

EoW criteria for mineral construction and demolition waste

Developing EU-wide end-of-waste criteria for mineral construction and demolition waste

The aim of this survey is to consolidate the scope and align on **first EU-wide End-of-Waste (EoW) criteria proposal for mineral Construction and Demolition (CDW) waste**. Furthermore, the available information on CDW legislation, CDW waste management, existing standards and national EoW criteria, etc. shall be validated and extended by the stakeholders. Also the survey serves to gather additional technical data and information to support the development of a first technical proposals for EU-wide EoW criteria for mineral CDW waste.

Deadline for feedback: 26 November 2024

Please provide answers to the questions raised in this EU-survey and always provide an argumentation to support your statements. For direct feedback on the background paper please use the Word template (attached to the e-mail you received on 12 September in preparation for the workshop) and upload the Word file at the end of the EU-survey (Section 6 - Upload Word template for direct background paper feedback).

Please coordinate internally and provide one consolidated feedback per organisation.

For general questions please contact the JRC via the functional mailbox: JRC-END-OF-WASTE@ec.europa.eu (subject: CDW EOW)

Stakeholder information

Organisation:

FEAD

First and last name:

Rafael Basciano

E-mail:

rafael.basciano@fead.be

1. Scope and initial criteria

1.1 Scope

Question 1:

The JRC proposes to develop EU-wide EoW criteria for recycling of mineral CDW only. Do you agree to develop EU-wide EoW criteria exclusively for recycling and exclude the development of EU-wide EoW criteria for preparing for re-use?

- Yes
- No

Question 2:

Concrete, fired clay bricks and tiles, ceramics, stones and boulders and mixtures thereof were identified by the JRC to have the highest potential for the development of EU-wide EoW criteria and therefore should be allowed as input material to produce recycled aggregates.

Do you agree with the selection of the mineral CDW fractions mentioned above?

- Yes
- No

If any mineral CDW fraction should be removed from the scope, please select the option(s):

- concrete (pure and reinforced concrete)
- fired clay bricks and tiles
- ceramics (e.g. wall & floor tiles, bricks & roof tiles, refractories, sanitary ware)
- stones and boulders (e.g. armour stones)
- mixtures of the mentioned CDW fractions above

Please elaborate why the selected CDW fractions should not be under scope for the production of recycled aggregates:

Although the typical structure of an end-of-waste criteria usually sets criteria for the input materials, we believe that it should remain as broad as possible in order to develop an EoW that is applicable in as many cases as possible when it comes to the production of recovered aggregates from CDW.

Especially, there are examples of separate collection and recycling of lime sandstone (calcium silicate units), which would not be covered by the current proposal. Furthermore, while we understand the need to promote selective demolition and separate collection at the demolition site, we would like to point out that in most cases most of inert CDW fractions are mixed and transported together to the recycling facility, with no possibility to separate different streams (e.g. ceramics from tiles). In addition, mixed CDW fractions (which also contain plastic, wood and plastic fractions) are often used as input to the recycling process after a mandatory sorting step to remove all impurities.

Therefore, we propose to keep the input as "all inert CDW fractions" without further restricting the scope, and to keep it open for inert CDW fractions not mentioned in the list above and that are usually not collected separately, and mixed CDW, provided that they undergo a post-sorting treatment step before the recovery step.

Additionally, the recovery of aggregates is a quality-monitored process, with different European standards applying to the output depending on the use of the RA. It is therefore not necessary to impose strict rules on the input materials, as the recovery process aims to meet the quality criteria of these standards, which, among other things, set rules on the purity of the RA (maximum level of foreign materials). More generally, it would be positive to align the EoW criteria with the revision of these European standards, in order to establish a harmonised set of criteria on the output quality, without multiplying layers of legislation.

In any case, we would recommend to refer to the European List of Waste to clearly define the authorised inputs.

Question 3:

Should additional mineral CDW fractions be under scope (e.g. hardened cement from construction sites)? If yes, add the mineral CDW fractions below. Please keep in mind that the precondition is that the output material after recycling has to be a recycled aggregate and the output material(s) can be covered by one single set of criteria:

See answer to question 2. All inert CDW fractions are usually collected and treated together. We propose to include in the scope all inert CDW fractions that could technically be used in the production of recovered aggregates.

