Webinar

Construction Goes Circular

27 JUNE 2024

Index

01. General Presentation of the Project

In November 2023, a Round Table will be held in Madrid with representatives from the entire paper sack value chain.

The objective: to promote an initiative that pursues its circularity, to take a step forward in the industry in terms of sustainability.

From this moment on, a commitment has been made to continue promoting this initiative, seeking to professionalise it, through the creation of an Alliance at European level.

In this context, **Eurosac** (European Sack Manufacturers Association) and **Eurokraft** (Kraft Paper Manufacturers Association) have decided to create the **CONSTRUCTION GOES CIRCULAR Alliance**.

Targets

1. Introduce the initiative formally to the participants.
2. Establish the basis of work and responsibilities
3. Promote the relationship between the participants
4. To extend the scope of action to other construction waste.
5. To encourage new members to join
6. Establish Next Steps

02. Introduction of Regulations

Legal requirements for segregation at construction sites Construction

01	**Royal Decree 105/2008 of 1 February 2008 regulating the production and management of construction and demolition waste.**	• Requirement for the segregation and classification of waste from construction processes. • Requirement for the elaboration of Studies and Plans, which include objectives and implementation/execution process for the fulfilment of the same.
02	**Law 7/2022 of 8 April on waste and contaminated soils for a circular economy**	• Requirement for segregation and sorting of waste from construction processes. • Establishes minimum targets for waste recovery (recovery of materials) → 70%. • Requires the traceability of the complete treatment of the waste, up to the verification of its final treatment. • Establishes the classification and coding of waste and treatments.

Legal requirements for segregation at construction sites Construction

New: January 2025 EPR for industrial and commercial packaging

03

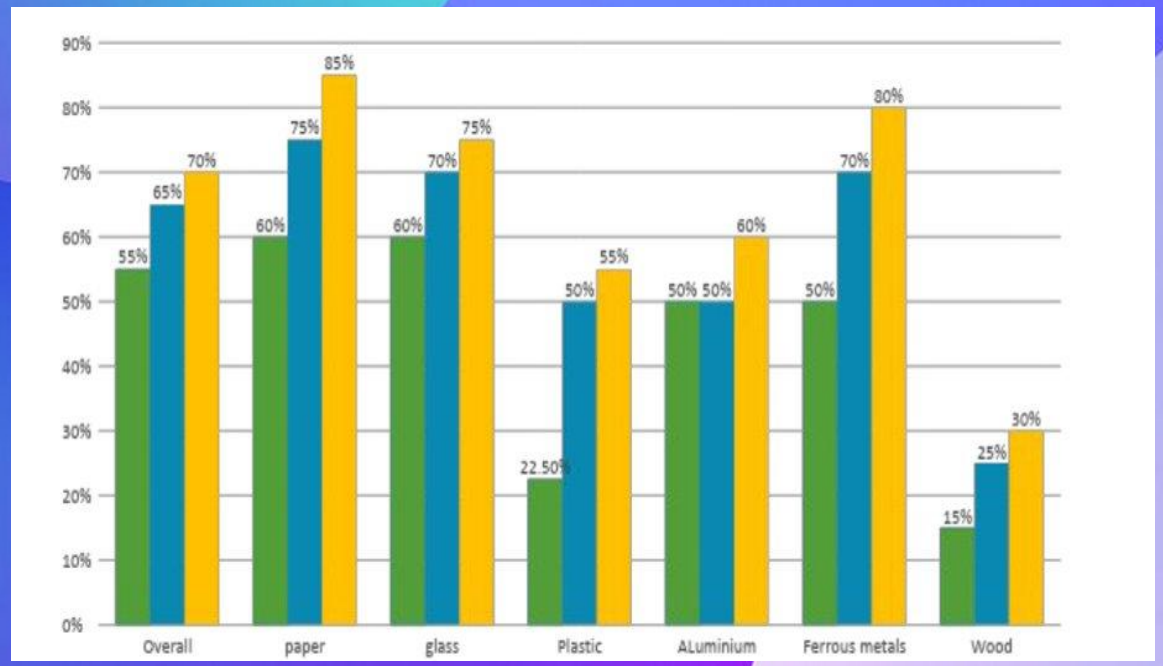
Royal Decree 105/2008 of 1 February 2008 regulating the production and management of construction and demolition waste.

- Requirement for segregation, sorting and separate collection of packaging waste.
- Obligation to set up collective EPRCS or individual systems for packagers who finance the collection of packaging waste
- Encouragement of prevention, reuse, recovery, recycling, recyclability and eco-design of packaging.
- Establishes minimum recovery targets for producers.

Separate collection targets: industrial packaging LER 15

2027	75%
2030	85%
2035	95%

Recycling targets per material: packaging



Legal requirements for segregation at construction sites
Construction

04

Royal Decree 105/2008 of 1 February 2008 regulating the production and management of construction and demolition waste.

- It sets the minimum conditions for documentary verification of waste shipment and treatment processes.
- It requires the identification of the agents involved in the process.

Actors involved

Responsibilities of legally recognised actors in the production, management and treatment process

- CDW Producer
- Product Producer
- Holder of the CDW
- Waste Manager

Actors involved

EXTENDED PRODUCER RESPONSIBILITY (EPR).

