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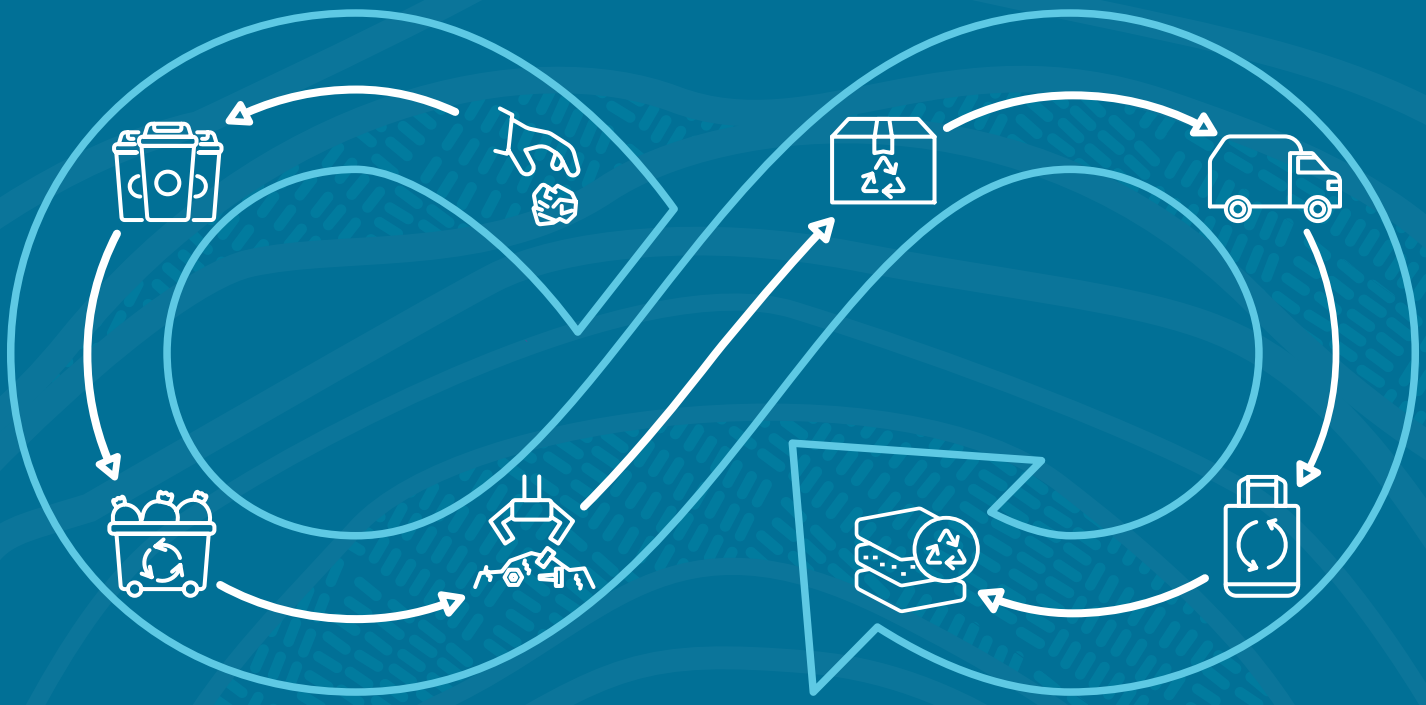
Department of Climate Change, Energy, the Environment and Water



Step-by-step implementation guide for recycled content traceability

National Framework for Recycled Content Traceability

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Cataloguing data

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Acknowledgement of Country

We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

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Summary

This guide is targeted to businesses along recycled content supply chains that want to implement traceability in line with the National Framework for Recycled Content Traceability (the framework). An overview of the framework is at Appendix A.

Traceability refers to the collection and sharing of information about materials as they move through the supply chain. For recycled content, this includes information about where recycled materials are sourced, how they are processed and ultimately used to make new products or in projects (such as construction). This information helps confirm that materials are recycled. It supports quality assurance, promotes transparency across the supply chain, and builds trust with both businesses and consumers.

Recycled content traceability can help a range of supply chain participants, including:

- material recovery operators to access new markets by demonstrating the supply of genuine recycled materials
- processors and recyclers to differentiate their recycled materials from others by showing their provenance (for example, to prove recyclate is Australian) and quality (for example how the recyclate has been processed)
- manufacturers and the construction sector have confidence to use recycled content and tell their customers about it
- retailers and procurement officers to source genuine recycled content products to meet consumer demand and their own sustainability goals
- consumers and organisations have more confidence in the products they're purchasing.

This step-by-step guide will help you to:

- develop a business case for traceability within your organisation
- understand and map your supply chain partners
- understand what data to collect and share in your supply chain
- choose a traceability system
- verify your traceability information.

This implementation guide provides general guidance only. You should review the framework for additional details. You may need to seek tailored professional advice to inform decisions about implementing recycled content traceability. You should review Making Environmental Claims: A Guide for Business, published by the Australian Competition and Consumer Commission (ACCC). This ACCC guide explains the obligations under the Australian Consumer Law which businesses must comply with when making environmental and sustainability claims, including for the use of recycled materials.

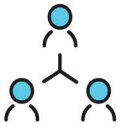
Traceability implementation overview

Traceability implementation overview

To support the transition to a circular economy, businesses and consumers need reliable information about recycled materials. The Framework provides clear guidelines to help collect and share this information consistently across supply chains. By improving data integrity and transparency, you can build confidence in recycled materials. Follow these five steps to get started.

STEP 1: Establish the business case for traceability

Define the challenges your business faces and show how traceability provides solutions as well as any other opportunities that may arise. Outline the strategic value, expected benefits and resources you need to get started. Support your case with a cost-benefit analysis that shows return on investment and identifies any risks, along with a plan to manage them.



STEP 2: Map the movement of recycled materials

Create a clear, end-to-end picture of your supplier and customer network from material recovery to final sale, by mapping your recycled materials supply chain including key suppliers, customers, and material flows. This map gives you visibility of where recycled content comes from, where it goes, and who you need to engage with to implement traceability.

STEP 3: Deciding the traceability information required

Next, understand the key data elements required under the framework. This includes details about the provenance, composition, and quality of recycled materials. Review what data is currently captured and shared across your supply chain and assess how consistent this information is with the framework.

