

St. Gallen, 10.11.2020

Validation of the general programme instructions of European Aluminium 2020 and critical review of its complementary product category rules

Scope of the document

- Validation of the conformity of the general programme instructions of the European Aluminium type III environmental product declaration programme with ISO 14025 and EN 15804+A2;
- Critical review of the complementary product category rules contained in the European Aluminium programme instructions to be in line with EN 15804+A2 and applicable complementary product category rules, notably EN 17213 for windows and doorsets.

Documents:

- European Aluminium General Programme Instructions, Version 3, 23rd of September 2020, incl. the separate annexes:
 - Annex 3_EPD template_V8.doc
 - Annex 4_Verification checklist EPD with LCA tool for EPD_V7.doc
 - Annex 5 -Verification checklist EPD without LCA tool for EPD_V7.doc
 - Annex 6_Verification checklist LCA tool for EPD_V7.doc
 - Annex 7 - Verification of the EPD document_V7.doc
 - Annex 8_Verification statement European Aluminium template_V5.doc

Members of the review panel

- Dr. Frank Werner, Werner Environment & Development, St. Gallen CH, Chair of the review panel
- Philippe Osset, Solinnen, Paris (FR)
- Carl-Otto Nevén, NEVÉN Miljökonsult, Partille (SE)

Procedure of the validation

The European Aluminium general programme instructions were reviewed independently by the members of the review panel. Their findings were communicated to the responsible persons at European Aluminium on 23.8.2020.

After a revision of the programme instructions, the members of the review panel reviewed the European Aluminium general programme instructions independently for a second time and communicated their findings to the responsible persons at European Aluminium on 19.9.2020.

All the comments have been addressed in a satisfactory way.

The complete list of comments can be found as an annex to this document.

Limitation of responsibility

The present verification report is delivered to European Aluminium. The review panel cannot be held responsible for the use of its work by any third party. The conclusions of the review panel cover the current state of the report, and no other report, extract or publication which may eventually be done. The review panel conclusions have been set given the current state of the art and the information which has been received. These review panel conclusions could have been different in a different context.

Validation statement

After careful review of the current version of the European Aluminium general programme instructions, we confirm not having found any significant deviations from the applicable standards ISO EN 14025 and EN 15804+A2 related to the organisation and management of the European Aluminium programme:

- the scope of the programme is identified clearly and limited to construction products primarily made from aluminium;
- the responsibilities of the programme operator are described coherently and in line with the requirements of ISO EN 14025;
- the content of the general programme instructions covers all elements that are listed in ISO EN 14025, clause 6.4.; the procedures and requirements are found to be practicable and appropriate;
- the rules for the involvement of interested parties are clearly described; in the context of this update of these general programme instructions, no involvement of interested parties is considered necessary;
- the procedures for the definition of product categories is found to be appropriate, the resulting product groups, for which complementary product category rules have been provided as part of the general programme instructions, are relevant and concisely defined;
- the programme is based on the core product category rules for construction products as defined in EN 15804+A2; complementary product rules have been defined as part of the general programme instructions (see below); the development of complementary product category rules for additional product groups is possible;
- the procedures for the application of LCA methodology as well as the content of the environmental product declarations follow the requirements of EN 15804+A2; beyond the

requirements of EN 15804+A2, additional environmental information can be declared – the conformity of this additional information contained in an EPD of the European Aluminium programme shall be verified according to ISO 14025, clause 7.2.4;

- the treatment of pre-consumer scraps going out of A stages is dealt as ISO 14044 recommends (i.e. in a consistent manner with post-consumer scraps). It is dealt in line with the alternative approach provided by EN 15804;
- the draft template for EPD as annex to the general programme instructions is found to be appropriate for a test phase, after which the template should be consolidated;
- the procedures for updates, correction or withdrawal of an EPD published under the European Aluminium programme are clearly defined and practicable;
- the procedures for review of product category rules complementary to EN 15804 and independent verification of environmental product declarations are found to be in line with ISO 14025 and EN 15804+A2 respectively;
- the draft checklists for the verification of EPDs and for the approval of LCA-tools for EPD as annexes to the general programme instructions are found to be appropriate for a test phase, after which the checklists should be consolidated. The draft verification statement as annex to the general programme instructions is found to be appropriate;
- the requirements on the independence and competences of the verifiers and of the members of the PCR review panel are in line with ISO 14025 and appropriate;
- the rules for data confidentiality are in line with ISO 14025 and appropriate.