Mandatory segregation of packaging at the producer site (construction site)

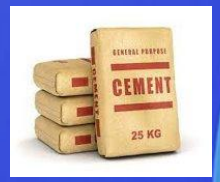
PRODUCT PRODUCER: MANUFACTURER

COLLECTIVE SYSTEMS NEW RESPONSIBILITY

HOLDER: CUSTOMERS CONSTRUCTION COMPANY

Packaging





Financing and organising the management of packaging waste in which the products are sold

Packaging waste


BENEFITS / ADDED VALUE:

Beyond regulatory compliance → Traceability and integral process optimisation

Segregation and selective classification

- Optimisation of the management costs directly passed on to the producer/owner (Construction company)
- Optimisation and increase of recovery rates (Recovery)
- Increase in volume of recovered packaging and waste → circularity
- MORE RECYCLABLE AND RECYCLED PACKAGING
- Transparency and traceability of process (treatment chain)

The involvement and collaboration of EPRCS how ENVALORA increases

- Optimisation of management costs → From January 2025, separate packaging collection will have economic incentives provided by EPRCS.
- Specific training at the regulatory level through webinars or seminars
- Greater control and stringency in the classification/coding of waste → Optimised traceability
- The economic subsidy of the processes is subject to documentary verification of the same, according to the characteristics of the specific waste streams.

Opportunities and challenges

- Better adaptation to European guidelines and regulations → TAXONOMY
- Optimisation of processes and costs related to the production and management of waste.
- More circular, sustainable packaging and construction materials with a higher recycling rate. → Lower impact.

03. Production and Segregation on Site

Keys and best practices

SIGNALLED CONTAINERS FOR STORAGE OF EACH TYPE OF WASTE (wood, iron, concrete, plastics, insulation, gypsum board, etc.)

- Analyse the location of storage containers, locating them close to the areas where waste is produced where feasible. E.g.: bins close to wood cutting tables, sack containers close to mixing machines, etc.
- Insulation waste storage area

OBLIGATION FOR CONTRACT SUBCONTRACTORS TO ENSURE THAT EACH TRADE COLLECTS ITS OWN MATERIAL RESIDUES

- If waste is collected continuously at the end of a pit, we avoid mixing in the plant and segregation by type of waste in different containers is feasible.

TRAINING AND AWARENESS RAISING AT THE WORKSITE WITH GRADUISTS AND SUBCONTRACTORS (indicating the separation system, location of storage areas, etc.) the materials that cannot be mixed

On the part of the MA technicians assigned to each site.
By the manufacturers with whom we collaborate.
- MONDI Group-sacks
- PLACO SAINT GOBAIN group - plasterboard
- ROCKWOOL-SATE insulation

Control and Monitoring Measures

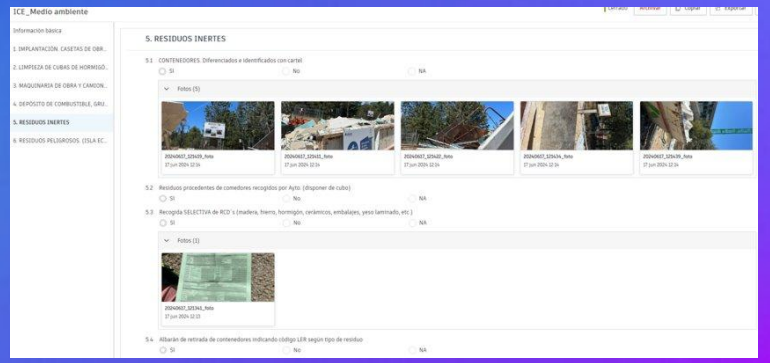
01 MONITORING THE CORRECT SEGREGATION OF WASTE ON SITE BY MEANS OF

- Control visits by the MA technicians → weekly
- Control by site teams through completion of ECI's / PPI's for waste monitoring → monthly

NON-COMPLIANCE → OPENING OF NON-CONFORMITY/INCIDENT → OBLIGATION OF RESOLUTION/CLOSURE

02 CONTROL ON SITE BY THE ORP AND ENVIRONMENT BRIGADES.

- Correct marking of containers
- Review of NO MIXING



Control and Monitoring Measures

Grupo arpada

03 **DOCUMENTATION**

- Transfer Identification Documents (ID's), monthly certificates...
- Chronological archive

DENSIDAD R.C.D.

Servicio	Albarán	Volumen (M^3)	Nº Contenedor LLEVA	Nº Contenedor RETIRA	Peso neto (K~)	DENSIDAD (Kg/M^3)	HORA	FECHA	TIPO RESIDUO	CENTROS DE TRATAMIENTO	FECHA FACTURA
103	339.906	6	731	1.288	5.660	0,943	15:50	02/01/2024		Macotran	20/01/2024
104	339.918	9	169	133	2.320	0,258	09:50	04/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
105	337.249	6	874	731	4.180	0,697	10:50	04/01/2024		Macotran	20/01/2024
106	340.018	6	1.006	874	2.060	0,343	10:20	08/01/2024		Macotran	20/01/2024
107	336.442	6	805	1.006	1.820	0,303	11:40	10/01/2024		Macotran	20/01/2024
108	340.036	9	100	165	2.040	0,227	11:30	10/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
109	11.554	6	1.229			0,000	16:50	11/01/2024		Macotran	20/01/2024
110	340.491	6	726	805	1.120	0,187	16:50	11/01/2024		Macotran	20/01/2024
111	340.696	6	477	1.229	2.080	0,347	15:10	15/01/2024		Macotran	20/01/2024
112	341.327	9	198	100	2.160	0,240	12:00	16/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
113	340.265	6	523	726	2.760	0,460	16:25	17/01/2024		Macotran	20/01/2024
114	341.790	9	192	169	2.260	0,251	11:20	18/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
115	339.626	6	633	477	980	0,163	11:00	19/01/2024		Macotran	20/01/2024
116	341.350	9	139	198	2.900	0,322	08:15	22/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
117	341.569	6	702	523	1.840	0,307	15:15	22/01/2024		Macotran	20/01/2024
118	342.619	6	682	633	1.220	0,203	10:40	24/01/2024		Macotran	20/01/2024
119	341.216	6	591	702	1.840	0,307	08:45	29/01/2024		NORTOBRAMA, S.L. (TR	20/01/2024
120	342.783	9	108	192	2.540	0,282	11:50	29/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024
121	341.228	6	1.199	682	1.760	0,293	15:30	30/01/2024		Macotran	20/01/2024
122	342.449	9	109	134	2.180	0,242	11:25	30/01/2024	LER170802	PLACO SAINT GOBAIN	20/01/2024

Aedas 210 | HOSPITAL HM | ACTIVITAS 192 | Ferrocarril 216 | Acciona 49 | Aedas 16 | Aedas 19 | AEDAS 90 | Aedas 23 | Aedas 72 | AEDAS 7

Auxiliary means and process optimisation

- **PACKAGING WASTE COMPACTORS** (plastic, sacks, cardboard)
  - Implemented on all our construction sites at the beginning of the enclosure phase.
  - We increase the density of the waste → We reduce the volume → We reduce the number of containers.
  - It favours NO MIXING of waste. The open container is more susceptible to contamination.
  - The presence of the compactor motivates the site teams and workers to carry out better segregation.

