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Revision of the EU Ecolabel criteria for Indoor and Outdoor Paints and Varnishes

Draft Technical Report v1.0

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1 Abstract

2 This draft Science for Policy Report is intended to provide the background information for the revision of the
3 existing EU Ecolabel criteria for indoor and outdoor paints and varnishes (Commission Decision 2014/312/EU).
4 The study has been carried out by the Joint Research Centre (JRC) Unit B.5 – Circular Economy and Sustainable
5 Industry with the technical support of Viegand Maagøe A/S. The work is being developed for the European
6 Commission’s Directorate General for the Environment.

7 The EU Ecolabel criteria for indoor and outdoor paints and varnishes set out in Decision 2014/312/EU were
8 established in 2014. Commission Decision (EU) 2022/1229 prolonged their validity until 31 December 2025.

9 The main purpose of this first version of the technical report is to summarise the results of the preliminary
10 analysis of the current criteria, to evaluate if any revision of the product groups scope is needed, and to discuss
11 if the criteria are still appropriate and up-to-date, or if some of them should be revised, amended or removed;
12 and finally, if any new criteria should be added. Proposals to expand the scope of the EU Ecolabel criteria to
13 different types of paint product are presented on an initial basis without yet entering into details of applicable
14 criteria to these additional products. Regardless of potential changes to the scope, a restructuring of the criteria
15 is also presented for stakeholders to consider, with the main idea to allow a clear distinction between indoor
16 and outdoor products.

17 This Technical Report addresses the requirements of Regulation (EC) No 66/2010 (EC, 2010) for technical
18 evidence to inform about the criteria revision, and sets the scene for the 1st Ad-Hoc Working Group (AHWG)
19 meeting, scheduled for the 8 May 2024, and the following stakeholder consultation. This technical report is
20 supported and complemented by the Preliminary Report, which is published in parallel with this Technical Report.

21 In this first version of the Technical Report, which should be considered as a working document that will evolve
22 into later versions during the project, the current EU Ecolabel criteria have been revised to a minor degree based
23 on stakeholder inputs received to date and known issues with the existing criteria that were flagged for needed
24 improvement. With each criterion in this report, rationale is provided to explain why the changes (if any) were
25 proposed and what is the potential implication of the new proposal. A direct comparison to any equivalent
26 criteria in currently valid versions of Nordic Swan and Blue Angel ecolabel criteria sets is also provided. If
27 considered relevant, the relevance of specific criteria to life cycle impacts of paints and varnishes is also
28 mentioned in the rationale.

29 This technical report consists of the following key sections: Summary of the Preliminary Report (section 2),
30 scope and definition (section 3), assessment and verification (section 4) and new criteria proposals (section 5).
31 In this last section the rationale for each of the proposed criterion texts and assessment and verification texts
32 are presented.

1 Introduction

34 The EU Ecolabel is the official voluntary labelling scheme of the EU that promotes the production and
35 consumption of products (goods and services) with a reduced environmental impact over their life
36 cycle, and is aimed at products with a high level of environmental performance. The EU Ecolabel Regulation
37 (EC) 66/2010⁽¹⁾ provides a framework to establish voluntary ecological criteria aiming at reducing the negative
38 impact on the environment, health, climate and natural resources of production and consumption of the defined
39 product group. The setting of EU Ecolabel criteria aims to target the environmentally top 10 to 20% of products
40 on the market within a defined product group or service. Accordingly, the EU Ecolabel enables suppliers to
41 market their products with a simple label that can be used as an accurate, non-deceptive and science-based
42 proof of the excellent environmental performance of their products.

43 Established in 1992, the EU Ecolabel has become a key policy instrument within the European Commission's
44 Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan (see
45 [COM\(2008\) 397](#)) and the Roadmap for a Resource-Efficient Europe (see [COM/2011/0571](#)). It has also links with
46 other policy instruments, such as Green Public Procurement (GPP, see [COM\(2008\) 400](#)), the Eco-Management
47 and Audit Scheme (EMAS) (see [Regulation \(EC\) No 1221/2009](#) and [Regulation \(EU\) No 2018/2026](#)) and the
48 Ecodesign Directive (see [Directive 2009/125/EC](#)). In addition, the EU Ecolabel was mentioned as having an
49 important role in [the new Circular Economy Action Plan \(CEAP\) from March 2020](#), being regarded as an
50 important tool whose criteria will be developed in synergy with future Ecodesign measures. As a part of the
51 circular economy package, the European Commission submitted a proposal for the Directive on empowering
52 consumers for the green transition (see [COM 2022/0092](#)). This Directive, along with the EU Ecolabel, shares the
53 goal of promoting sustainability and empowering consumers to make environmentally conscious choices. The
54 empowering consumers for the green transition Directive is closely linked to the Directive on Green Claims ([COM](#)
55 [2023/0085](#)), which promotes reliable claims on the environmental performance of products reducing the risk
56 of greenwashing, and with the Ecodesign for Sustainable Products Regulation ([COM 2022/0095](#)). These
57 initiatives in line with the principles of the EU Ecolabel, seek to establish a coherent policy framework to help
58 the EU produce sustainable goods, transform consumption patterns in a more sustainable direction, and
59 significantly reduce the environmental footprint of products to contribute to the EU's policy objective of climate
60 neutrality by 2050. Moreover these initiatives recognize the EU Ecolabel as a reliable third-party certification to
61 prove overall environmental excellence.

62 This Draft Technical Report 1 (hereafter, TR1) addresses the requirements of EU Ecolabel Regulation
63 66/2010 and its main purpose is to summarise the results of the preliminary analysis of the current criteria
64 and to discuss if the criteria are still appropriate and up-to-date or if they should be revised, amended or some
65 of them removed; and finally, if any new criteria should be added. This TR1 provides elements supporting the
66 revised EU Ecolabel criteria for indoor and outdoor paints and varnishes.

67 The revision process takes the current consolidated version of the legal criteria text (Commission Decision
68 2014/312/EU of 28 May 2014) as the starting point and seeks to analyse its validity, taking into account
69 technological and economic changes in the European market, relevant legislative changes, improved scientific
70 knowledge and feedback from Competent Bodies and license holders.

71 This TR1 is supported and complemented by the draft Preliminary Report published in parallel in April 2024,
72 ahead of the 1st Ad-Hoc Working Group (AHWG1) meeting scheduled for May 2024. The Preliminary Report
73 includes analyses of the scope and definition, market analysis, and technical analysis. In the Preliminary Report,
74 the results of a life cycle assessment (LCA) for different products under the scope of the EU Ecolabel criteria
75 were presented for the identification of the environmental hotspots.

76 Bringing together the information in the associated Preliminary Report on the assessment of the current scope
77 and criteria validity, on the market analysis and on the life cycle assessment (LCA) studies (performed using
78 the Product Environmental Footprint method), as well as initial inputs from stakeholders, a first proposal for a
79 set of revised EU Ecolabel criteria is presented in this TR1. The entire life cycle of the products is considered,
80 from the extraction of raw material through production, transport and use, to the disposal phase. The EU
81 Ecolabel criteria address the environmental impacts from any of these life cycle phases, with the aim being to
82 encompass the areas of greatest impact (life cycle hotspots). The EU Ecolabel criteria shall be proposed with
83 the general aim to correspond to the best 10-20% of the products available on the EU market in terms of
84 environmental performance.

¹ Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel (OJ L 27, 30.1.2010, p. 1–19). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32010R0066>

85 An important part of the process for developing or revising EU Ecolabel criteria is the involvement of
86 stakeholders through their consultation on draft criteria proposals and technical reports. This is carried out via
87 Ad-Hoc Working Group (AHWG) meetings, conference calls, email exchanges, forum discussions and written
88 comments submitted via the online platform BATIS. The criteria revision process involves contributions from
89 technical experts, non-governmental organisations (NGOs), Member State representatives and industry
90 stakeholders, among others.

91 This TR1 is structured as follows:

92 — Introduction (Chapter 1): this section describes the goal of the project and the structure of the
93 document.

94 — Summary of the Preliminary Report (Chapter 2): this section summarises the main findings from
95 the Preliminary Report, especially with respect to market analysis and technical analysis, including an
96 overview of the results of the LCA screening studies.

97 — Scope, definitions and criteria structure (Chapter 3): this section reports proposals for potential
98 changes to the scope, definitions and criteria structure related to the product groups of 'indoor and
99 outdoor paints and varnishes'.

100 — Assessment and verification (Chapter 4): this section includes general information on the type of
101 proof required to show compliance with the criteria that shall be provided by applicants and approved
102 by competent bodies.

103 — Criteria proposal for indoor and outdoor paints and varnishes (Chapter 5): this section presents
104 the final EU Ecolabel criteria for the 'indoor and outdoor paints and varnishes' product group as well
105 as the technical rationale for the structure and content of the individual criteria.

106 Relevant discussions and inputs that support the revised criteria proposals or changes to those proposals will
107 be reflected in future versions of the draft Technical Report. For transparency, a table of all comments received
108 during the public consultation periods, together with responses and explanations on how they have been
109 addressed in the next rounds of criteria proposals, will be published as a separate document.

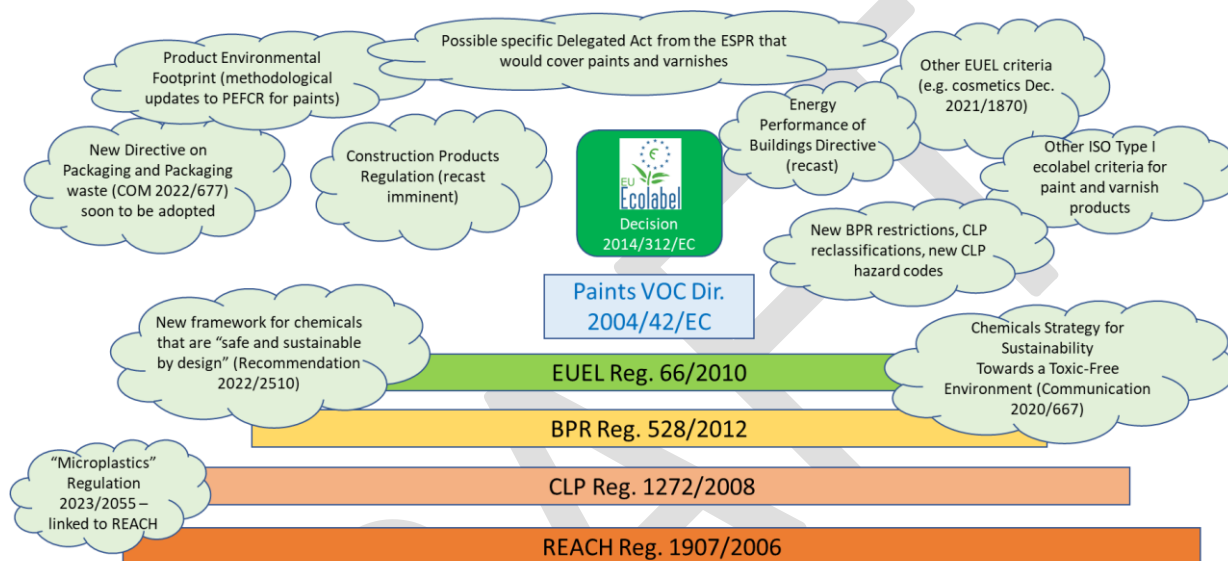
110 2 Summary of Preliminary Report

111 The summary here reflects the content of version 1.0 of the draft Preliminary Report (PR). Any significant
112 changes to the content of the PR later on should also be reflected in this summary section of future versions
113 of the Technical Reports, as relevant.

114 2.1 Legal and policy context

115 There are a number of relevant EU policy tools, Regulations and Directives that directly or indirectly affect the
116 paints and varnishes sector, as illustrated below.

117 Figure 1. Illustration of particularly relevant regulatory and EU policy context for EU Ecolabel paint and varnish products



118 Source: Own elaboration
119

120 At the centre of the illustration is Commission Decision 2014/312/EU, which constitutes the legal text for the
121 EU Ecolabel criteria for indoor and outdoor paints and varnish products. The main regulatory frameworks are
122 delineated by sharp boxes and in a hierarchal framework that reflects both their degree of specific relevance
123 to the paint and varnish product group and the general breadth of the regulatory scope.

124 From Figure 1, the most specific regulatory framework is that of Directive 2004/42/EC on the limitation of VOC
125 (Volatile Organic Compounds (VOCs) in different types of paint and varnish. This Directive is exclusively focused
126 on paints and varnishes and defines product categories in a very similar way to the EU Ecolabel criteria.

127 Another directly relevant regulatory framework is Regulation (EC) No 66/2010 on the EU Ecolabel. While the
128 connection to EU Ecolabel paints and varnishes is obvious, it is worth noting that the EU Ecolabel applies to 24
129 other product groups and services listed on the [DG ENV website](#), such as furniture, tissue paper, cosmetic
130 products, textiles and tourist and accommodation services – just to name a few. The EU Ecolabel Regulation
131 stipulates certain horizontal requirements on hazardous substance restrictions and this, in turn, makes relevant
132 the regulatory frameworks set out in:

- 133 — Regulation (EU) No 528/2012 on biocidal products (for many different uses);
- 134 — Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging (CLP) of substances and
135 mixtures (for a great variety of substances and mixtures, with or without biocidal products). This
136 regulation was revised in 2023 and now includes new hazard classes for chemical compounds and
137 clarification of rules on labelling²;
- 138 — Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and restriction of
139 CHEMicals (REACH) is the basis for CLP and also resulted in the creation of the European Chemicals
140 Agency and effectively replaced a number of pre-existing regulations on hazardous substances.

² See: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008R1272-20231201>

141 Other pieces of legislation relevant for EU Ecolabel license holders are currently under revision and are expected
 142 to be published in 2024, including the Directive on Empowering Consumers for the Green Transition (ECGT), the
 143 Ecodesign for Sustainable Product Regulation (ESPR) and the Construction Products Regulation (CPR). Moreover,
 144 the Packaging and Packaging Waste Regulation (PPWR)³ is soon-to-be adopted. Shown in Figure 1 are a number
 145 of “clouds” – these represent the less solid but potentially important influences of existing EU policies or near-
 146 future developments in such policies. Further details of all of these relevant EU policies and legislation are
 147 provided in the Preliminary Report for interested readers. In cases where they are particularly relevant for
 148 criteria rationale, they are mentioned there as well. This is the case with the Construction Products Regulation
 149 (CPR) and the Energy Performance of Buildings Directive (EPBD) that are important drivers for the new criteria
 150 proposals for VOC emissions and carbon footprinting requirements.

151 2.2 Market analysis

152 Sales data: A review of the Eurostat PRODCOM database revealed that product categories in this database
 153 are defined by chemistry, whereas the EU Ecolabel scope is defined by application. Consequently, an accurate
 154 match between PRODCOM and the EU Ecolabel scope could not be made. Nonetheless, knowing that the VOC
 155 content limits for EU Ecolabel paints and varnishes effectively requires formulations to be water-based instead
 156 of organic solvent-based, the two most relevant PRODCOM codes could be analysed. The PRODCOM codes listed
 157 below were analysed and aggregated for the reasons presented in the table below.

158 Table 1. PRODCOM codes considered most relevant to the scope for EUEL paints and varnishes⁴

Code(s)	Description	New aggregated category and reason
20.30.11.50	Paints and varnishes, based on acrylic or vinyl polymers dispersed or dissolved in an aqueous medium (including enamels and lacquers).	Not aggregated, but shortened name of “Acrylic or vinyl polymer-based P&V, aqueous medium” is given. The most popular PRODCOM category amongst EU Ecolabel P&V.
20.30.11.70	Other paints, varnishes dispersed or dissolved in an aqueous medium.	Not aggregated, but shortened name of “Other P&V, aqueous medium” is given. These products are highly likely to fall within the scope of the EU Ecolabel.
20.30.12.25	Paints and varnishes, based on polyesters dispersed/dissolved in a non-aqueous medium, weight of the solvent > 50 % of the weight of the solution including enamels and lacquers.	Aggregated together and given the name “Polyester or acrylic-based P&V, organic solvent medium”. None of these categories are expected to be applicable to the EU Ecolabel, but are included for context.
20.30.12.29	Paints and varnishes, based on polyesters dispersed/dissolved in a non-aqueous medium including enamels and lacquers excluding weight of the solvent > 50 % of the weight of the solution.	
20.30.12.30	Paints and varnishes, based on acrylic or vinyl polymers dispersed/dissolved in non-aqueous medium, weight of the solvent > 50 % of the solution weight including enamels and lacquers.	
20.30.12.50	Other paints and varnishes based on acrylic or vinyl polymers	Aggregated together and given the name “Other P&V n.e.c”. Uncertain to which extent these products may be included in the scope of the EU Ecolabel, but counted anyway for context.
20.30.12.70	Paints and varnishes: solutions n.e.c.	
20.30.12.90	Other paints and varnishes based on synthetic polymers n.e.c.	

159 *Source: Combination of Eurostat PRODCOM and own elaboration.*

160

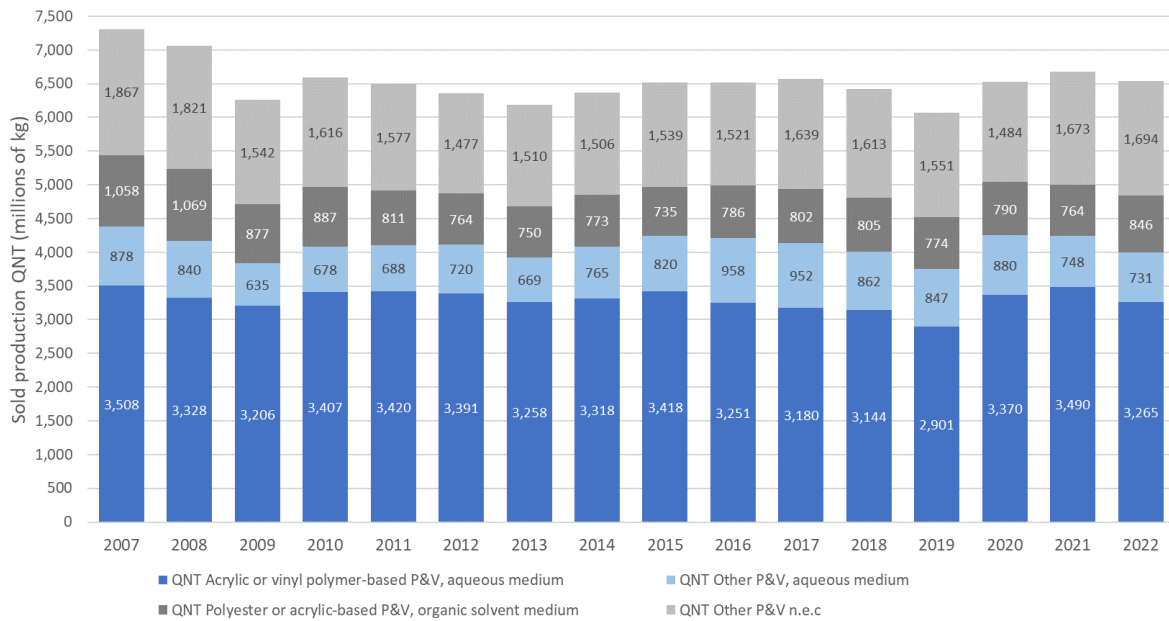
161 Trends in sales values show a recent increase in the years 2019 to 2022 for the four aggregated categories
 162 shown above. However, since these increases are most likely influenced by increases in product prices, trends
 163 in quantities sold in the EU are considered as a better reflection of the market demand.