After careful review of the complementary product category rules for aluminium products contained in the current version of the European Aluminium general programme instructions (clause 5), we confirm not having found any significant deviations from the applicable standard EN 15804+A2 as regards methodological requirements.

St. Gallen, 10.11.2020



Dr. Frank Werner

Paris, 10.11.2020



Philippe Osset

Partille, 10.11.2020



Carl-Otto Nevén

Standards:

EN ISO 14025-07:2007, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

EN 15804:2012+A2:2019, Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

EN 17213:2020, Windows and doors. Environmental Product Declarations. Product category rules for windows and pedestrian doorsets.

Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment	Comments	Proposed change	Final answers European Aluminium
	0		ge	Do you prescribe a database for your programme? You could consider prescribing an electricity model per country.		We do not prescribe any database for our programme. In the programme rules we define some aspects of data quality (section 5.1.3) that shall be taken into consideration when choosing datasets. We cannot prescribe an electricity model per country because this would favour a database vs another. What we are including in the revised version is the approach to be used for the modelling of electricity (see section 5.1.6).
	0		ge	Be aware that the French complement to EN 15804 is currently being revised and contains rules for the modelling of metals. Alignment would be welcome.		We will check with the French Association what we can do about it. No changes to the text.
General			Ge	The ISO 22057 EPD for BIM standard will assist BIM developers to integrate EPD, and to (eco)design buildings based on EPD.	The present document should integrate requirements which helps Aluminium Europe to control the way their EPD are used, even when they are used through BIM tools. As an example, it may include the fact that any EPD of Aluminium products which states that the EPD is applying the requirements of the present document shall be verified according to the process described in the present document, "including when the EPD is modelled with a BIM tool". The level of requirement is up to the decision of Aluminium Europe (question of governance). It would ensure that modifications done to EPD by designers (thanks to BIM tools) are appropriate. It might also include that the use of an existing verified EPD is limited to the products that EPD is explicitly said to be covering. Responsibility regarding other uses is not accepted by Aluminium Europe. ...	The results for windows, doors and curtain walling reported in EPDs are not easily scalable to similar products. We propose to include in the EPDs the following sentence: "The use of this EPD within BIM tools is in principle limited to the products explicitly included in the EPD. The scaling of results to model similar products can only be done if justified and transparently reported in the project report. Any responsibility regarding the misuse of this EPD by third parties is not accepted by the Programme Operator" See section 7.1 Question for the review panel: shall we mention the BIM ISO standard in the text? CON: Probably good to reference in the EAA document.
5	Contents		Ge	A set of useful definitions would have been welcomed	Add definitions	Ok, a set of useful definitions specific for the aluminium world have been added. The definitions for data quality have been taken by ISO 21930. For the other definitions we refer to EN 15804.
86	Contents		Ge	A set of "normative references" would have been welcomed (i.e. ISO and CEN standards which requirements apply) Ok, appears at chapter 2, Lines 87 to 95. Not clear at line 86 if "according to" means that the requirements of the list of standards apply	Reformulate line 86 to state that all requirements of the standards apply. If it is not the case (as in L 391 to 395), please mention somewhere which requirements do not apply, or put the related standard as bibliography only.	Reformulated l.86