STEP 4: Choose a traceability system

Select a system that captures, shares, and provides access to recycled material data. Make sure it records the appropriate data, such as the material information, the stakeholders involved, and locations of where materials are processed or sorted. Consider whether a manual or digital traceability system would best suit your business needs.

STEP 5: Get verified

Use verification to confirm the accuracy of data within traceability system. This can be conducted internally or through an independent third-party. The process ensures the data is correct and meets regulatory and industry standards, giving confidence to your customers and supply chain partners.

Step 1:Establish the business case

This step is about building a clear and compelling case that shows how traceability aligns with your business goals, what it will cost, what it will deliver, and how it will be rolled out.

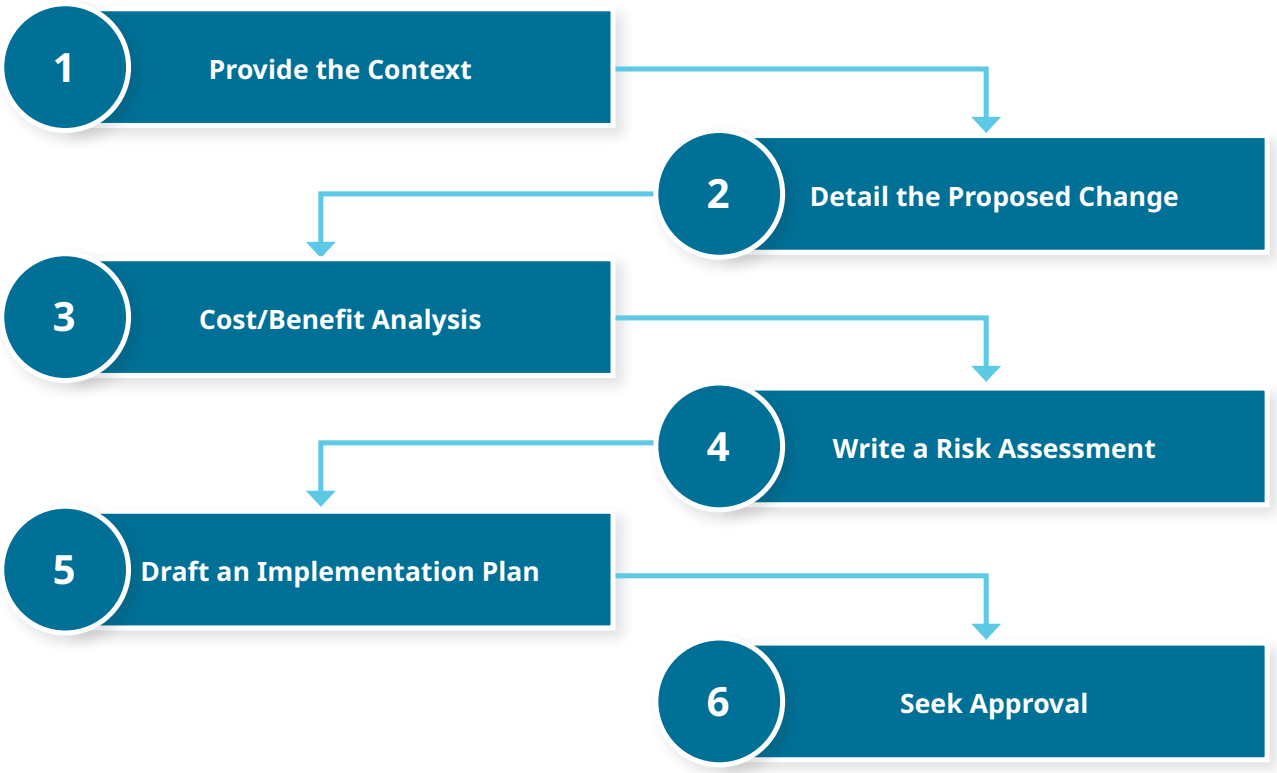
A strong business case will help you to secure agreement from decision-makers in your organisation to proceed with traceability. Your business case will clearly demonstrate its strategic value, expected benefits, resource needs, and implementation approach.

What is a business case?

Developing a business case means defining the value, benefits and costs of implementing traceability in your business. It is an opportunity to consider how participating in traceability can help meet your business goals. It ensures that all stakeholders have a clear understanding of the project's goals, expected outcomes, potential risks and benefits, and the resources required to achieve success.

What to include in the business case?

A business case can be simple and does not need to be a long document or a difficult process. The key steps to develop a business case are:



Context (or background)

The background should introduce the business problem and explain why traceability is important. For example, you might highlight the need to retain customers who are seeking verified recycled materials, or the opportunity to enter markets where traceability is required or provides a competitive advantage.

Traceability can also strengthen consumer trust by countering greenwashing, support compliance with regulatory requirements, and simplify reporting. In sectors like construction, it can help businesses meet sustainability targets, qualify for green building certifications, and enhance project reputation. More broadly, it positions your business as a committed participant in the circular economy.

Proposed change

Next, outline the proposed change, explaining what will be different once traceability is in place. This might include identifying what recycled content information is currently missing, and explaining how existing processes, systems, and workflows will adapt. You should outline any new systems or capabilities required and any training that may be needed.

> It's important to consider the scale of the change: which parts of the business will be affected, how risks will be managed, and what new value the system will deliver. For example, implementing traceability may add capabilities such as more accurate inventory management, reduced errors in reporting, and stronger evidence to back sustainability claims.

Cost benefit analysis

A cost benefit analysis (CBA) is the process of comparing the estimated costs and benefits for the proposed change to determine whether it makes sense for your business. A CBA normally involves calculating the total dollar value of the benefits of a project over a set period (e.g. 3 or 5 years) and subtracting the total costs over the same period. It is important to note that traceability benefits can take time to materialise, so it is important to choose a time period that will enable consideration of these.

- Benefits include both the positive outcomes achieved and negative outcomes avoided.
- Costs include the financial and human resources required, and any potential negative outcomes.

Where feasible, these should be quantified; however, if precise figures are difficult to obtain, a qualitative assessment can be used.

> A qualitative CBA evaluates the advantages and disadvantages of a proposal without assigning exact monetary values. Instead, it focuses on clear, descriptive comparisons of costs and benefits. This approach is especially useful for capturing intangible elements, such as improved customer satisfaction, enhanced stakeholder trust, or potential resistance to change, that may not be easily measured but still hold significant value.

