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Cross-border Network for circular economy training and decarbonisation in manufactoring

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Cooperation programme
2021-2027

WASTE MANAGEMENT ON SITE

STEP 5

Meetings at ESEV CPT Verona

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GENERAL GUIDELINES

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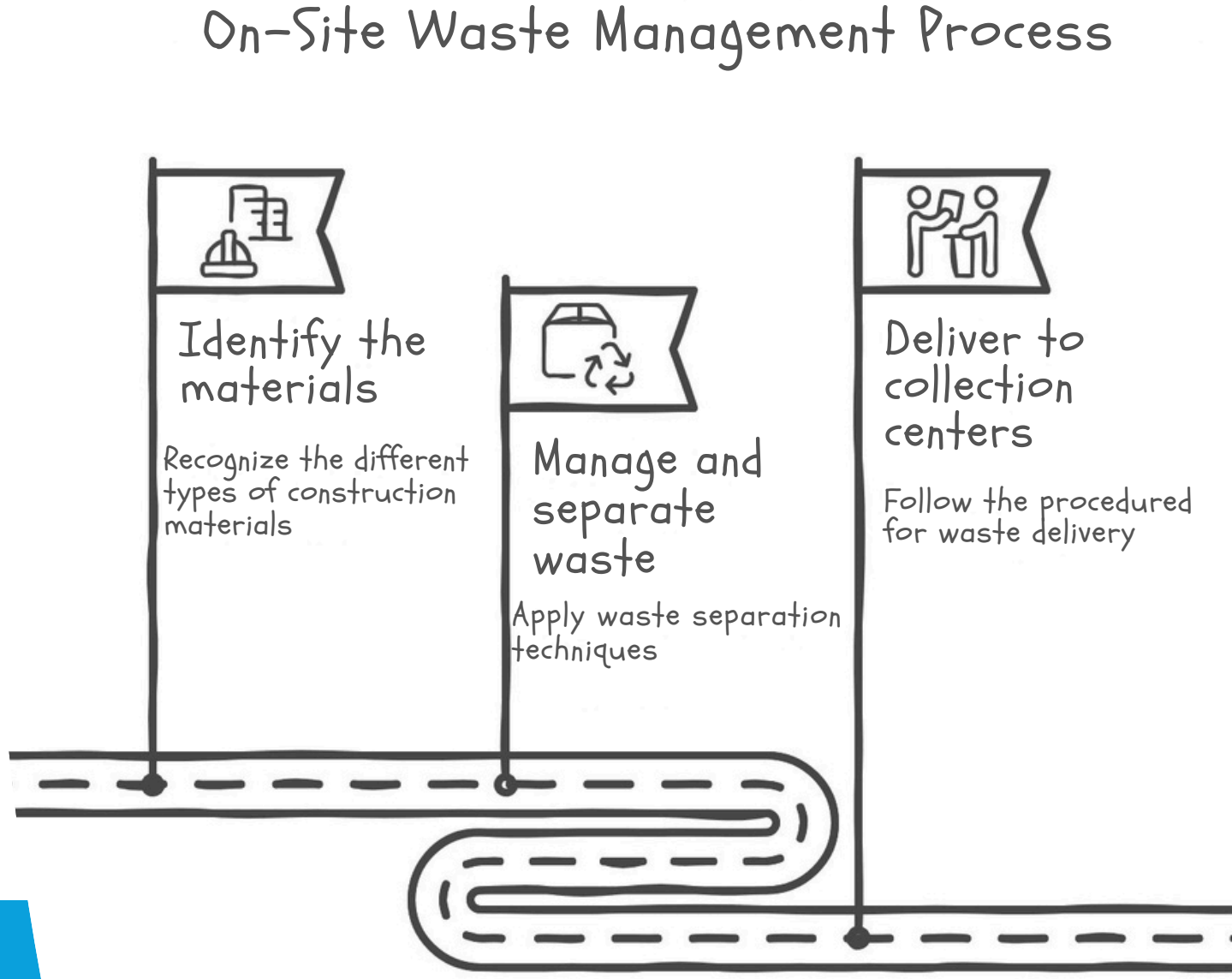
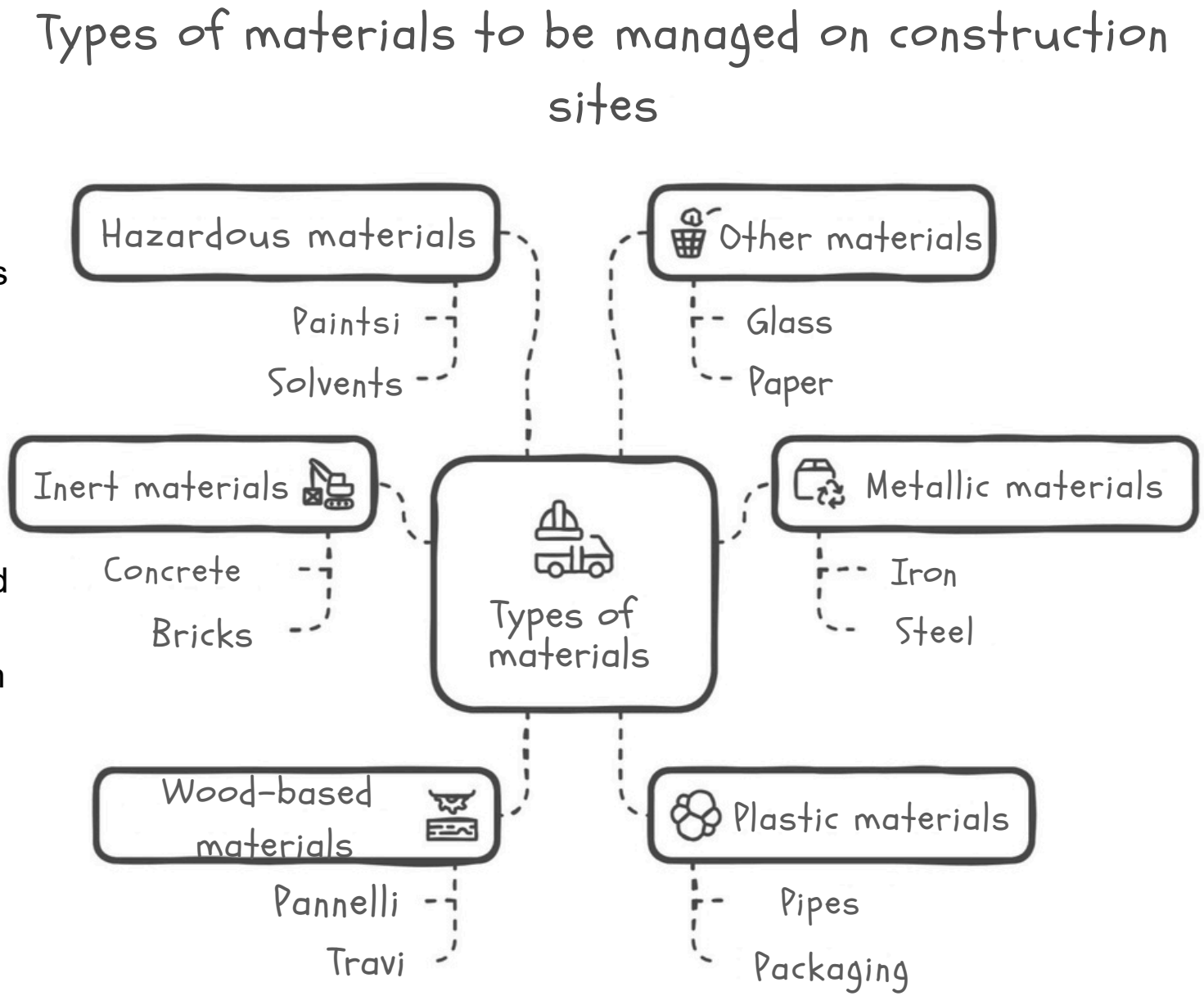
1. **Types of materials to be managed in a building and road renovation site.**
2. **Methods for managing and separating waste on site.**
3. **Procedures for delivering waste to collection centers.**



