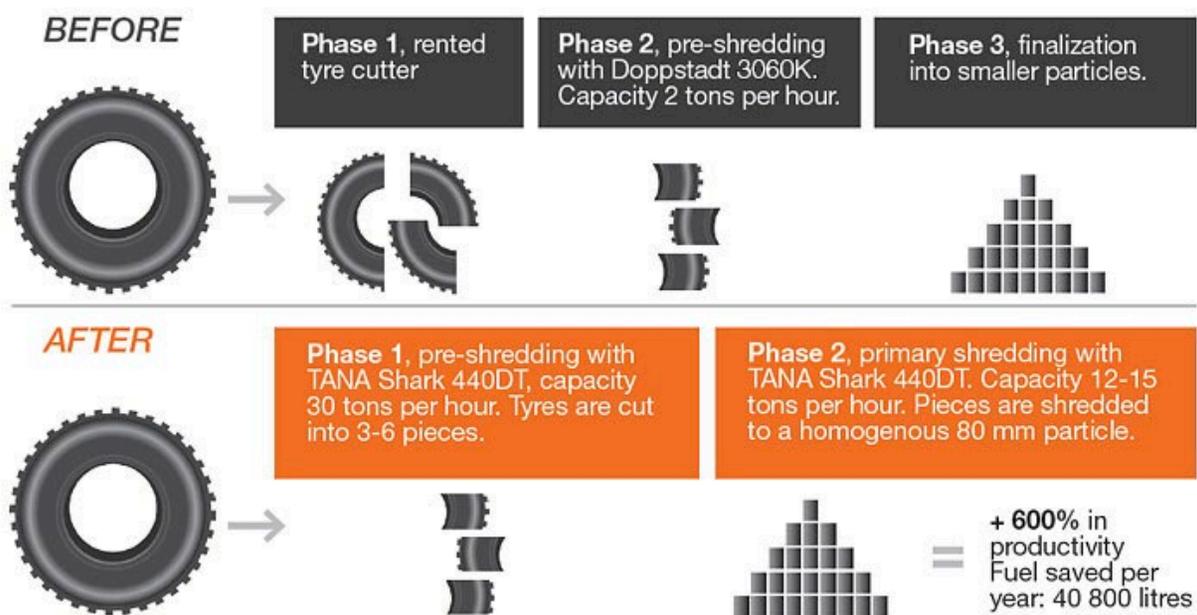
CUSTOMER CASE:

Tire shredding – Lassila-Tikanoja, Finland

Rubber waste originated from car and truck tyres is almost equal in heat value as gasoil and even 25% more effective than coal. There are extremely high quality requirements for the rubber waste used in the burning process at power plants. The particle size needs to be homogenous and no remnants of metal wires are tolerated in the furnace.

Quality issues in particle size as well as ineffectiveness in the shredding process were the problem for our customer Lassila-Tikanoja Ltd (L&T) who provides rubber waste for the energy industry.

Earlier, the process of shredding car & truck tyres at the L&T site was done in three separate phases to achieve the desired particle size homogeneity.



In the new process, TANA Shark 440DT takes care of the whole shredding process in two phases. In just two passes the required homogenous particle size of 80 mm is achieved and metal separated from the end product.

Read the whole case at: <https://www.tana.fi/recycling-processes/success-stories/shredding-car-and-truck-tyres>

"What has amazed us is the fact that using a single machine gives us the required end result. If possible, even more amazing is that this is achieved with 5-10 litres lower fuel consumption per hour than before."

- Kari Soini, L&T Finland.

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Checklist for choosing the right waste shredder

Use the checklist below to map out the most important advantages that waste shredders have based on your business needs. You can then compare different shredders and how well they suit your needs. This can also be a helpful exercise to analyse your current business scenario and how you might improve its profitability.

ADVANTAGE	Must have = X	Shredder 1	Shredder 2
	Good to have = +		
	Nice to have = 0		

UPTIME

Robust frame			
Heavy-duty rotor for increased wear resistance			
Easy removal of non-crushable material			
Easy access to daily maintenance points			
Well-defined and easy to follow service schedule			
Easy access to serviceable parts			
Remote diagnostics			
Remote access to machine data			

VERSATILITY

Capability to produce large range of particle sizes			
Ability to produce homogenous particle size			
Optimal particle size output ratio			
Versatility to shred a large variety of waste materials			
Torque and robustness to shred toughest materials			
Tangle-free design good at shredding long, elastic materials			
Can perform in many roles in the shredding process			

OPTIMIZATION

Modern operator interface			
Pre-programmed setups for different material			
Easy to change mechanical setup like screens for different material			
Advanced information and reporting for operator and business owner			



Conclusion

All waste shredders are not created equal and you should consider which factors and advantages are most important to your business. Compare different models and choose the one that suits your needs, even if at first glance a single number like output for a single material is not the best.

For a business owner looking forward and anticipating the changes in recycling needs of societies, a versatile shredder capable of handling almost all waste types well can be a good investment.

We at Tana are happy to tell you more about how we see the future of the business and how we may be able to help you prepare for it and increase your profitability with your current process.

Key things to consider when choosing a waste shredder:

- 1. Comparing basic output numbers is not enough**
- 2. Maximizing uptime increases profitability**
- 3. A versatile shredder is most often the better choice**
- 4. Smart solutions can help at all stages of use**
- 5. Get the heavier one of the ones you're comparing**

Learn more about TANA recycling processes at
www.tana.fi/recycling-processes



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