³ https://environment.ec.europa.eu/publications/proposal-packaging-and-packaging-waste_en

⁴ Source: [Database - Prodcom - statistics by product - Eurostat \(europa.eu\)](#); Dataset: [Sold production, exports and imports \[DS-056120_custom-8262303\]](#), https://ec.europa.eu/eurostat/databrowser/view/ds-056120_custom_8262303/default/table

164
165

Figure 2. Sold production quantity (PRODQNT) of EU27 for different aggregated categories of paint and varnish products during the period 2007 to 2022.



166
167

Source: Combination of Eurostat PRODCOM and own elaboration.

168 The darker blue column represents the PRODCOM categories that best match the EU Ecolabel scope. The trends
169 in quantities sold for all of the aggregated categories indicate a mature market in the EU27 over the last 15
170 years. Quantities sold today have still not returned to levels prior to the global economic crisis of 2008. However,
171 the relatively stability at EU27 level masks some significant changes in sold production quantities at Member
172 State level. For the main PRODCOM category of water-based acrylics, the biggest relative % increases between
173 2014 and 2022 occurred in Latvia (+394%) and Slovenia (+106%), while the biggest increases in terms of
174 tonnes over the same period occurred in Spain (+130 000 tonnes/yr) and Italy (+100 000 tonnes/yr). Significant
175 decreases occurred in major producers of water-based acrylics between 2014 and 2022, namely in Germany
176 (-180 000 tonnes/yr or -19.1%), Poland (-81 000 tonnes/yr or -25.8%) and France (-64 000 tonnes/yr or -
177 11.6%).

178 Paint manufacturers rely heavily on the supply of raw materials from other companies and only some of the
179 larger multinational manufacturers also produce (some) of the raw materials they use, which they will also
180 normally sell to competing paint and varnish manufacturers. At global level, there have been a lot of mergers
181 and acquisitions between large multinational companies in recent years. In Europe, the top 4 companies are:
182 AkzoNobel, BASF, Jotun and Hempel, which are all in the top 12 companies at global level in terms of annual
183 revenue.

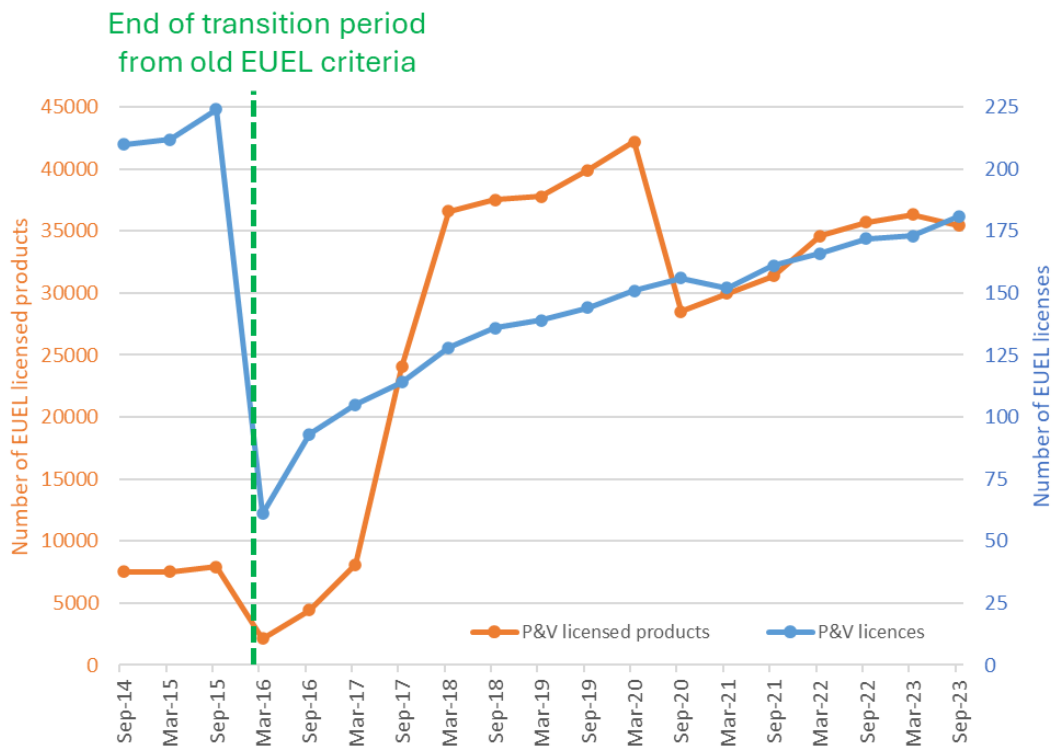
184 Uptake of the EU Ecolabel: Although exact data in terms of sales values and volumes of EU Ecolabel paints
185 is not available, data on the number of licenses granted to paint and varnish producers, as well as the number
186 of products covered by these licenses, is collected every 6 months by the EU Ecolabel helpdesk service.

187 The current EU Ecolabel criteria were adopted in May 2014, repealing the previous criteria sets that had been
188 adopted in 2009 and which were set out in two Decisions, one for indoor paints and varnishes ([Decision 2009/544/EC⁵](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A2009D0544))
189 and one for outdoor paints and varnishes ([Decision 2009/543/EC⁶](https://eur-lex.europa.eu/eli/dec/2009/543/oj)). There was a 21-month
190 transition period lasting up until February 2016 when products could be licensed in line with the 2009 criteria
191 or the new 2014 criteria.

⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A2009D0544>

⁶ <https://eur-lex.europa.eu/eli/dec/2009/543/oj>

Figure 3. Trends in the uptake of EU Ecolabel paint and varnish products in the EU since 2014.



193

194

Source: EU Ecolabel statistics – European Commission⁷

195 As can be seen in the figure above, the 2009 EU Ecolabel criteria had reached around 225 licenses that covered
 196 around 7500 products. When the 2014 criteria came fully into force, there was a sudden drop in licenses (ca. -
 197 73%, from 225 to around 60) and licensed products (ca. -73%, from 7 500 to 2 000). The number of licenses
 198 has since steadily increased, as has the number of licensed products carrying the EU Ecolabel. License numbers
 199 did not recover to the same levels associated with the previous EUEL criteria, but the number of licensed
 200 products is at least 4 times higher under the current criteria than the previous criteria.

201 These trends imply that the current criteria can be met by a significant number of producers and that each EU
 202 Ecolabel license is now being associated with a greater number of products than before. This may imply that
 203 larger companies with more extensive product catalogues are occupying a greater share of EU Ecolabel license
 204 holders and/or that the new criteria have made it easier in the administrative sense to award the licenses to
 205 tinted paints than before – combinations of different tints can generate lots of different shades with the same
 206 base paint.

207 There was a sudden drop in licensed products in 2020 (ca. -33%, from 42 000 to 28 000). While there has been
 208 some recovery since then, it has only been about halfway to the previous level. This drop in licensed products
 209 was generally explained by industry stakeholders to be related to the need to adjust formulations due to CLP
 210 reclassifications of commonly used in-can and dry-film preservatives. Not all products could be reformulated
 211 in such a way that continued to respect the EUEL criteria, and that is believed to be the main reason why current
 212 licensed products in 2023 are still around 7000 lower than 2020 levels.

213 Other ecolabel schemes: The EU Ecolabel is an example of an ISO 14024 Type I Ecolabel scheme, and the
 214 market analysis also looked at other ecolabel schemes to see if they had criteria for paints and varnishes. An
 215 initial review identified the following relevant schemes in the table below.






216

217

218

⁷ EU Ecolabel Statistics – European Commission: <https://ec.europa.eu/environment/ecolabel/facts-and-figures.html>

219 Table 2. Other ISO 14024 Type I Ecolabel schemes

Scheme logo	Scheme name, criteria title, version and, if available, number of licenses awarded.
	Blue Angel. Low-emission and low-pollutant paints and varnishes. DE-UZ 12a, January 2019, v.9.
	Blue Angel. Low-Emission Interior Wall Paints. DE-UZ 102, January 2019, v.5.
	Austrian ecolabel. Varnishes, glazes and wood sealers. UZ-01 (German only) – 2 licenses.
	Austrian ecolabel. Wall paint. UZ 7 – 22 licenses.
	China Environmental Labelling Certification. Green Building Materials Evaluation Wall Coating.
	Nordic Swan. Chemical building products. Version 2.21, March 2014.
	Nordic Swan. Paints and varnishes. Version 4.1, September 2023.
	Umwelt Etikette Ecolabel. I. Interior wall paints. Version 4.2, October 2023. (in FR and DE only).
	Umwelt Etikette Ecolabel. II. Interior paints, wood and floor coatings. Version 2.3, October 2023.
	Umwelt Etikette Ecolabel. IV. Façade paints. Version 2.3, October 2023. (in FR and DE only).
	Umwelt Etikette Ecolabel. V. Exterior varnishes, wood and floor coatings and wood preservatives. Version 2.23, October 2023.

220 *Source: Own elaboration.*

221

222 2.3 Technical analysis

223 A technical analysis of existing manufacturing technologies and processes was performed. In addition, the
 224 environmental impacts were studied through an LCA literature review and by conducting a screening LCA study.
 225 As the LCA analyses cannot provide information on the impacts of the products on health, the presence of
 226 chemicals of potential concern was also assessed. Finally, based on the results obtained, improvement
 227 potentials and best practices were presented.

228 2.3.1 Literature review of life cycle assessment studies

229 In addition to the Product Environmental Footprint Category Rules (PEFCR) for Decorative Paints published in
 230 2018, 16 studies and 13 Environmental Product Declarations (EPDs) from three different EPD library
 231 (International EPD library, EPD Danmark and EPG Norge) were also analysed.

232 A check of the 16 studies revealed that only 6 were considered suitable for reading in more detail. From the 13
 233 EPDs, 8 concerned indoor paints⁸, 2 concerned outdoor paints⁹, 1 looked at both indoor and outdoor paints¹⁰
 234 and 2 looked at varnishes¹¹. The EPD data was generally limited to information only on the production stages
 235 (i.e. modules A1, A2 and A3).

236 2.3.2 LCA screening studies

237 In order to be able to explore some sensitivity analyses and to see how changes in paint or varnish formulations
 238 affect results, several LCA screening studies were carried out following PEF methodology and using the available
 239 EF datasets and for the following products:

⁸ [Smaltoplast paint](#), [Flügger Performance 5](#), [Flügger Performance 10](#), [Dyrup professional](#), [Smaltolux Hydro](#), [Fenomastic Wonderwall Lux](#), [Sigma Wall paints](#), [Isomat Interior matt paint](#)

⁹ [Jotashied Decor traditional Tex](#), [Dyrup Acryl mellemalling](#)

¹⁰ [Paintlac](#)

¹¹ [Pinturas Macy](#), [Juno varnishes](#)

- 240 — Indoor paint.
- 241 — Outdoor paint.
- 242 — Outdoor varnish.

243 Details of the assumed formulations are available in the Preliminary Report and feedback on the suitability of
 244 these formulations, and potential formulations for indoor varnishes, would be welcomed. The functional unit
 245 was the protection and decoration of 1 m² of indoor substrate for 50 years at a specified quality level (minimum
 246 98% opacity in the case of paints). Reference flows necessary to meet this functional unit were estimated using
 247 the following equation:

248 $\text{kg of paint} = 1 \text{ (m}^2\text{)} / \text{Coverage (m}^2\text{/L)} / \text{Applied paint (-)} \times \text{Paint density (kg/L)} \times \text{Maintenance multiplier}$

249 The assumptions used for the three product categories were as shown below.

250 Table 3. Reference flow calculation assumptions

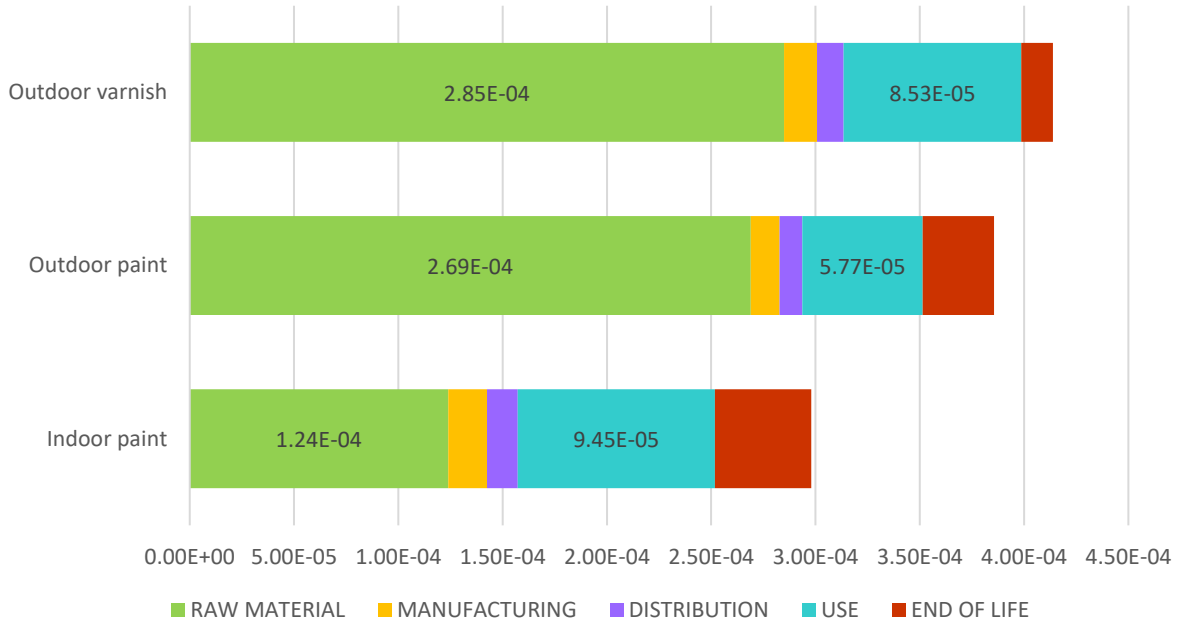
Parameter	Indoor paint	Outdoor paint	Outdoor varnish
Coverage	9.5 m ² /L	7.0 m ² /L	9.5 m ² /L
Applied paint	0.89	0.89	0.89
Paint density	1.43 kg/L	1.30 kg/L	1.36 kg/L
Maintenance multiplier	8.33	5	7.46
Reference flow (kg/FU)	1.409 kg	1.043 kg	1.200 kg

251 *Source: Own elaboration.*

252

253 A comparison of results generated from the LCA modelling after normalisation and weighting according to the
 254 PEF methodology, showed the results in the figure below for the three products, split by life cycle stage.

255 Figure 4. Normalised and weighted PEF scores (in micropoints) for 3 different coating products, split by life cycle stage



256

257

Source: Own elaboration

258 The figure above shows that the raw material production is the most significant source of normalised and
 259 weighted life cycle impacts for all three product categories according to the PEF methodology. However, raw
 260 material impacts were both higher and relatively much more significant in the outdoor products, even though
 261 the assumed applications for outdoor products were fewer than the indoor paint over the 50 years and the
 262 coverage rate was no lower for the indoor product.

263 The next most significant life cycle stage was the use phase. This finding is linked to the consumption of ancillary
264 materials used for the paint or varnish application as well as an assumed loss of 11% of the product, due to
265 spillage, product stuck to the edge of the can or half empty cans leftover after the job is completed. The use
266 phase is more significant also because of the relatively long time period for the functional unit of 50 years,
267 meaning that multiple uses (and consumptions) of ancillary materials takes place.

268 In terms of individual impact categories and highest impact ingredient, the most significant ones for each
269 product group were:

270 — Indoor paints: Climate Change (43%) and Energy Resources, non-renewable (20%). Most impactful
271 ingredient: TiO₂.

272 — Outdoor paints: Climate Change (32%) and Energy Resources, non-renewable (22%) and Particulate
273 Matter Formation (14%). Most impactful ingredient: Vinyl acetate.

274 — Outdoor varnishes: Climate Change (32%) and Energy Resources, non-renewable (26%). Most
275 impactful ingredient: Acrylic resin.

276 Two particularly relevant sensitivity analyses carried out were: (i) zinc sulphide as an alternative to
277 titanium dioxide, and (ii) paints with and without preservatives. In the first scenario, the key variable is
278 understanding how much extra ZnS is needed to deliver similar performance to TiO₂. A 1-to-1 substitution would
279 lower the LCA impacts quite significantly, however this is unrealistic. As the amount of ZnS needed increases,
280 the impacts also increase and if 50% more ZnS would be needed, the LCA impacts would be notable worse than
281 the baseline with TiO₂. Further input is welcomed in order to revise this sensitivity analysis in a more realistic
282 way.

283 The sensitivity analysis between paints with and without biocides assumed that removing biocides would
284 increase spoilage rate from 0.1% to 50% if no preservatives were used, but that spoilage rate could be limited
285 if the preservative-free products were subject to refrigerated storage (at a penalty of 2 MJ/kg product). The
286 effect of no preservatives was also considered to reduce dry film lifetime from 7 years to 3 years. Based on
287 these assumptions, on which further debate is welcomed, the products with preservatives had a far lower LCA
288 impact.

289 Non-LCA impacts were also considered, focusing mainly on the hazardous classifications of ingredients, in-can
290 preservatives, health effects associated with VOC emissions in indoor air and the potential contributions to
291 microplastic pollution. On these last two points, the initial considerations suggested the potential for setting a
292 criterion on VOC emissions for indoor paints and varnishes, but the lack of potential for meaningful criteria on
293 microplastics.

294 3 Scope, definitions and criteria structure

295 3.1 Scope

296 The existing scope text from Decision 2014/312/EU is presented below.

Existing scope (consolidated version of Decision 2014/312/EU)	
1.	The product group of 'indoor and outdoor paints and varnishes' shall comprise indoor and outdoor decorative paints and varnishes, woodstains and related products intended for use by consumers and professional users falling under the scope of Directive 2004/42/CE of the European Parliament and of the Council (1).
2.	The product group of 'indoor and outdoor paints and varnishes' shall comprise: floor coatings and floor paints; paint products which are tinted by distributors at the request of consumer (non-professional) or professional decorators, tinting systems, decorative paints in liquid or paste formulas which may have been pre-conditioned, tinted or prepared by the manufacturer to meet consumer's needs, including wood paints, wood and decking stains, masonry coatings and metal finishes primers and undercoats of such product systems as defined in Annex I to Directive 2004/42/CE.
3.	The product group shall not comprise the following products:
(a)	anti-fouling coatings;
(b)	preservation products for wood impregnation;
(c)	coatings for particular industrial and professional uses, including heavy-duty coatings;
(d)	powder coatings;
(e)	UV curable paint systems;
(f)	paints primarily intended for vehicles;
(g)	product which primary function is not to form a film over the substrate, e.g. oils and waxes;
(h)	fillers as defined by EN ISO 4618;
(i)	road-marking paints.