Auxiliary means and process optimisation

- **I-VASIC SELF-TIPPING TROUGHS**
  - Larger capacity than a normal skip
  - Less manpower required: they are tipped into the container by the crane operator himself without the need for another operator.
  - Safer

BENEFITS / ADDED VALUE:

Beyond regulatory compliance → Optimisation of results

GOODBYE LANDFILL HELLO CIRCULARITY: construction is one of the sectors that generates the most waste, thanks to circularity we manage to divert waste from the landfill for its use.

TO ADVANCE AND PREPARE FOR REGULATORY REQUIREMENTS (RD 1055/2022– 1 January 2025)

Compliance with WASTE requirements for obtaining **SUSTAINABLE CONSTRUCTION CERTIFICATES**

1

2

LOWER MANAGEMENT COSTS: Economic incentive for managers such as MACOTRAN to segregate the material, reducing the need for intervention on the waste, making it possible to send the waste to final recovery companies.

- Savings on landfill fees.
- In the short term further optimisation and economic incentives through EPRCS.

3

4

BRAND/ COMPANY IMAGE to external stakeholders (properties, manufacturers, contractors, institutions, etc.)

5

6

ODS

- 9 (industry, innovation and infrastructure)
- 11 (sustainable cities).
- 12 (responsible production and consumption)
- 17 (promoting partnerships to achieve the goals)

04. Collection and Pretreatment Process and Lotification

WASTE MANAGEMENT AT THE PLANT

Management model and its evolution

Historically, the business model of the CDW managers was based on the container logistics service.

- Container collection and transport service from site to landfill and/or plant.
- Benefit obtained by.

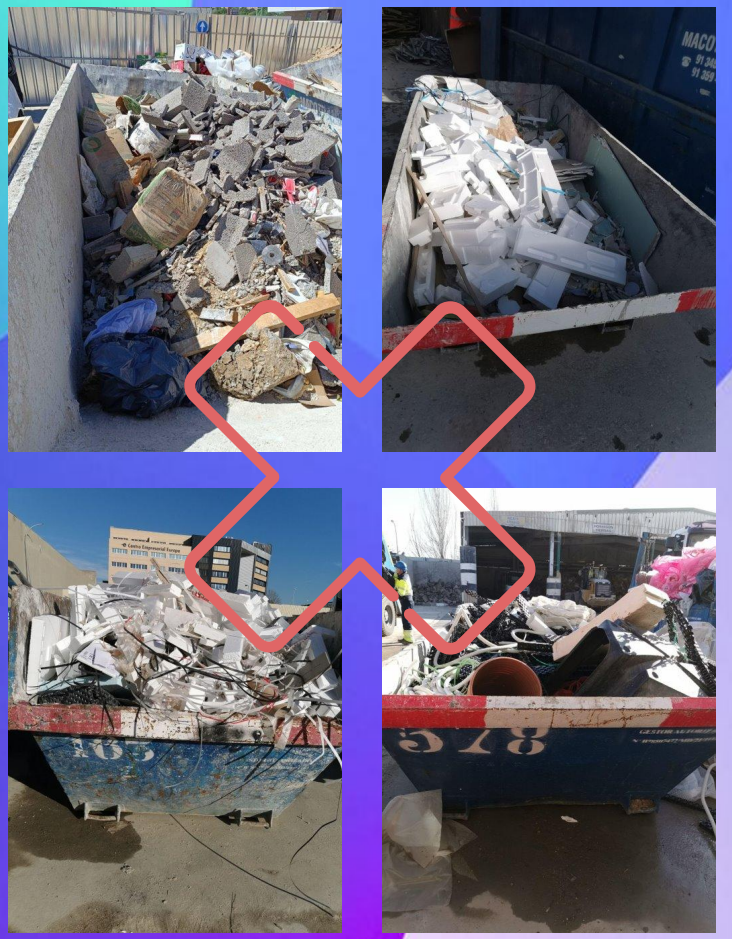
  - Logistics service efficiency

  - Margin on waste deposited at landfill site

  - Recovery of stone materials (concrete and ceramic waste) → minimum % due to the quality of the waste received.

- Very low segregation and waste quality → Does not allow margins or profitability to be set in order to apply treatment methods.

UNIQUE COST PER SERVICE AND CONTAINER



BENEFITS / ADDED VALUE:

Optimisation and new horizons through waste segregation

- New treatment possibilities and alternatives to landfill disposal
- New paradigm → Economic profitability of waste treatment
  - Elimination of landfill fee costs
  - Economic value for the material (waste)
  - Possibility to receive external economic incentives → EPRCS
  - Business model feedback → Incentives for segregation at source → Reduction and optimisation of producer costs for segregation

DIFFERENTIATED AND REDUCED COST BY TYPE OF WASTE AND CORRECT SEGREGATION

BENEFITS / ADDED VALUE:

Optimisation and new horizons through waste segregation

- Highest % of Valorisation (Recovery) per waste type
  - The higher the quality of the waste the lower the % of unfit waste → less triage and treatment applied up to the final recycler.