Please elaborate why these added mineral CDW fractions have the same/higher potential for developing dedicated EoW criteria than the mineral CDW fractions currently within the scope:

NA

Please provide further data to demonstrate that the by you suggested additional mineral CDW fraction(s) could fulfil the following four conditions for EoW:

- the substance or object is to be used for specific purposes;
- a market or demand exists for such a substance or object;
- the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and

- the use of the substance or object will not lead to overall adverse environmental or human health impacts

NA

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Question 4:

Currently, the JRC proposes that recycled aggregates should only derive from the defined source separated mineral CDW fractions or mixes thereof (see question 2) to reach EU-wide EoW status.

Should the scope be extended to mixed CDW fractions (mineral CDW mixed with other CDW fractions such as plastics, wood, metals, etc.)?

- Yes
 No

If yes, please elaborate and include an analysis (e.g. physical properties, chemical composition of the solid aggregates and eluate) of recycled aggregates from mixed CDW fractions. Furthermore, provide information about the composition of the input material and the recycling process applied:

Selective demolition is not always possible and even with a very careful selective demolition, the inert CDW fractions might still contain some organic fractions (wood, plastic, etc.) or asphalt, gypsum. Achieving this quality on the input (only specific streams of inert CDW fractions) may require additional treatment, such as washing of aggregates, which is not always technically feasible (e.g. mobile crushers), or which involves additional costs that affect the economic balance of the whole recovery operation. Furthermore, it is often not necessary to achieve such a high level of quality for the future use of the recovered aggregates.

It should also be noted that selective demolition followed by recycling of the separated fractions may sometimes be more energy intensive and less efficient than post-sorting and recycling of mixed CDW. In this respect, the quality of the output of the recycling process is more important than the input (see EoW Plastics - JRC study: the emphasis is on the quality of the output and not on the input).

In this regard, it is worth noting the following point 4.1.6 of the "EU Construction & Demolition Waste Management Protocol including guidelines for pre-demolition and pre-renovation audits of construction works" published in 2024:

"However, the degree of separation depends strongly on the options available at the site (e.g. space and labour) and on the costs and revenues of separated materials. Although mixed waste typically has greater disposal costs, source separation can be challenging. Construction works have become increasingly complex, and this has implications for demolition works. Furthermore, over the last few decades, an increasing number of materials have been glued and the use of composite materials has extended as well."

Therefore, mixed CDW should be included in the scope under certain conditions, otherwise the scope would remain very narrow and very few streams would be covered. In fact, it is common practice in some European countries to send all CDW as one fraction to recycling facilities, where the inerts are sorted before being recovered into aggregates.

We therefore propose that the mixed CDW can be used as input material, provided that it undergoes a sorting step before being used for recovery.

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Question 5:

Do you agree with the terminology mineral construction and demolition waste for the CDW fractions under scope?

- Yes
- No

If no, suggest other terminologies that should be used

See question 4. While we agree that mineral CDW should be the target material for this end-of-waste criteria, as stated above, it should be recalled that the mixed CDW fractions should also fall within the scope, provided that they undergo adequate sorting step before.

In addition, we understand that the current EoW proposal aims to provide a framework for the recycling of CDW, but it should be noted that other wastes, such as bottom ash, can also be used to produce recovered aggregates: the output product remains the same (recovered aggregates), requires the same specifications, is used under the same conditions and therefore requires a similar framework. While the inclusion of bottom ash in the scope may not be relevant for this EoW, the implementation of a similar framework at European level would definitely be needed for the recovery of bottom ash as aggregates.

Is there a need to specify that mineral CDW should be inert?

- Yes
- No

Question 6:

Do you agree with the terminology recycled aggregates for the output material of a mineral CDW recycling process?

- Yes
- No

Question 7:

The JRC proposes to have non-hazardous mineral CDW from construction works, including **buildings and civil engineering works** under scope.

Construction works means buildings and civil engineering works that may be over or in the ground or in the water, including but not limited to roads, bridges, tunnels, pylons and other facilities for transport of electricity, communication cables, pipelines, aqueducts, dams, airports, ports, waterways, and installations which are the basis for rails of railways.

Do you agree that the sources of mineral CDW mentioned above should be under scope?