297 A first proposal to modify the scope is presented below in a track change style, so that the differences can
298 easily be identified (proposed text in blue). After the proposed scope, a rationale section presents a short
299 explanation of the reasoning behind each change in the different proposals.

300 Proposed scope:

Proposed scope (more transparent on what is in, plus specific mention of anti-rust and just-add-water products)	
1.	The product group of 'indoor and outdoor paints and varnishes' shall comprise the following indoor and outdoor decorative paints, and varnishes, woodstains and related products intended for use by consumers and professional users via application to buildings, their trim and fittings, and associated structures: falling under the scope of Directive 2004/42/CE of the European Parliament and of the Council (1).
(a)	matt coatings for interior walls and ceilings
(b)	glossy coatings for interior walls and ceilings
(c)	coatings for exterior walls of mineral substrate
(d)	interior/exterior trim and cladding paints for wood, metal or plastic
(e)	interior/exterior trim varnishes and woodstains
(f)	minimal build woodstains
(g)	primers
(h)	binding primers
(i)	one-pack performance coatings
(j)	two-pack performance coatings
(k)	multicoloured coatings
(l)	decorative effect coatings
(m)	anti-rust paints
(n)	floor coatings and floor paints
(o)	wood paints
(p)	wood and decking stains

(q) tinting pastes?

The paint categories referred to above include base paints and different colour shades achieved by tinting, either predefined by the manufacturer or at the customised request of consumers or professional decorators to operators of tinting systems.

~~2. The product group of 'indoor and outdoor paints and varnishes' shall comprise: floor coatings and floor paints; paint products which are tinted by distributors at the request of consumer (non-professional) or professional decorators; tinting systems; decorative paints in liquid or paste formulas which may have been pre-conditioned, tinted or prepared by the manufacturer to meet consumer's needs, including wood paints, wood and decking stains, masonry coatings and metal finishes primers and undercoats of such product systems as defined in Annex I to Directive 2004/42/CE.~~

3.2. The product group shall not comprise the following products:

- (a) anti-fouling coatings;
- (b) preservation products for wood impregnation;
- (c) coatings for particular industrial and professional uses, including heavy-duty coatings;
- (d) powder coatings (this does not apply to cement paints or other "just add water" paints, see definition in Article 2(x));
- (e) UV curable paint systems;
- (f) paints primarily intended for vehicles;
- (g) product which primary function is not to form a continuous film over the substrate, e.g. oils and waxes (subject to change if scope is expanded);
- (h) fillers as defined by EN ISO 4618;
- (i) road-marking paints (subject to change if scope is expanded).

301 Rationale for the proposed scope text

302 It is clear that the existing EU Ecolabel scope is aimed to align with Annex I to the so-called "Paints Directive"
303 (2004/42/EC) that sets VOC limits on different categories of paints and varnishes. Although this Directive is still
304 in force 20 years later, and no updates are expected in the near future, some of the categories of paints and
305 varnishes may have changed due to innovation in the coatings industry. Given this, it seems more appropriate
306 that the actual categories of product are clearly stated in the scope so that they will be subject to stakeholder
307 scrutiny. The first two paragraphs of the existing scope also have some degree of unnecessary repetition. For
308 these reasons, a more detailed presentation of the individual product categories that are included is proposed,
309 even if the scope is generally the same as before. The full list of terms is included in the proposed scope, and
310 stakeholders will be asked if any of these terms are overlapping and can be combined.

311 Defining the scope in this manner also highlights the need for clarity on the inclusion of anti-rust (or anti-
312 corrosion) coatings. Anti-rust decorative coatings are not explicitly presented in Directive 2004/42/CE but are
313 mentioned directly in EU Ecolabel criteria. There are now clearly mentioned in the scope (see new addition to
314 the proposed scope as 1(m) anti-rust paints).

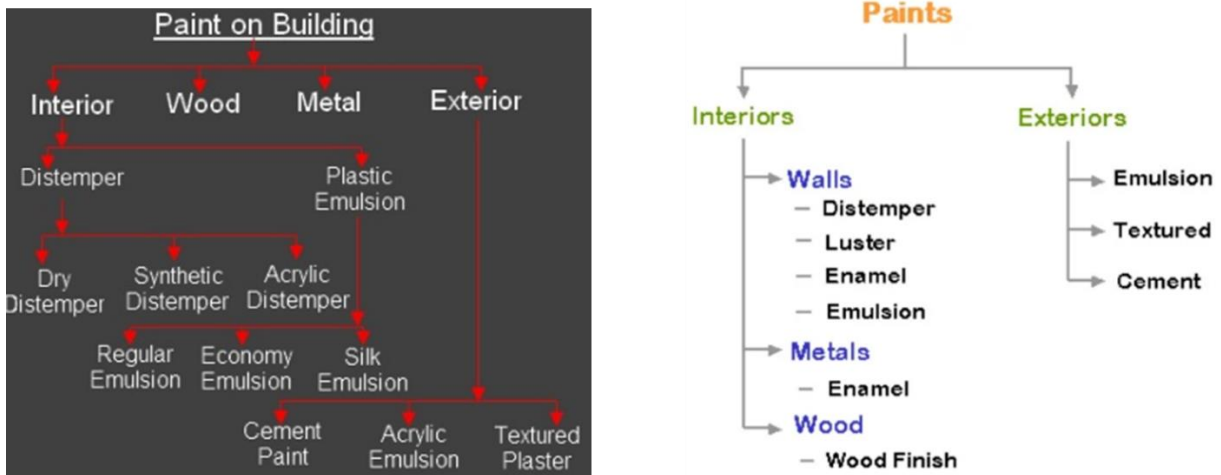
315 The other main issues related to clarity on excluded categories. Some extra detail has been added to 2(d) on
316 the exclusion of powder paints to make clear that this does not apply to the "just-add-water" type products. It
317 was decided not to explicitly mention "just-add-water" paints in the list of products definitely included in the
318 scope, because this type of formulation could potentially apply to multiple types of paint category.

319 Request for input from expert stakeholders on product categorisation and hierarchy (taxonomy)

320 The coatings sector can define products by application (e.g. architectural, decorative, industrial, performance
321 etc.), by sub-application (e.g. indoor wall and ceiling, woodstain, floor coating etc.) by resin/binder chemistry
322 (e.g. acrylics, alkyd, polyester, cement, silicate, polyurethane etc.), by solvent (e.g. water-based or organic
323 solvent-based) and by format (e.g. one-pack, two-pack, powder, paste, liquid etc.).

324 In order to send a clear signal to the industry, consumers and Competent Bodies, it would be very helpful if a
325 hierarchical taxonomy of coating products could be provided, with a clear visual indication of which products
326 are in the scope of the EU Ecolabel and which are out. Input from industry experts would be needed to
327 do this, but it could help a lot to provide clarity and make it easy to answer questions on the scope in the future,
328 or even avoid the need for such questions.

329 Figure 5. Illustrative and basic examples of how the scope for paints could be defined in a visual and hierarchical manner



330
331
332 Source: Left image taken from: <https://hometriangle.com/articles/452/types-of-paint> and right image from <https://www.slideshare.net/VishakaBothra/paint-types-of-paint>.

333 Such a hierarchical taxonomy may also help to inform what the optimum way to structure the EU Ecolabel
334 criteria would be. A small sub-group is proposed to be convened on this, in order to discuss the best
335 way to define the product category taxonomy. The terms used in this hierarchy should also be
336 defined in the EU Ecolabel criteria text.

337 Comparison with scopes from other EU-based ISO 14024 Type I Ecolabels

338 The table below shows how the scopes for Blue Angel, the Austrian Ecolabel and the Nordic Swan criteria for
339 paints and varnishes are set.

340 Table 4. Comparison of scopes for other ecolabel schemes in the EU that include paint and varnish products

Ecolabel scheme and product group	Scope	How does it compare to the EU Ecolabel?
Austrian ecolabel UZ-01 Lacke, Lasuren und Holzversiegelungslacke, v9.2, January 2021.	(Criteria only in German). Varnishes, glazes and wood-sealing varnishes. Explicitly excludes: products with preservatives added for dry-film preservation or preservation of wood against wood pests; impregnation products with biocidal active substances or organic flame retardants; two component systems; anti-corrosion coatings; surface treatments containing >10% wax; fillers and wall paints (the latter covered in UZ-17).	Much more limited scope, does not include any paints and unlikely to be suitable for any outdoor products due to the lack of dry-film preservatives.
Austrian ecolabel UZ-17 Wall paints, v9.1, January 2020.	Indoor wall paints. Must have low emissions and limits on organic content for silicate paints, silicate dispersion paints and distemper paints. Explicitly excludes: products with preservatives added for dry-film preservation; fillers and renders (distinction based on thickness), wall paints advertised with certain green claims.	Much more limited scope, does not include any varnishes or outdoor paints.
Blue Angel UZ-12a Low-emission and low-pollutant paints and varnishes, v9, January 2019.	Paints and varnishes and comparable coating substances with paint/varnishing properties for interior and exterior use as architectural paints and as industrial coatings. Explicit inclusion of primers; undercoats; clear and coloured paints and varnishes; thin and high-build glazes; water-thinnable paints and varnishes; ground sealing products; radiator paints and varnishes; window and door paints and varnishes; exterior paints and varnishes; furniture paints and varnishes and wood oils. Explicitly excludes: wood preservatives; varnishes and glazes with (dry?) film protection; pickling solutions; fillers;	A similarly broad scope to the EU Ecolabel. Covers both indoors and outdoors and explicitly includes some categories that are not clearly covered by the EU Ecolabel. For example, radiator paints, furniture paints and varnishes and wood oils.

Ecolabel scheme and product group	Scope	How does it compare to the EU Ecolabel?
	waxes; wall paints (other criteria); printing inks and other coatings with paint/varnish properties.	
Blue Angel UZ-102 Low-emission interior wall paints, v5, January 2019.	Interior wall and ceiling paints that meet certain technical requirements as defined in EN 1062-1 and EN 13300. Specifically referring to: emulsion paints according to VdL guideline 11 (including in powder form), primers according to EN 13300, silicate emulsion paints according to DIN 18363. The criteria also apply to tinting systems, where tinting pastes must be compliant.	Much more limited scope, only includes certain types of interior wall and ceiling paints (and tinting pastes that might be used).
Nordic Swan Chemical building products, v2.21.	Applies to adhesives; sealants; fillers and screed (and their primers); outdoor paints and varnishes (including their primers); industrial paints and varnishes; impregnating agents for tile, stone and concrete, anti-corrosion paints for industry and infrastructure	Much broader than the EU Ecolabel, overlapping with some products but not including indoor paints and varnishes (other criteria for that).
Nordic Swan indoor paints and varnishes v3.12.	Applies to indoor decorative paints and varnishes, woodstains and related products intended for use by consumers and professional users falling under the scope of Directive 2004/42/CE. Also explicitly includes floor coatings and floor paints, tinted paint products, tinting systems, wood paints, wood and decking stains, masonry coatings and metal finishes primers and undercoats of such product systems. A list of specific exclusions provided too, that are basically identical to the EU Ecolabel except that they also exclude anti-rust paints and outdoor products.	Very, very similar to the scope for EU Ecolabel. Large parts of the text are literally copy-pasted, but with some notable differences too, for example with outdoor products and the anti-rust paints.

341 *Source: Own elaboration from the various ecolabel criteria documents cited.*

342

343 From the three main ecolabel schemes listed above, it can be seen that they all try to split the product group
344 into two different criteria sets. The [Austrian Ecolabel](#) makes a distinction between (i) varnishes, glazes and
345 wood-sealing varnishes and (ii) indoor wall paints. The [Blue Angel](#) has one very broad product group and then
346 a very specific product group that is limited to certain indoor wall and ceiling paints. The [Nordic Swan](#) criteria
347 makes a clear distinction between indoor and outdoor products, where outdoor products are grouped with a
348 larger set of other chemicals used in buildings, like adhesives, sealants etc.

349 The above points imply that, even without any further expansion of the scope, it could make sense to
350 split the EU Ecolabel criteria into separate annexes for different paint and varnish categories. But
351 before considering this further, it is necessary to present some potential options for expanding the
352 scope of the product group.

353 3.2 Potential extension of the scope

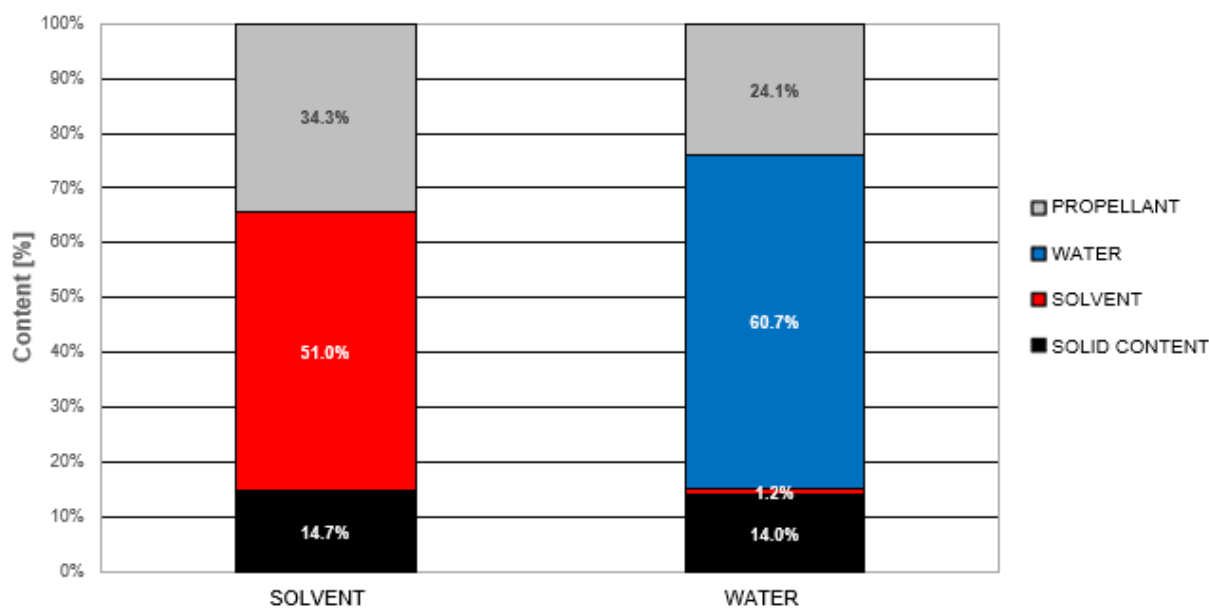
354 In the stakeholder preliminary questionnaire, opinions from 73 respondents were sought about the potential
355 inclusion of other types of paint, coating or varnish products in the scope. Specifically, the questionnaire
356 mentioned spray paints, road marking paints, powder/cement paints, wood oils and waterproofing products. In
357 this sub-section, some extra details are mentioned about each of these proposals.

358 3.2.1 Aerosol spray paints

359 Europe is the leading producer of aerosol products worldwide, with over 5 billion cans being produced each year.
360 Most of these products (ca. 55%) are for personal care uses, like deodorants, hair sprays and shaving creams.
361 Aerosol paints and varnishes account for around 5-6% of total aerosol cans produced, accounting for around
362 300,000 cans per year. Of this total, 20% are for use in the automotive sector. A request was made by a leading
363 industry manufacturer to include the remaining 80% of aerosol spray paints (around 240,000 cans) in the scope
364 for EU Ecolabel. For context, each can be of a volume of 100 to 600mL, with 400mL being the most common
365 size.

366 The main way for the EU Ecolabel to distinguish between aerosol spray paints with a higher or lower
 367 environmental footprint would be to require products to be water-based. This simple requirement would affect
 368 the product composition as shown below.

369 Figure 6. Comparison of organic solvent-based and water-based aerosol spray paints



370
 371 *Source: Information obtained from communication with spray paint manufacturer.*

372 Water-based spray paints result in a dramatic reduction in organic solvent content and can also be associated
 373 with a reduction in the use of propellants, but the propellant will still be needed. According to the information
 374 provided, the EN ISO 11890 VOC content is effectively reduced from 70-85% typical of conventional aerosol
 375 spray paints to less than 10% in the water-based aerosol spray paints. It is also claimed that the CO2 footprint
 376 of the water-based product is around 50% less than the conventional products.

377 Another benefit of the water-based formulation is that it is no longer classified as flammable, and so represents
 378 a reduced risk during storage and transport. However, initial information about ingredients revealed that some
 379 derogations would likely be needed if this product group would be included in the scope of the EU
 380 Ecolabel. For example:

- 381 — Triethylamine (CAS No 121-44-8) used as a neutralising agent in concentrations <1.0%, would need a
 382 derogation for H301, H311 and H331.
- 383 — Zinc neodecanoate (CAS No 27253-29-8) used as an anti-flash rust additive in concentrations <0.02%,
 384 would need a derogation for H412.
- 385 — Distillates (petroleum) hydrotreated light (CAS No 64742-47-8) used as a solvent in the dryer
 386 formulation in concentrations <0.02%, would need a derogation for H304.

387 There were seven other individual substances that would also potentially need derogation, which are all used
 388 in quantities well below 0.5%, and having hazards that are associated with aquatic toxicity hazards (i.e. H4XX).

389 In terms of performance criteria, there are standards available for measuring properties such as yield and
 390 covering power (EN ISO 6504), pencil hardness (EN ISO 15184), adhesion (EN ISO 2409), chemical resistance
 391 (EN ISO 2812-3), salt spray resistance (EN ISO 9227), blistering (EN ISO 4628-2), corrosion (EN ISO 4628-3),
 392 cracking (EN ISO 4628-4), flaking (EN ISO 4628-5), infiltration (EN ISO 4628-8), colour deviation (EN ISO 11664)
 393 and gloss level deviation (EN ISO 2813). So there are plenty of ways to ensure that water-based products would
 394 be able to deliver a satisfactory level of performance.

395 To date, there is no ISO 14024 Type I Ecolabel that covers these types of product even though they
 396 represent a major environmental breakthrough in their sector. The size of the market for these product groups
 397 is probably not large enough to merit a whole EU Ecolabel product group of their own, but it could potentially
 398 be included as part of the broader group of paint and varnish products. Such an approach could potentially

399 serve as an inspiration for future market developments in other types of aerosol products switching from
400 organic solvent-based to water-based. The main challenge for including this product group would be how to
401 make the criteria structure suitable, a separate Annex would be recommended, if aerosol spray paint
402 products are to be included in the end.