- More and better recycling pathways → Recovery/recycling solutions for materials that are considered unwanted in other waste streams
  - Gypsum
  - Plastic insulation (EPS/XPS)
  - PVC
  - Plastic raffia (Big-Bag)
  - Carpets / Geotextile (Polypropylene)
  - Mineral fibres (rock wool / glass fibre)

BENEFITS / ADDED VALUE:

Optimisation and new horizons through waste segregation

- Transparency of process and optimisation of traceability to complete waste treatment → Defined and known treatment chain.
  - Higher waste quality → Possibility of direct shipment to the final processor (only needing logistics/lotting intermediaries) → Fewer agents in the chain → Easier monitoring and documentary verification of the process

- Ease of coding and regulatory compliance (LER Classification)
  - Correct and optimised segregation makes it possible to adjust the LER coding of the waste, improving the acceptance of the waste in all links of the chain → Without the need for LER recoding/adaptation, traceability is improved.

05. Recycling and Transformation

HOW DO WE DO IT?

FROM WASTE TO PAPER...

Recycling sacks

The production of SACKS cannot be made with recycled fibres that do not come from the same type of fibre. That is why we need tons of RECOVERED SACKS to be able to continue and increase our production capacity of this type of sacks.

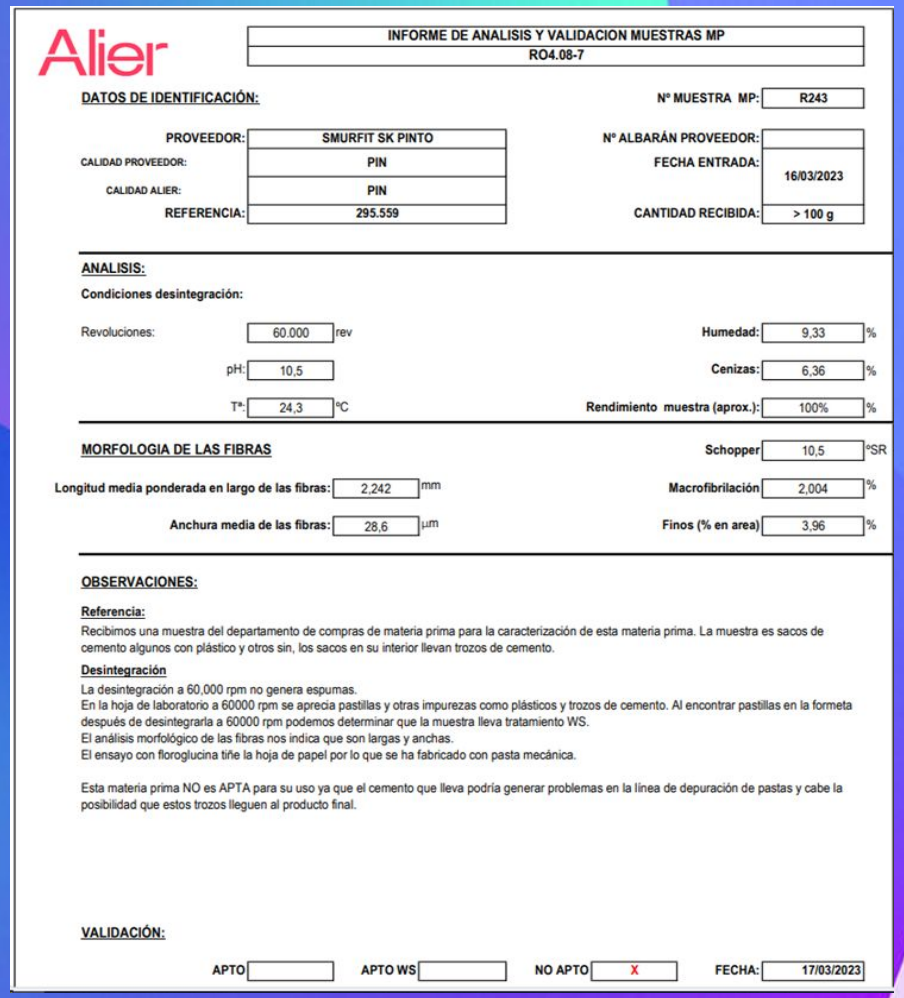
In ALIER we have a capacity of 180.000 tn/year and we consume 20.000 tn of SACKS per year with origin of all types:

- Building site bags (cement, mortar, plaster...)
- Cereal sacks
- Milk sacks
- Tea sacks

QUALITY

QUALITY

QUALITY



Alier

INFORME DE ANALISIS Y VALIDACION MUESTRAS MP
RO4.08-7

DATOS DE IDENTIFICACIÓN:

		Nº MUESTRA MP:	R243
PROVEEDOR:	SMURFIT SK PINTO	Nº ALBARÁN PROVEEDOR:	
CALIDAD PROVEEDOR:	PIN	FECHA ENTRADA:	16/03/2023
CALIDAD ALIER:	PIN		
REFERENCIA:	295.559	CANTIDAD RECIBIDA:	> 100 g

ANALISIS:

Condiciones desintegración:

Revoluciones:	60.000	rev	Humedad:	9,33	%
pH:	10,5		Cenizas:	6,36	%
T*:	24,3	ºC	Rendimiento muestra (aprox.):	100%	%

MORFOLOGIA DE LAS FIBRAS

			Schopper	10,5	ºSR
Longitud media ponderada en largo de las fibras:	2,242	mm	Macrofibrilación	2,004	%
Anchura media de las fibras:	28,6	µm	Finos (% en area)	3,96	%

OBSERVACIONES:

Referencia:

Recibimos una muestra del departamento de compras de materia prima para la caracterización de esta materia prima. La muestra es sacos de cemento algunos con plástico y otros sin, los sacos en su interior llevan trozos de cemento.