- Yes
- No

Should certain additional sources of mineral CDW be restricted as input material due to potential negative effects on recycling processes, quality of the output material or on the environment and human health (e.g. building and infrastructure parts that were in contact with potentially hazardous substances (e.g. reactors, reservoirs, pipes), CDW from nuclear power plants due to radioactive concerns)?

- Yes
- No

If yes, which selected sources should be restricted and why?

Since the aim of this EoW is to cover as many CDW streams as possible, we believe that we should not limit the scope to specific sources of CDW as input material. Indeed, recycling companies already apply strict acceptance procedures on their input to comply with technical requirements for recovered aggregates as defined in EU product standards.

Therefore, it is up to the recycling operator to accept a waste stream into his operation, as long as he applies the correct treatment operation so that the output complies with the products environmental and quality standards, finds a market for this output and finds its economic balance for his overall process.

We propose that the criteria should be set on a process itself, and that a proper waste acceptance procedure is applied at the recovery facility.

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1.2 Point of End-of-Waste

Question 8:

Do you agree that the point of EoW should be set after a recycling operation is completed and the material has reached the form of an aggregate?

- Yes
- No

Please elaborate on your decision for choosing a different point of EoW other than recycled aggregates? Please consider in your answer that the choice on the point of EoW will have an impact on shipment, market and traceability:

We do agree with the proposed EoW point, which should be at the recycler's facility to facilitate transport.

1.3 Intended use of recycled aggregates

Question 9:

The JRC proposes that EoW can only be achieved if the output material (recycled aggregate) of a recycling operation is used again as construction material for buildings and other infrastructure (e.g. architectural concrete products, precast concrete, ready mix concrete, asphalt products, structural (unbound) use and track ballast). Backfilling is not considered as intended use to achieve EoW.

Do you agree with the intended use for recycled aggregates to achieve EoW?

- Yes
- No

If no, what intended application listed above should be restricted or considered to achieve EoW. Please elaborate on your suggestion(s):

Whilst we understand that backfilling does not require product status for the aggregates used and that it can be done with waste (see WFD - Article 3.17.a) and that these EoW criteria should not be developed with the sole aim of facilitating backfilling, we still believe that backfilling should not be excluded as an end use.

Backfilling of untreated RA should always be prohibited, but properly produced recycled aggregates can also be used for backfilling. Indeed, there are cases where RA are produced to high quality standards with the aim of being recycled as a construction material for buildings and infrastructure, but these RA do not find a buyer in time - in this case, backfilling is still an economic option for the RA producer.

While downcycling should not be encouraged in the framework of EoW, it would not make sense to exclude backfilling as a possible route for RA when the material has already reached EoW and meets the EoW criteria.

Additionally, backfilling is an important end-use for RA, in most cases following a similar recovery process as for other uses of RA, from the same CDW fractions. Some backfilling operations, such as landscaping, noise barriers and road construction, are engineering works with corresponding technical requirements for the material properties used.

Therefore, while the overall criteria should not be designed with the aim of using RA for backfilling, backfilling should not be excluded from the possible uses - as it still represents a possible route for the economic valorisation of RA - as long as the RA meets the necessary quality standards for recycling as a construction material in building and infrastructure (aligned with EU standards).

2. Standards, technical specification, existing national EoW criteria and product legislation

Question 10:

Are you aware of additional national and EU-wide technical specification or standards (waste- and product status) to be considered than those listed below?

- Yes
 No

If yes, please provide relevant information and references:

It seems like the standards below are missing.

EN13383

EN13450

UNI 11531

UNI EN 998

UNI 11104

UNI 8520-1

UNI 8520-2

UNI EN 197-6

Standard	Content
AT OENORM B 4710-1:2018, concrete standard	Existing standard has been adapted for the application of recycled aggregates in concrete formulations
CEN/TC 154 (SC1 to SC6 and WG 1 to WG13)	Aggregates. Standardization in the field of natural, recycled and manufactured aggregates, by specifying aggregate performance characteristics, sampling and methods of test.
EN 206 (1 to 9)	Concrete
EN 932 (1 to 6)	Tests for general properties of aggregates
EN 933 (1 to 9)	Tests for geometrical properties of aggregates
EN 1097 (1 to 8)	Tests for mechanical and physical properties of aggregates
EN 12457-4:2004	Characterisation of waste - Leaching - Compliance test for leaching of granular waste materials and sludges - Part 4: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction).
EN 12620:2002+A1:2008	Aggregates for concrete
EN 13043:2002/AC:2004	Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas;
EN 13055-1:2002/AC:2004 (1+2)	Lightweight aggregates
EN 13108-1 to 5	Bituminous mixtures – Material specifications
EN 13108-8	Bituminous mixtures – Material specifications – Part 8: Reclaimed asphalt.
EN 13139:2002/AC:2004	Aggregates for mortar
EN 13242:2003+A1:2008	Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction
EN 13285	Unbound mixtures – Specifications
EN 13286	Unbound and hydraulically bound mixtures – Test methods
EN 14227-1 to 5	Hydraulically Bound Mixtures: Specifications