1. Types of materials to be managed

In building renovation sites and simple road works, the waste produced can be classified as follows:

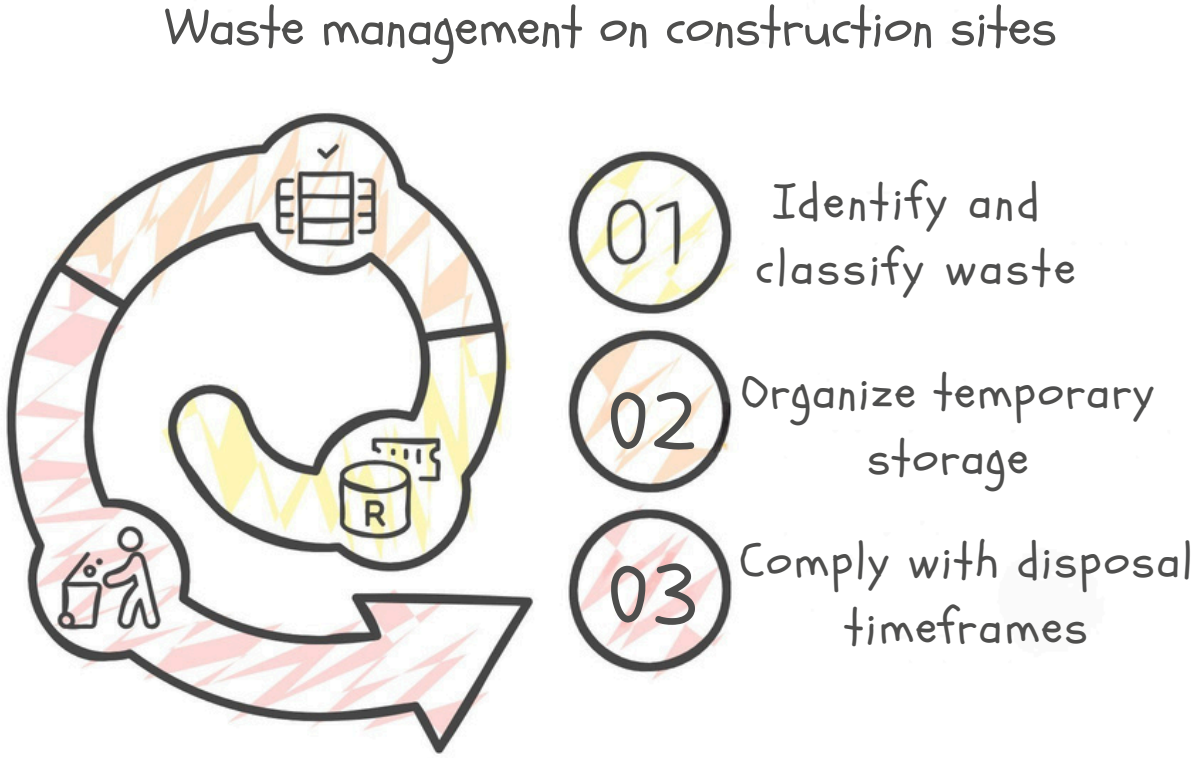
- **Inert materials**: concrete, bricks, bituminous mictures, uncontaminated soil and excavation rocks.
- **Metal materials**: iron, steel, aluminium, copper.
- **Wood materials**: panels, beams, windows and door freams.
- **Plastic materials**: pipes, packaging, insulation materials.
- **Hazardous materials**: paints, solvents, waste oils, materials containing asbetos.
- **Other materials**: glass, paper, cardboard.



2. On-site waste management and segregation procedures

For proper waste management on a construction site, it is essential to:

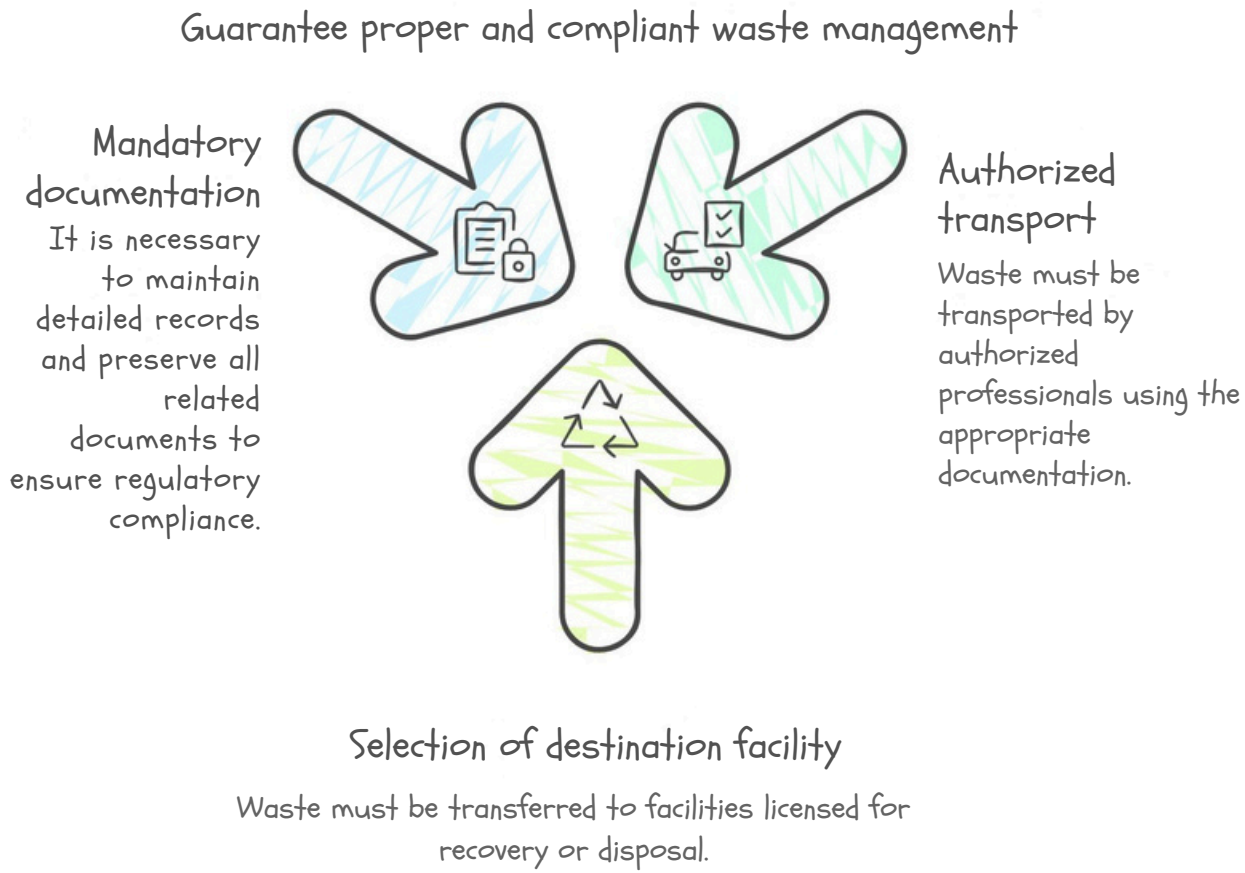
- **identify and classify waste**: assign the correct European Waste Catalogue (EWC) code to each waste steam, distinguishing between hazardous and non-hazardous waste.
- **Organize temporary storage**: set up designated and clearly marked areas for temporary waste storage, separating waste by type. The use of appropriate containers or skips is recommended, avoiding the mixing of different waste streams.
- **Compliance with disposal timeframes**: waste must be sent for recovery or disposal in accordance with one of the following procedures:
  - On a quarterly basis, regardless of the quantity accumulated.
  - Upon reaching 30 cubic meters of non-hazardous waste or 10 cubic meters of hazardous waste, and in any case within one year from the start of the temporary storage period.