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30 and 63	Contents		Te	Not clear when reading the titles why two chapters deal with the same issue	Modify titles?	Titles have been modified to reflect the differences in the content
86 586	Contents		Ge	EN1279-5 is not defined	Add a list of references with the full names of all standards which are referred in the text	All the standards have been defined in the text with their full name. all the standards have also been included in the references section.
	1		ed	clarity	This document also includes some specific methodological requirements for the development of EPDs, particularly concerning EPDs for aluminium windows and doors, curtain walls, profiles, sheets and composite panels as additional complementary Product Category Rules (PCR) is necessary.	Ok, text is modified
	2		ed	The types of EPDs under the programme are listed twice in the document	Delete the list here.	Ok, the list is deleted here
86	2	2	Ge	<p>Since new versions of these standards are about to be introduced, I believe it would be valid if the version of these documents is given.</p> <p>I.e.14020 and 14044 will get amendments, 15804 has an A1 + A2 and 21930 should be checked on the version as well.</p> <p>ISO is making a large work on rewriting the whole series of standards in 14020 series. Including 14025. This writing is in its beginning and is not ready yet, but it will be within the next 3-4 years and this GPI document shall hold for a longer period of time.</p>		Ok the date for all the standards has been included
117-119	2	11	Te	What about different production sites for the same company? Or a multitude of different production sites for several companies??		I. 117-119 are deleted here (see previous comment from FW. See section 5.1.3 on data quality for this point
92 and 78 and 301 and 312 and 330... and others	2		Te	Requirements of A1 and A2 are not compatible (sometimes different). It is necessary to precise which version of EN 15804 applies, i.e. which requirements apply to the present PCR. It looks like A2 is considered.	Yes, specify the version A1 or A2 which apply in the scope of the present document. Please modify everywhere in the document using the same wording for the reference (e.g. EN 15804+A2:2019)	Ok, included
87 to 95	2		Ge	ISO 14027 adds up to ISO 14025	Please consider adding ISO 14027 in the list... and applying its requirements	ISO 14027 has been added as a reference. The Programme Rules are fully aligned with ISO 14027.

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97, 451 and 452	2		Ge	What about products made of Aluminium and other materials (e.g. wood, glass)? Do you provide recommendations to apply the other applicable PCR (including the standardised ones) in conjunction with the present one? Are they compatible?	Please elaborate. The recommendation could have highlighted that choices regarding modelling of end of life (e.g. recycling) need to be consistent: e.g. for a window made of aluminium and wood, the collection rate for the aluminium part and the wood part should be the same! (and equal to the collection rate of the window in the related country). Then in that case, maybe the EoL modelling needs to be adapted for aluminium	We consider this c-PCR as covering the full category for one specific product, so the modelling apply to all the products included in the specific category represented by the PCR. No changes needed in the main document
124	3	Headline	Te	It is important to know that ISO 14065 is a new document to understand in relation to verification. ISO 14065 is a CASCO based document based on ISO 17029 (i.e. with normative reference to ISO 17029).		Question for the review panel: To our understanding these standards include requirements for verifiers and verification bodies. How should we refer to them? Shall we ask as additional requirements for the verifiers that they comply with them? Thanks for your view. To my understanding you shall apply the ISO14065 document. However doing so you have to be aware of the fact that you probably will lose verifiers that not are working under the umbrella of larger certification bodies like BVQI, Lloyds, Norske Veritas etc, because standalone verification operators normally cannot keep up with the requirements in ISO14065. ISO14065 will make the verifications very expensive./CON
127 and 250	Figure 1		Ge	Nothing about communication of EPD? (how is it made available to business? How to ensure that what is made available and said compliant and verified is exactly what has been verified?...)	The PO should ensure that communication of EPD is fair and appropriate (as stated in line 139). Please modify the figure and elaborate somewhere in the doc. A link to an EPD does not ensure that the EPD at the end of the link is the one that has been verified.	Figure 1 has been modified to include the publication of the verified EPD on our website. The website of European aluminium shall be considered as a reference. A sentence concerning this point has been added in section 4.4
127 and 251 827 to 830	Figure 1		Ge	Nothing about revocation of EPD? (after a while) EPD become obsolete (question after 5 years and/or significant change of technology and/or change of requirements of normative references – ISO 14025 will be revised in some years...). L 251 mentions expired EPD... Criteria which define the expiration rules should be set and controlled by the PO.	The PO should ensure that communicated EPD are appropriate, i.e. not obsolete. Please modify the figure and elaborate in the doc.	the text has been modified. Expired EPDs are removed from the website. A list of expired EPDs will be available on the website in a different section than valid EPDs. Section 7.4 has been modified to include the criteria for expirations of EPDs. Figure 1 has not been updated concerning expiration of EPD, but the relevant text has been added in section 7.4