Question 11:

Are you aware of additional European product legislation to be considered other than those listed below?

- Yes
 No

Product legislation	Abbr.	Legislation
Construction Product Regulation	CPR	Regulation (EU) No 305/2011
European Technical Assessment	ETA	-
CE Marking	CE	Part of the EU harmonisation legislation
Classification, Labelling and Packaging of substances and mixtures	CLP	Regulation (EC) No 1272/2008
Registration, Evaluation, Authorisation and Restriction of Chemicals	REACH	Regulation (EC) No 1907/2006
Regulation concerning Persistent Organic Pollutants	POP	Regulation (EC) No 2019/1021

Question 12:

Are you aware of additional national (or regional) EoW criteria other than those listed below?

- Yes
 No

If yes, please provide relevant information and references:

As a general comment, there is no association which has members in all EU member states, or it's possible that some members from some MS did not provide feedback. Therefore, to ensure that all MS legislations are covered, JRC should approach each MS authorities individually, in order not to miss any key information.

Please find below a list of national legislations that seem to be missing:

Wallonia (Belgium) has developed an EoW for recovered aggregates. The principle is to have a 'recognition' based on a technical assessment of a product X, and then a 'registration' linking the recognised product X to a company A. This EoW is only valid in Wallonia, for C&D waste aggregates which are recycled locally.

Please find more information here: <https://sol.environnement.wallonie.be/home/accueil-dechets/sortie-du-statut-de-dechet---sous-produits.html>

Also Flanders (Belgium) has a EoW for recovered aggregates, which is very elaborate.

More info: https://ovam.vlaanderen.be/puin-ehr-certificatie-van-gerecycleerde-granulaten-en-hinderaspecten-verwerking?p_l_back_url=%2Fzoeken%3Fq%3Dgerecycleerde%2Bgranulaten

Brussels Capital Region (Belgium) is also working on an EoW criteria for aggregates, but it is not finalised yet.

A revised draft of national EoW-criteria for Germany is expected to be published soon. Discussions on how broad the scope and criteria are supposed to be are still ongoing.

It should be noted that the Italian EoW has been updated very recently (Italian Decree 152/22 has been cancelled and substituted by Decree 127/24).

It seems like Croatia has also developed an EoW for demolition waste, which we could not find but that is mentioned there:

- In page 16 <https://thedocs.worldbank.org/en/doc/e855a9b98e82c462704a6e353f350fe5-0080012022/original/08-Session-2-Overview-of-EU-and-Croatian-legislation-recycling-and-recyclability-status-of-CDW.pdf>

- In page 186 https://mingo.gov.hr/UserDocsImages/UPRAVA-ZA-PROCJENU-UTJECAJA-NA-OKOLIS-ODRZIVO-GOSPODARENJE-OTPADOM/Sektor%20za%20odr%C5%BEivo%20gospodarenje%20otpadom/PGO%20eng_web%2011_12_2023.pdf)

Bulgaria also has developed EoW for C&D waste, under the Ordinance on the Management of Construction (and Demolition) Waste and Insertion of Recycled Construction Materials.

More information on the content of the EoW here: <https://mobiccon-pro.eu/publications/shortcomings-of-the-existing-regulatory-framework-for-the-management-of-construction-and-demolition-waste-cdw-in-bulgaria/>

It should also be noted that the United Kingdom has also developed an EoW on aggregate from inert waste.