403 3.2.2 Road marking paints

404 In the preliminary questionnaire, some respondents expressly stated that they would like to see road marking
405 paints included in the scope. While the authors are not aware of any other ISO 14024 Type I Ecolabel that cover
406 these products, environmental criteria have been defined at EU level for Green Public Procurement (GPP) of
407 road marking paints. Extending the EU Ecolabel scope to include road marking paints would therefore address
408 a current mismatch between the current EU Ecolabel criteria and GPP criteria. In order to maximise synergies
409 between these policies, the EU GPP criteria tend to be defined in such a way that products that have been
410 awarded the EU Ecolabel can be deemed to comply – providing a simple and fast-track means of verification
411 for procurers.

412 So the proposal here would be based on bringing the EU GPP criteria for road marking paints into the EU Ecolabel
413 criteria. As with aerosol paints, this would no doubt need to be included in a separate Annex. The EU GPP
414 criteria for paints, varnishes and road markings¹² define the activity of road marking as:

415 *“the application of paint systems or structural plastic systems to road surfaces in order to delineate traffic lanes,*
416 *bays and signals, as well as to provide frictional properties and night time retroreflection. They are generally*
417 *composed of a pigmented road marking material and a broadcast material which, together, may or may not*
418 *form a film over the substrate. Preformed road marking products defined as tape, preformed cold plastic road*
419 *marking or preformed thermoplastic road marking with or without drop-on materials are also included in the*
420 *scope. Mechanical markings such as cat’s eyes are not included.”*

421 The mandatory EU GPP criteria for road markings that are relevant for potential direct inclusion in the EU
422 Ecolabel, or adaptation prior to inclusion, are as follows:

- 423 — Waste management plan for dealing with reuse, recycling, energy recovery or safe disposal of waste
424 from road marking products, ingredients and relevant packaging materials.
- 425 — Limits on VOC content and specific VOC restrictions.
- 426 — Non-classification of the product formulation with any of a list of health and environmental hazards.
- 427 — Specific restrictions on ingredients, such as preservatives, phthalates and heavy metals.
- 428 — Restrictions on heavy metal content in glass beads used as “broadcast material”.
- 429 — Abrasion resistance of road markings according to EN 1824, EN 13197 or equivalent.

430 The optional award criterion defined in EU GPP, which might be suitable for EU Ecolabel are as follows:

- 431 — Upper limits on titanium dioxide content.
- 432 — Minimum limits for recycled glass content in broadcast material.
- 433 — Take-back systems for packaging waste and residual road marking materials.

434 If stakeholders do not oppose the potential inclusion of road markings in the scope, then input from
435 manufacturers that produce road markings will be actively sought to gauge their potential interest
436 in the EU Ecolabel. Only if they are interested, then a check of the suitability of the current EU GPP criteria
437 would be made between the 1st and 2nd AHWG meetings and any updates included in the version 2 of the
438 Technical Report.

439 3.2.3 Cement paints / powder paints

440 One response to the preliminary questionnaire requested the exploration of the inclusion of cement/powder
441 paints in the scope. One of the advantages of this was the more efficient transport of these products (since

¹² Available online here: https://susproc.jrc.ec.europa.eu/product-bureau/sites/default/files/contenttype/product_group_documents/1581689805/GPP_criteria_paints_and_road_markings_after_consultation_August_2015.pdf

442 water is not being transported). Another important advantage is the lack of need for in-can preservation. The
443 fact that cement paints are already covered now by the Nordic Swan ecolabel¹³ merits some investigation
444 about its suitability for the scope of EU Ecolabel paints and varnishes, as per Article 11 of the EU Ecolabel
445 Regulation (EC) No 66/2010. Cement paints are composed of cement, aggregates and water and can contain
446 pigments that offer some variety of colours for the product. They have a completely different chemistry to the
447 typical water-based paints using acrylic, vinyl polymer or polyester resins. Cement paints are mainly for
448 application to brickwork, masonry and concrete surfaces and can be used indoors or outdoors. It is actually not
449 clear if cement paints are not already in the scope, because even though they are supplied in powder form, and
450 powder paints are excluded from the scope in article 1(3d), the actual definition of powder paints (where the
451 powder is applied direct to the substrate) does not apply to cement paints.

452 The Nordic Swan product group “Chemical building products” includes cement-based masonry paints in the
453 scope and sets some specific quality requirements for these products (on water vapour resistance, resistance
454 against driving rain and weathering). Other cement-based products like adhesives, filler/screed and grouts are
455 also explicitly mentioned.

456 Cement paints are supplied in a powder form and mixed with water immediately prior to application. This is
457 because it is the hydration of the reactive mineral phases in cement that causes the dry powder to form a sticky
458 cement paste. The environmental impact of cement paints will be dominated by the cement ingredient, even if
459 cement only accounts for a small percentage of the total powder content. This is because the aggregates have
460 a very low environmental impact (basically just quarrying and grinding), while cement requires quarrying,
461 grinding and firing at temperatures of around 1500°C in a rotary kiln, before being ground again and potentially
462 blended with other materials like gypsum or supplementary cementitious materials such as limestone, ground
463 blast furnace slag, metakaolin, silica fume or coal fly ash.

464 If this product group is to be included in the scope, then it would be necessary to define requirements that
465 ensure a relatively low environmental impact of the cement used. Indeed, the Nordic Swan criteria version 4.1
466 for paints and varnishes, published in September 2023¹⁴, set limit values for Global Warming Potential (GWP)
467 during the production stages of the cement life cycle (modules A1 to A3). Inspiration for other possible criteria
468 to consider relating to cement could be taken from the recently adopted EU Ecolabel criteria for hard covering
469 products¹⁵. Similar requirements could be considered for lime or hydrated lime ingredients used in paints, since
470 these are also fired at high temperatures (ca. 900-1000°C) in kilns and produce a lot of direct CO₂ emissions
471 via mineral decarbonation.

472 If stakeholders do not oppose the potential inclusion of cement paints in the scope, then it would be necessary
473 to speak to manufacturers of these products, first of all to gauge their interest in the EU Ecolabel and secondly
474 to learn more about the quantities and types of cement that are used in these products. Depending on how the
475 criteria develop, it may be considered suitable to have a separate Annex for masonry paints, including
476 cement paints, or it may still be possible to just include the criteria in the main body of criteria, but
477 with one specific requirement relating to cement production. Any scrutiny on criteria for cement
478 should lead to a similar scrutiny on lime-based paints, which are definitely within the current scope.

479 3.2.4 Wood oils

480 Several responses to the preliminary questionnaire requested the inclusion of these products. The key
481 consideration was whether or not the product forms a durable and continuous film over the treated substrate
482 – this in turn could be linked to the need for a resin or binder to be used in the formulation. In cases where a
483 durable and continuous film can be claimed, it would then be necessary to decide which type of performance
484 requirements would apply from criterion 3.

485 Opening the scope to oils (and waxes) also leads to treatments of different substrates, like wooden furniture,
486 for which no clear performance requirements are set. The fact that they are already covered now by the Nordic
487 Swan ecolabel merits some investigation about its suitability for the scope of EU Ecolabel paints and varnishes,
488 as per Article 11 of the EU Ecolabel Regulation (EC) No 66/2020. Certain wood oils are also included in the Blue
489 Angel criteria for DE-UZ 12a, as long as they are used for the care and protection of wood and do not have a
490 cleaning function.

¹³ Available online here: <https://www.nordic-swan-ecolabel.org/criteria/chemical-building-products-097/>

¹⁴ Available online here: <https://www.nordic-swan-ecolabel.org/criteria/paints-and-varnishes-096/>

¹⁵ Available online here: <https://publications.jrc.ec.europa.eu/repository/handle/JRC124266>

491 Initial feedback from EUEB members was generally favourable regarding the inclusion of these products in the
492 scope, but a distinction needs to be made between products considered for indoor use and for outdoor use. In
493 the new Nordic Swan ecolabel criteria, wood oils were distinguished by indoor and outdoor products for certain
494 requirements, but it was not clear if the same requirements on oil feedstocks for acrylic and alkyd resins also
495 applies to wood oils.

496 If to be included, it would need to be decided if the intention is to distinguish between film forming and non-
497 film forming oils. Before this product category could be potentially included in the scope, further research would
498 be needed to better understand the different types of wood oil product available and what environmental and
499 technical criteria can apply to them. Because the product is dominated by oil, specific criteria on oil product
500 would be merited, and this might lead to requirements on sustainable agriculture. The discussion
501 could easily lead to consideration of similar or partially related products like waxes and
502 impregnation compounds for waterproofing of wood. Dialogue with manufacturers of these products
503 would be considered essential in order to understand what claims and information can be transmitted along
504 current oil supply chains.

505 3.2.5 Waterproofing products

506 Clarity is needed about the extent to which these types of product are included in the scope already, and where
507 the line is drawn for excluding them. Decorative paints with high water resistance are clearly in the scope given
508 the specific measures for outdoor paints and paints for high humidity indoor environments. However,
509 impregnating agents and treatments used by professionals are clearly out of the scope, as per article 1(3c).
510 There has been some limited interest from industry to include these products, and the fact that they seem to
511 be covered now by the Nordic Swan ecolabel¹⁶ (specifically “impregnating agents for tiles, stone and concrete”) and
512 the Blue Angel DE-UZ¹⁷ (specifically “ground sealing products”) merits some investigation about its
513 suitability for the scope of EU Ecolabel paints and varnishes, as per Article 11 of the EU Ecolabel Regulation
514 (EC) No 66/2010.

515 This category of products can cover a diverse range of categories depending on the substrate they are applied
516 to and the environment the coated substrate is exposed to. The common purpose of these products is to prevent
517 water and any contaminants carried by the water from passing into the porous substrate and disrupting the
518 existing coating of that substrate, efflorescence or even physical or chemical damage to the substrate. Some
519 examples include impregnation agents for wood in outdoor environments, so-called “wet room” paints for
520 bathroom, kitchen, swimming pools and other high humidity areas, epoxy coating for metal substrates and for
521 garage floors, where the porous concrete floors need to be protecting from the ingress of water and
522 chemicals.

523 It is unclear to what extent the different chemistries required for water-based formulations for
524 waterproofing products would comply with the existing hazardous substance restrictions for EU
525 Ecolabel paints and varnishes and further research would be needed. For example, these coatings are
526 expected to come into significant and prolonged contact with water and so may require higher quantities of
527 dry-film preservatives than normal outdoor paints. Consequently, if to be included and proposals to be made
528 for the 2nd AHWG meeting, it will be necessary to engage with manufacturers to better understand the
529 variety of products that are being referred to and what environmental and technical criteria can apply to them.

530 In summary:

- 531 — Including aerosol spray paints in the scope, coupled with requirements for them to be water-based
532 would certify a major shift in this particular sector, but may require a separate Annex for the criteria.
- 533 — Including road marking paints in the scope makes sense from a broader policy perspective by
534 providing the EU Ecolabel as a fast-track means of verification for Green Public Procurement criteria,
535 but to revise criteria for these products would also require a separate Annex and consultation with
536 completely new stakeholders, who to date have not expressed any interest in the EU Ecolabel.
- 537 — Regarding cement paints, it needs to be confirmed if they are actually excluded from the existing
538 scope already. If not, then the next question is if stakeholders want them to be included. They are

¹⁶ Available online here: <https://www.nordic-swan-ecolabel.org/criteria/chemical-building-products-097/>

¹⁷ Available online here: <https://www.blauer-engel.de/en/productworld/varnishes-glazes-and-primers>

- 539 already addressed in Blue Angel and Nordic Swan ecolabel criteria. If included, new criteria on cement
540 would be strongly justified.
- 541 — For wood oils (and waxes), initial interest was shown to include them in the scope of the EU Ecolabel
542 for paints and varnishes, but these products have some fundamental differences that would could
543 justify a separate Annex and maybe even a change to the name of the product group. It would also
544 lead to potentially very different criteria, as could be the case with cement paints.
- 545 — With waterproofing products, initial feedback was more on seeking clarification about what exactly
546 was meant by the term and the need to understand the different sub-categories of these products.
547 Including these products would probably lead to a contradiction with Article 1(3c), which excludes
548 products for particular industrial and professional uses.

Questions to stakeholders about the scope:

1. Stakeholders' views on the new wording proposed for the scope are welcomed.
2. Would you support having a hierarchical description of the scope? If yes, would you be able to contribute to creating this hierarchy with your sectorial knowledge?
3. How to explain in more detail the exclusion of Article 1(3c)? (which excludes "coatings for particular industrial and professional uses, including heavy-duty coatings").
4. Do you agree on having a set of criteria proposed for aerosol paints? If so, should it be as a separate Annex?
5. Do you agree on having a set of criteria proposed for road marking paints? If so, should it be as a separate Annex?
6. In your opinion, are cement paints already included in the scope? If not, or if you are not sure, would you agree on them being included in the scope? If so, which type of EU Ecolabel criteria should be applied to them, considering that an important hotspot will be cement production?
7. Do you agree on having a set of criteria proposed for wood oils? If yes, what type of EU Ecolabel criteria should be applied to them, considering that an important hotspot will be oil production? And should the criteria be presented as a separate Annex?
8. Do you agree on including waterproofing paints and varnishes in the scope? If so, how to define precisely what they are and which ones are in the scope and which ones are out?
9. Do you think that anti-rust paints should continue to be in the scope or is this more of an industrial type of product? Are you aware of any anti-rust paints carrying the EU Ecolabel?
10. Are radiator paints and furniture paints currently considered to be included in the scope?

549

550 3.3 Definitions

551 The existing definitions from Decision 2014/312/EU are presented below.

Existing definitions (consolidated version of Decision 2014/312/EU)

- (1) 'Paint' means a pigmented coating material, supplied in a liquid paste or powder form, which, when applied to a substrate, forms an opaque film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;
- (2) 'Varnish' means a clear coating material which, when applied to a substrate forms a solid transparent film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;
- (3) 'Decorative paints and varnishes' means paints and varnishes that are applied in-situ to buildings, their trim and fittings, for decorative and protective purposes;
- (4) 'Lasure' means coatings producing a transparent or semi-transparent film for decoration and protection of wood against weathering, which enables maintenance to be carried out easily;

Existing definitions (consolidated version of Decision 2014/312/EU)

- (5) 'Tinting system' means a method for preparing coloured paints by mixing a 'base' with coloured tints;
- (6) 'Masonry coating' means a coating that produce a decorative and protective film for use on concrete, paintable brickwork, blockwork, rendering, calcium silicate board or fibre-reinforced cement;
- (7) 'Binding primers' means coatings designed to stabilise loose substrate particles or impact hydrophobic properties;
- (8) 'UV curable paint system' means the hardening of coating materials by exposure to artificial ultra-violet radiation;
- (9) 'Powder coating' means protective or decorative coating formed by the application of a coating powder to a substrate and fusion to give a continuous film;
- (10) 'In-can preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 of the European Parliament and of the Council that are for use in product-type 6 as described in Annex V to that Regulation. They are in particular used for the preservation of manufactured products during storage by the control of microbial deterioration to ensure their shelf life and used for the preservation of tints that will be dispensed from machines;
- (11) 'Dry-film preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 that are for use in product-type 7 as described in Annex V to that Regulation, in particular for the preservation of films or coatings by the control of microbial deterioration or algal growth in order to protect the initial properties of the surface of materials or objects;
- (12) 'Anti-skinning substances' are additives that are added to the coating materials to prevent skinning during production or storage of the coating material;
- (13) 'Volatile organic compounds' (VOC) means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC and which, in a capillary column, are eluting up to and including n-Tetradecane (C₁₄H₃₀);
- (14) 'Semi volatile organic compounds' (SVOCs) means any organic compound having a boiling point greater than 250 °C and less than 370 °C measured at a standard pressure of 101,3 kPa and which, in a capillary column are eluting with a retention range after n- Tetradecane (C₁₄ H₃₀) and up to and including n-Docosane (C₂₂H₄₆);
- (15) 'White and light coloured' paints are those with a tri-stimulus (Y- value) > 70 %;
- (16) 'Gloss paints' are those which at an angle of incidence of 60° show a reflectance of ≥ 60;
- (17) 'Mid sheen paints' (also referred to as semi-gloss, satin, semi matt) are those which at an angle of incidence of 60° or at 85° show a reflectance of < 60 and ≥ 10;
- (18) 'Matt paints' are those which at an angle of incidence of 85° show a reflectance of < 10;
- (19) 'Dead matt paints' are those which at an angle of incidence of 85° show a reflectance of < 5;
- (20) 'Transparent' and 'semi-transparent' means a film with a contrast ratio of < 98 % at 120µ wet film thickness;
- (21) 'Opaque' means a film with a contrast ratio of > 98 % at 120µ wet film thickness.

552 While all of the definitions above are useful, it is proposed to have a much more exhaustive list of
553 definitions that would match up with the more detailed description of the scope of the product group. This
554 would involve expanding upon the very general definition of "(3) Decorative paints and varnishes". Note that
555 from definition (4) the applicable binders for the different categories are not yet known at this stage and
556 further discussion will be needed as well as information from stakeholders.