Benefits

Some of the benefits of implementing recycled content traceability are outlined below:

New market access	Meet regulatory and market access requirements (e.g. EU digital product passports (2027) and access premium markets).
Competitive advantage	Attract sustainability conscious consumers, investors, and partners seeking genuine recycled materials.
Improved reputation	Verifiable claims build customer trust and reduce greenwashing risks.
Operational efficiency	Less manual data entry, fewer errors, and faster compliance checks.
Risk reduction	Faster recalls and fewer compliance penalties; limit reputational damage.
Premium pricing	Traceable, certified recycled content often attracts price premiums.
Long term viability	Alignment with sustainability expectations and readiness for emerging regulations ensures ongoing market relevance.

Costs

Some of the costs for implementing recycled content traceability include the following:

System upgrades / purchases	New or upgraded software for traceability (e.g. QR code generation, linked data tools).
Equipment	Scanners, label printers, or mobile devices to enable scanning and verification.
Training	Staff training.
Maintenance & support	System updates, IT support, or subscriptions.
Implementation time	Initial setup and process changes.
Ongoing data entry & verification	Record keeping and verification / certification costs.
Potential hidden costs	Such as integration with partner systems or adapting for new standards.

Risk assessment

A risk is the possibility that an action might cause harm, loss or a negative outcome. In a business case, a risk assessment involves identifying and documenting the following:

- Risk factors: The situation or challenge that could lead to a problem.
- Risks: The harm, loss or negative outcome if the factor isn't managed.
- Mitigation: Actions or steps to reduce or prevent risks.

Conducting a risk assessment strengthens your business case and supports senior management in making informed decisions. Follow your organisation's risk management framework for consistency. If your organisation doesn't have its own, you can follow guidance from a reputable source such as business.gov.au.

Implementation plan

An implementation plan translates an approved business case into practical action. It provides a clear roadmap for how traceability capability will be established or strengthened within the business.

It should begin by setting out the aim and goals of the project, making clear what the initiative is intended to achieve. The scope of the project should then be defined, clarifying both what will be included and what falls outside its boundaries.

From there, the plan should outline the specific tasks required to implement traceability and the timeframes for their completion. It is also essential to assign responsibility, identifying the staff who will manage and deliver each element of the project.

Finally, the plan should consider the costs and risks identified earlier in the business case. This ensures that the project remains realistic, achievable, and aligned with the organisation's broader objectives.

Key takeaways

- Explain what's driving the need (customer expectations, government regulations, or emerging requirements like the EU Digital Product Passport in 2027).
- Outline benefits (e.g. how traceability helps you win tenders, retain contracts, differentiate from competitors, and reduce risks of greenwashing).
- Estimate the essentials, such as staff time, training, labels/scanners, and system costs.
- Be clear about potential issues (e.g. supplier resistance, hidden costs, data gaps) and how you'll handle them).
- Identify what you can already do (recordkeeping, QA systems) and where you need to build capacity.

Step 2: Map the movement of recycled materials

Before you can trace recycled content with confidence, you need to understand how it flows through your supply chain. This step is all about creating a clear, end-to-end picture of your supplier and customer network, from material recovery to final sale.

By the end of this step, you will have: mapped your recycled materials supply chain, giving you visibility into where recycled content comes from, where it goes, and who you need to engage with for traceability.

What is supply chain mapping

Supply chain mapping means identifying and keeping track of all the suppliers, manufacturers, distributors, and customers involved in making and delivering a product. It gives businesses a clear picture of how materials move through the supply chain, who is responsible at each stage, and where improvements can be made. This process applies not only to traditional product/manufacturing supply chains but also to construction and project-based supply chains, where materials, contractors, and logistics play a critical role.

Steps to mapping your supply chain

Understand your position in the supply chain

Before you begin mapping your supply chain, it's important to understand where your business fits within the broader supply chain. In a typical supply chain, there are several levels or "tiers" of suppliers, each with a different role. Here's a simple breakdown of the main stages:

Understanding where you fit in will help you know which suppliers and customers to focus on and guide you through the mapping process.

Identify and visualise your supply chain

Understanding your stakeholders is about mapping both where your recycled materials come from and where they go. Start by focusing on your main suppliers as well as your primary customers. Once you are confident that you have reliable traceability with your main suppliers and customers, expand your mapping to second- and third-level partners, tracing through the chain until you reach the original source and point of final sale of the materials.

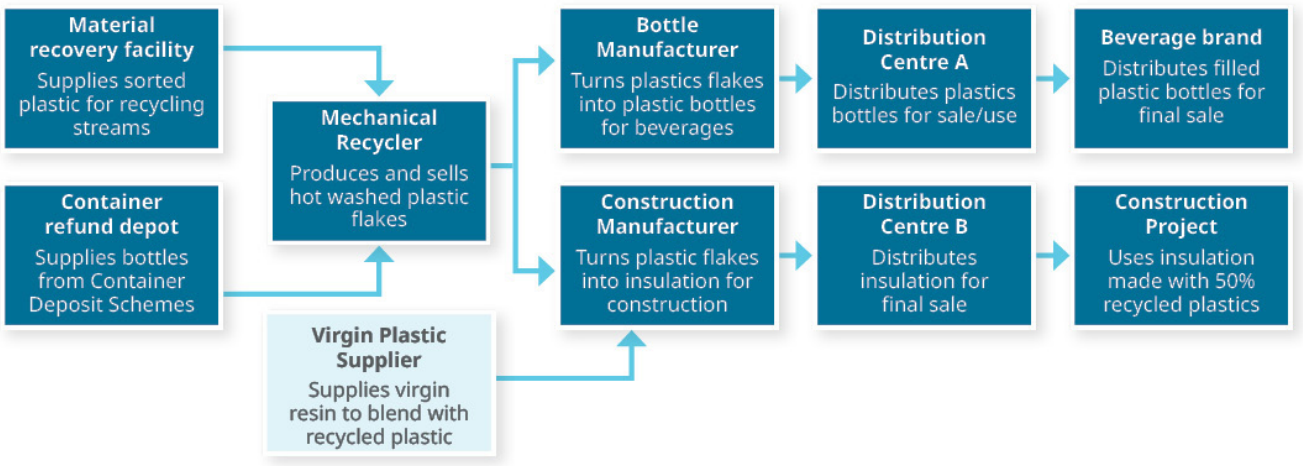
Document key details about each supplier, including their full name and address, a unique identifier (if possible) such as a Global Location Number (GLN), and a clear record of the materials or recycled-content products they supply.