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	3.1	2nd bullet point	ed/te	The meaning of the second bullet point: “ensuring that the declaration requirements are followed” is not clear to me		Ok, reworded
	3.1	8th bullet point	ed/te	“... to this International Standard...” needs to be rephrased		“ok reworded: ...to ISO 14025...”
	3.3	first list of bullet points	ed	- Address the comments formulated by interested parties during the open consultation, when organised, and includes them in the review statement	- Address the comments formulated by interested parties during the open consultation, when organised, and includes them in the review statement	Ok, corrected
	3.3	last list of bullet points	ed	Reference is made to the “European Framework”, which is very vague – the required competence is not clear		Rewritten as “knowledge of the European mandatory and voluntary legislative framework concerning environmental labelling of products, green claims and, more in general, sustainability of products and services”
167	3.3	Headline	Te	This headline should say PCR Review Panel		Ok, amended in the headline and in the rest of the Programme rules
193-195	3.3	6	Te	This mean that only the chairperson of the PCR review panel is paid for the work.	Comment CON	The sentence has been removed since it should not belong in the programme rules.
178 and 220	3.3 and 3.4		Ge	The CR panel integrates the comments of the interested parties together with its comments. The technical committee redacting the PCR take all comments (CR and interested parties) into account by modifying (or not) the PCR and answering the comments. The term “address” is not clear about this process. (in all cases, the CR do not answer the comments of the interested parties, and do not modify the PCR according to those comments...)	Elaborate on the way the comments (CR and interested parties) are taken into account.	Ok, a new section 4.3 has been added on the process to be followed for the review of the programme rules including these explanations
	3.4		ed	clarity:	The review statement regarding this open consultation requirement shall be included in the review report. The Review Panel shall address these comments received during public consultation in its review statements and its final version of the document.	Ok, editing accepted

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229	4.1		Te	<p>According to ISO 14044. 5.2. “When results of the LCA are to be communicated to any third party (i.e. interested party other than the commissioner or the practitioner of the study), regardless of the form of communication, a third-party report shall be prepared.</p> <p>The third-party report can be based on study documentation that contains confidential information that may not be included in the third-party report. [let’s say that third party report + confidential information = LCA project report]</p> <p>The third-party report constitutes a reference document, and shall be made available to any third party to whom the communication is made.”</p> <p>Then any EPD should contain the elements that are listed in 5.2 of ISO 14044 if no additional report is made available...</p> <p>This is a key issue with EN 15804 that shall not be solved here... but need to be mentioned in the CR.</p>	<p>Do your best to require ISO 14044 5.2 elements in the EPD.</p> <p>Or (which would be better since a major improvement as compared to the current practice) require a third party report which is communicated with the EPD.</p>	<p>We double checked the content of the EPD template with the list included in ISO 14044, section 5.2 to ensure that the majority of the elements are included.</p> <p>No changes in the text of the Programme rules</p>
254-255	4.3	4	Te	You need to define or describe the “stakeholders” here.		Text modified with some examples of stakeholders: to all interested stakeholders, e.g. architects, public administrations, buildings owners, research institutes
257	4.4		Te	Do you want that EPD integrate requirements regarding the issue?	Elaborate if relevant	No, we do not have requirements to add. So no changes to the text have been made.
	5	last paragraph, p. 8	ed/te	The meaning of the following sentence is not clear “If no PCR is developed, it shall be accepted by the verifier.” Who decides if complementary PCR need to be developed and what the verifier has to accept?		The paragraph has been removed. The two sections describing the LCA methodology have been renamed into C-PCR for all products and cPCR for specific products. In this way, the two sections can act as c-PCR for all products in the scope.
292-293	5	4 Row-4	Te	<p>This case is not possible in the future.</p> <p>All EPD Type III shall have a PCR</p>		The paragraph has been removed. The two sections describing the LCA methodology have been renamed into C-PCR for all products and cPCR for specific products. In this way, the two sections can act as c-PCR for all products in the scope.
291-292	5		Ed	<p>Do not understand the meaning of “If no PCR is developed, it shall be accepted by the verifier”. What is covered by “it”? Does that mean any EPD of product shall be accepted?</p> <p>I guess that means “no additional PCR is mandatory” and “the verifier cannot require an additional PCR”</p>	Replace “it” by what is covered by “it” or reformulate.	The paragraph has been removed. The two sections describing the LLCA methodology have been renamed into C-PCR for all products and cPCR for specific products. In this way, the two sections can act as c-PCR for all products in the scope.