Proposed definitions (consolidated version of Decision 2014/312/EU)

For the purposes of this Decision, the following definitions shall apply:

- (1) 'Paint' means a pigmented coating material, supplied in a liquid paste or powder form, which, when applied to a substrate, forms an opaque film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;
- (2) 'Varnish' means a clear coating material which, when applied to a substrate forms a solid transparent film having protective, decorative or specific technical properties and after application dries to a solid, adherent and protective coating;
- (3) 'Decorative paints and varnishes' means paints and varnishes that are applied in-situ to buildings, their trim and fittings, for decorative and protective purposes, [specifically referring to: matt or glossy coatings for interior walls and ceilings; coatings for exterior walls of mineral substrate; interior/exterior trim and cladding paints; interior/exterior trim varnishes and woodstains; minimal build woodstains; wood and decking stains; wood paints; primers; binding primers;](#)

Proposed definitions (consolidated version of Decision 2014/312/EU)

one-pack and two-pack performance coatings; multicoloured coatings; decorative effect coatings; floor coatings and floor paints;

(4) 'matt or glossy coatings for interior walls and ceilings' means coatings designed for application to indoor walls and ceilings, which deliver a dead matt, matt, semi-matt, satin, semi-gloss, or gloss finish (and that may be based on _____ binders);

(5) 'coatings for exterior walls of mineral substrate' means, according to Directive 2004/42/CE, coatings designed for application to outdoor walls of masonry, brick, or stucco (and that may be based on _____ binders);

(6) 'interior/exterior trim and cladding paints for wood, metal or plastic', according to Directive 2004/42/CE, means coatings designed for application to trim and cladding which produce an opaque film. These coatings are designed for either a wood, metal, or plastic substrate (and that may be based on _____ binders);

(7) 'interior/exterior trim varnishes and woodstains', according to Directive 2004/42/CE, means coatings designed for application to trim which produce a transparent or semi-transparent film for decoration and protection of wood, metal, and plastics. (and that may be based on _____ binders);

(8) 'minimal build woodstains', according to Directive 2004/42/CE, means woodstains which, in accordance with EN 927-1:1996, have a mean thickness of less than 5 µm when tested according to ISO 2808: 1997, method 5A (and that may be based on _____ binders);

(9) 'primers', according to Directive 2004/42/CE, means coatings with sealing and/or blocking properties designed for use on wood or walls and ceilings (and that may be based on _____ binders);

(10) 'binding primers', according to Directive 2004/42/CE, means coatings designed to stabilize loose substrate particles or impart hydrophobic properties and/or to protect wood against blue stain (and that may be based on _____ binders);

(11) 'one-pack performance coatings', according to Directive 2004/42/CE, means performance coatings based on film-forming material, which are designed for applications requiring a special performance, such as primer and topcoats for plastics, primer coat for ferrous substrates, primer coat for reactive metals such as zinc and aluminum, anticorrosion finishes, floor coatings, including for wood and cement floors, graffiti resistance, flame retardant, and hygiene standards in the food or drink industry or health services (and that may be based on _____ binders);

(12) 'two-pack performance coatings', according to Directive 2004/42/CE, means coatings with the same use as one-performance coatings, but with a second component (e.g. tertiary amines) added prior to application (and that may be based on _____ binders);

(13) 'multicoloured coatings', according to Directive 2004/42/CE, means coatings designed to give a two-tone or multiple-colour effect, directly from the primary application (and that may be based on _____ binders);

(14) 'decorative effect coatings', according to Directive 2004/42/CE, means coatings designed to give special aesthetic effects over specially prepared pre-painted substrates or base coats and subsequently treated with various tools during the drying period. (and that may be based on _____ binders);

(15) 'floor coatings and floor paints' means coatings and paints specifically formulated to be applied to flooring, with the purpose of protecting and/or colouring the flooring substrate (and that may be based on _____ binders);

(16) 'wood paints' means paints applied to wood, which change the colour of the wood (and that may be based on _____ binders);

(17) 'wood and decking stains' are a type of paint with low quantities of binder that penetrate deep into the wood and change its natural colour and appearance (and that may be based on _____ binders);

(18) 'Lasure' means a coating material containing small amounts of a suitable pigment and/or extender and used to form a transparent or semi-transparent film for decoration and/or protection of the substrate (and that may be based on _____ binders);

(19) 'Tinting system' means a method for preparing coloured paints by mixing a 'base' with coloured tinting pastes;, and 'tinting paste' means a highly concentrated pigment preparation;

(20) 'Masonry coating' means a coating that produce a decorative and protective film for use on concrete, paintable brickwork, blockwork, rendering, calcium silicate board or fibre-reinforced cement (and that may be based on _____ binders);

(21) 'Binding primers' means coatings designed to stabilise loose substrate particles or impact hydrophobic properties (and that may be based on _____ binders);

(22) 'UV curable paint system' means the hardening of coating materials by exposure to artificial ultra-violet radiation;

(23) 'Powder coating' means protective or decorative coating formed by the application of a coating powder to a substrate and fusion to give a continuous film;

(24) 'In-can preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 of the European Parliament and of the Council that are for use in product-type 6 as described in Annex V to that Regulation. They are in particular used for the preservation of manufactured products during storage by the control of

Proposed definitions (consolidated version of Decision 2014/312/EU)

microbial deterioration to ensure their shelf life and used for the preservation of tints that will be dispensed from machines;

(25) 'Dry-film preservatives' are active substances within the meaning of Article 3(1)(c) of Regulation (EU) No 528/2012 that are for use in product-type 7 as described in Annex V to that Regulation, in particular for the preservation of films or coatings by the control of microbial deterioration or algal growth in order to protect the initial properties of the surface of materials or objects;

(26) 'Anti-skinning substances' are additives that are added to the coating materials to prevent skinning during production or storage of the coating material;

(27) 'Driers', also referred to as 'siccatives', means _____

(28) 'Surfactants' means _____

(29) 'Mineral raw material' means _____

(30) 'Optical brightener' means _____

(31) 'UV stabiliser' means _____

(32) 'Binder' means _____

(33) 'Volatile organic compounds' (VOC) means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC and which, in a capillary column, are eluting up to and including n-Tetradecane (C₁₄H₃₀);

(34) 'Semi volatile organic compounds' (SVOCs) means any organic compound having a boiling point greater than 250 °C and less than 370 °C measured at a standard pressure of 101,3 kPa and which, in a capillary column are eluting with a retention range after n- Tetradecane (C₁₄H₃₀) and up to and including n-Docosane (C₂₂H₄₆);

(35) 'White and light coloured' paints are those with a tri-stimulus (Y- value) > 70 %;

(36) 'Gloss paints' are those which at an angle of incidence of 60° show a reflectance of ≥ 60;

(37) 'Mid sheen paints' (also referred to as semi-gloss, satin, semi matt) are those which at an angle of incidence of 60° or at 85° show a reflectance of < 60 and ≥ 10;

(38) 'Matt paints' are those which at an angle of incidence of 85° show a reflectance of < 10;

(39) 'Dead matt paints' are those which at an angle of incidence of 85° show a reflectance of < 5;

(40) 'Transparent' and 'semi-transparent' means a film with a contrast ratio of < 98 % at 120µ wet film thickness;

(41) 'Opaque' means a film with a contrast ratio of > 98 % at 120µ wet film thickness.

(42) 'Anti-rust paints' means paints designed to prevent rust in metal substrates in the presence of oxygen and water, through the application of a protective coating (and that may be based on _____ binders).

(43) 'Thick decorative coating' means paints that are designed to give a three-dimensional decorative effect and a therefore characterized by a very thick coat (and that may be based on _____ binders).

(44) 'Elastomeric paint' means _____ (and that may be based on _____ binders).

(45) 'Undercoat' means _____

(46) 'Aerosol spray paints' means _____

(47) 'Road marking paints' means _____

(48) 'Cement paints' means _____

(49) 'Wood oils' means oils used for the care and protection of wood (e.g. pearling effect) without any cleaning action;

(50) 'Waxes' means _____

(51) 'Waterproofing products' means _____

(52) 'Wood preservative' means a product containing a biocide with the primary purpose of inhibiting the development of wood-destroying and/or wood-staining organisms in the wood to which it is applied.

557 Rationale for the proposed text

558 Aim of the definitions

559 Definitions are needed in order to make it clear what technical terms refer to and to avoid or minimise the
560 potential for misunderstandings. There are many different distinctions to be made between different paint and
561 varnish products, as is reflected in the wording of the EU Ecolabel criteria text.

562 The definition of "**lasure**" has been updated to better align with the more recent definition used in the Nordic
563 Swan ecolabel criteria.

564 Every time a specific limit or condition in the criteria applies to a specific category of paint or varnish product,
565 that category should be defined. That way, whenever an application is being processed, the applicant can declare
566 which category or categories apply to each product covered by the application and the applicable criteria can
567 be clearly identified. A brief review of the existing criteria text identified several paint and varnish categories
568 that were not explicitly defined. For this reason, new definitions are proposed for the terms **“anti-rust**
569 **paint”, “thick decorative coating” and “elastomeric paint”**. However, expert input will be required in order
570 to arrive at the best definitions for these terms.

571 Paints and varnishes in the current EU Ecolabel criteria have generally been defined based on their application,
572 but it could also be useful to define them in terms of their chemistry, namely the type of binder or resin that
573 they use. For this reason, an additional space has been left at the ends of definitions (4) to (21) and
574 (42) to (44). Such a distinction could help readers to quickly identify where certain types of paints can apply,
575 for example with lime paints, silicate paints and so on. If decided to proceed with this approach, then expert
576 input would be needed to clarify which binders apply to which paint and varnish categories.

577 Additional definitions are also proposed for the product categories that were requested to be included in the
578 scope (i.e. aerosol spray paints etc.). Regardless of whether they are included in the scope or specifically
579 excluded, their definition will be useful for clarifying the scope of the criteria in one way or the other. The
580 definition of “wood oils” was taken from Blue Angel DE-UZ 12a and the definition of “wood preservative” was
581 taken from the Nordic Swan criteria.

582 Finally, definitions are intended to be proposed for all the groups of hazardous substance groups
583 with certain derogations in criterion 5 (e.g. **“driers”, “surfactants” etc.**) in next Technical Report 2
584 as given the time limitations they could not be included in the present report. This is simply an
585 extension of the existing definitions for groups of substances like “in-can preservatives”, “dry-film preservatives”
586 and “anti-skimming substances”.

587 Overall, the proposal presents a major increase in the number and depth of definitions. However, this increase
588 is only to the same extent of the technical terms used in the actual EU Ecolabel criteria. Any additional technical
589 definitions that are not defined in EU legislation are of added value in the sense that the terms will be translated
590 to the different official EU languages – helping to minimise misunderstandings and different interpretations
591 across Europe.

592 The numbering of the definitions is not so important since the intention in the final version would be to list the
593 definitions in alphabetical order.

594 *Information from preliminary questionnaire*

595 From a total of 73 responses, 34 respondents felt that the scope and definitions were adequate, 17 said that
596 they needed to be changed and 22 did not respond.

Questions to stakeholders about the definitions:

11. Stakeholders' views on the new wording proposed for the definitions are welcomed.
12. Should further definitions for terms like “spreading rate”, “blistering”, and “opaque” be inserted in the text or is this best left to the User Manual in case definitions in EN or ISO standards change?
13. Should other definitions be included?

597

598 3.4 Restructuring of criteria

599 A reluctance to expand the scope of the EU Ecolabel for indoor and outdoor paints and varnishes in initial
600 feedback seemed to stem from the perception that the criteria were already very difficult to follow for the
601 existing scope, and that adding more products to it could only increase the confusion further. However, it must
602 also be noted that the responses from the preliminary questionnaire on this matter were: 11 responses
603 requesting multiple Annexes; 29 responses with no opinion, and 33 responses saying that one Annex was fine.
604 The main argument for staying with one Annex was that it would be less complex than having multiple Annexes,
605 but this was basically the same argument used for having multiple Annexes (i.e. less confusing if there are
606 multiple Annexes).

607 Considering that the current criteria are the result of the merging of two separate Commission Decisions (one
608 for indoor products and one for outdoor products), and that other EU-based ISO 14024 Type I Ecolabels do have
609 separate criteria sets for different types of paint and varnish products, there is a strong case to reconsider the
610 criteria structure during this revision. A simple overview of how the current criteria proposals would apply to
611 indoor paints, outdoor paints, indoor varnishes and outdoor varnishes, is shown below.

612 Table 5. Applicability of proposed EU Ecolabel criteria to different general product categories

Criterion	Indoor paint	Outdoor paint	Indoor varnish	Outdoor varnish	Reasons why applies as it does
1. White pigment content	Yes	Yes	No	No	All paints have white pigments, varnishes do not.
2. Titanium dioxide production	Yes	Yes	No	No	The vast majority of paints contain TiO ₂ , varnishes do not.
3a. Efficiency in use: spreading rate	Yes	Yes	No	No	
3b. Efficiency in use: resistance to water	Some?*	Some*	Yes	Yes	*only for floor paints
3c. Efficiency in use: adhesion	Some*	Some*	Some?*	Some?*	*only to floor paints, primers and undercoats
3d. Efficiency in use: abrasion	Some?*	Some*	No	No	*only for floor paints
3e. Efficiency in use: weathering	No	Yes	No	Yes	
3f. Efficiency in use: water vapour permeability	No	Yes	No	No	
3g. Efficiency in use: liquid water permeability	No	Yes	No	No	
3h. Efficiency in use: fungal resistance	No	Yes	No	No	Not sure if also for indoor paints in high humidity environments...
3h. Efficiency in use: algal resistance	No	Yes	No	No	Not sure if also for indoor paints in high humidity environments...
3i. Efficiency in use: crack bridging	No	Some*	No	No	*only for elastomeric paints
3j. Efficiency in use: alkali resistance	No	Some*	No	No	*only for masonry paints
3k. Efficiency in use: corrosion resistance	No	Some*	No	No	*only for anti-corrosion paints in outdoor environments and on trim and cladding
4. VOC and SVOC content	Yes	Yes	Yes	Yes	
5. Restriction of hazardous substances and mixtures	Yes	Yes	Yes	Yes	
6. Consumer information	Yes	Yes	Yes	Yes	
7. Information appearing on the EU Ecolabel	Yes	Yes	Yes	Yes	
X. VOC emissions (new)	Yes	No	Yes	No	
X. Carbon footprint	Yes	Yes	Yes	Yes	

613 Source: Own elaboration.

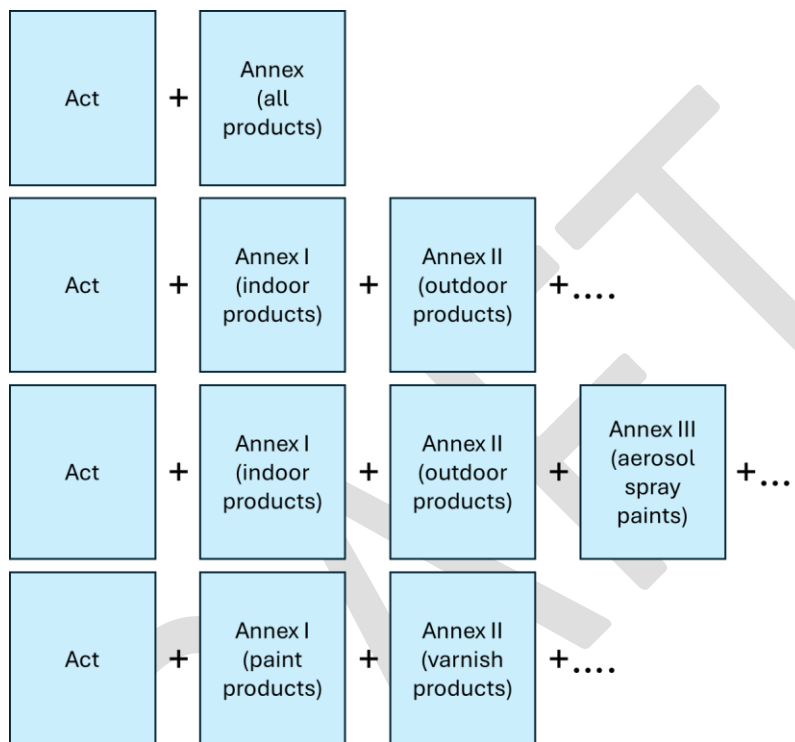
614

615 While Table 4 summarises the criteria applicable to each product type namely indoor paints, outdoor paints,
616 indoor varnishes and outdoor varnishes, the colours (green, orange or yellow) graphically indicate if the criterion
617 applies (Yes), applies sometimes (Some) or does not apply (No). The colour code suggests a clear distinction
618 between criteria applicable to paints and varnishes. This means that two annexes, one for paints and one

619 for varnishes, would be recommended. This would also avoid the issue of double labelling when a product
620 is used both for indoor and outdoor. If this would be the case, note that a clear indication should be provided in
621 the criteria for “opaque” products i.e. lasures, woodstains and primers... to allow stakeholders to understand
622 well where these products belong to and which criteria to comply with.

623 Some different ways in which the criteria could be split into different annexes are shown below. Any new
624 products added to the scope that do not fit so well with the current scope for indoor and outdoor paints and
625 varnishes should in fact have criteria defined in a separate annex.

626 Figure 7. Examples of different ways to structure the EU Ecolabel criteria for paints and varnishes



627
628 *Source: Own elaboration.*

629 At the time of writing this first draft report, no decision has been made about splitting the structure.
630 Consequently, the single Annex structure is maintained in this first draft TR and notes inserted where relevant
631 in order to indicate which criteria apply to which product categories.

632 Rationale for raising the subject of restructuring the criteria

633 It is important to discuss any potential restructuring of the criteria at an early stage in the project, especially
634 when deciding on whether or not to expand the scope of the product group.

635 Even with the existing scope, the main argument in favour of separate annexes would be to make the criteria
636 more readable for someone who is only interested in certain types of product at a given time (i.e. all applicants
637 and Competent Bodies). For example, none of the requirements for Titanium Dioxide or tinting pastes apply to
638 varnish products; the proposed new requirements on VOC emissions do not apply to outdoor products etc.

639 If the criteria are to remain in one Annex, then it is recommended to try and develop a wizard which would
640 automatically tell you which criteria apply depending on the answers chosen to a few fixed questions about the
641 nature of the product(s) that are subject to the EU Ecolabel application.

642 If the scope is to be extended, especially to fundamentally different products like aerosol spray
643 paints, road marking paints or wood oils, then the inclusion of more than one Annex seems
644 unavoidable.

Questions to stakeholders about the restructuration of the criteria:

14. Would you support the splitting of current criteria into more than one Annex? If so, how would you split it?
15. If including other products like wood oils, road marking paints or aerosol spray paints, would you support the renaming of the product group to "Indoor and outdoor decorative paints, varnishes and related products"?

645

DRAFT

4 Annex preamble

647 The general text that appears before any EU Ecolabel criteria is a relatively standard text common to all EU
648 Ecolabel product groups. The text has gradually evolved over the years.

Existing Annex preamble (consolidated version of Decision 2014/312/EU)

The Ecolabel criteria reflect the best environmental performing products on the market of paints and varnishes. High quality and performance standards of the paint are required to ensure the longevity of the product and contribute that way to the significant reduction of the paints' overall life cycle impacts. Moreover, the criteria aim at minimizing the use of volatile and semi-volatile organic substances in the paint formulation.

Whilst the use of chemical products and release of pollutants is part of the production process, a product that bears the EU Ecolabel guarantees the consumer that the use of such substances has been limited to the extent technically possible without prejudice to its fitness for use. Moreover, the final paint or varnish product may not be classified as being an acute toxin or hazardous to the environment under European legislation on the labelling of products.

The criteria exclude whenever possible or restrict to a minimum the concentration (required for providing specific functions and properties) of a number of substances identified as hazardous to human health and the environment that may be used in the formulation of paints and varnishes. Only where a substance is required to meet consumer performance expectations or mandated requirements for the product (for instance paint preservation), and where there are no applied and tested available alternatives, derogation for such a substance to be used in the Ecolabel is granted.

Derogations are evaluated on the basis of the precautionary principle and scientific and technical evidence, especially if safer products are available on the market.

Testing of the final product for the presence of restricted hazardous substances may be requested in order to provide a high level of assurance to consumers.

Where appropriate, strict conditions are also imposed on the handling of substances in manufacturing processes for paints and varnishes to avoid workforce exposure. The verification of compliance with the criteria is formulated in a way that provides a high level of assurance to consumers, reflects the practical potential for applicants to obtain information from the supply chain and excludes the potential for 'free riding' by applicants.

Assessment and verification

(a) Requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or his supplier(s) and/or their supplier(s), as appropriate.

In the case of changes such as in supplier, the paint formulation or an extension of a product range that results in a change in how the paint or varnish complies with one or more criteria (as relevant) then the license holder shall, in advance of any change, submit information to the relevant Competent Body demonstrating the products ongoing compliance as specified in the relevant criteria.

Where appropriate, test methods other than those indicated for each criterion may be used if these are described in the user manual of the Ecolabel criteria application and the competent body assessing the application accepts their equivalence.