3. Procedures for delivery to collection centres

Waste must be delivered in compliance with current regulations:

- **Authorized transport:** waste must be transported by operators registered with the National Environmental Managers' Register, using the Waste Identification Form (FIR) to track the movement from the construction site to the treatment facility.
- **Selection of destination facility**: waste must be delivered to facilities authorized for recovery or disposal, selected according to the type of waste and the possibilities for recycling or reuse.
- **Mandatory documentation**: it is necessary to keep the waste logbooks up to date and retain all related documentation for at least five years.



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LET'S GO INTO DETAILS

Guidelines for proper management

Construction waste consists of the scrap materials generated on construction sites during the building, renovation, or demolition of structures and infrastructure.

Proper management is essential to reduce environmental impact and ensure workplace safety.

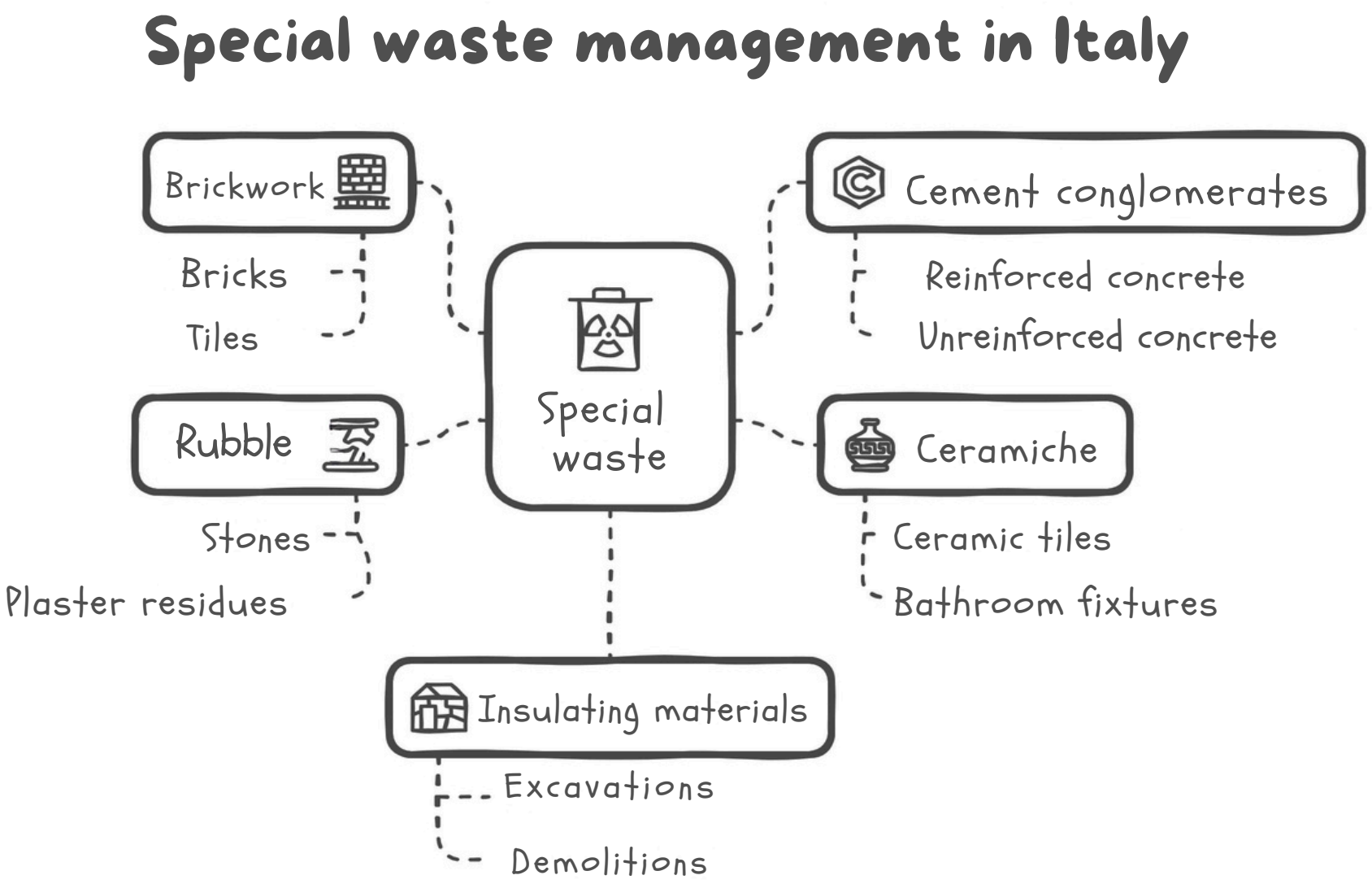
In waste management, numerous documents are required.

What is meant by construction waste?