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301	5.1		Te	“Attributional LCA” What does that mean in practice? Something like, when using Simapro, “cut-off data” or “APOS” (former alloc-def) and “attributional” data?	Please precise what is meant in practice in the list of requirements. Very helpful for verifiers. Any clarification will be welcomed to ensure consistency between EPD. Requirement of Cut-off data when using Simapro is needed.	The sentence has been reformulated. Instead of speaking of attributional LCA, we prescribe the use of average data for the modelling. -
	5.1.2		te	The definition of a declared unit or a functional unit is key in PCR. It seems that some general text on the use of declared or functional units is missing, also where the DU/FU for the products included in these General Programme instructions can be found. Then, as a complementary approach the FU of “consolidated EPDs” can be introduced. In any case, reference should exclusively be made to declared units; 1 m2 of window is not a function.		Definitions for functional unit and declared unit taken from en 15804:2019 have been added. A reference to where the declared unit can be found for each product has been included in the text.
315	5.1.2		Ge	What about green certificates for electricity? Do you apply ISO 14067:2018? Or something similar (see PEF)?	To be checked. If yes, it is worthwhile to clarify and elaborated.	Text concerning the modelling of electricity has been added in 5.1.6. a clarification about the use of guarantee of origin for electricity has been included.
357	5.1.3	6	Te	??? Wy not a shall???		examples have been provided in text concerning when data referring to less than one year could be used. Should has been kept in the sentence.
332-334 431	5.1.3		Ge	Not clear is “data” and “data sets” cover primary data or secondary data as defined in ISO 14033 or existing cradle to gate LCI. 3.1.4 and 3.1.5 It is necessary to make clear and different requirements dealing with primary and secondary data. As far as existing cradle to gate LCI data are concerned, not only the supplier data should be considered, but the all upstream models which are aggregated to generate the LCI. This one should be consistent throughout all the secondary data used.	Complete reformulation is expected or the paragraph, and care reading of all the document to be sure to use harmonised wording to describe given data and sets of data - Primary data - Secondary data - LCI datasheets	The paragraph has been reformulated. Definitions concerning data quality have been included in the section on “definitions”
334 and 435	5.1.3		Ge	Ok to have an EPD valid for 5 years after its generation/verification. Not ok to ask for verification of an EPD made with primary data which are 5 years old... One or two years is a max in the current practice (ok for 3years in L 435...): if you do something in 2020, you use 2019 or 2018 primary data... If 2018 data are used, you need to explain.	Please clarify why 5 years would be accepted by verifier for primary data... or modify	The paragraph has been reformulated. Definitions concerning data quality have been included in the section on “definitions”

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342	5.1.3		Ed	Aggregated is better than average. For average you need to define how you calculate your average. Otherwise some “innovative” calculations could occur.	Replace “averaged” by “aggregated”	Ok, done
358 and 388 391 to 395 Annex 1	5.1.5		Ge	Aluminium scraps which are not used as closed loop and go out of A stages are not accounted in Module D nor as waste according to EN 15804. In chapter 6.3.5.2 “Flows leaving the system at the end of waste of the product stage (A1-A3) shall be allocated as co-products. Loads and benefits from allocated co-products shall not be declared in Module D.” Similarly, in ISO 21930, 7.1.7.2.4. It is written: “Co-products from unit processes leaving the system at the production stage (A1 to A3) shall be allocated in accordance with 7.2.5. Loads and benefits from allocated co-products shall not be declared in module D (see 7.1.7.6)”	EN 15804+A2 does not leave any choice about the way to deal with aluminium scrap within A1 to A3 stages. According to EN 15804+A2, delete “potentially in module D” and modify “should be treated as waste”. Or please mention chapter of ISO 21930 where this exception would be recommended(?).	An explanation concerning the modelling of aluminium scrap has been included with pictures in section 5.1.6 the text in section 5.1.5 has been modified accordingly.
366, 411	5.1.5		Te	“foreign material”; “foreign element” looks specific aluminium language	Please define “foreign material” and harmonise wording	Ok, the sentence has been rephrased
374	5.1.5		Ge	Exit system boundaries “as co-product (for A stage) or secondary material (after C).”	Add “as co-product (for A stage) or secondary material (after C).”	Ok, added
	5.1.6	2nd bullet point	te	“Energy flows generated within the modules A1-A3 may be modelled as “closed loop”, as long as their amount is smaller than the amount of needed energy. If more energy is generated than needed within A1-A3, allocation shall be carried out according to EN 15804”. This guidance is not in line with ISO 21930. It is recommendable to allow for an export of exported energy and consideration in Module D (as a co-product allocation required by EN 15804) is not reasonably possible. This would imply that the same modelling can be used for EPD according to EN 15804 and ISO 21930.		This paragraph has been deleted. For the modelling of energy flows the same approach used for the modelling of aluminium scrap shall be used. This has been included in section 5.1.6
	5.1.6	3rd para.	te	“The percentage of recycled content in an aluminium product corresponds to the fraction of the aluminium mass in the product which originates from aluminium scrap, i.e. secondary material”. Clarification is needed if pre-consumer scrap is part of these considerations.		Yes, pre-consumer scrap is part of this. A clarification has been included in 5.1.7, section on recycled content
428	5.1.7	3	Ed	This sentence needs to be filled out		Ok, the sentence has been completed with some additional examples. Foreign elements has been substitute with “other elements”