What is a Global Location Number?

A Global Location Number (GLN) is a unique identifier used to identify legal entities, functional entities, or physical locations within a supply chain. It helps standardise supplier information, enabling consistent identification and improving the traceability and verification of sourcing details - particularly for large or complex supply networks.

Once you've identified your partners, the next step is mapping out how they are connected. The relationships between these partners can be visualised using a network diagram or flowchart, as shown below:

Example of a simple supply chain map for plastic flakes



Supplier and customer engagement

Your suppliers and customers are your most important source of information. To get the data you need, start by building (or leveraging) strong relationships and clear communication channels with them, especially with those that have the most influence on your business. This will be an iterative and ongoing process. Here's an example of how to approach engagement effectively.

Step 1: Explain the business case	• Clarify why traceability matters for your business. • Share your goals openly with suppliers. • Show how accurate traceability information benefits both parties.
Step 2: Communicate sensitive information	• Request only the information you need. • Explain how shared information/data will be handled, including any security controls. • Allow suppliers to agree on what data can be shared.
Step 3: Make it understandable	• Avoid jargon and explain traceability in plain language. • Provide examples of how it works in practice. • Offer support or resources for suppliers and customers new to the process.
Step 4: Start small	• Begin with your most critical suppliers or customers. • Test your approach with them before expanding further. • Add more partners gradually as the process becomes smoother.
Step 5: Stay within the rules	• Confirm compliance with competition laws. • Use the ACCC website as your guide.
Step 6: Maintain communication	• Encourage two-way feedback and not just reporting. • Treat engagement as a partnership, not a one-off request.

Key takeaways

Start with a focused supply chain map that shows where recycled material comes from, how it is transformed, and where it goes next.

- Map your top 3–5 suppliers and customers first. Focus on the materials that are most critical to your business.
- Use simple digital tools you already have (e.g. Spreadsheets or your Enterprise Resource Planning (ERP) system).
- Record standard identifiers where possible (company ABN, Global Location Number, product codes).
- Expand step by step, starting with "one up, one down" visibility: who supplies you, and who you supply.
- Flag higher-risk suppliers (e.g. overseas imports, uncertified sources) for closer attention.

Example in practice

You might track recycled concrete inputs from three demolition contractors by recording contractor ID, load date, tonnage, and grade. You then link that data to the builders you sell the recycled aggregate to, giving you a simple but clear trace.

Step 3: Deciding the traceability information you need

To effectively trace recycled content, you first need to understand the key data elements required under the framework. This includes details about the provenance, composition, and quality of recycled materials. Once you understand what data is needed, the next step is to assess how much of this information is already being shared within your supply chain.

By the end of this step, you will have a clear view of which traceability data is currently being shared across your supply chain, how it's captured and exchanged, and where the gaps are.

Understand the data needed for recycled content traceability

The framework lists the types of information that businesses must collect and share to track recycled materials throughout the supply chain. These are referred to as key data elements and can be seen in Table 1.

Product information	Provenance information	Quality information
Item identifier	Country of origin	Processing method
Item description	Jurisdiction of origin	Chemical content declaration
Quantity	Remoteness of source	Recycled content risk assessment
Unit of measure	Feedstock source stream	Results of analysis
Receipt date	Feedstock type	Certification details
Ship date	Feedstock source type	Certification identifier
Sender identifier	**Composition information**	Certification start date
Shipment identifier	Recycled content claim	Certification end date
Receiver identifier	Chain of custody approach	
Ship from location	Mass balance period	
Ship to location	Mass balance allocation method	

General information

General information refers to the basic details needed to identify and track materials through the supply chain. This may include a unique identifier, a description of the material, the quantity and unit of measurement, the date of movement, and the parties and locations involved in shipping and receiving the material. Most of this information is already exchanged when buying and selling recycled materials.

What is a unique identifier?

This set of general information includes several 'unique identifiers', which are essential for traceability. These are specific numbers or codes assigned to recycled materials (objects), places and supply chain parties to tell them apart from others. They provide a way for each party to connect different pieces of information to the same recycled material as it moves through the supply chain – in the same way that a unique tax file number or driver's licence links various records to one person. This makes it possible to follow the movement of recycled materials at each stage in the supply chain.

For recycled materials, a unique identifier is often assigned to a batch of items, or a logistics unit (a group of materials/items bundled together for movement) such as a bale of shredded plastic. This avoids the need to uniquely identify individual items in the batch.

Unique identifiers can be assigned at three levels – class level, batch or lot level, and instance level.

At the class level, grouped items of the same type are assigned a unique identifier - for example, all 600 ml recycled content bottles from one company containing the same beverage.

At the batch or lot level, the unique identifier is given to items processed or produced at the same time under similar conditions. For example, recycled bottles from the same production run using the same feedstock, recycled aggregates from a single crushing session, or bales of scrap paper sorted and compressed at a material recovery facility during the same shift.

At the instance level, an individual item is given a unique identifier. This might be relevant for large, recycled content items such as heavy equipment or machinery components.

Provenance information

Provenance covers the origin of the materials and the sources from which they are recovered. Key details may include the country or region of origin, the type of source material, and whether it comes from pre-consumer or post-consumer streams.