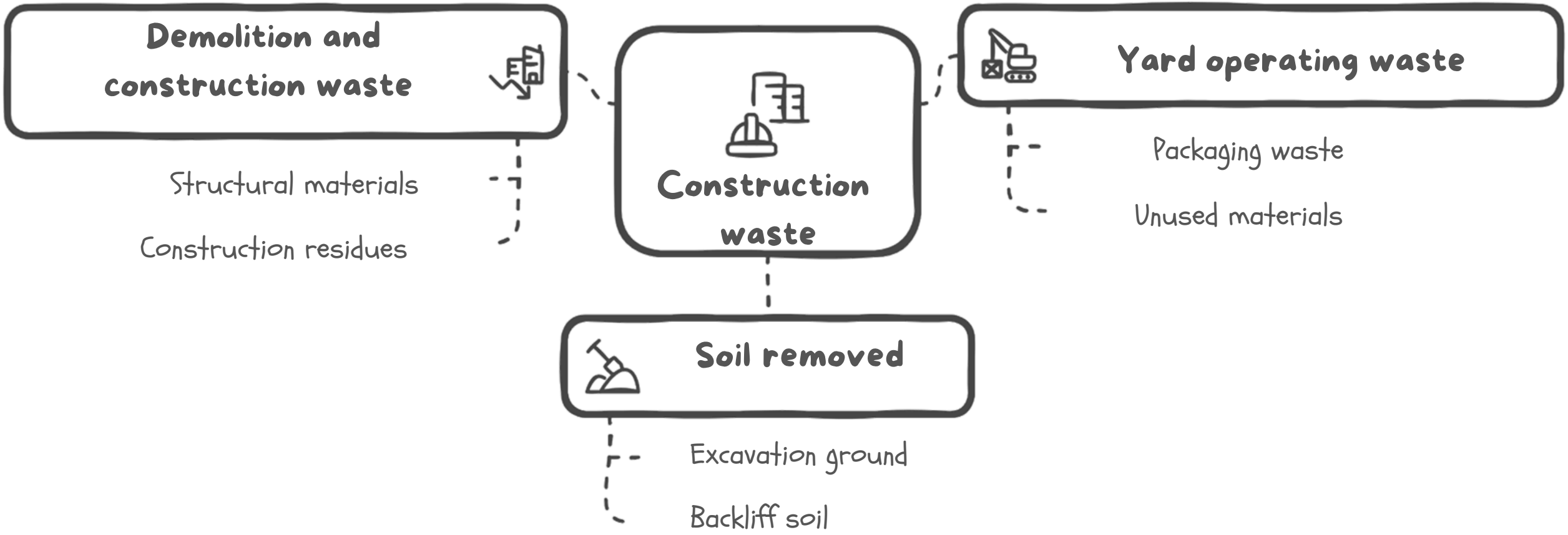
According to Article 183 of Legislative Decree 152/2006, waste is defined as “any substance or object which the holder discards, intends to discard, or is required to discard.”

Construction waste, also known as construction and demolition (C&D) waste, includes the waste materials generated during building, renovation, and demolition activities.

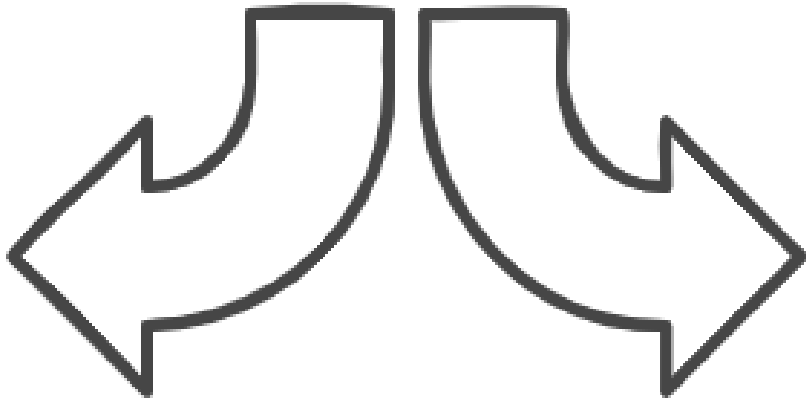
What is meant by construction waste?



Categories of construction waste



How to classify construction materials?



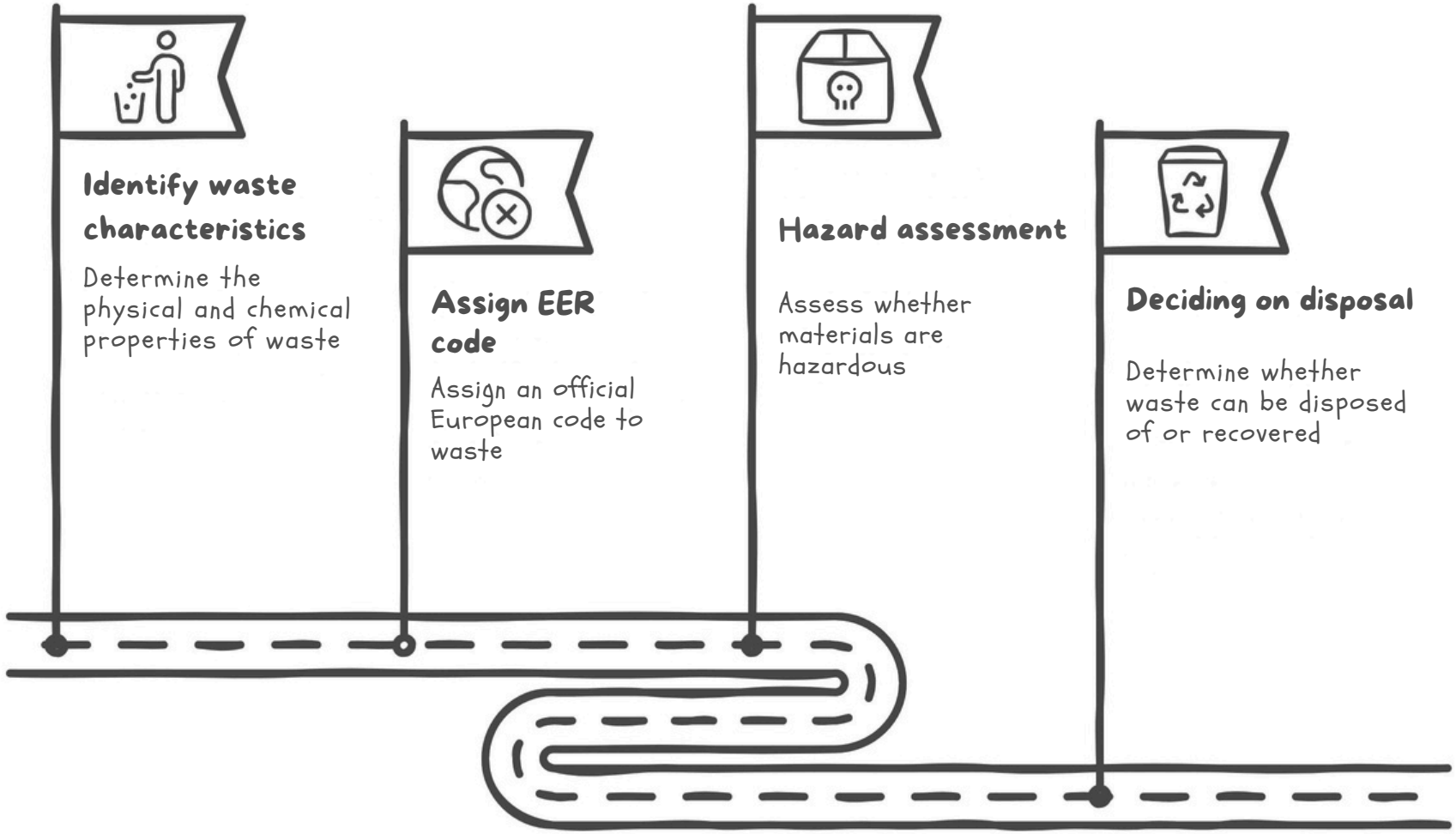
Inert waste

These materials do not change over time and do not pose encironmental risks.