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459	5.1.7	8	Ed/Te	Perhaps a better English is needed here. This sentence is difficult to understand. CON does not understand.		The bullet point has been rephrased.
406	5.1.7.		Ge	"Should be considered"...how to do?	Please refer to the section where it is explained how to consider, or elaborate here	Ok, rephrased in the text
422 to 423	5.1.7		Ge	"is the most appropriate" as compared to what? A PCR should try to present requirements and guidelines, not trying to bring too many arguments to justify them	Replace by "should be used" (or "is appropriate").	Ok, replaced with should be used.
428	5.1.7		Ed	"on five years"	"during the next five years"	ok
428	5.1.7.		Ge	"on five years" is linked to the "future" (not the "past") 5 years during which the EPD will be valid. Ok. An alternative would be to limit the lifetime of the EPD as long as the integration of recycled content is kept. This is linked to some previous PhO comments.	Check if it is written somewhere before that the EPD is valid for the next 5 years	Ok. Validity of the EPD is five years indeed. Now it has been explicitly mentioned in section 7.4
	5.1.8		ed/te	Guidance on the modelling of module B2 should be added, e.g. related to maintenance and cleaning (e.g. for windows)		Ok, typical scenario for maintenance and cleaning have been added. See section 5.1.8
	5.1.8		ed/te	It should also be stated that modules B4 and B5 are not relevant on product level and need not be considered in a cradle to grave EPD		Ok, this has been added in the text
	5.1.8		ed/te	It could also be mentioned that module B7 is not relevant for aluminium products.		Ok, this has been added in the text
117 to 119 446 501 to 502 7691 to 763 560 to 571 768 to 770	5.1.8		Ge	What about parameterised scenario/EPD? I saw nothing (it is quite used for windows) except for 5.1.10 (which is then inconsistent) Think on how the ISO 22057 "EPD for BIM" will use EPD from the present document	Please elaborate on the way to decrease the number of EPD when "easy" to defined parameters can be used (= scenario based on one reference + extrapolation rules) Please be consistent throughout the report is scenario EPD are possible	See also previous comment on this. A sentence concerning this aspect will be included in every EPD.
	5.1.10		ed	It is suggested to shift the text "When modelling end-of-life, it is allowed that several scenarios for module C and module D are given in addition. Each scenario shall be calculated and declared separately in the project report and in the EPD." After the list of sub-bullet points to bullet point 1		Ok, done