Please upload your file(s)

Member State	Targeted waste	Status
Austria	Recycled building materials.	Implemented: Recycling Building Materials Ordinance BGBl. II Nr. 181/2015)
Germany	Proposal	Planned: Ministerial key issues paper on the End-of-Waste Ordinance for certain mineral substitute building materials has been developed.
Finland	Crushed concrete	Implemented: Government Decree on End-of-Waste Criteria for Crushed Concrete (466/2022)
France	Aggregates produced from construction and public works to be used in road building	Implemented: Order No 2010-1579 of 17 December 2010 based on the WFD definition and supplemented by Decree No 2012-602 of 30 April 2012.
Ireland	Recycled aggregates ¹	Implemented (national EoW criteria): Decision EoW-N001/2023 of 12th September 2023 establishing criteria determining when recycled aggregate ceases to be waste
	Concrete (17 01 01 concrete from CDW) Various codes ² Concrete and soil and stone: 17 01 01 concrete (from CDW)) 17 05 04 soil and stone other than those mentioned in 17 05 03, (non-hazardous) 17 01 01 concrete (from CDW)	Implemented (case-by-case decisions): Art28-0034: Decision on EoW Criteria relating to Recycled Aggregates from Crushed Demolition Concrete (2019) Art28-0035: Decision on EoW Criteria relating to Recycled Aggregates from Construction and Demolition Waste (2019) Art28-0056: Decision on EoW Criteria relating for recycled aggregate (2022) Art28-0059: Decision on EoW Criteria relating for recycled aggregate (2023)
Italy	Inert CDW and other waste aggregates of mineral origin	Implemented: Regulation governing the end of waste status of inert construction and demolition waste and other inert waste of mineral origin. Decree 152 of 27 settembre 2022.
The Netherlands	Recycled aggregates	Implemented: Regulation on Recycling Aggregates from stony waste. Regulation No IENM / BSK-2015/18222 of February 5, 2015.

3. Specific questions for all stakeholders but in particular for recyclers to cover the set of EoW criteria

3.1 Input materials

Question 13:

Which input material(s) are used as feedstock in the recycling facility you operate? Please define the CDW material (e.g. source separated concrete, mix of mineral CDW) and source (e.g. buildings, other infrastructure). If possible, please provide photos that can be reproduced.

- source separated concrete
- source separated fired clay bricks and tiles
- source separated ceramics
- stones and boulders (e.g. armour stones)
- mixture of the mentioned CDW fractions above (concrete, fired clay bricks and tiles and ceramics)
- mixed CDW fractions (mineral CDW mixed with other CDW fractions such as plastics, wood, metals, etc.).
- other please specify:

If mixed CDW fraction, what CDW fractions:

Mixed CDW fractions are first sorted to retain only the inert CDW fraction before being used in the recycling process.

Please upload your file(s)

Question 14:

Which input material(s) do you exclude in the recycling facility you operate?

- source separated concrete
- source separated fired clay bricks and tiles
- source separated ceramics
- stones and boulders (e.g. armour stones)
- non-mineral CDW fractions such as plastics, wood, metals, etc.
- other please specify:

If other, please specify:

The exclusion of some materials depends rather on the local context - if there is a market for such materials as waste in input (availability) and as secondary raw materials in output (demand), and if there is installed technical capacity to treat and recover such materials.

The production of RA is a local activity, as the transport of such materials over long distances can rapidly have a negative impact on the overall economic balance of this activity. It does not make economic sense not to recycle inert CDW locally.

Question 15:

Do you treat mineral CDW with hazardous properties (e.g. due to cross-contamination of adhering hazardous CDW, mineral CDW that was in contact with hazardous substances)?

- Yes
- No

If yes, please provide further details on decontamination processes:

It depends on the nature of the contamination. Inert CDW can be washed during the recycling process to remove contaminants.

Please upload your file(s)

Question 16:

What are the quality parameters/specifications on the input materials in the recycling facility you operate?

This depends on the specific companies and the output criteria that need to be met.

Question 17:

Do you have a process in place to monitor the quality of the input material?

- Yes
- No

If yes, how do you monitor the input material (e.g. visual inspection, sampling plan and analysis)?

Proper waste acceptance is applied to monitor the quality of the input material, including to make sure that certain materials are not present, such as asbestos and tar containing materials.
This is done via visual inspection (camera and personal visual inspection), analysis, or inquiring additional information about the use/function/historical information of the material.

If yes, what are the criteria (e.g. standards, EoW criteria) or limit values?