Hazardous waste

These materials may contain harmful substances and require special management.

Construction Waste Management Process



Analysis of construction waste

The analysis of construction waste is a crucial activity that requires specific expertise and strict compliance with current regulations, in order to promote sustainable practices in the construction sector.

The characterization of construction waste involves identifying its physical and chemical properties, which is necessary to determine the correct European Waste Catalogue (EWC) code and to assess the hazardousness of the materials.

This process is essential to determine whether the waste can be disposed of in a landfill or recovered for other applications.

Characterization

Describes the chatacterization process in chemestry

Chemical analysis

It refers to chemical analysis techniques used

Classification

It involves the classification of chemical compounds

CER code waste construction work

The **EWC codes**, or **European Waste Codes**, are a standardized system for classifying different types of waste.

This system was introduced by the European Union through directives and regulations, and implemented in Italy through Legislative Decree 152/2006, known as the "Environmental Regulations."

Since the entry into force of Legislative Decree 116/2020, the acronym EWC has been replaced by EWR (European Waste List), although the terms are often used interchangeably.

These six-digit codes, divided into three pairs, allow for the identification of waste based on its origin and the specific characteristics related to the production process from which it derives.

Composition of the six-digit CER code (three pairs of numbers)

FIRST PAIR:
Class

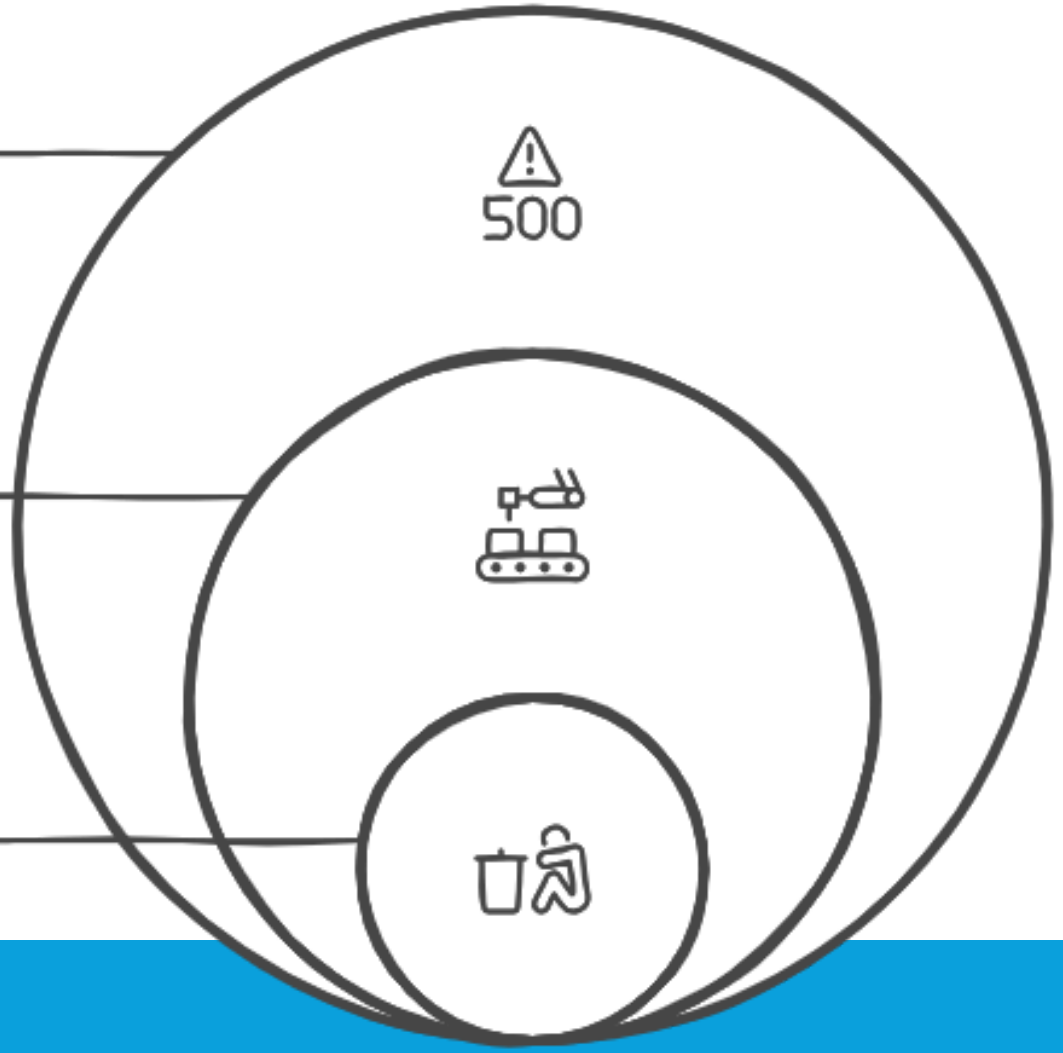
General activity sector

SECOND PAIR:
Subclass

Production process that generates waste

THIRD PAIR:
Type of waste

Sector-specific rejection



They may be accompanied by an asterisk, which indicates that the waste is considered dangerous and must be handled with particular care.

CER codes: waste construction work #1

CONSTRUCTION WASTE	CER code	EER code
Waste from construction and demolition activities (including land taken from contaminated sites)	17 00 00	17 00 00
Cement, bricks, tiles and ceramics	17 01 00	17 01 00
Cement	17 01 01	17 01 01
Bricks	17 01 02	17 01 02
Tiles and ceramics	17 01 03 17	17 01 03 17
Mixtures of separate fractions of cement, bricks, tiles and ceramic, containing substances dangerous	01 06*	01 06*
Mixtures of cement, bricks, tiles and ceramics, other than those falling within heading 17 01 26	17 01 07	17 01 07
Wood, glass and plastic	17 02 00	17 02 00
Wood	17 02 01	17 02 01
Glass	17 02 02	17 02 02
Plastic	17 02 03	17 02 03