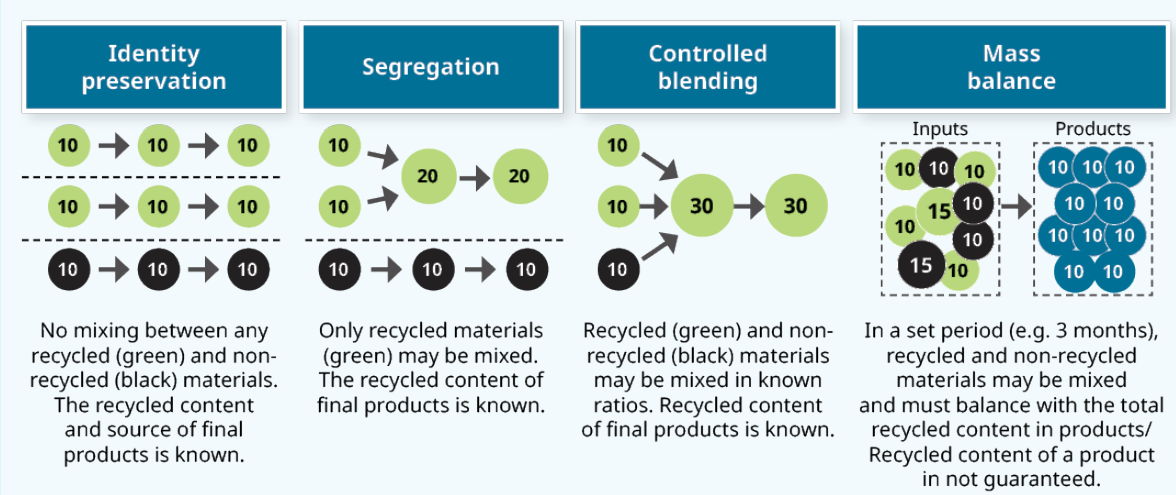
Quality information

Quality relates to the characteristics of the material and how it has been processed. This may include information on processing methods, chemical composition or relevant documentation, results of any testing, and details of certifications or standards that apply.

Composition information

Composition refers to the proportion of recycled content within a material or product or project and how this is verified. This may include the recycled content claim, the method used to substantiate the claim, any system of allocation or tracking applied and the chain of custody approach used.

A 'chain of custody approach' refers to how recycled materials are managed and their qualities recorded throughout the supply chain. Under the framework, four approaches are allowed:



Find out the data shared within your supply chain

Now that you understand the types of information required for tracing recycled content, determine how much of it is currently shared among members of your supply chain for the recycled materials you wish to trace. In doing so, look at:

- the types of information shared (for example, the supplier name, country of origin, and certification details). This includes the information you already collect and share with your suppliers and customers
- how the information is sourced (for example from a label, delivery docket or other means)
- how the information is captured (for example by manual data entry or barcode scanning)
- how the information is shared (for example by email or centralised cloud system).

Appendix B provides a useful table to capture this information. Consider the following when obtaining this data:

List current information	Identify what's already shared about the material or product. • Does its form change along the chain? (e.g. flakes → pellets → film) • What happens at each stage? (e.g. processing, mixing, repackaging) • What information is passed on? (e.g. quantity, quality, certification) • How is it recorded? (e.g. manual entry, barcode, digital system)
Assess current exchange	• Where is the data generated? • How is it captured and stored? • Who controls it? • Record how you and each supply chain partner define each piece of information. If there differences, agree shared terminology or a process to account for differences.
Map supplier and customer information	• What do your main suppliers exchange with their suppliers? • What do you main customers exchange with their customers? • Continue mapping up and down the chain as needed.
Identify and address information gaps	Compare what information is shared now with what's needed for traceability • Prioritise filling gaps with your direct suppliers first. • Work toward "one step up, one step down" traceability initially and build to full traceability over time.
Discuss sensitive information	Agree with partners how information, including sensitive or commercially sensitive information will be managed • Ensure compliance (e.g. privacy laws).
Overcome challenges	Some suppliers may be unable or unwilling to share information. Work with them to understand challenges. If issues persist: • Consider alternative suppliers who are more open to sharing information • Include data sharing expectations in supply or sales agreements.

Key takeaways

The framework lists many possible data points, start by prioritising the ones that matter most for your business and customers.

Start by capturing the essentials, such as:

- a product ID or batch number (unique identifier)
- a material description with recycled content percentage and chain of custody approach
- the supplier and customer identifier (name, ABN, or GLN)
- the provenance basics, pre- or post-consumer sources, and country of origin.

How to manage it

- Use a consistent template (spreadsheet or a digital form) for every batch.
- Store all records and certificates in one organised system (cloud folder, ERP, or traceability platform).
- Agree with suppliers on what information you really need, don't request more than is necessary.
- Focus first on data that you can verify, rather than trying to collect everything.

Collaborate lawfully

Make sure you understand and comply with Australia's competition laws. The ACCC's website contains useful information on cooperation among businesses.

Example in practice

You might assign a QR code to each bale of recycled PET, which links to a file containing supplier certificates, recycled content claims, and delivery records. When you sell the material on, you simply pass the code and records along with it.

Step 4: Choose a traceability system

Now that you understand what information is needed and what's already being shared, it's time to choose a system that can support your traceability goals. A traceability system lets you identify, capture and share information about recycled content as it moves through your supply chain. This could be a simple manual method, or a digital solution using tools like barcodes, sensors, or cloud-based software.

By the end of this step, you will have:
chosen a preferred traceability system that fits your business.

What is a traceability system?

A traceability system is a manual or electronic system that provides the ability to capture, share and access documented information about the recycled materials being traced. Traceability solution' is often used interchangeably with 'traceability system' or 'traceability technology', especially when referring to digital and electronic systems.

Types of traceability systems

Traceability systems can be broadly categorised into manual and digital systems.

Manual traceability systems

Manual traceability is the most basic form of tracking, relying on paper records, spreadsheets, or simple databases. Data is captured and shared through human input, for example, using handwritten or typed labels, recording details in a ledger or spreadsheet, and exchanging information via emails.

These systems are low-cost, easy to set up, simple to use, and well-suited to small businesses with short supply chains, low transaction volumes, and limited resources. However, as businesses expand, manual systems often become less practical and more costly.

Digital traceability systems

Digital traceability systems use software and technology to identify, capture, store and share traceability information. These systems require investment in technology and training but enable more efficient and automated data collection and storage, greater accuracy, efficiency and real-time visibility compared to manual systems.

Most digital systems will be capable of tracing multiple criteria, for example, scope 3 emissions and modern slavery requirements in addition to recycled content. Systems vary from bespoke software platforms to functionality within other platforms such as ERP systems.

The framework is technology neutral. It does not endorse specific traceability systems. Rather, it provides guidance for all businesses, regardless of their choice of traceability system. It is important to ensure that the system you choose is interoperable with other systems used in your supply chain.

Key components of a traceability system

At their core, traceability systems are designed to track and share information about items or materials as they move through a supply chain. A complete traceability system provides three key functions: to identify, capture and share traceability information.