If the country has an EoW criteria, it's usually the country's EoW criteria that are used to monitor input. This is particularly the case in Flanders (Belgium).

3.2 Treatment processes and techniques

Question 18:

How are the input materials stored (e.g. separate storage of different input material qualities, combined storage of different input material qualities)?

There is usually a separate storage based on quality of the output needed. For higher quality RA, a more selective storage on input side will also be needed.
In some countries, the permits of facilities treating CDW include requirements on how the waste should be stored prior treatment. Generally, only a few categories of waste may be stored together and separate storage bays are required for each type of waste.

Question 19:

Please list and describe any sorting or pre-treatment processes that are applied before the main recycling process:

Containers of Mixed CDW waste are first sorted into different fraction.
A washing step may be applied depending of the quality of the input and the quality needed for the output.
Mineral fraction is then sent to a crusher to recycle the mineral waste into RA

Question 20:

Please describe the recycling technology used in the facility you operate. Please provide detailed information on the recycling process/steps and provide flow-charts if available (attach).

Please upload your file(s)

Question 21:

How are the output materials from a recycling process stored (e.g. separate storage of different output material qualities, combined storage of different output material qualities)?

There is usually a separate storage based on different output material qualities.

3.3 Output materials

Question 22:

What are the output materials of the recycling process you operate (e.g. aggregates with different particle sizes, sediments, light materials)?

Output material is quite diverse and depends on the local context (available waste input, technical capacities for recovery, market demand for RA, distances factor).

Among possible outputs, materials such as concrete aggregates, mixed aggregates, brickwork aggregates, recycled sands, asphalte granulates and some other mixes of these types of granulates can be produced.

The national certification bodies may have the information on the type of RA produced at national level, based on different CE standards.

It should be noted that the proposal to limit the EoW criterion on output to particle sizes between 0.063 and 90 mm does not reflect the operations. While the elimination of fines (0 to 0.063 mm) is generally required for aggregate applications in concrete or mortar, it is not necessary and not performed for the majority of road infrastructure applications, which account for the vast majority of volumes, excluding backfill.

In general, the size of the output should not be a limiting criterion, as outputs are produced according to the needs of the market in terms of output quality and in accordance with European product standards. We therefore propose to remove the size criterion.

Question 23:

What are the quality parameters or market/industry/costumer specifications for the output materials in the recycling facility you operate?

Several physical and chemical parameters can be used, usually linked with the use that will be done of the RA. Existing EoW regulations do take account of different applications and related different criteria.

These are detailed in the national/regional end-of-waste and national/regional legislations.

Question 24:

Please describe the process for the sampling of the output material (e.g. how many samples, how are samples taken, how often) until the final result of the desired quality (e.g. what parameters are analysed)?

These are detailed in the national/regional legislations.

Please provide analysis of the output material (total content, leachable content; e.g. particle size (distribution), impurities such as wood or plastics, leachable salts, metals, heavy metals, hazardous substances, POPs):

Analysis mainly focus on impurities (floating and non floating), presence of glass, asbestos, PAH's, leaching of heavy metals...

In case of leaching tests, it is important to consider the method used. Indeed, different leaching test methods will lead to different leaching test results.

Once this EoW is adopted, Member States will need to ensure that their current environmental legislation that imposes requirements on the use of recycled aggregates (e.g. soil protection legislation) is aligned with

the environmental requirements of the future EU EoW. Indeed, it is important to avoid double testing (e.g. for leaching criteria) for recycling operators - and therefore additional costs - just to ensure compliance with both the EoW and the applicable environmental legislation, in case they were not harmonised in terms of testing.

Please upload your file(s)

Question 25:

What is the legal status assigned to the output materials in the recycling facility you operate?

- waste
- product

If product, under which legal status was the EoW status achieved (e.g. national/regional EoW, case-by-case EoW decision, self-declaration)? Please specify

It depends on the country, it can be national/regional EoW status, implicit Eow status (France)...

Question 26:

Which waste or product code (harmonised system code) is used for shipping the output materials to the next holder?

Question 27:

What is the intended use for the recycled aggregates?