Desintegración

La desintegración a 60,000 rpm no genera espumas.
En la hoja de laboratorio a 60000 rpm se aprecia pastillas y otras impurezas como plásticos y trozos de cemento. Al encontrar pastillas en la formeta después de desintegrarla a 60000 rpm podemos determinar que la muestra lleva tratamiento WS.
El análisis morfológico de las fibras nos indica que son largas y anchas.
El ensayo con floroglucina tiñe la hoja de papel por lo que se ha fabricado con pasta mecánica.

Esta materia prima NO es APTA para su uso ya que el cemento que lleva podría generar problemas en la línea de depuración de pastas y cabe la posibilidad que estos trozos lleguen al producto final.

VALIDACIÓN:

APTO		APTO WS		NO APTO	X	FECHA:	17/03/2023

Benefits / Added value:

Obtaining new sources of raw materials and products

- Improved waste quality → Characterisation of the waste as raw material usable for material production process
- Optimisation of management costs passed on to the producer
  - If the waste is of a minimum quality at source, treatment costs are reduced
  - Can be characterised as a usable material → market value
  - Market value passed on to the treatment chain + lower treatment costs → higher profitability for the collectors → Demand generation → Cost optimisation at scale for the producer
- Meeting the needs and demand of the building products manufacturing industry → More sustainable packaging
  - Recycled and recyclable packaging → The end of single-use packaging

New challenges and opportunities

- **Generating a real Circularity of recyclable materials**
  - High demand from the sector for product packaging materials → Recycling capacity for all waste produced by the construction sector
- **Optimisation of recycling processes to maximise Valorisation, even with waste not categorised as raw material.**
  - Recycling of plastics and films for composite/mixed packaging
  - Energy recovery and biomass plants

06. Sustainability Objectives and Innovation Product/Material Manufacturers

Saint-Gobain's sustainability targegts

2050 NET ZERO CARBON

Packaging targets

FOR PACKAGING:

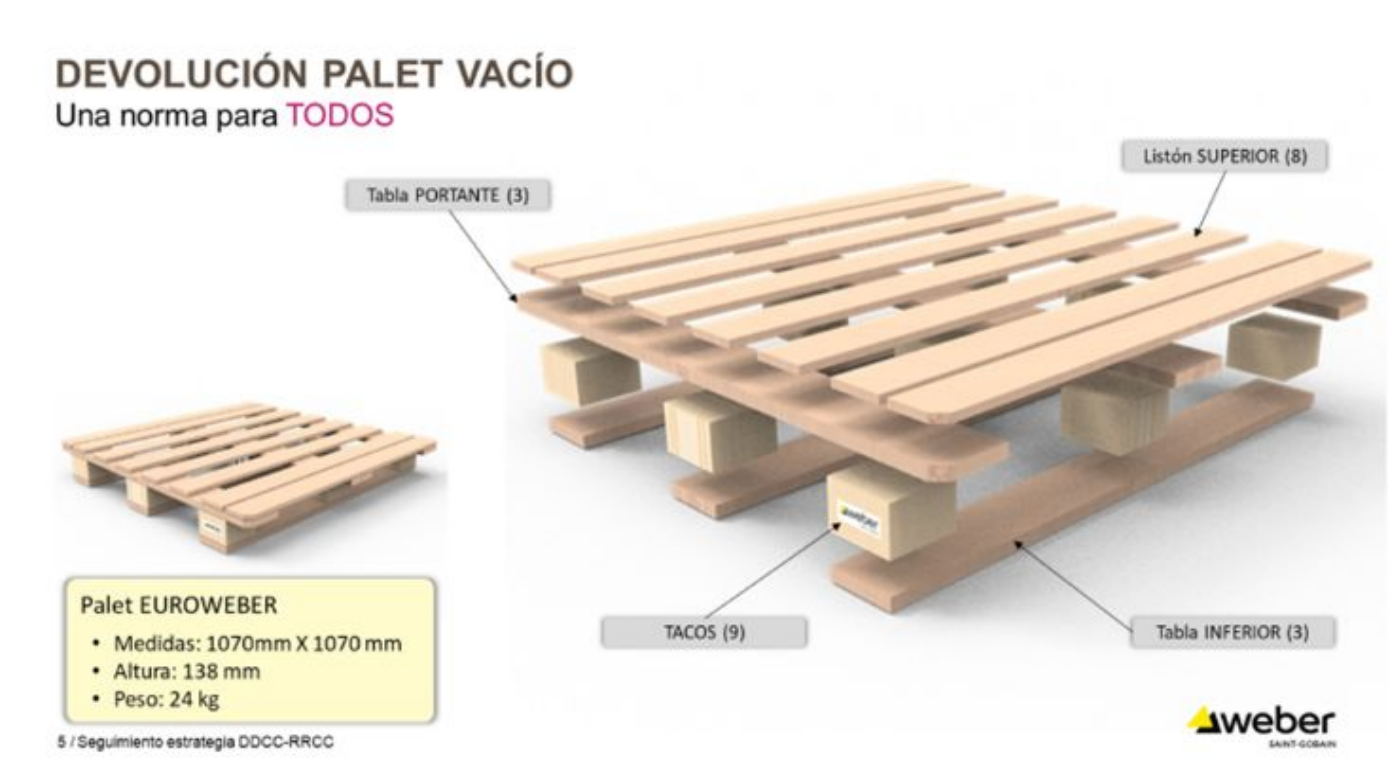
- 100% of packaging recyclable.
- >30%* recycled or biobased content in our packaging.
- Reduce packaging usage and waste. To lower CO2 footprint and boost circularity

Mondi hosts first-of-its-kind round table to tackle used paper bags from construction

PAPER SACKS THE KEY CHALLENGE FOR MORTAR BUSINESS

It represents a big volume for SG (300 Million bags)
Approx. 30.000Tn paper landfilled

Initiatives to improve the reuse of packaging



Return and return system with more than 20 years in service

Return rate: 80%.