CER codes: waste construction work #2

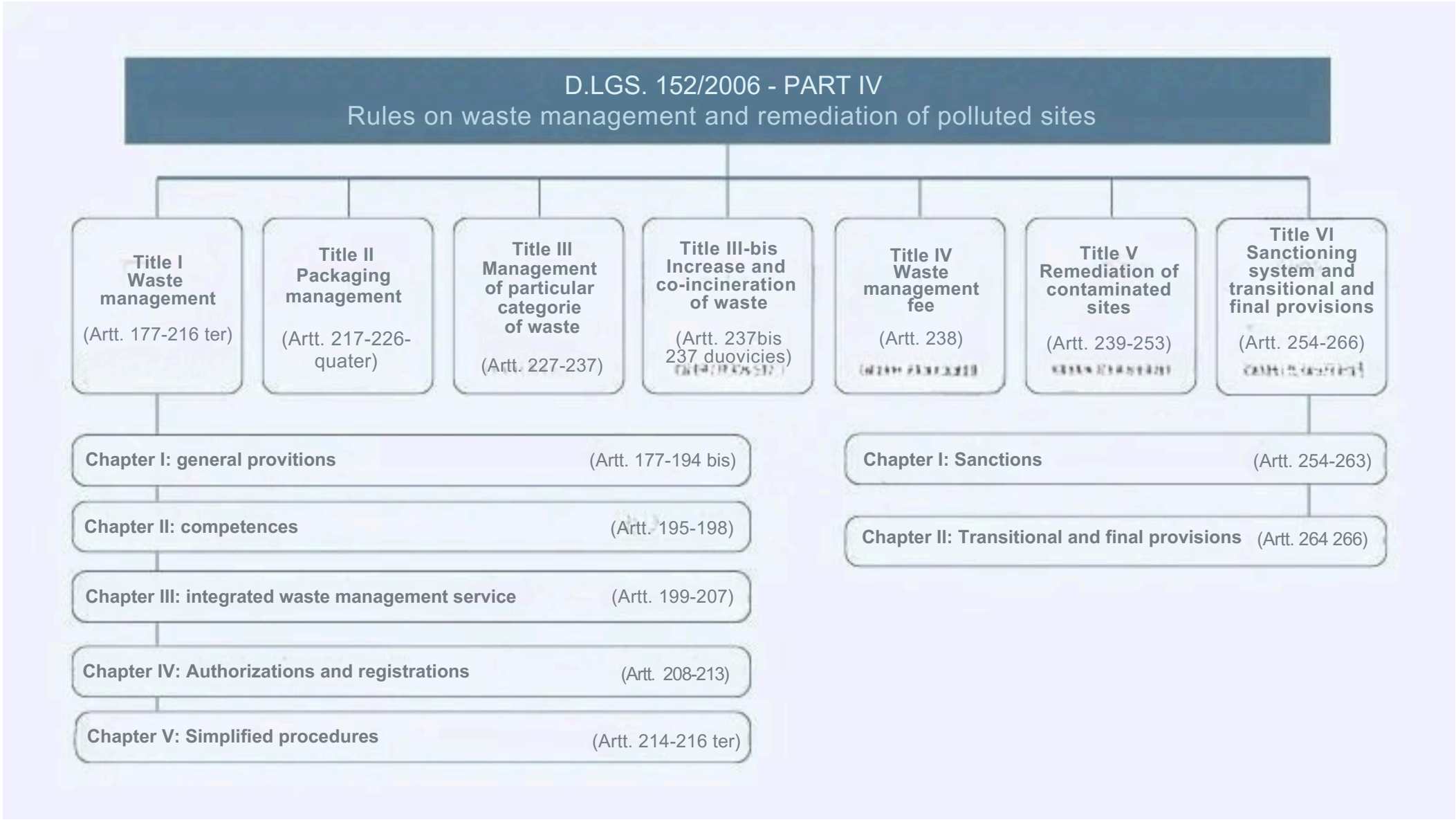
CONSTRUCTION WASTE	CER code	EER code
Glass, plastics and wood containing or contaminated with dangerous substances	17 02 04*	17 02 04*
Bituminous mixtures, coal tar and tar-containing products	17 03 00	17 03 00
Bituminous mixtures containing coal tar	17 03 01*	17 03 01*
Bituminous mixtures other than those falling within heading No 17 03 01	17 03 02	17 03 02
Coal tar and tar-containing products	17 03 03*	17 03 03*
Metals (including their alloys)	17 04 00	17 04 00
Copper, bronze, brass	17 04 01	17 04 01
Aluminum	17 04 02	17 04 02
Lead	17 04 03	17 04 03
Zinc	17 04 04	17 04 04
Iron and steel	17 04 05	17 04 05
Tin	17 04 06	17 04 06

CER codes: waste construction work #3

CONSTRUCTION WASTE	CER code	EER code
Mixed metals	17 04 07	17 04 07
Metal waste contaminated with hazardous substances	17 04 09*	17 04 09*
Cables impregnated with oil, coal tar or other dangerous substances	17 04 10*	17 04 10*
Cables, other than those falling within heading No 17 04 10	17 04 11	17 04 11
Earth (including from contaminated sites), rocks and dredging material	17 05 00	17 05 00
Earth and rocks, containing dangerous substances	17 05 03*	17 05 03*
Earth and rocks, other than those falling within heading No 17 05 03	17 05 04	17 05 04
Dredging material, containing dangerous substances	17 05 05*	17 05 05*
Dredging material, other than that falling within heading No 17 05 05	17 05 06	17 05 06
Steel for railway ballast, containing dangerous substances	17 05 07*	17 05 07*
Ballast for railway ballast, other than that falling within heading No 17 05 07	17 05 08	17 05 08
Insulating materials and construction materials containing asbestos	17 06 00	17 06 00

CER codes: waste construction work #4

CONSTRUCTION WASTE	CER code	EER code
Insulating materials, containing asbestos	17 06 01*	17 06 01*
Other insulating materials containing or consisting of dangerous substances	17 06 03*	17 06 03*
Insulating materials, other than those falling within heading Nos 17 06 01 and 17 06 03	17 06 04	17 06 04
Asbestos-containing building materials	17 06 05*	17 06 05*
Gypsum-based building materials	17 08 00	17 08 00
Gypsum-based building materials contaminated with hazardous substances	17 08 01*	17 08 01*
Gypsum-based building materials, other than those falling within heading No 17 08 01	17 08 02	17 08 02
Other construction and demolition activity waste	17 09 00	17 09 00
Waste from construction and demolition activity, containing mercury	17 09 01*	17 09 01*
Waste from construction and demolition activity, containing PCBs	17 09 02*	17 09 02*
Other construction and demolition activity waste containing hazardous substances	17 09 03*	17 09 03*
Mixed waste from the construction and demolition activity, other than those falling within heading Nos 17 09 01, 17 09 02 and 17 09 03	17 09 04	17 09 04


D.LGS. 152/2006 - PART IV
Rules on waste management and remediation of polluted sites
Title I Waste management (Artt. 177-216 ter)
Title II Packaging management (Artt. 217-226-quater)
Title III Management of particular categorie of waste (Artt. 227-237)
Title III-bis Increase and co-incineration of waste (Artt. 237bis 237 duovicies)
Title IV Waste management fee (Artt. 238)
Title V Remediation of contaminated sites (Artt. 239-253)
Title VI Sanctioning system and transitional and final provisions (Artt. 254-266)
Chapter I: general provitions (Artt. 177-194 bis)
Chapter II: competences (Artt. 195-198)
Chapter III: integrated waste management service (Artt. 199-207)
Chapter IV: Authorizations and registrations (Artt. 208-213)
Chapter V: Simplified procedures (Artt. 214-216 ter)
Chapter I: Sanctions (Artt. 254-263)
Chapter II: Transitional and final provisions (Artt. 264 266)

Construction Waste Management: What It Is

"***Waste management***": the collection, transport, recovery, including sorting, and disposal of waste, including the supervision of such operations and after-care of disposal sites, as well as operations carried out in the capacity of dealer or broker.