Possible applications of the recovered aggregates are:

- Landscaping and backfilling;
- Embankment construction of civil engineering works;
- Construction of bituminous mixtures and sub-base layers for roads, railways, airports and civil and industrial yards;
- Construction of foundation layers for transport infrastructures and civil and industrial yards;
- Construction of layers with anti-capillary, anti-freeze, drainage, etc. functions;
- Manufacture of mixtures bound with hydraulic binders (such as, for example, cement mixes, concrete mixes);
- Manufacture of concrete;
- Production of cement clinker;
- Production of cement.

It is important to note that in the existing national EoW regulations, a different output application comes with different set of criteria. Indeed, some applications may require stricter environmental standards than others. Such issue should be addressed in the future EoW criteria.

EU product standards are obligatory and regulate the use of recycled aggregates in all applications. EoW criteria should refer to these standards.

Question 28:

Are the recycled aggregates exported?

- Yes

No

If yes, from which country/ies does your organisation export to which country/ies? Please also include extra-EU export if relevant:

Export is not so common inside EU, except to a small extent in the borders areas (it's notably the case for Germany and Italy), but it is a widespread phenomenon in those countries where natural aggregates are not available (e.g. the Netherlands).

3.4 Quality management system (QMS)

Question 29:

Is there a quality management system in place in the recycling facility you operate?

- Yes
 No

If yes, what set of documented procedures are included in the quality management system implemented in the recycling facility you operate (e.g. monitoring of processes, product quality, acceptance control, training of staff)? Please list them:

Question 30:

If you have implemented a QMS, is this certified by a third party (other organisation)?

- Yes
 No

If yes, please provide further details:

In Flanders (Belgium), the EoW criteria requires that the output material must be certified by a third-party. In this case, the QMS is also reviewed during the certification process.

Question 31:

What body certifies and verifies your QMS?

3.5 Provision of information

Question 32:

Do you need to fulfil specific requirements on provision of information (e.g. statement of conformity, declaration of origin) when shipping the output materials from a recycling plant to the next holder?

- Yes
 No

If yes, please provide details on the procedure:

Question 33:

What elements does the statement of conformity contain?

If a template is available, please upload this template:

4. Market and economics

Question 34:

What are the market prices of recycled aggregates (average values and ranges where possible, in €/t)?

Question 35:

In case you have experience working under a national/regional EoW regime for CDW, what are the additional costs or the savings for EoW compliance (indicate e.g. €/tonne output material)?

Question 36:

How relevant is this work on EoW criteria for mineral CDW for the business model of recyclers and market demand?

In countries where EoW criteria do not exist, this work is extremely relevant - recycled construction products are currently not used due to exclusion of contractors due to lack of legal certainty for their use, lack of acceptance by third parties and lack of product status. All these problems could be improved by EoW criteria. However, the European harmonised level is not the key - the most important point is to be able to benefit from an EoW criteria. Indeed, as mentioned above, the RA market is mainly local and RA are exported in very small amount and specific cases.

In this respect, for countries where EoW criteria are already well established, the benefits of EU harmonised EoW criteria for inert CDW are more questionable and will depend on how the EU EoW criteria are defined. In countries that have taken years to develop technical and environmental criteria, there is a risk that the volume of recycled materials will decrease if these criteria are tightened: if the criteria are too low, it will have a negative impact on the quality and perception of RA, but if they are too high, it will exclude the use of RA in certain applications and go against the circular economy and disrupt what is working well.

It should also be emphasised that a harmonised EoW would only solve part of the difficulties associated with cross-border shipments of waste. In fact, it is reasonable to assume that a large number of low quality aggregates will continue to be directed to outlets with waste status, as they will be unable to meet the EoW criteria.

Question 37:

How likely is that the markets will change with EU-wide EoW criteria for CDW, and how (e.g. foreseen prices of recycled aggregates with EoW status)?

5. Additional comments and acknowledgement

Question 38:

Please provide any additional comments not covered by the questions above as well as reports and documents that you consider relevant for the development of EU-wide EoW criteria for mineral CDW:

Please upload your file(s)

Question 39:

The stakeholder consultation will feed the final report on technical proposals for EoW criteria for CDW. Please indicate if you would like your feedback to be acknowledged in the final report:

- Yes
 No

6. Upload Word template for direct background paper feedback

Please name the file as follows: **JRC_CDW-EoW Template_Feedback_XX** where XX stands for your organisations name

Please upload your file(s)

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