Circularity and innovation

1. Eliminación del plástico de nuestros sacos
2. Contribución a la reducción de CO2 en Scope3
3. Mejorar la circularidad de los residuos de envase para favorecer la valorización de los residuos de papel y su reciclabilidad a escala

RECYCLABLE PACKAGING

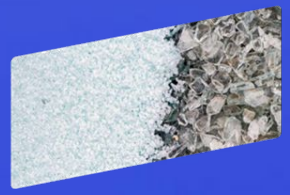
From linear to circular model

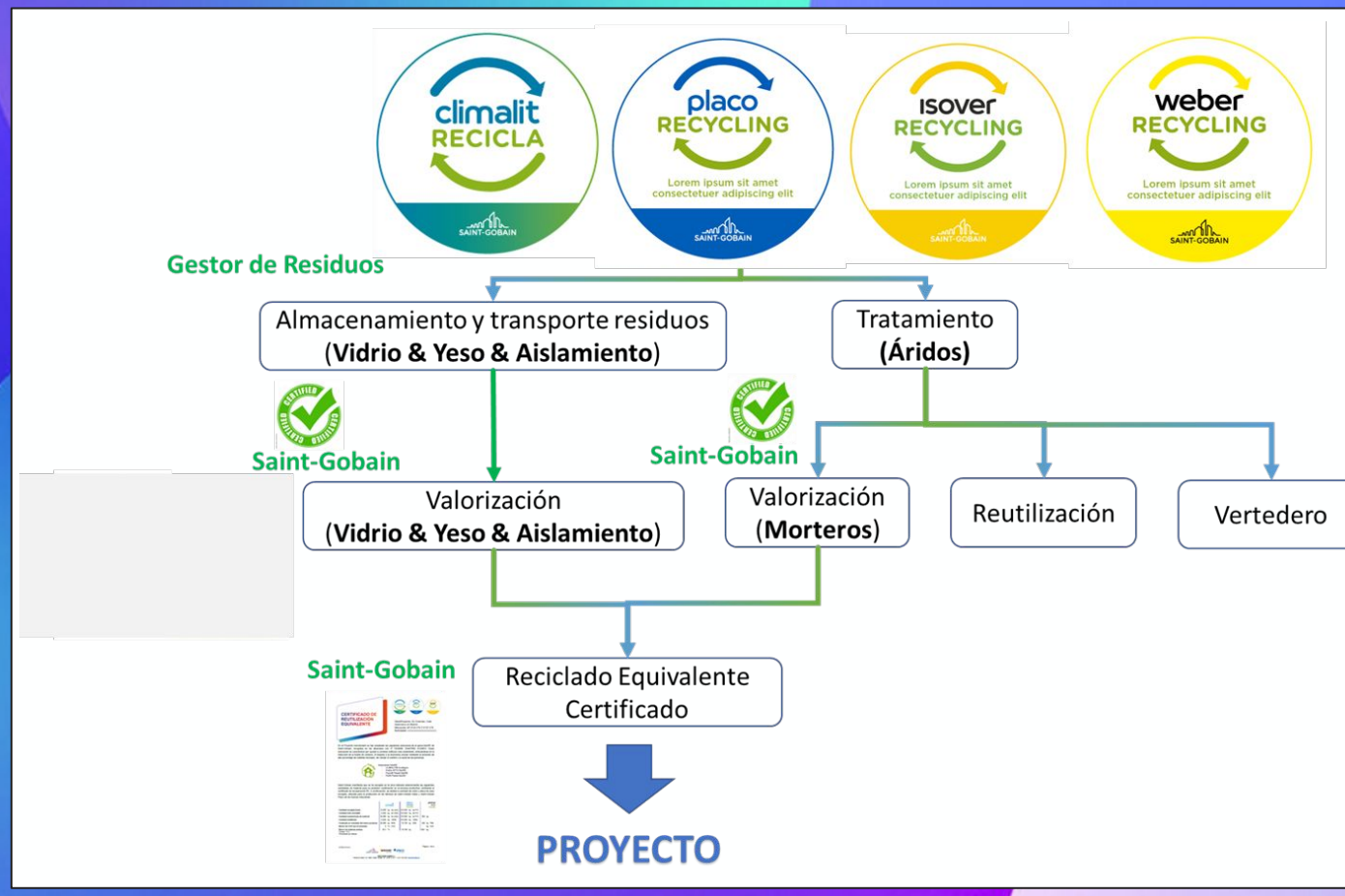
volume for SG = 23M units
Large amount of single-use plastic waste
Customers have to pay for their waste