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	5.1.10		te	the “overall aluminium recycling rate” is understood as the share of aluminium scrap at deconstruction site that ends up in secondary aluminium. For the purpose of modelling, it would be more interesting to list the remelting efficiency; the “overall aluminium recycling rate” could be stated in addition.		Ok done.
515	5.1.10	1 Bullet 2	Te	CON does not understand. In the new EN15804 all C modules and the D module shall be declared.		Ok, clarified in the text
	5.1.10		ed	Clarity: Energetic use of a secondary fuel, means that the waste flow reaches the end-of-waste status prior to the combustion or thermal energy recovery process. This qualifies the material flow as a secondary fuel exiting the system boundary and the criteria of the R1 value is not applicable: the environmental impacts of waste treatment up to the secondary fuel are accounted in C3, the material flow is declared as a material for energy recovery from C3, and the combustion process including transport as well as the benefits associated with the generated net energy are declared in module D.		Ok, text modified
506-513	5.1.10		Ge	Ratio (collection rate...) are not defined. Multiple persons would give multiple calculation formula for each ratio.	Please provide formula with Figure indication points of measurement to clarify	Ok, formula has been added
522	5.1.10				Define R1 with Figure to clarify	R1 has been substituted with efficiency rate, since it could give space for misunderstanding. (R1 is the recycled content in PEF)
545-545	5.2		Ed	The program instructions contradict EN 15804+A2 (see previous comments).	Please indicate the program instructions first and mention that they dominate other references. In juridical terms, the first argument dominates what comes after.	The order of the documents has been changed. An explanatory sentence has been added.
	5.2.1		te	On the declaration of non standard size products: I do not understand the purpose of option a) and I would declare non standard size products per piece (to avoid misinterpretations)		This is taken exactly from EN 17213. No changes included in the text.
	5.2.1		te	“... Any replacement of the complete window/door after the RSL of separated components shall be considered under B4...” No, this is not part of a product EPD, which ends at the end of the RSL; modules B4 and B5 are relevant on building level only.		Ok , this has been changed in the text

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610	5.2.1 a) Bullet 3	9	EdTe	What is IGU? It needs to be defined.		Ok, added to the list of acronyms
	6			"The Review Panel reviews the PCR document and requires accordingly an update of the document."	Rather ... a consolidation of the document?	Ok, modified in the text
	7.2.1	4th bullet point	ed	These aspects sound like R/H sentences; should the R/H sentences be listed explicitly?		These sentences shall be listed explicitly in the EPD only if they are verified. The decision to include these statements in the verification and in the EPD is with the EPD owner. This aspect has been clarified in the text.
727	7.2.1		Ge	Do you consider here any input from the French CN?		The information requested by the French CN are now included as voluntary.
	7.3		ed	there are not only 3 but 4 types of EPDs; the "consolidated EPD" is missing in this list; it should be added and referred to clause 7.4; you may also want to consider merging clause 7.4 and 7.5 (or structure the text differently); the current structure does not look to logic to me.		Ok, this paragraph has been modified. See new proposal in the text
798-799	7.3	4	Te	??? is this span due to the glass weight e.g. in window variants? You need more text here to explain this span.		An additional requirement specifically for aluminium has been added to the list. The span 80%-100% is thought to accommodate the use, for example, an EPD for a triple glazed window to represent the same model, but with double glazing. We cannot be more specific in the text because in some cases little variations are also due to the use of less joints for example, that can affect the performance of the window. We would like to avoid to specify which material is included in the span because, in fact, it can be more than one material that varies. As additional clarification however we added a requirement for aluminium
801	7.3	First -	Te	Which product? The reference product or the declared (EPD) product? Better precision is needed in the text. Is 5% the cut-off limit by mass? If so, it is a high limit for the mass of the product.		This sentence has been deleted. All the components of the product shall be included in the assessment. Exceptional exclusions shall be justified by the LCA analyst in the LCA report. the sentence has also been revised for clarity.
	7.4		ed	Clarity: The functional declared unit is univocally defined as the sum of the different products included in the EPD.		Ok, modified