The operations of collection, grouping, selection, and temporary storage carried out prior to the collection of materials or natural substances resulting from atmospheric, meteorological, or volcanic events — including storm surges and floods — even when mixed with other materials of anthropogenic origin, do not constitute waste management activities, provided that they are performed, for the strictly necessary technical time, at the same site where such events deposited them.

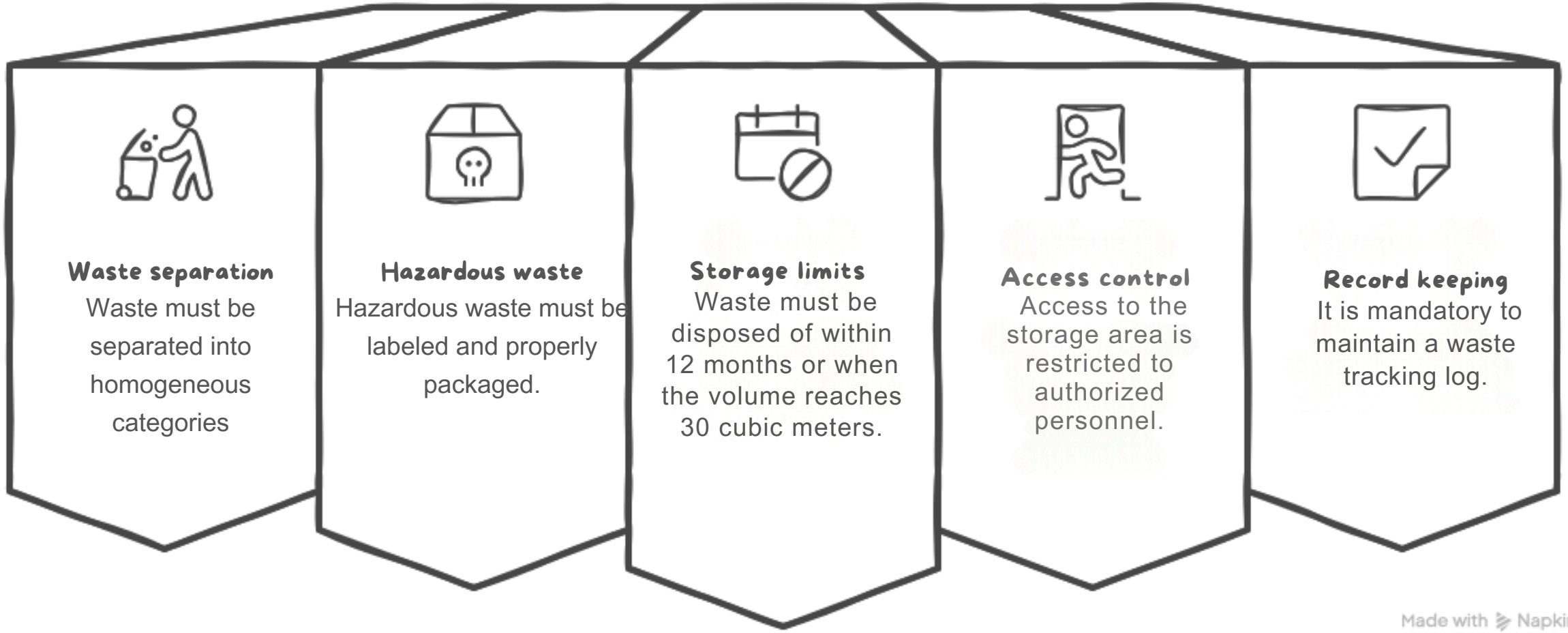
Temporary storage of construction waste

Temporary storage of waste is defined as the grouping of waste at the place of production prior to its collection and transport to a treatment facility.

According to the regulations, temporary storage has a maximum duration of one year; however, waste must be disposed of or recovered earlier if specific volume limits are reached:

- 30 m³ for non-hazardous waste;
- 10 m³ for hazardous waste.

Guidelines for the temporary storage of waste



Waste separation
Waste must be separated into homogeneous categories

Hazardous waste
Hazardous waste must be labeled and properly packaged.

Storage limits
Waste must be disposed of within 12 months or when the volume reaches 30 cubic meters.

Access control
Access to the storage area is restricted to authorized personnel.

Record keeping
It is mandatory to maintain a waste tracking log.