Pilot Country: SP
Country interest: NL, CZ, PT

Saint-Gobain recycling services

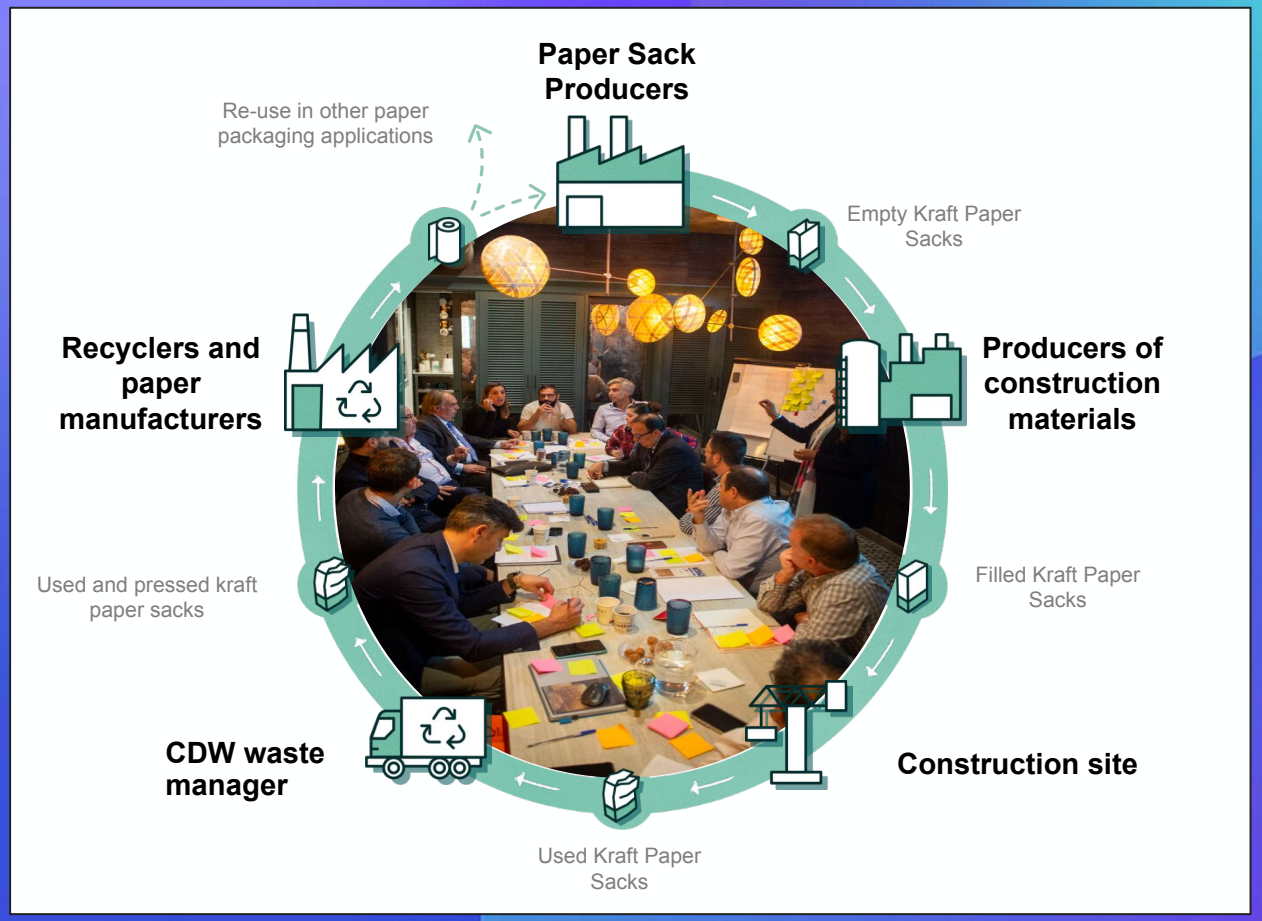
Saint-Gobain recycling services to decarbonise the construction sector





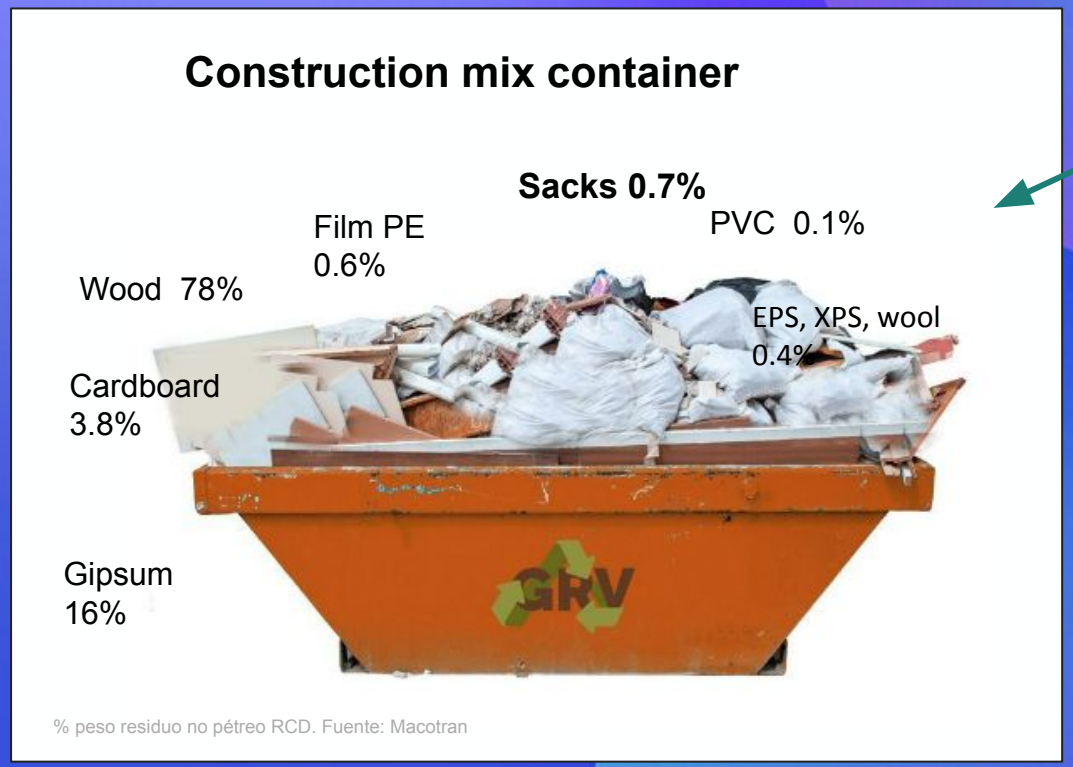
07. Closing and Summary

Paper sacks go circular



- The result of the collaboration of all actors in the value chain
- After successful implementation of the sack collection and recycling pilot project
- Challenges to create circularity become opportunities and synergies that are managed by the Alliance.
- Understanding that the circularity of sacks has to be approached with an open vision to the rest of the waste generated in construction.