Identify

The system ensures that every item entering the recycled content supply chain can be uniquely recognised and tracked. It assigns a unique identifier (e.g. barcode, tag or number) that links the item to key data including its provenance, composition and quality. This creates a reliable foundation for following the item as it moves and transforms through the supply chain.

If the item is transformed or split, a new identifier is created and digitally linked to the original, preserving a “breadcrumb trail” back to its source.

> Example: A recycler assigns a barcode to a bale of plastics. If a reprocessor later converts the bale into pellets, they may create new IDs for the pellets but must link them to the bale’s original ID.

Capture

Information is recorded at key events in the supply chain, such as packing, shipping, receiving, processing, inspection, manufacturing, and storage.

Digital systems often automate this process. For example, a handheld scanner can read a barcode, retrieve details from a database, and add new data like weight, date, or location. This ensures an up-to-date, accurate record of the item’s journey.

Share

Traceability information must be accessible and shareable across the supply chain. Many businesses already exchange order and supplier data; traceability builds on this. Cloud-based systems allow real-time access and sharing.

Transitioning to digital traceability

Moving from traditional systems to digital traceability can be daunting. It requires more than technology, but also alignment, engagement and thoughtful change management.

Take a stakeholder first approach.

Using your supply chain map, engage all your key stakeholders early. Listen carefully to concerns and address them openly to build trust. Explain why timely, accurate, transparent traceability matters, and highlight the advantages it brings. Provide opportunities for feedback and respond to concerns proactively.

Check for recent developments

Recycled content traceability is evolving quickly. Before choosing a traceability system, check what’s happening in your sector and what your supply chain partners are doing. Talk to industry associations to learn about ongoing and upcoming traceability initiatives or requirements and consider these in your decision-making.

Examine existing systems

Before investing in a new traceability system, check whether you can adapt or build on any of your existing systems, such as ERP systems, data sharing systems or other environmental, social and governance (ESG) reporting systems. When stakeholders see that systems make their work easier, adoption accelerates.

Explore suitability of a new system

If you need a new system, consider the following features and functions:

Functionality	Ensure the system is able to identify, capture and share traceability data internally and externally.
Interoperability	Choose a system that can share and interpret data with other traceability systems using global standards (e.g. GS1, ISO). If partners lack interoperable systems, agree on a clear process for exchanging data.
Compatibility	Ensure the system integrates with existing operations such as inventory, logistics, ERP, supplier management, and order systems.
Data management and security	The system should securely capture, and store all required data for at least 5 years. Look for encryption, secure transmission, access controls, and compliance with Australian and global security standards.
Scalability	Ensure your preferred system is flexible enough to scale with your business and adapt to changing demands without compromising performance or data accuracy.
User-friendliness	Look for a system that is intuitive and easy for your team to use and for your supply chain partners to interact with.
Ask the right questions	Refer to "Suggested questions to ask your Traceability Solution Provider partners". This is a helpful guide to check whether a system aligns with GS1's global open standards.

Improve your system by using linked data

While some systems offer interoperability, a modern approach called linked data allows you to share trusted information while keeping control of your own records.

What is linked data?

Think of linked data like a reference system. Rather than emailing or uploading files, your business keeps the information in its own system. When someone needs to check it, they use a secure link (often through a QR code or digital identifier) to "pull" the latest version from your records. You stay in control of what is shared, with whom, and for how long.

A practical example of linked data

You produce shampoo bottles made from recycled plastic. Instead of printing long lists of details on the packaging, and sharing spreadsheets with your supply chain partners, you place a QR code on the label. When scanned, this shows that the bottle is made from 30% recycled PET, links to the public record of the resin used, and provides details of the provenance of your materials. Because the QR code connects to live data, you can update information whenever needed without redesigning the packaging.

How to implement linked data

Based on the data you've already identified as necessary to collect and share, decide which information should be made accessible across the supply chain. Create a digital label that links to your system or data source. Many businesses use international standards like Global Trade Item Numbers (GTINs) for products, Serialised Shipping Container Codes (SSCCs) for logistics, and Global Location Numbers (GLNs) for production sites. These identifiers are already widely used and make it easier to connect your records with the rest of the supply chain.

Free resources are also available through initiatives such as the UN Transparency Protocol, GS1 Global Digital Link Standard and Australia's new linked data standards (AS ISO/IEC 18975:2025) which provide practical frameworks for connecting identifiers with online records.

Testing your system

Once you have decided on a traceability system, consider testing it in a small area of your business. The aim of testing is to see how the system works in the real world before you roll it out to the entire business. This might mean testing it with a specific recycled material or product, location, or supplier. Use the feedback from testing to improve the system before rolling it out across the business.

Preparing for change

Resistance to change is a common challenge in any industry. Employees may be used to existing methods and systems and could resist new ones. A strong focus on training and support is key to overcoming this. Training should not only cover the technical aspects of using the traceability system, but also provide practical guidance through hands-on exercises, demonstrations, and real examples from daily operations.

By investing in thorough training and ongoing support, employees are more likely to feel confident in using the system effectively, reducing resistance and embedding traceability into everyday work.

Key takeaways

Options you can use:

- Manual, including a manual digital hybrid (e.g. using spreadsheets combined with QR or barcodes).
- Digital, including adding traceability modules to your existing ERP or inventory system, or a specialised traceability platform.

When choosing a system, check:

- Functionality and costs (can it do what you need? Consider both upfront and ongoing costs).
- Interoperability (will the system work in your supply chain e.g. by using common GS1, ISO standards).
- User-friendliness (can your team use it?).

Example in practice

You might start with QR codes linked to cloud-based folders that hold supplier certificates and batch data. Later, you could migrate to a dedicated traceability platform or app, which automates data capture and integrates with customer systems.

Step 5: Get verified

While traceability tracks recycled materials through the supply chain, verification confirms that the data behind those claims is accurate, credible, and compliant. Whether you start with an internal audit, engage a third-party verifier, or pursue full certification, verification adds integrity and assurance to your recycled content story.

By the end of this process, you will understand how to ensure your traceability system and actions can stand up to scrutiny through documented audits, trusted third-party validation, and, where needed, accredited certification.

What is verification?

Verification is the process of assessing and confirming the accuracy of data within a traceability system. This process can be conducted internally or by an independent third-party and typically involves:

- reviewing supplier documentation
- conducting site audits to check whether practices align with documentation and claims
- testing materials for compliance with any stated claims or industry standards.