Competent bodies shall preferentially recognise tests which are accredited according to ISO 17025 and verifications performed by bodies which are accredited under the EN 45011 standard or an equivalent international standard.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

(b) Measurement thresholds

Unless otherwise indicated compliance with the Ecolabel criteria is required for intentionally added substances and mixtures, as well as for by-products and impurities from raw materials, the concentration of which equals or exceeds 0,010 % by weight of final formulation.

(c) The exact formulation of the product, including the function and the physical form of all ingredients identified within the criteria, as well as any additional functional ingredients, and their ingoing concentration shall be provided to the competent body. The chemical name, CAS number and CLP classification according to Regulation (EC) No 1272/2008 shall be provided for each ingredient. All ingredients identified within the criteria, as well as any additional functional ingredients and known impurities, that are present at concentrations in the product of greater than 0,010 % shall be reported unless a lower concentration is required in order to comply with a derogation requirement.

Existing Annex preamble (consolidated version of Decision 2014/312/EU)

Where ingredients are referred to in the criteria, this includes substances and preparations or mixtures. The definitions of 'substances' and 'mixtures' are given in Article 3 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (1) ('the REACH Regulation').

Safety data sheets and/or CAS numbers and CLP classifications for each ingredient shall be submitted to the competent body in accordance with the REACH Regulation.

(d) For all criteria, apart from Criterion 4 Volatile and Semi-volatile Organic Compounds (VOCs, SVOCs), the limits shall apply to the paint or varnish in its packaging. In line with Directive 2004/42/EC the VOC limits relate to the ready to use product and so the maximum VOC content shall be measured or calculated including any recommended additions such as colorants and/or thinners. For this calculation or measurement, data supplied by the raw material suppliers regarding solids content, VOC content and product density will be required. The above is also applicable in the measurement or calculation of SVOCs. Competent bodies may request testing for SVOC's in order to validate calculations.

649

Proposed Annex preamble for the revised EU Ecolabel paints and varnishes

The EU Ecolabel criteria target the best paint and varnish products on the market, in terms of environmental performance. The criteria focus on the main environmental impacts associated with the life cycle of these products and promote circular economy aspects.

Assessment and verification requirements

For the EU Ecolabel to be awarded to a specific product, the product shall comply with each requirement. The applicant shall provide a written confirmation stating that all the criteria are fulfilled.

Specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent bodies shall preferentially recognise attestations that are issued by bodies accredited in accordance with the relevant harmonised standard for testing and calibration laboratories, and verifications by bodies that are accredited in accordance with the relevant harmonised standard for bodies certifying products, processes, and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

Changes in suppliers and production sites pertaining to products to which the EU Ecolabel has been awarded shall be notified to competent bodies, together with supporting information to enable verification of continued compliance with the criteria.

As pre-requisite, the product shall meet all respective legal requirements of the country or countries in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The following information shall be provided together with the application for the EU Ecolabel:

- (a) A description of the product formulation(s), with a % composition of the ingredients used (this shall be subject to a non-disclosure agreement between the applicant and the Competent Body).
- (b) Safety data sheets for the ingredients used in the paint and varnish formulations.
- (c) If deemed necessary, details of the ingredient composition of supplied ingredients and materials, or any other information associated with the production of supplied ingredients and materials that is necessary for demonstrating compliance with the EU Ecolabel criteria, shall be provided by the suppliers or producers of those ingredients and materials.
- (d) A description of the packaging format(s) used, the volume(s) of product held, the mass of packaging materials used and its material composition.
- (e) The number of individual products associated with the same base formulation shall be clearly stated, for example, each different packaging size shall be counted as an individual product, as shall each individual colour that is based on the same base paint formulation.

[Definitions for terms that only appear in the Annex (and not in the Act) should be placed here in future versions]

650 Rationale for proposed annex preamble:

651 This general preamble text explains some basic horizontal principles that can apply to the assessment and
652 verification of compliance with any particular EU Ecolabel criteria. It is more efficient to simply state this one
653 time at the beginning than to repeat it for each criterion.

654 The general text prior to the assessment and verification section has been greatly reduced and is closely aligned
655 with the general text used for the recently adopted EU Ecolabel criteria for absorbent hygiene products and for
656 reusable menstrual cups (See [Commission Decision \(EU\) 2023/1809](#)¹⁸).

657 The beginning of the assessment and verification text is also general and has been aligned with the cited EU
658 Ecolabel criteria for absorbent hygiene products and for reusable menstrual cups.

659 The final text with the bullet points (a) to (e) has been tentatively proposed as covering the basic information
660 needs in order to demonstrate compliance with all of the criteria, or at least to form the basis for demonstrating
661 compliance.

662 It is also understood that any definitions added in the Annex that are not already mentioned in the Act or its
663 recitals should be defined here, but for the time being, the definitions have all been left in Article 2 of the Act.

DRAFT

¹⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023D1809>

664

5 Criteria proposals and rationale

665 In this section, each of the existing criteria are presented together with any proposed changes to the criteria
666 text. Proposals will normally be shown in a track changes style so that it will be easy to spot the changes.
667 However, in cases of a complete overhaul of the criteria, the track changes style will not be used since it would
668 be probably more difficult to understand and unnecessarily take up more space in the report. Rationale for
669 proposed changes is provided immediately after each proposal and, in some cases, completely new criteria are
670 proposed.

671 5.1 Criterion 1. White pigment content and wet scrub resistance requirements

Existing criterion (consolidated version of Decision 2014/312/EU)	
1(a) Minimum requirement for white pigment content	
Indoor wall and ceiling paints for which Class 1 and 2 wet scrub resistance claims are made shall have a white pigment content (white inorganic pigments with a refractive index higher than 1,8) per m ² of dry film equal to or lower than that described in Table 1, with 98 % opacity. For tinting systems this requirement only applies to the base paint.	
Table 1 Relationship between wet scrub resistance and TiO ₂ content for indoor paints	
Wet scrub resistance	Indoor limit (g/m ²)
Class 1	40
Class 2	36
For all other paints, including limed paints, silicate paints, primers, anti-rust paints and facade paints, the white pigment content (white inorganic pigments with a refractive index higher than 1,8) shall not exceed 36 g/m ² for indoor products and 38 g/m ² for outdoor products. In the case of paints for both indoor and outdoor use the more stringent limit shall apply.	
In case the above mentioned products fall under the exemption indicated in part (b) then the white pigment content (white inorganic pigments with a refractive index higher than 1,8) shall not exceed 25 g/m ² of dry film, with 98 % opacity.	
1(b) Minimum requirement for Wet Scrub Resistance (for indoor paints only)	
All indoor wall and ceiling paints (finishes) shall achieve class 1 or class 2 in wet scrub resistance (WSR) according to EN 13300 and EN ISO 11998. This requirement only applies to tinting bases (base paints).	
Exempted from this requirement are indoor wall and ceiling paints with a white pigment content (white inorganic pigments with a refractive index higher than 1,8) that is equal or lower to 25 g/m ² of dry film, with 98 % opacity.	
Only WSR class 1 and 2 ecolabelled paints may claim wet scrub resistance on the label or other marketing documentation.	
Assessment and verification: the requirements of both 1(a) and 1(b) shall be fulfilled. the applicant shall provide documentation showing that the content of white pigments is compliant with this criterion.	
The applicant shall provide a test report according to EN 13300 using the method EN ISO 11998 (Test for cleanability and scrub resistance). For ceiling paints and indoor wall paints the labelling for the packaging, including the accompanying text, shall be provided as evidence regarding claims of wet scrub resistance.	

672

Proposed updated criterion (complete rewrite, so not presented in track changes style)
<i>Note: this criterion only applies to paint products.</i>
No EU Ecolabel paint product shall claim wet scrub resistance via the use of terms like “washable” in product information or marketing material unless it meets class 1 or class 2 requirements according to the procedure defined in ISO 11998 and the classification system of EN 13300. Furthermore, EU Ecolabel paint products shall meet the relevant requirements on wet scrub resistance and white pigment content as defined in the table below.
For the purposes of this criterion, “white pigment” shall be counted as pigments with a refractive index higher than 1,8.
Limits in the table below apply to white paints and, in the case of tinted paints, apply to the white base paint only.

Proposed updated criterion (complete rewrite, so not presented in track changes style)

Table 1 Requirements for wet scrub resistance and white pigment content for paint products		
Wet scrub resistance claim?	Wet scrub resistance	White pigment content
Yes	Class 1	≤ 40 g/m ^{2*}
Yes	Class 2	≤ 36 g/m ^{2*}
No	n/a	≤ 25 g/m ^{2*}

The m² refers to 1m² of dry film with an opacity of at least 98%.

Assessment and verification:

The applicant shall declare the total content of white pigments with a refractive index >1,8 in the final product or base paint formulations that are subject to the EU Ecolabel license application. This information shall be provided in terms of the chemical name and CAS number of the white pigment, its declared refractive index, its concentration in g/L of paint product and the density of the paint, in g/L. The spreading rate of the paint product, in L/m² for a dry-film of at least 98% opacity according to ISO 6504-1, shall also be stated. Multiplying the white pigment concentration (in g/L) by the spreading rate (in L/m²) will produce results in g/m² that can be compared to the limits in the table above.

Except in cases where the content of white pigments is < 25,0 g/m², the applicant shall also provide results of wet scrub resistance testing according to ISO 11998 that show that the products meet the applicable class 1 or class 2 resistance requirements defined in EN 13300.

673 Rationale for the proposed criterion text

674 Aim of the criterion

675 This criterion is about achieving the right balance between the use of high environmental impact white pigments
 676 and the improved durability performance of paints that the use of such pigments can deliver. The use of
 677 pigments with a high refractive index reflects more light and thus allows higher spreading rates (in m² per L)
 678 while delivering an adequate opacity (e.g. 98% or higher hiding power). The definition of “high refractive index
 679 white pigment” was set at being >1.8 and for context, the approximate refractive indices of these relevant white
 680 pigments should be considered¹⁹:

681	— Titanium dioxide (TiO ₂):	RI = 2.6 to 2.7
682	— Zinc sulphide (ZnS):	RI = 2.4
683	— Zinc oxide (ZnO):	RI = 2.0 to 2.1
684	— Lithopone (BaSO ₄ +ZnS):	RI = 1.8 to 2.1
685	— Calcium carbonate (CaCO ₃):	RI = 1.65
686	— Barium sulphate (BaSO ₄):	RI = 1.64

687 The most commonly used white pigment is TiO₂ because it has the highest refractive index and also imparts
 688 good Wet Scrub Resistance (WSR) properties to the film. A good WSR value implies that the painted surface can
 689 easily be physically scrubbed with minimal degradation, which is especially important for ensuring the longer
 690 durability of white or light-coloured paints.

691 However, according to the LCA screening studies in the background research (please see the Preliminary Report),
 692 the TiO₂ content was a major contributor to the overall LCA impacts of paint products. In order to ensure a
 693 balance between the use of TiO₂ and the adequate performance of the paint, limits for the white pigment
 694 content have been set whenever a high WSR performance is claimed.

695 The test procedure for wet scrubbing is set out in ISO 11998 and is based on the reduction of film thickness
 696 after 200 clearly defined scrub cycles. Coatings are classified in EN 13300 into one of these 5 classes based
 697 on the extent of film thickness reduction after scrubbing as follows:

698 — R class 1: ≤5 μm after 200 scrub cycles

¹⁹ El Ali, B., Chapter 7, PAINTS, PIGMENTS, AND INDUSTRIAL COATINGS
https://faculty.kfupm.edu.sa/CHEM/belali/CHEM%20456/Chapter%207/CHAPTER%207_PAINTS,%20PIGMENTS,%20AND%20INDUSTRIAL%20COATINGS.pdf

- 699 — R class 2: >5 and ≤ 20 μm after 200 scrub cycles
- 700 — R class 3: >20 μm and ≤ 70 μm after 200 scrub cycles
- 701 — R class 4: ≤ 70 μm after 40 scrub cycles
- 702 — R class 5: >70 μm after 40 scrub cycles

703 In order to ensure that the use of high refractive index white pigments also delivers good WSR performance,
 704 requirements on minimum WSR apply as soon as the (high refractive index) white pigment content goes above
 705 25.0 g/m^2 . In order to meet the class 1 or 2 WSR requirements, higher white pigment contents are permitted,
 706 up to a maximum of 40.0 g/m^2 . By setting limits in terms of g/m^2 at 98% opacity and not g/L of paint, those
 707 formulations that also deliver a good spreading rate are rewarded.

708 Information from preliminary questionnaire

709 Responses to general questions about criterion 1 were as follows:

710 Do you consider criterion 1 very relevant for the overall goal of EU Ecolabel? Answers: Yes (27); Blank (23); No
 711 opinion (17); No (6).

712 Do you consider the current formulation of criterion 1 precise enough? Answers: Blank (31); Yes (19); No opinion
 713 (17); Minor changes needed (6), and Changes needed (4).

714 Some complaints about the criterion were centred on the relevance of the requirement, stating that WSR is not
 715 so relevant to real-life performance of paints. However, other comments stated that Class 1 and 2 WSR
 716 translated into fewer reapplications than Class 3 or 4 products – thus leading to better LCA results with better
 717 WSR. Another complaint was that the criterion was quite confusing to read, it was not clear in what order the
 718 logic was to be followed, does WSR have to be measured first, then the TiO_2 content, or was there a “high
 719 refractive index white pigment” limit regardless of WSR claims? The added value of the minor distinctions of 36
 720 and 38 g/m^2 for indoor and outdoor paints was also questioned. Unless there is clear data to support that small
 721 distinction, the limits should just be linked to WSR class and be the same rule for all paint types. It was also
 722 asked if a requirement on cleanability should be added, which is complementary to the WSR test.

723 Comparison with other ecolabels

724 The Nordic Swan ecolabel criteria for paints and varnishes (097, v4.1) have a very similar requirement in
 725 criterion O19 on “White pigment content”. Upper limits of 40 and 36 g/m^2 of “high refractive index white
 726 pigment” are set of WSR class 1 and 2 paints, respectively. A limit of 25 g/m^2 applies for other wall paints
 727 without WSR class 1 or 2 claims. The main difference is that an additional upper limit of 36 g/m^2 of high
 728 refractive index white pigment applies to all other paints without WSR claims. It is not clear what is the
 729 reasoning of having this limit as the same as for class 2 WSR claim products. A minor difference with the Nordic
 730 approach is that they make the requirement of limiting WSR claims to products that meet Class 1 and Class 2
 731 in a separate criterion (O18).

732 The Blue Angel, Austrian Ecolabel and Swiss Ecolabel do not have upper limits on white pigment content,
 733 especially with any link to WSR class.

734 Research and source for the proposals given

735 The main changes made were to simplify the requirements and reduce the number of relatively minor nuances
 736 in limits. Some of these changes came from simply restructuring the criteria to make them more readable and
 737 others were in reaction to comments received via the preliminary questionnaire.

738 Questions to stakeholders

Questions about criterion 1

16. Opinions about the criterion 1 proposal?
17. Can you provide data on the content of “high refractive index white pigment” content for different types of paint product categories that have been awarded the EU Ecolabel?
18. How exactly is Wet Scrub Resistance claimed? Do products just claim to be “washable” as being similar to Class 2 WSR, or “highly washable” as being similar to Class 1 WSR?

739 5.2 Criterion 2. Titanium dioxide production

Existing criterion (consolidated version of Decision 2014/312/EU)
<p>If the product contains more than 3,0 % w/w of titanium dioxide, the emissions and discharges of wastes from the production of any titanium dioxide pigment used shall not exceed the following (1):</p> <ul style="list-style-type: none"> — SO_x calculated as SO₂ : 7,0 kg/tonne TiO₂ pigment — Sulphate waste: 500 kg/tonne TiO₂ pigment <p>For the chloride process:</p> <ul style="list-style-type: none"> — If natural rutile ore is used, 103 kg chloride waste/tonne TiO₂ pigment — If synthetic rutile ore is used: 179 kg chloride waste/tonne TiO₂ pigment — If slag ore is used: 329 kg chloride waste/tonne TiO₂ pigment <p>If more than one type of ore is used, the values will apply in proportion to the quantity of the individual ore types used.</p> <p>Note:</p> <p>SO_x emissions only apply to the sulphate process.</p> <p>The Waste Framework Directive 2008/98/EC of the European Parliament and of the Council (1), Article 3 shall be used for the definition of waste. If the TiO₂ producer can satisfy Article 5 (by-product production) of the Waste Framework Directive for its solid wastes then, the wastes shall be exempted.</p> <p>Assessment and verification: the applicant shall submit supporting documentation showing compliance by the titanium dioxide producer manufacturing the raw material for the paint product either in the form of a declaration of non-use or a declaration supported by data indicating that the respective levels of process emissions and waste discharges of wastes are met.</p> <p><i>(1) As derived from the Reference Document on Best Available Technology for the Manufacture of Large Volume Inorganic Chemicals (BREF), August 2007.</i></p> <p><i>(1) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).</i></p>

740

Proposed updated criterion 2 on titanium dioxide production
<p><i>Note: this criterion only applies to paint products.</i></p> <p>If the product contains more than 3,0 % w/w of titanium dioxide (TiO₂), the emissions and discharges of wastes from the production of any titanium dioxide pigment used shall not exceed the following meet the following requirements for the respective production processes (1):</p> <p>For all types of TiO₂ production process:</p> <ul style="list-style-type: none"> — Procedures shall be in place to ensure a “low dust” working environment. <p>For the sulphate process (1):</p> <ul style="list-style-type: none"> — SO_x calculated as SO₂: 7,0 kg/tonne TiO₂ pigment — Sulphate waste: 500 kg/tonne TiO₂ pigment <p>For the chloride process (1):</p> <ul style="list-style-type: none"> — If ore with above 95% TiO₂ content natural rutile ore is used, 103 kg chloride waste/tonne TiO₂ pigment — If ore with 90-95% TiO₂ content If synthetic rutile ore is used: 179 kg chloride waste/tonne TiO₂ pigment — If ore below 90% TiO₂ content or above If slag ore is used: 329 kg chloride waste/tonne TiO₂ pigment <p>If more than one type of ore is used, the values will apply in proportion to the quantity of the individual ore types used.</p> <p>Note:</p> <p>SO_x emissions only apply to the sulphate process.</p>

Proposed updated criterion 2 on titanium dioxide production

The Waste Framework Directive 2008/98/EC of the European Parliament and of the Council (42), Article 3 shall be used for the definition of waste. If the TiO₂ producer can satisfy Article 5 (by-product production) of the Waste Framework Directive for its solid wastes, then, the wastes shall be exempted from being counted as waste.

Assessment and verification

The applicant shall declare the content of TiO₂ used in each of the product formulations subject to the EU Ecolabel license application. For any products with more than 3,0 % w/w TiO₂ content, the applicant shall also declare the supplier or suppliers of the TiO₂ used in those products.

The applicant declaration shall be supported by declarations from their TiO₂ supplier(s) (and the original TiO₂ producer(s), if different) stating the measures in place to ensure a low dust working environment, the type of TiO₂ production process used, the applicable TiO₂ content range of ore used and a statement of annual average SO_x emissions, specific sulphate waste generation or specific chloride waste generation, as appropriate. submit supporting documentation showing compliance by the titanium dioxide producer manufacturing the raw material for the paint product either in the form of a declaration of non-use or a declaration supported by data indicating that the respective levels of process emissions and waste discharges of wastes are met.