From Paper sacks go Circular to Construction goes Circular



We need to join forces with other construction waste to achieve the segregation of Kraft Paper sacks on an industrial scale. We can't do it alone!

- Interest of all actors: environmental and economic
- The economic incentive is fundamental to motivate the segregation of waste (on site) and to manage it efficiently (CDW managers and recyclers) in order to generate circularity.
- The Circularity of Kraft Paper Sacks in Spain has set up a collection system that allows other materials to follow the same course.
- Packaging SCRAPS are a key player in providing economic value and making a circular economic model more profitable than a linear one.
- Recyclers of other (non-packaging) materials are also fundamental to give additional economic value to the whole value chain.

Global solution to construction waste construction waste

This Alliance brings a circular model with important benefits for all the actors that participate in it and that aims to encourage the segregation of waste on site, resulting in:

- Significant reduction of waste management costs
- Significant increase in the recovery rate
- 100% transparency and traceability in waste valorisation

08. Questions

09. Next steps and new members joining

Kpi's and validation of piloted process

1

Process costs analysed → Allows to detect key inputs for cost optimisation, which will be passed on directly to the producer:

- Raw material with market value → Generation of interest in waste management stakeholders (business) → More profitable to treat waste than landfill.
- Very high degree of optimisation → The higher the material quality, the higher the value, the better the optimisation of process costs, the lower the management costs for the producer.
- Process and system valid for RAP compliance → Allows SCRAPS targets to be met → Economic incentives to improve process and costs for the producer.

2

System validated and applicable in the main geographical locations:

- MADRID → MACOTRAN -> SOLIS -> ALIER
- BARCELONA → MARRONES -> IRMASOL -> ALIER

In which construction companies such as ARPADA, OHLA, SACYR, CALAF, VOLTES, AVINTIA... are applying the system through the generated treatment chain.

Kpi's and validation of piloted process

3	Advanced implementation process in other geographical areas: • GIPUZKOA • MÁLAGA • VALENCIA
4	Industry demands much higher volume of material → 29.000Tn in circulation (new bags) → VIABILITY for the whole value chain

Next steps

Active working groups

OPTIMISATION OF MANAGEMENT PROCESSES

Participants:

- Recyclers
- CDW waste managers
- Reclaimers / Intermediate recoverers
- EPRCS

Topics to be covered:

- Optimisation of implemented processes
- Economic incentives and cost optimisation to promote segregation and material recovery
- Definition of minimum material qualities and conditions for material sorting (segregation)

TRACEABILITY AND CERTIFICATION FULL TREATMENT

Participants:

- Recyclers
- CDW waste managers
- Reclaimers / Intermediate recoverers
- Construction companies
- Manufacturers

Topics to be covered:

- Optimisation of implemented processes
- Waste coding
- Quality and documentary verification
- Connection between stakeholders
- Waste flow measurement system and waste typology

Next steps

Working groups to launch

TRAINING, AWARENESS RAISING AND BEST PRACTICES

Participants:
- CDW waste managers
- Construction companies
- Manufacturers

IMPLEMENTATION OF SOLUTIONS FOR OTHER MATERIALS

Participants:
- Recyclers
- CDW waste managers
- Reclaimers / Intermediate recoverers
- Construction companies
- Manufacturers

COMMUNICATION AND PUBLICITY

Participants:
- Recyclers
- CDW waste managers
- Reclaimers / Intermediate recoverers
- Construction companies
- Real estate developers
- Manufacturers
- Associations

Adhesion to the alliance

BENEFITS

1. Cost-optimised management due to segregated materials
2. Circular and complete treatment pathways up to material recycling → optimised recovery rate up to complete treatment
3. Participation in process and system implementation
4. Access to a transparent and committed stakeholder network
5. Collaborative working system
6. Verification and traceability of the process up to the final recipient (complete treatment)

REQUIREMENTS

1. Formalisation of a minimum commitment according to stakeholder typology → Through the signing of the Alliance manifesto.

2. Active participation in the roundtables and working groups

3. Collaboration in the dissemination of the milestones and objectives achieved.

Adhesion to the alliance

Stakeholder typology

CONSTRUCTION COMPANIES
- Segregation of waste, under the established minimum quality conditions.
- Participation through the network of managers adhered to the Alliance.
- Participation in communication and dissemination of the project
- Active participation in the working groups/tables.

REAL ESTATE DEVELOPERS
- Participation in communication and dissemination of the project
- Encouragement and promotion of project segregation
- Active participation in working groups/working groups

WASTE MANAGERS
- Transparency and documentary quality of services for waste streams managed through the Alliance
- Ability to operate under the LER codifications required for the characteristics of each stream
- Cost optimisation for segregated flows complying with the established requirements
- Active participation and collaboration in traceability processes
- Active participation in working groups/working tables

RECUPERATORS / VALORISERS
- Transparency and documentary quality of services for waste streams managed through the Alliance
- Cost optimisation for segregated flows complying with the established requirements
- Ability to operate under the LER codifications required for the characteristics of each stream
- Active participation and collaboration in traceability processes
- Active participation in working groups/working tables

Adhesion to the alliance

Stakeholder typology

- **RECYCLERS / MANUFACTURERS**
  - Participation in communication and dissemination of the project
  - Participation in the training and awareness-raising processes for the sector.
  - Active participation in the working groups/working groups
- **EPRCS**
  - Commitment to incentives in the treatment chain for packaging waste managed through the Alliance's network of partners.
  - Collaboration in the didactic dissemination and updating of regulations.
  - Collaborative will for working groups and implementation of joint projects.
- **ASSOCIATIONS**
  - Collaboration in the dissemination of milestones and targets reached
  - Internal outreach to engage partners in the Alliance
  - Collaborative willingness for working groups and implementation of common projects

10. Questions, Comments on the Alliance and Adhesion

THANKS

CONTACT:
constructiongoescircular@cocircular.es