Even the most sophisticated traceability system cannot ensure accuracy unless verification is built into the process.

Types of verification approaches

There are three main approaches businesses can use to verify recycled content claims: internal audits, third-party verification, and third-party certification schemes. Each approach has its own purpose and benefits depending on the context.

Internal audits as a first step in verification

For small and growing businesses, internal audits are a practical way to test traceability systems before committing to third-party verification. They help refine processes, identify risks, and prepare for external validation.

Step 1: Set up verification protocols	Assign responsibility for overseeing traceability and define the scope of your audit. For example, decide what documentation will support recycled content claims. If resources are limited, focus on the areas with the highest risk of uncertainty.
Step 2: Identify risk areas	Review the points where data is transferred between systems or departments, as these are often prone to error. Pay particular attention to supplier-provided information, especially if it is self-declared or not independently verified.
Step 3: Decide on audit frequency	Not all data requires the same level of scrutiny. Higher-risk points, such as data from new suppliers, should be checked more frequently than established, lower-risk sources.
Step 4: Conduct the internal audit	Use your preparatory work, including supply chain and data mapping, to guide the process. These tools show which suppliers, materials, and records are in scope, and how information flows through your systems.

Third-party verification

Selecting the right third-party verification provider is critical to ensuring accurate and credible verification results. Businesses may wish to consider the following questions when choosing a provider:

Scope	• How is the accuracy of recycled content information confirmed? • Do verification procedures cover the entire supply chain? • What types of data are reviewed, such as source, quantity, processing methods, and certifications? • How are verification methods and findings documented?
Competence	• What experience exists in verifying recycled content or similar supply chain data? • What qualifications or certifications are held by the verification team? • Are examples of past verification work available for review? • Is the verification process accredited to recognized standards (e.g., ISO)?
Impartiality	• How is independence ensured in the verification process? • Procedures exist to identify and manage any conflicts of interest? • What policies are followed to maintain objectivity and impartiality?
Confidentiality	• How is sensitive information provided by the business protected?
Verification statement	• What will the verification statement include? • Will the statement clearly indicate what was verified and the results? • Will the statement identify the party that carried out the verification and the date? • How can the verification statement be used, for example in reporting, marketing, or compliance?

Prepare for third-party verification

Verification relies on accurate, well-documented data. Businesses should ensure traceability records are complete and well-organised, including supplier documentation, purchase records, and material composition details. Where possible, maintain consistent data formats to facilitate easier verification.

Businesses can conduct internal verification audits to check for discrepancies in recycled content data and claims and gaps in documentation. This can include reviewing past data to ensure accuracy and completeness; cross-checking information against invoices, contracts, and shipment records; and assessing compliance with company policies and traceability goals.

Third-party certification schemes

Certification schemes can add credibility by independently assessing recycled content claims against specific standards such as recycled content thresholds and chain of custody protocols and are often recognised in global markets.

While certification schemes validate claims against their own proprietary standards, the framework promotes interoperability and transparency between businesses. The following steps can help you if approaching certification schemes for verification and traceability.

Select a suitable certification scheme

If selecting a certification scheme for traceability, businesses should consider whether it delivers traceability outcomes that are equivalent to those outlined by the framework.

Third-party certification schemes should rely on Conformity Assessment Bodies (CABs) that are accredited to ISO/IEC 17065. Where possible, this accreditation should be granted by a member of the International Accreditation Forum (IAF), such as the Joint Accreditation System of Australia and New Zealand (JASANZ). This ensures the credibility, impartiality, and consistency of the certification process.

> Third-party certification schemes have been invited to self-assess their alignment with the framework. These self-assessments, available on the department's website, compare each scheme's requirements against the framework, highlighting both areas of alignment and any gaps. Businesses are encouraged to review these self-assessments to better understand how each scheme aligns with the framework.

Undergo the certification process

After selecting a suitable scheme, engage an accredited certification body to conduct independent audits verifying recycled content claims. The process typically begins with a review of traceability records and supplier data, followed by on-site audits of storage, processing, and documentation practices. Auditors may also interview staff or suppliers, and any issues identified must be corrected before certification is granted.

Obtain and maintain certification

Successful audits lead to certification, which outlines scope, validity, and compliance requirements. Most schemes require ongoing surveillance audits to confirm continued compliance and adapt to process or material changes.

Integrate certification into traceability systems

Once certified, integrate the details into your traceability system. Link certification information with supplier data, reporting, and verification statements to maintain transparency and support efficient tracking.

Alignment with national and international conformance frameworks

Use Australia's conformance infrastructure

Australia's national system for standards and conformance provides the assurance needed for trustworthy certification. This system brings together:

- Standards Australia, which develops recognised standards
- National Association of Testing Authorities (NATA), which accredits laboratories and inspection bodies
- Joint Accreditation System of Australia and New Zealand (JASANZ), which accredits certification bodies to ISO/IEC standards and
- The National Measurement Institute (NMI), which ensures consistent measurement and calibration.

Digital verification standards

As global trade increasingly relies on digital systems, businesses may wish to align with the United Nations Economic Commission for Europe (UNECE) Business Requirements Specification (BRS) for Digital Product Conformity Certificate Exchange. This framework sets out common formats and protocols for issuing and sharing product certificates digitally, allowing claims to be verified automatically and securely. Using these standards reduces errors, strengthens trust in recycled content claims, and supports international market access.

Working within this conformance infrastructure ensures that recycled content claims are credible, verifiable, and recognised both domestically and overseas. Where possible, businesses should choose certification schemes and auditors that operate under this framework.

Key takeaways

Verification ensures that your claims stand up to scrutiny or that others can make claims about the material you supply them.

1. **Internal audits:** Assign a staff member as a "traceability lead." Cross-check supplier documentation with your recycled content information and claims, aim for quarterly to start with.
2. **Third party verification:** Use your third-party verification bodies to verify your claims.
3. **Certification (if needed):** Formal third-party certification may be needed if required by your customers or markets.

How to make it efficient:

- Focus verification on higher-risk suppliers (for example new suppliers, overseas imports, or unusually high recycled content claims)
- Use sampling instead of checking every record
- Keep all records, certificates, and audit notes in one digital system.