(1) As derived from the Reference Document on Best Available Technology for the Manufacture of Large Volume Inorganic Chemicals (BREF), August 2007.

(42) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

- 741
- 742 Rationale for the proposed criterion text
- 743 Aim of the criterion
- 744 As explained briefly in the rationale for criterion 1, the use of TiO₂ is a major source of environmental impacts
745 in paint products as suggested by the LCA (more details in the Preliminary Report). It is the white pigment *par*
746 *excellence* thanks to its very high refractive index. This criterion aims to address some of the main emissions
747 associated with TiO₂ production.
- 748 Information from preliminary questionnaire
- 749 Responses to general questions about criterion 2 were as follows:
- 750 Do you consider criterion 2 very relevant for the overall goal of EU Ecolabel? Answers: Yes (31); Blank (22); No
751 opinion (14); No (6).
- 752 Do you consider the current formulation of criterion 2 precise enough? Answers: Yes (26); Blank (23); No opinion
753 (16); Minor changes needed (3), and Changes needed (5).
- 754 When asked about whether the limits referred to in criterion 2 should be lowered, almost all respondents said
755 “No” or “No opinion”, only one said “Yes”. Some paint manufacturers felt that this criterion was a burden on
756 them and that the TiO₂ manufacturers should have to deal with demonstrating compliance in some other way.
- 757 Comparison with other ecolabels
- 758 The Blue Angel criteria for low-emission and low pollutant paints and varnishes (DE-UZ 12a) and for low-
759 emission interior wall paints (DE-UZ 102) have the same requirements as set out in the 2014 EU Ecolabel
760 criteria. The only difference is that they do not exempt products with less than 3.0% TiO₂ from this requirement,
761 whereas the EU Ecolabel criterion does.
- 762 The Austrian Ecolabel for wall paints (UZ 17) states that “titanium dioxide used must comply with Directive
763 2010/75/EU”. This is a very general reference that is basically only requiring compliance with mandatory
764 legislation and it is not clear how this would apply to any TiO₂ imported from outside the EU.
- 765 The Nordic Swan criteria for paints and varnishes (v4.1) set the same requirements as defined in the 2014 EU
766 Ecolabel criteria for SO_x emissions and specific waste generation but they do not appear to allow the non-
767 counting of waste that can be defined as a by-product in line with Article 5 of the Waste Framework Directive.
- 768 The Nordic Swan criteria also go further by requiring that the TiO₂ manufacturing sites must have implemented
769 an EN ISO 50001 compliant energy management system, or be in the process of doing so. Furthermore, they
770 also require that any raw materials in powder form must be handled in a closed system, in slurry form or in
771 any other method that promotes a “low dust” working environment. This last requirement seems highly pertinent

772 given the high-level attention given to the potential carcinogenic effects of inhalation of fine TiO₂ powder and
773 so a similar requirement has been added to the EU Ecolabel criteria.

774 Research and source for the proposals given

775 The changes to the criterion are mainly based on feedback received from industry stakeholders and linked to
776 the need to be more flexible in terms of the types of ore that can be used. The original distinction in waste
777 limits for rutile, synthetic rutile and slag ores in the chloride process was based on the fact that these ores had
778 different levels of purity (in terms of TiO₂ content).

779 However, it was mentioned that there are also other ores such as ilmenite and leucogene that can be used in
780 the chloride process and that the TiO₂ contents in ores are generally decreasing as high quality deposits are
781 gradually exhausted.

782 Consequently, it was deemed more appropriate to distinguish the waste limits based on the TiO₂ content of the
783 ore rather than on the ore type. This is a more directly relevant factor for determining waste generation rates
784 and conveniently includes ilmenite and leucogene (and any other ore types that may occur in the future).

785 The industry representatives proposed to maintain the limits as before as a reflection of the counterbalancing
786 effects of:

- 787 — Ore quality decreasing in general → increased specific waste generation.
- 788 — Improvements in process efficiencies → decreased specific waste generation.

789 It should also be noted that the industry proposal also suggested an additional (higher) limit to be introduced
790 for the chloride process (of 450 kg chloride waste/tonne TiO₂ pigment) in cases where the TiO₂ is produced in
791 installations that discharge wastewater directly into salt water (estuarine, coastal or open sea). However, this
792 part of the proposal has not been included in the draft EU Ecolabel criteria since further discussion would be
793 needed to understand the logic of the proposal.

794 Questions to stakeholders

Questions about criterion 2

19. Opinions about the criterion 2 proposal?
20. For TiO₂ manufacturers: please explain in more detail how the process wastes are produced and why a higher waste quantity should be allowed when wastewater is disposed into the sea or estuarine water – what are the environmental benefits of this (if any)?
21. Can Competent Bodies or license holders provide data on the numbers of waste quantities produced in order to assess the suitability of current ambition levels?

795

796 5.3 Criterion 3. Efficiency in use

Existing criterion 3: Efficiency in use (consolidated version of Decision 2014/312/EU)

In order to demonstrate the efficiency in use of paints and varnishes the following tests per type of paint and/or varnish, as indicated in Table 2, shall be undertaken:

Table 2. Performance requirements for different kinds of paints and varnishes

Criteria	Paints and Varnishes (with their subcategories identified according to the Directive 2004/42/EC)							
	Indoor paint (a,b)	Outdoor paint (c)	Trim and cladding (d)	Thick decorative coating indoor and outdoor (l)	Varnish and woodstain (e, f)	One pack performance and floor covering paint (i)	Primer (g)	Undercoat and primer (h)
3(a) Spreading rate (only for white and light coloured paints, including the white base paints used in tinting systems) – ISO 6504/1. Not applicable to varnishes, lasures, transparent adhesion primers or any other transparent coatings.	8 m ² /L	4 m ² /L (elastomeric paint) 6 m ² /L (masonry paint)	Outdoor products 6m ² /L Indoor products 8m ² /L	1 m ² /L	-	Outdoor products 6 m ² /L Indoor products 8 m ² /L	6 m ² /L (without having specific properties) 8 m ² /L (with opacity)	6 m ² /L (without having specific properties) 8 m ² /L (with opacity)
3(b) Resistance to water – OSO 2812-3	-	-	-	-	Resistant to water	Resistant to water	-	-
3(c) Adhesion – EN 24624	-	-	-	-	-	Score 2	1,5 MPa (masonry paint)	1,5 MPa (masonry paint)
3(d) Abrasion – EN ISO 7784-2	-	-	-	-	-	70 mg weight loss	-	-
3(e) Weathering – EN 11507 / EN 927-6	-	1 000 h	1 000 h (outdoor)	1 000 h (outdoor)	1 000 h (outdoor)	1 000 h (outdoor)	-	-
3(f) Water vapour permeability ⁽¹⁾ – EN ISO 7783	-	Class II or better	-	Class II or better (outdoor)	-	-	-	-
3(g) Liquid water permeability ⁽¹⁾ – EN 1062-3	-	Where claims are made Class III All other products Class II or better	-	Class II or better (outdoor)	-	-	-	-
3(h) Fungal resistance ⁽¹⁾ – EN 15457	-	Class 1 or lower (masonry or wood paints)	Class 0 (outdoor wood products)	Class 1 or lower (outdoor)	-	-	-	-

Existing criterion 3: Efficiency in use (consolidated version of Decision 2014/312/EU)

3(h) Algal resistance ⁽¹⁾ – EN 15458	-	Class 1 or lower (masonry or wood paints)	Class 0 (outdoor wood products)	Class 1 or lower (outdoor)	-	-	-	-
3(i) Crack bridging ⁽¹⁾ – EN 1062-7	-	A1 (elastomeric paint only)	-	-	-	-	-	-
3(j) Alkali resistance – ISO 2812-4	-	Masonry paint	-	-	-	-	Outdoor for masonry	Outdoor for masonry
3(k) Corrosion resistance ⁽¹⁾ – EN ISO 12944-2 and 12944-6, ISO 9227, ISO 4628-2 and 4628-3.	-	Anti-rust paint Blistering ≥ size 3/ density 3 Rusting ≥ Ri2	Anti-rust paint Blistering ≥ size 3/ density 3 Rusting ≥ Ri2	-	-	Anti-rust paint Blistering ≥ size 3/ density 3 Rusting ≥ Ri2	Anti-rust paint Blistering ≥ size 3/ density 3 Rusting ≥ Ri2	Anti-rust paint Blistering ≥ size 3/ density 3 Rusting ≥ Ri2

(1) Only required when marketing claims are made.

3(a) Spreading rate:

Spreading rate requirement shall apply to white and light coloured paint products. For paints that are available in more colours the spreading rate shall apply to the lightest colour.

White paints and light-coloured paints (including finishes and intermediates) shall have a spreading rate (at a hiding power of 98 %) of at least 8 m² per litre of product for indoor paints and 6 m² for outdoor paints. Products marketed for both — indoor and outdoor shall have a spreading rate (at a hiding power of 98 %) of at least 8 m² per litre.

For tinting systems, this criterion applies only to the white base (the base containing the most TiO₂). In cases where the white base is unable to achieve this requirement, the criterion shall be met after tinting the white base to produce the standard colour RAL 9010.

For paints that are a part of a tinting system, the applicant must advise the end-user on the product packaging and POS which shade or primer/ undercoat (if possible, bearing the Community Eco-label) should be used as a basecoat before applying the darker shade.

Opaque primers and undercoats shall have a spreading rate of at least 8 m² per litre of product. Opaque primers with specific blocking/sealing, penetrating/binding properties and primers with special adhesion properties shall have a spreading rate of at least 6 m² per litre of product.

Thick decorative coatings (paints that are specially designed to give a three-dimensional decorative effect and are therefore characterised by a very thick coat) shall alternatively have a spreading rate of 1 m² per kg of product.

Opaque elastomeric paints shall have a spreading rate of at least 4 m² per litre of product.

This requirement does not apply to varnishes, lacures, transparent adhesion primers or any other transparent coatings.

Assessment and verification: the applicant shall provide a test report using the method ISO 6504/1 (Paints and varnishes — determination of hiding power — Part 1: Kubelka-Munk method for white and light-coloured paints) or 6504/3 (Part 3: determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate), or for paints specially

Existing criterion 3: Efficiency in use (consolidated version of Decision 2014/312/EU)

designed to give a three-dimensional decorative effect and characterised by a very thick coat the method NF T 30 073. For bases used to produce tinted products not evaluated according to the abovementioned requirements, the applicant shall produce evidence of how the end-user will be advised to use a primer and/or grey (or other relevant shade) of undercoat before application of the product.

3(b) Resistance to water:

— All varnishes, floor coatings and floor paints shall have resistance to water, as determined by ISO 2812-3 such that after 24 hours' exposure and 16 hours' recovery no change of gloss or of colour occurs.

Assessment and verification: the applicant shall provide a test report using the method ISO 2812-3.

3(c) Adhesion:

— Pigmented masonry primers for exterior uses shall score a pass in the EN 24624 (ISO 4624) pull-off test where the cohesive strength of the substrate is less than the adhesive strength of the paint, otherwise the adhesion of the paint must be in excess of a pass value of 1,5 MPa.

— Floor coatings, floor paints, floor undercoats, interior masonry primers, metal and wood undercoats shall score 2 or less in the EN 2409 test for adhesion.

— Transparent primers are not included in this requirement.

— The applicant shall evaluate the primer and/or finish alone or both applied together. When testing the finish alone this shall be considered the worst case scenario concerning adhesion.

Assessment and verification: the applicant shall provide a test report using the method EN ISO 2409 or EN 24624 (ISO 4624) as applicable.

3(d) Abrasion:

— Floor coatings and floor paints shall have an abrasion resistance not exceeding 70 mg weight loss after 1000 test cycles with a 1000 g load and a CS10 wheel according to EN ISO 7784-2.

Assessment and verification: the applicant shall provide a test report showing compliance with this criterion using the method EN ISO 7784-2.

3(e) Weathering (for outdoor paints and varnishes):

Masonry finish paints and wood and metal finishes including varnishes shall be exposed to artificial weathering in apparatus including fluorescent UV lamps and condensation or water spray according to ISO 11507. They shall be exposed to test conditions for 1000 hours. Test conditions are: UVA 4 h/60 °C + humidity 4 h/50 °C.

Alternatively, outdoor wood finishes and wood varnishes shall be exposed to weathering for 1000 hours in the QUV accelerated weathering apparatus with cyclic exposure with UV(A) radiation and spraying according to EN 927-6.

According to ISO 7724 3, the colour change of samples exposed to weathering shall not be greater than $\Delta E^* = 4$. It is not applicable to varnishes and bases.

Decrease of gloss for gloss paints and varnishes exposed to weathering shall not be greater than 30 % of its initial value and shall be measured using ISO 2813. This requirement is not applicable to mid sheen and matt finishes (1) which have an initial gloss value less than 60 % at 60° angle of incidence.

Chalking shall be tested using method EN ISO 4628-6 on masonry finish coats and wood and metal finishes (where applicable) after the samples have been exposed to weathering. Coatings shall achieve a score of 1,5 or better (0,5 or 1,0) in this test. In the standard there are illustrated references.

Existing criterion 3: Efficiency in use (consolidated version of Decision 2014/312/EU)

The following parameters shall also be evaluated on masonry finish coats and wood and metal finishes after the samples have been exposed to weathering:

- Flaking according to ISO 4628-5; flake density 2 or less, flake size 2 or less
- Cracking according to ISO 4628-4; crack quantity 2 or less, crack size 3 or less
- Blistering according to ISO 4628-2; blister density 3 or less, blister size 3 or less.

Tests *should be performed on the tinting base.*

Assessment and verification: the applicant shall provide test reports using either ISO 11507 according to the specified parameters or EN 927-6, or both. The applicant shall provide test reports using EN ISO 4628-2, 4, 5, 6 and a test report in conformance ISO 7724-3 where applicable.

3(f) Water vapour permeability:

Where claims are made that exterior masonry and concrete paints are breathable the paint shall be classified according to EN1062-1 as class II (medium vapour permeability) or better according to the test method EN ISO 7783.

Due to the large number of potential tinting colours, this criterion will be restricted to testing of the base paint.

Assessment and verification: the applicant shall provide a test report using methodology EN ISO 7783 and classification according EN1062-1.

3(g) Liquid water permeability

Where claims are made that exterior masonry and concrete paints are water repellent or elastomeric, the coating shall be classified according to EN1062-1 as class III (low liquid permeability) according to method EN 1062-3.

Due to the large number of potential tinting colours, this criterion will be restricted to the testing of the base paint.

All other masonry paints shall be classified according to EN1062-1 as class II (medium liquid permeability) or better according to the test method EN 1062-3.

Assessment and verification: the applicant shall provide a test report using methodology EN 1062-3 and classification according EN1062-1.

3(h) Fungal and algal resistance

Where claims are made that exterior masonry finish and wood paints have anti-fungal and algal properties, and in accordance with PT7 of the Biocide Regulation (EU) No 528/2012 of the European Parliament and of the Council (1), the following requirements shall be determined using EN 15457 and EN 15458.

Masonry paints shall have a score of class 1 or lower (1 or 0) for fungal resistance, (i.e. less than 10 % fungal coverage) and a score of class 1 or lower for algal resistance.

Wood paints shall have a score of 0 for fungal resistance and 0 for algal resistance.

Due to the large number of possible tinting colours, this criterion will be restricted to the testing of the base paint.

Assessment and verification: the applicant shall provide a test report using the methodology in EN 15457 and EN 15458.

3(i) Crack bridging

Existing criterion 3: Efficiency in use (consolidated version of Decision 2014/312/EU)

Where claims are made that masonry (or concrete) paint has elastomeric properties, the paint shall be at least classified as A1 at 23 °C according to EN 1062.

Due to the large number of potential tinting colours, this criterion will be restricted to the testing of the base paint.

Assessment and verification: the applicant shall provide a test report using methodology DIN EN 1062-7.

(j) Alkali resistance

Masonry paints and primers shall show no noticeable damage when the coating is spotted for 24 hours with 10 % NaOH solution according to method ISO 2812-4. The evaluation is done after 24 hours drying-recovery.

Assessment and verification: the applicant shall provide a test report using methodology ISO 2812-4.

3(k) Corrosion resistance

Simulated corrosion stresses shall be applied to a substrate for the purpose of rating according to the appropriate atmospheric corrosivity category or categories in EN ISO 12944-2 and the accompanying test procedures specified in EN ISO 12944-6. Anti-rust paints for steel substrates shall be tested after 240 h salt spray following ISO 9227. The results shall be rated using ISO 4628-2 for blistering and ISO 4628-3 for rusting. The paint shall achieve result not worse than size 3 and density 3 in blistering and not worse than Ri2 in rusting test.

Assessment and verification: the applicant shall provide testing and rating reports to confirm compliance with this criterion.

(1) EN ISO 2813.

(1) Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products (OJ L 167, 27/06/2012, p. 1).

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Proposed updated criterion 3: Efficiency in use

In order to demonstrate the efficiency in use of paints and varnishes the following tests per type of paint and/or varnish, as indicated in Table 2, shall be undertaken:

Table 2. Performance requirements for different kinds of paints and varnishes

Criteria	Paints and Varnishes (with their subcategories identified according to the Directive 2004/42/EC)							
	Indoor paint (a,b)	Outdoor paint (c)	Trim and cladding (d)	Thick decorative coating indoor and outdoor (l)	Varnish and woodstain (e, f)	One pack performance and floor covering paint (i)	Primer (g)	Undercoat and primer (h)
3(a) Spreading rate (only for white and light coloured paints, including the white base paints used in tinting systems) – ISO 6504-1. Not applicable to varnishes, lacures, transparent adhesion primers or any other transparent coatings.	8 m2/L	4 m2/L (elastomeric paint) 6 m2/L (masonry paint)	Outdoor products 6m2/L (outdoor products)	1 m2/kg ±	-	Outdoor products 6 m2/L (outdoor products) Indoor products 8 m2/L (indoor products)	6 m2/L (without having specific blocking, sealing, penetrating, binding or special adhesion properties and opacity)	

Proposed updated criterion 3: Efficiency in use

			Indoor products 8m2/L (indoor products)				8 m2/L (with opacity but no specific properties mentioned above)
3(b) Resistance to water – ISO 2812-3	-	-	-	-	Resistant to water	Resistant to water	-
3(c) Adhesion – EN 24624 ISO 4624 or ISO 2409	-	-	-	-	-	Score of 2 or lower (ISO 2409)	>1,5 MPa (for masonry paint, and according to ISO 4624)
3(d) Abrasion – EN ISO 7784-2	-	-	-	-	-	≤ 70 mg weight loss	-
3(e) Weathering – (cycles as per EN 16474-1 and 16474-6 or 11507 EN 927-6, for 1000 hours)	-				1-000 h	Colour change $\Delta E^* \leq 4$ (EN ISO 11664-6); Gloss decrease ⁽²⁾ < 30% (EN ISO 2813); Chalking ⁽³⁾ of ≤ 1.5 (EN ISO 4628-6); Flaking density ≤ 2 and flake size ≤ 2 (EN ISO 4628-5); Crack quantity ≤ 2 and crack size ≤ 3 (EN ISO 4628-4); Blister density ≤ 3 and blister size ≤ 3 (EN ISO 4628-2)	-
3(f) Water vapour permeability ⁽¹⁾ – EN ISO 7783	-	Class II or better	-	Class II or better (outdoor)	-	-	-
3(g) Liquid water permeability ⁽¹⁾ – EN 1062-3	-	Where claims are made: Class III All other products: Class II or better	-	Class II or better (outdoor)	-	-	-
3(h) Fungal resistance ⁽¹⁾ – EN 15457	-	Class 1 or lower (masonry or wood paints)	Class 0 (outdoor wood products)	Class 1 or lower (outdoor)	-	-	-
3(h) Algal resistance ⁽¹⁾ – EN 15458	-	Class 1 or lower (masonry or wood paints)	Class 0 (outdoor wood products)	Class 1 or lower (outdoor)	-	-	-
3(i) Crack bridging ⁽¹⁾ – EN 1062-7	-	A1 or better (elastomeric paint only)	-	-	-	-	-
3(j) Alkali resistance – ISO 2812-4	-	No noticeable damage (masonry paint)	-	-	-	-	No noticeable damage (outdoor masonry paint)

Proposed updated criterion 3: Efficiency in use

All varnishes, floor coatings and floor paints shall have resistance to water, as determined by ISO 2812-3 such that after 24 hours' exposure and 16 hours' recovery no change of gloss or of colour occurs.