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	7.5		ed	Reconsider the conditions for not having to re-calculated “most relevant background datasets, excluding AI-datasets, are no more than 10 years old”; why? If the AI datasets –being the most relevant ones for these products - have been updated in the meantime?		Ok, a bullet point has been added concerning ai-datasets
816 and 428	7.5			“validity period” appears here for the first time. 5 years?	Provide guidance and requirements regarding the definition of the validity period	Ok, the validity period for the EPD has been better defined here
842 846 etc.	7.6			“European Aluminium” as PO? Or as technical experts? Two key roles which may, in the future, be held by different bodies.	Replace everywhere it is relevant “Aluminium Europe” by the “Program operator”?	As program operator, it has been clarified in the text
883	8.3				Add to the list “a self declaration of independence”. ISO/TS 14071 Annex B can be used, you can refer to it.	Ok, added
	8.4		te	Why should a new submission process take place after 5 years? The pre-conditions to work as a verifier should not have become worse... But indeed, a re-appointment should be possible after 5 years.		Ok, the text has been modified accordingly
	8.6		te	“A review of the accuracy of the data provided by the manufacturer that goes beyond the plausibility test, the reliability of the life cycle assessment software used, the correct use of the evaluation methods in the life cycle assessment software used, as well as an additional plausibility check as to the correct use of manufacturer data in the life cycle assessment software are explicitly not the object of the verification.” From a verifier’s point of view, it would be essential to check the correct use of evaluation methods as well as the attribution of manufacture’s data to datasets within the LCA software (i.e. which datasets have been selected for each input/output reported by the manufacturer as well as the correct use of values/units in the LCA software (e.g. via screenshots).		Ok, see new proposal in the text
	8.7/8.8		ed	Throughout this clause, the term “verification” is used in the context of the approval of EPD software.		Ok “approval” is now used instead of verification
	8.7/8.8		ed/te	How should the “test of functionality” of the tool be documented and made accessible to verifiers of EPDs resulting from the tool		This aspect has been clarified in the text

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	8.7/8.8		ed	the term EPD software is ambiguous: you could envisage a tool that does the LCA calculation according to EPD rules in an (semi-) automated way, and these results then have to be transferred into an EPD document; or you could envisage a software solution that creates your final EPD document. It should be clearly stated what software solution you are talking about as the requirements and possibilities of verification differ for these 2 alternatives.		Name of the software to be discussed with the review panel. For the moment we have a proposal, but we are not fully happy with it. Ok, instead of EPD software the following name has been used: Software for the (semi-) automated calculation of the results to be included in EPDs.
	8.8		te	An update of the background database SHOULD lead to a new version of the tool as the results will not be comparable, at least in the second digit, e.g. version 1.1		Ok, included.
	9		te	you might also want to describe a revision process of an EPD due to an observation/complaint from the market – it happens that competitors come up with questions regarding the plausibility of values declared in an EPD		Added in section 9.2
1122-1135	9.3	3, 4, 5, 6	Ed/Te/Juris	CON cannot judge on this text		This text has been simplified.
	Annex 1		te/ed	Instead of working with equations (which is not how the modelling according to EN 15804 is described) I would provide text/guidance, e.g. related to the quantification of net scrap flows. I would also use the percentages on collection rates, shredding efficiencies and remelting efficiency to quantify the amount of secondary Al that replaces primary production		The % have been included in the main text.
	Annex 1			How is pre-consumer scrap treated if the amount resulting from processing does not correspond to the input used in the generic dataset for the production of Al-slabs?		This has been clarified in section 5.1.6

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651 and 661 (new document)				<p>Clear and applicable formula. Difference with reco of EN 15804+A2. It clarifies well the information received during the first CR meeting.</p> <p>Then the net amount of aluminium scraps in kg “avoids” (Irec-Iprimary). This formula explicitly states that scraps have (Irec-Iprimary) impact.</p> <p>Then the following phrase “Aluminium scraps... does not have any impact or benefits” looks strange.</p> <p>The phrase ““Aluminium scraps... does not have additional impact or benefits” would be better, but not good.</p> <p>Transportation of scraps from A (sometimes shipping overseas + trucks) is done between sites, which causes additional impacts.</p>	.To be discussed.	<p>As discussed with the review panel, it has been specified better.</p> <p>Aluminium scrap does not have any impact or benefit coming from the product system in which it is generated, it however bears the impacts of transportation and preparation.</p> <p>Added in 5.1.6 (repeated for Case 1 and Case 2):</p> <p>“It however bears the impacts due to transportation and preparation of the scraps before smelting. “</p>
189	3.1	No. 8	Ed/Te	<p>ISO 14025:2006</p> <p>I have read the document and found it plausible and possible to use.</p>	ISO 14025:2010. This is the highest version today	

End.