Example in practice

You might begin with internal audits of your main three suppliers' recycled content claims. Once you're confident in your processes, you could engage a JASANZ-accredited auditor to verify your records before submitting a tender that requires independent verification.

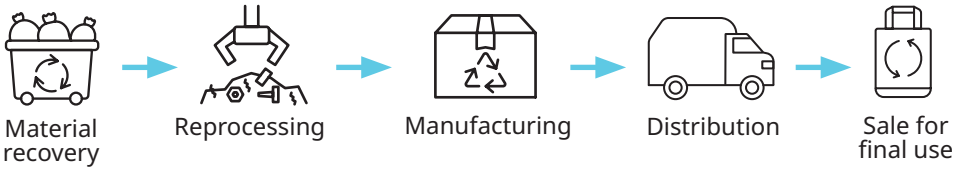
What's next

This guide is designed as a starting point for implementing recycled content traceability in line with the framework within your supply chain.

As a next step, if you haven't already, review the National Framework for Recycled Content Traceability, and let the department know you're using the framework to guide your traceability activities. You can do this by completing the registration form available on our website and emailing it to RecycledContentTraceability@dcceew.gov.au. The department's privacy policy will apply to any personal information you provide.

The department may contact you to request additional information. This information helps us understand the use and impact of the framework, ultimately improving it for all stakeholders. We may also connect you with relevant resources or other opportunities to support your traceability efforts.

Appendix A: National Framework for Recycled Content Traceability Summary

Objective	To boost confidence in, and demand for, recycled content, by increasing the amount of information that is available on these materials.
Scope	The following stages of recycled content supply chains:  All types of recovered materials, recycled materials and recycled content products produced or imported into Australia. This includes pre-consumer and post-consumer materials. All recycling processes, including advanced recycling.
Guiding principles	• Governments set harmonised expectations • Industry ownership • Transparency and visibility • Data integrity, security and privacy • Interoperability • Harmonisation • Precautionary principle • Adaptability • Collaboration and cooperation
Guidelines	**Interoperability**: Align traceability activities and systems with the GS1 Global Traceability Standard. **One-step forward, one-step back**: Collect, record and share information that ensures at least 'one-step forward and one-step back' traceability. **Full supply chain coverage**: Participants aim to trace recycled content across their supply chains, between the traceability entry point (material recovery) and exit point (sale for final use), within four years—by the end of 2027. **Provenance**: Trace the provenance of recycled content back to this first material recovery location, where it is collected or sorted. **Composition**: Determine the recycled content composition of materials and products as they move through the supply chain using mass balance (or an identity preservation, segregation or controlled blending chain of custody) approach. **Quality**: Determine the quality of recycled content as it moves through the supply chain, by documenting processing and using a precautionary approach to risk assessment. **Data elements**: Collect and share a minimum set of recycled content information (including about their composition, provenance and quality) with supply chain participants. **Verification**: Supply chain participants should verify the traceability information they receive is accurate and adequate to support any recycled content claims and enable tracing backward in the supply chain. **Certification schemes**: Participants in supply chain certification schemes can achieve traceability under the framework if those schemes provide considerations similar to the framework. **Records management**: Maintain traceability records in accordance with any legal obligations for your sector, or in the absence of any such requirements, a minimum of five years.
Key success measures	• Number of businesses that are aware of the framework. • Number of businesses that have adopted (or are adopting) the framework. • Number of businesses with 'one-up-one-down' traceability for recycled content. • Number of businesses with end-to-end traceability systems for recycled content. • Number of businesses that independently verify recycled content information. • Amount of recycled content used in manufacturing resulting from access to traceability data. • Access to international markets attributed to traceability.
Review	First review in 2027.

Appendix B: Example table detailing traceability data exchange

Type of Information	Exchanged? (Yes/No)	Source (How is it obtained?)	How is it captured/ shared?	Example Value
Item identifier	Yes	Bale label	Barcode scan	“GTIN: 0847976000005”
Item description	Yes	Product datasheet	Manual entry	“HDPE Pellets”
Item quantity	Yes	Packing slip / scale	Manual or scale import	“500 kg”
Unit of measure	Yes	Bale label	Barcode scan	“kg”
Date shipped	Yes	Shipping system	Auto-timestamp or manual	“2024-10-03”
Date received / delivered	Yes	Delivery docket	Manual entry	“2024-10-06”
Sender identifier	Yes	Vendor database	Auto populated	“SUP00123”
Shipment identifier	Yes	Waybill	Barcode scan	“SHIP456789”
Receiver identifier	Yes	Customer system	Auto populated	“CUST00987”
Location shipped from	Yes	Shipping documents	Manual entry	“Warehouse A”
Location shipped to	Yes	Delivery docket	Manual entry	“Factory Z”
Country of origin	Yes	Certificate of origin	Manual entry	“Australia”
Jurisdiction of origin	Yes	Supplier declaration	Manual entry	“NSW”
Remoteness of source	Yes	GPS, audit	Manual entry or geolocation	“Remote (Outback)”
Feedstock source stream	Yes	Material spec sheet	Manual entry	“Municipal Solid Waste (MSW)”
Feedstock type	Yes	Supplier declaration	Manual entry	“Cardboard – Not waxed”
Feedstock source type	Yes	Audit report	Manual entry	“Post-consumer”
Recycled content claim	Yes	Spec sheet / bale label	Manual entry	“80% recycled”
Chain of custody approach	Yes	Supplier documents	Manual entry	“Mass balance”
Mass balance period	Yes	Report	Manual entry	“Q1 2025”

Type of Information	Exchanged? (Yes/No)	Source (How is it obtained?)	How is it captured/ shared?	Example Value
Mass balance allocation method	Yes	Audit or standard	Manual entry	“Free Allocation”
Processing method	Yes	Tech datasheet	Manual entry	“Mechanical “
Chemical content declaration	Yes	SDS, supplier disclosure	Manual upload or entry	“Yes - SDS provided”
Risk assessment	Yes	Assessment	Manual entry	“Low risk”
Results of analysis	Yes	Lab report / CoA	Upload or entry	“No hazardous chemicals found”
Certification details	Yes	Certification	Manual entry	“FSC Recycled”
Certification identifier	Yes	Certificate	Manual entry	“FSC-C123456”
Certification start date	Yes	Certificate	Manual entry	“2025-01-01”
Certification end date	Yes	Certificate	Manual entry	“2026-01-01”

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