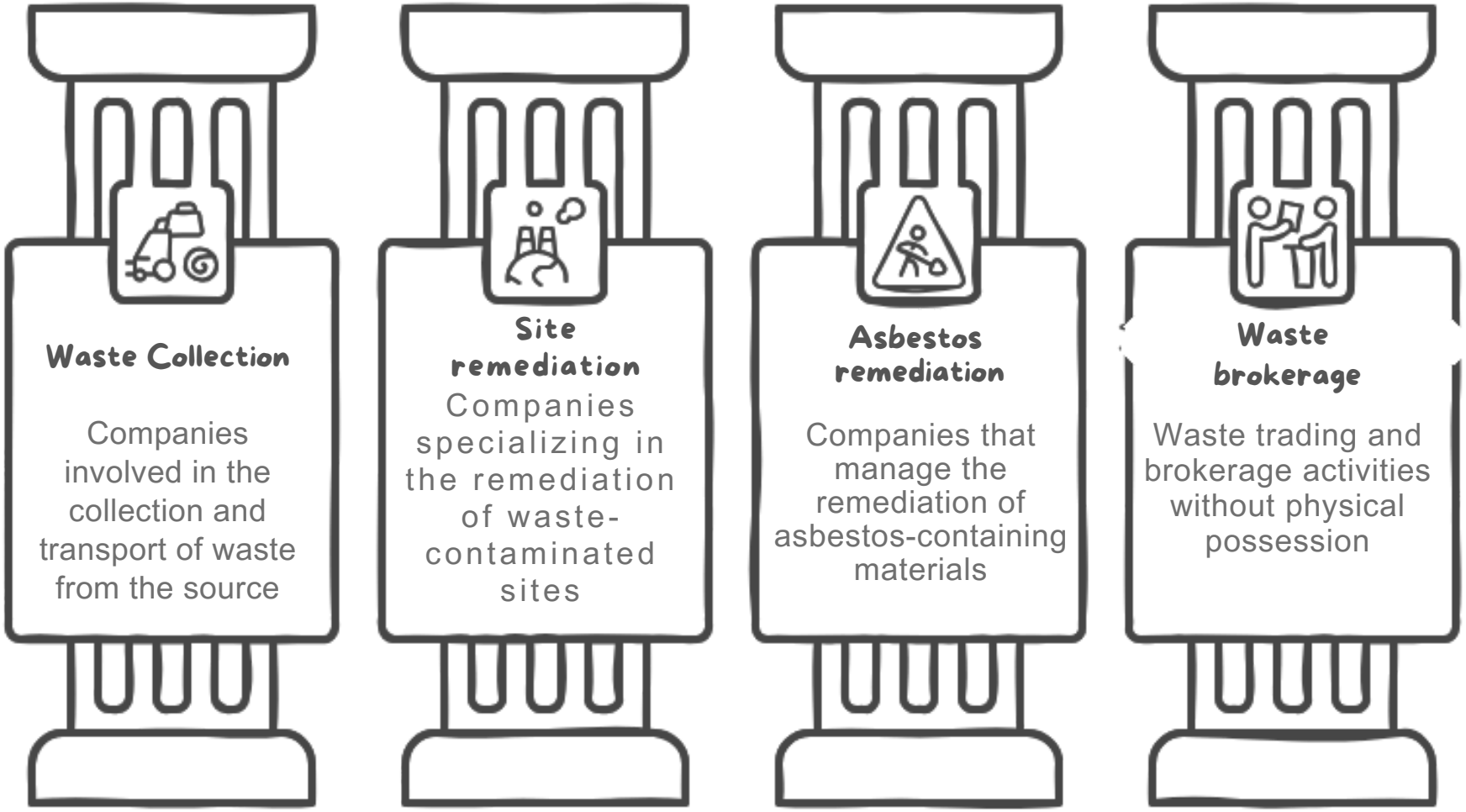
Waste collection on construction sites

Waste on construction sites must be collected and separated by type (metals, wood, concrete, plastic) directly on-site. On construction sites, the responsibility for collecting construction waste falls on different professional roles, depending on specific contractual provisions and operational management.

Transport of construction waste

The transport of waste must be carried out by authorized operators registered with the National Register of Environmental Managers.
The National Register of Environmental Managers was established by Legislative Decree 152/06, is hosted by the Ministry of the Environment, and is organized into a National Committee based at the same Ministry, as well as regional and provincial sections located at the Chambers of Commerce of regional capitals and the Autonomous Provinces of Trento and Bolzano.

Key activities in waste management and remediation



Roles in waste management

Producer

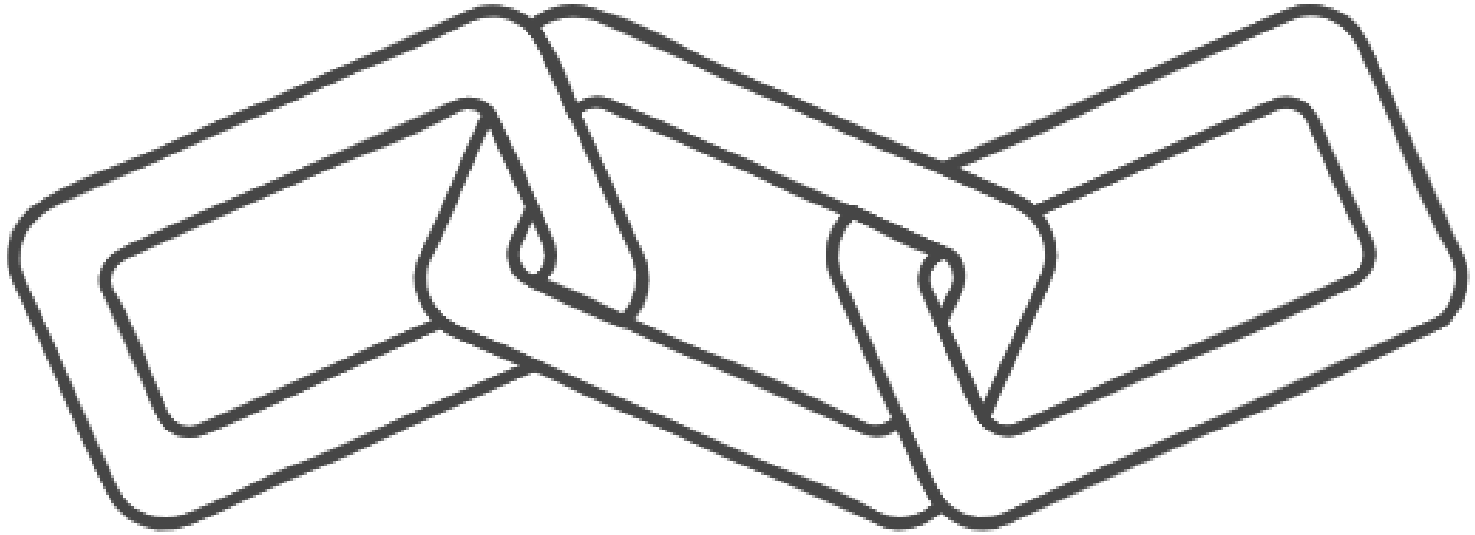
Classifies the waste and completes the Waste Tracking Form (FIR)

Transporter

Ensures proper transport

Recipient

Disposes of or recovers waste



Construction Waste Form - FIR

The Waste Identification Form (FIR) is a fundamental document for the transport of waste, required by Italian regulations to ensure traceability and proper management of waste materials.

Completion of documentation for waste management

Waste characteristics
Detailed waste characteristics

Producer identification
Identification of the producer responsible for the waste

Broker
Information on the broker without physical possession of the waste

Waste holder
Identification of the current holder of the waste

Waste transporter
Details about the waste transporter

Waste recipient
Identification of the entity reciving the waste

Transport of construction waste without a form: is it possible?

The transport of construction waste without the FIR is not allowed and carries severe penalties, as provided by Article 258, paragraph 4, of Legislative Decree 152/2006:

- Non-hazardous waste: an administrative fine ranging from €1,600 to €10,000 for transport without the FIR or with incomplete documentation;
- Hazardous waste: in addition to administrative fines, the transport of hazardous waste without the FIR may entail criminal consequences, including imprisonment for up to 2 years (Article 483 of the Penal Code).

Recovery of construction waste

The **recovery of construction waste** involves the reuse of materials from construction and demolition activities, promoting a circular economy and reducing environmental impact.

These wastes, defined as inert, originate from demolition and reconstruction activities as well as excavation work. They include sand, gravel, concrete, bricks, ceramics, cement mixtures or slag, crushed stone, etc., and can be recycled for new construction projects, thereby reducing the extraction of raw materials.

The process is governed by specific regulations, namely D.M. 127/2024 – End of Waste for Inert Materials, which sets the criteria for recycling and reintroducing recovered materials into the market.

Waste management process and end-of-waste status

Waste classification
Companies classify and document waste

Application of techniques
Techniques such as crushing and separation are applied

Code assignment
Waste codes are assigned and documented

Declaration of conformity
A declaration of conformity is prepared for each batch

Sending to regulators
The declaration is invited to the relevant regulators

Preservation of documentation
The documentation is archived for five years