Assessment and verification: the applicant shall provide a test report using the method ISO 2812-3.

3(c) Adhesion:

Pigmented masonry primers for exterior uses shall score a pass in the ~~EN 24624~~ (ISO 4624) pull-off test where the cohesive strength of the substrate is less than the adhesive strength of the paint, otherwise the adhesion of the paint must be in excess of a pass value of 1,5 MPa.

Floor coatings, floor paints, floor undercoats, interior masonry primers, metal and wood undercoats shall score 2 or less in the EN ISO 2409 test for adhesion.

Transparent primers are not included in this requirement.

The applicant shall evaluate the primer and/or finish alone or both applied together. When testing the finish alone, this shall be considered the worst-case scenario concerning adhesion.

Assessment and verification: the applicant shall provide a test report using the method defined in EN ISO 2409 or ~~EN 24624~~ (ISO 4624), as applicable.

3(d) Abrasion:

Floor coatings and floor paints shall have an abrasion resistance not exceeding 70 mg weight loss after 1000 test cycles with a 1000 g load and a CS10 wheel according to EN ISO 7784-2.

Assessment and verification: the applicant shall provide a test report showing compliance with this criterion using the method EN ISO 7784-2.

3(e) Weathering (for outdoor paints and varnishes):

Masonry finish paints and wood and metal finishes including varnishes shall be exposed to artificial weathering in apparatus including fluorescent UV lamps and condensation or water spray according to ISO ~~11507~~ 16474-1. They shall be exposed to test conditions for 1000 hours. Test conditions are: UVA 4 h/60 °C + humidity 4 h/50 °C.

Alternatively, outdoor wood finishes and wood varnishes shall be exposed to weathering for 1000 hours in the QUV accelerated weathering apparatus with cyclic exposure with UV(A) radiation and spraying according to EN 927-6.

According to ISO ~~11664-6~~ 7724-3, the colour change of samples exposed to weathering shall not be greater than $\Delta E^* = 4$. It is not applicable to varnishes and bases.

Decrease of gloss for gloss paints and varnishes exposed to weathering shall not be greater than 30 % of its initial value and shall be measured using ISO 2813. This requirement is not applicable to mid sheen and matt finishes ~~(1)~~ which have an initial gloss value less than 60 % at 60° angle of incidence.

Chalking shall be tested using method EN ISO 4628-6 on masonry finish coats and wood and metal finishes (where applicable) after the samples have been exposed to weathering. Coatings shall achieve a score of 1,5 or better (0,5 or 1,0) in this test. In the standard there are illustrated references.

The following parameters shall also be evaluated on masonry finish coats and wood and metal finishes after the samples have been exposed to weathering:

- Flaking according to ISO 4628-5; flake density 2 or less, flake size 2 or less
- Cracking according to ISO 4628-4; crack quantity 2 or less, crack size 3 or less
- Blistering according to ISO 4628-2; blister density 3 or less, blister size 3 or less.

Proposed updated criterion 3: Efficiency in use

Tests *should be performed on the tinting base*.

Assessment and verification: the applicant shall provide test reports using either ISO ~~11507~~16474-1 according to the specified parameters or EN 927-6, or both. The applicant shall provide test reports using EN ISO 4628-2, 4, 5, 6 and a test report in conformance ISO ~~11664-6~~7724-3 where applicable.

3(f) Water vapour permeability

Where claims are made that exterior masonry and concrete paints are breathable the paint shall be classified according to EN 1062-1 as class II (medium vapour permeability) or better according to the test method EN ISO 7783.

Due to the large number of potential tinting colours, this criterion will be restricted to testing of the base paint.

Assessment and verification: the applicant shall provide a test report using methodology EN ISO 7783 and classification according EN 1062-1.

3(g) Liquid water permeability

Where claims are made that exterior masonry and concrete paints are water repellent or elastomeric, the coating shall be classified according to EN1062-1 as class III (low liquid permeability) according to method EN 1062-3.

Due to the large number of potential tinting colours, this criterion will be restricted to the testing of the base paint.

All other masonry paints shall be classified according to EN 1062-1 as class II (medium liquid permeability) or better according to the test method EN 1062-3.

Assessment and verification: the applicant shall provide a test report using methodology EN 1062-3 and classification according EN 1062-1.

3(h) Fungal and algal resistance

Where claims are made that exterior masonry finish and wood paints have anti-fungal ~~and~~ anti-algal properties, and in accordance with PT7 of the Biocide Regulation (EU) No 528/2012 of the European Parliament and of the Council ⁽¹⁾, the following requirements shall be determined using EN 15457 ~~or~~ EN 15458.

Masonry paints shall have a score of class 1 or lower (1 or 0) for fungal resistance, (i.e. less than 10 % fungal coverage) and a score of class 1 or lower for algal resistance.

Wood paints shall have a score of 0 for fungal resistance and 0 for algal resistance.

Due to the large number of possible tinting colours, this criterion will be restricted to the testing of the base paint.

Assessment and verification: the applicant shall provide a test report using the methodology in EN 15457 and/or EN 15458, *as appropriate*.

3(i) Crack bridging

Where claims are made that masonry (or concrete) paint has elastomeric properties, the paint shall be at least classified as A1 at 23 °C according to EN 1062-7.

Due to the large number of potential tinting colours, this criterion will be restricted to the testing of the base paint.

Assessment and verification: the applicant shall provide a test report using methodology DIN EN 1062-7.

3(j) Alkali resistance

Proposed updated criterion 3: Efficiency in use

Masonry paints and primers shall show no noticeable damage when the coating is spotted for 24 hours with 10 % NaOH solution according to method ISO 2812-4. The evaluation ~~is~~ shall be done after 24 hours drying-recovery.

Assessment and verification: the applicant shall provide a test report using methodology ISO 2812-4.

3(k) Corrosion resistance

Simulated corrosion stresses shall be applied to a substrate for the purpose of rating according to the appropriate atmospheric corrosivity category or categories in EN ISO 12944-2 and the accompanying test procedures specified in EN ISO 12944-6. Anti-rust paints for steel substrates shall be tested after 240 h salt spray following ISO 9227. The results shall be rated using ISO 4628-2 for blistering and ISO 4628-3 for rusting. The paint shall achieve a result not worse than size 3 and density 3 in blistering and not worse than Ri2 in rusting ~~test~~.

Assessment and verification: the applicant shall provide testing and rating reports to confirm compliance with this criterion.

(1) Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products (OJ L 167, 27/06/2012, p. 1).

799 Rationale for the proposed criterion text

800 Aim of the criterion

801 The efficiency in use criteria have been set to ensure that the paint and varnish products will perform adequately
802 both in terms of covering a specific area of substrate to be coated (3a on spreading rate) and in terms of
803 resistance to various environmental exposures (3b to 3k). Not all criteria are relevant to all product categories
804 but some criteria do apply to multiple product categories. For this reason it was considered most effective to
805 present the requirements in a matrix format.

806 Information from preliminary questionnaire

807 When asked about the relevance of the different efficiency in use requirements, the responses were as follows:

808 — 3(a) Spreading rate: Yes (32); Blank (23); No opinion (15); No (3).

809 — 3(b) Resistance to water: Yes (30); Blank (23); No opinion (15); No (5).

810 — 3(c) Adhesion: Yes (31); Blank (23); No opinion (15); No (4).

811 — 3(d) Abrasion: Yes (25); Blank (30); No opinion (15); No (3).

812 — 3(e) Weathering: Yes (29); Blank (24); No opinion (17); No (3).

813 — 3(f) Water vapour permeability: Yes (28); Blank (23); No opinion (19); No (3).

814 — 3(g) Liquid water permeability: Yes (26); Blank (23); No opinion (23); No (1).

815 — 3(h) Fungal and algal resistance: Yes (29); Blank (24); No opinion (17); No (3).

816 — 3(i) Crack bridging: Yes (27); Blank (24); No opinion (19); No (2).

817 — 3(j) Alkali resistance: Yes (26); Blank (24); No opinion (20); No (3).

818 — 3(k) Corrosion resistance: Yes (30); Blank (24); No opinion (18); No (1).

819 The feedback received generally showed very little opposition to the recognition of these properties as being of
820 relevance to the overall life cycle performance of the EU Ecolabel criteria for indoor and outdoor paints and
821 varnishes.

822 Comparison with other ecolabels

823 The Blue Angel criteria for low-emission interior wall paints (DE-UZ 102) have only a general reference to some
824 of these efficiency in use properties under the fitness for use criterion where it states: “The wall paint according
825 to Paragraph 2 must fulfil the usual quality requirements with respect to fitness for use for the respective
826 product group (e.g. adhesion, hardness, drying properties, light fastness, elasticity, and, where applicable, surface
827 resistance to household chemicals and wet scrub resistance according to existing DIN standards).” The Austrian
828 Ecolabel for wall paints (UZ 17) only makes a very general reference to fitness for use as well.

829 The Nordic Swan criteria for paints and varnishes (v4.1) set common requirements as defined in the 2014 EU
830 Ecolabel criteria for spreading rate in criterion O20, resistance to water in criterion O21, adhesion in criterion
831 O22, abrasion in criterion O23, weathering in criterion O24, water vapour permeability in criterion O25, liquid
832 water permeability in criterion O26, anti-fungal and anti-algal properties in criterion O27. However, there is no
833 separate crack-bridging requirement set for elastomeric paints (just the general requirements under the
834 “weathering” requirements) and there are no specific limits for alkali resistance or corrosion resistance. In fact,
835 corrosion resistance requirements are inserted in criterion O33, but this is in the section for industrial paints
836 and varnishes.

837 Research and source for the proposals given

838 No specific research has been conducted yet, instead, the changes in the table reflect a combination of: (i)
839 updates to the existing criteria based on mistakes noticed by stakeholders; (ii) clarifications about whether a
840 limit was an upper or lower limit; the insertion of additional details, and (iv) merging of adjacent cells with the
841 same requirement.

842 The remaining criteria text had only minor changes except for the spreading rate text, where the text was mainly
843 reordered or some duplicate text removed because it was already clearly understood from the table.

844 The criteria make many references to multiple test standards and test conditions and it is proposed to try and
845 explain what is being requested in a more detailed manner in the rationale section of TR2 or in the technical
846 analysis section of the Preliminary Report.

847 Questions to stakeholders

Questions about criterion 3

22. Opinions about the criterion 3 proposal?
23. Would you appreciate a more detailed explanation of the testing requirements and results in the User Manual (or a draft version of this in the Technical Report rationale sections)?
24. For alkali resistance, what ISO 4628-1 rating is considered as equivalent to “no noticeable damage” (i.e. in terms of rating the quantity and size of defects)?
25. Some of these requirements only apply when claims are made. How many licensed products are you aware of that have claims for:
 - a) high water vapour permeability (i.e. the “breathable” claim of 3f)?
 - b) low liquid water permeability (i.e. the “water repellent” claim of 3g)?
 - c) about anti-fungal or anti-algal claims of 3h?
 - d) about the crack-bridging or elastomeric claims of 3i)?

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850 5.4 Criterion 4. Content of Volatile and Semi-volatile Organic Compounds (VOCs,
851 SVOCs)

Existing criterion (consolidated version of Decision 2014/312/EU)

The maximum content of Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs) shall not exceed the limits given in Table 3.

The content of VOCs and SVOCs shall be determined for the ready to use product and shall include any recommended additions prior to application such as colourants and/or thinners.

Products with a VOC content that is in accordance with the limits in Table 3 may display the text 'reduced VOC content' and the VOC content in g/l next to the Ecolabel.

VOC and SVOC content limits		
Product description (with subcategory denotation according to Directive 2004/42/EC)	VOC limits (g/l including water)	SVOC limits (g/l including water)
a. Interior matt walls and ceilings (Gloss < 25@60°)	10	30 (1)/40 (2)
b. Interior glossy walls and ceilings (Gloss > 25@60°)	40	30 (1)/40 (2)
c. Exterior walls of mineral substrate	25	40
d. Interior/Exterior trim and cladding paints for wood and metal	80	50 (1)/60 (2)
e. Interior trim varnishes and woodstains, including opaque woodstains	65	30 (50, 60)
e. Exterior trim varnishes and woodstains, including opaque woodstains	75	60
f. Interior and Exterior minimal build woodstains	50	30 (1)/40 (2)
g. Primers	15	30 (1)/40 (2)
h. Binding primers	15	30 (1)/40 (2)
i. One-pack performance coatings	80	50 (1)/60 (2)
j. Two-pack reactive performance coatings for specific end use such as floors	80 (65)	50 (1)/60 (2)
l. Decorative effect coatings	80	50 (1)/60 (2)
Anti-rust paints	80 (75)	60 (n/a)

(1) Indoor white paints and varnishes

(2) Indoor tinted paints/outdoor paints and varnishes

The VOC content shall be determined either by calculation based on the ingredients and raw materials or by using the methods given in ISO 11890-2 or, alternatively for products with a VOC content of less than 1.0 g/l, the methods given in ISO 17895. The SVOC content shall be determined using the method given in ISO 11890-2. [M1] The test shall be carried out using the analytical system as identified in the Criteria User Manual. In the case of products used both indoors and outdoors the strictest SVOC limit value for indoor paints shall prevail.

Assessment and verification: the applicant shall provide for the VOC content of the ready to use product either a test report using the methods given in ISO 11890-2 or ISO 17895 that demonstrates compliance or a declaration of compliance supported by calculations based on the paint ingredients and raw materials.

The applicant shall provide for the SVOC content of the ready to use product either a test report using the method given in ISO 11890-2 or a declaration of compliance supported by calculations based on the paint ingredients and raw materials. The test shall be carried out with reference to the modifications to ISO 11890-2 provided in the Criteria User Manual. At the request of a Competent Body applicants may be required to validate calculations using the specified test method.

Proposed updated criterion on VOC and SVOC limits

No changes proposed yet – awaiting receipt of license holder data prior to evaluation.

853

854 Rationale for the proposed criterion text

855 Aim of the criterion

856 The VOC and SVOC content of paints and varnishes have clear health effects on exposure to professionals in
857 all types of application and on exposure to building occupants in the case of indoor paints and varnishes. Health
858 impacts can be headaches and eye, throat, and nose irritation caused by short term exposure, while long-term
859 exposures can cause serious kidney damage and cancer. The emission of VOCs to outdoor ambient air can also
860 contribute to photochemical smog formation. The importance of these health and environmental issues is
861 reflected by Directive 2004/42/CE, which set mandatory upper limits for VOC content for various types of paint
862 and varnish products. The EU Ecolabel criteria go further by setting even lower limits and by also setting limits
863 for SVOC contents too.

864 Information from preliminary questionnaire

865 Responses to general questions about criterion 4 were as follows:

866 Do you consider criterion 4 very relevant for the overall goal of EU Ecolabel? Answers: Yes (45); Blank (24); No
867 opinion (4); No (0).

868 Do you consider the current formulation of criterion 4 precise enough? Answers: Yes (37); Blank (25); No opinion
869 (4); Minor changes needed (3), and Changes needed (4).

870 Should the limits for criterion 4 be lowered? Answers: Yes (6); No opinion (12), and No (31).

871 The feedback clearly appreciated the importance of the criteria but did not support any further increases in
872 ambition level. Some comments requested the active measurement of VOC content rather than having the
873 opportunity to calculate it based on ingoing materials. If testing, then it should be clear that testing can be
874 limited to worst-case combinations when many different shades are possible.

875 Comparison with other ecolabels

876 The Austrian Ecolabel for wall paints has a very strict approach to volatile organic compounds by not allowing
877 VOCs to be present in concentrations greater than 500 ppm (around 0.05% weight by weight) and SVOCs to be
878 present in concentrations greater than 200 ppm (around 0.02% weight by weight).

879 The Blue Angel criteria for low-emission interior wall paints (DE-UZ 102) take a similar approach to the Austrian
880 Ecolabel, but with higher limits for VOC (700 ppm instead of 500 ppm) and for SVOC (500 ppm instead of 200
881 ppm).

882 The Blue Angel criteria for low-emission and low pollutant paints and varnishes (DE-UZ 12a) take a quite
883 complicated approach to VOC content by first of all setting maximum VOC contents as a function of non-volatile
884 matter content. The higher the non-volatile matter content, the higher the allowed maximum VOC content. This
885 is presumably a recognition of VOCs being inherently linked to non-volatile matter content in water-based
886 paints. The maximum VOC content is defined in this way for three separate groups of products, with limits of
887 either 2%, 8% or 10% weight by weight. These limits are further nuanced by distinguishing between different
888 categories of VOC based on its boiling point, VOCs with LCI values less than 100 µg/m³ and SVOCs.

889 The Nordic Swan ecolabel criteria for chemical building products take a more similar approach to the 2014 EU
890 Ecolabel criteria in the sense that they set maximum VOC contents in units of g/L for various categories of
891 outdoor paints and varnishes. The categories defined are also linked to Directive 2004/42/CE.

892 The Nordic Swan ecolabel criteria for paints and varnishes (v4.1) set limits for total VOC and SVOC content for
893 different categories of paints and varnishes that is very similar to the current requirements for EU Ecolabel.

894 Research and source for the proposals given

895 Due to the fact that there are over 30000 licensed EU Ecolabel paint products, it was considered useful to
896 conduct a data gathering exercise in order to understand the actual VOC contents of licensed products and how
897 they compare to the respective limits for different categories of product.

898 However, due to time constraints and limited feedback to date, it has not been possible to carry out such a data
 899 analysis that could serve as the basis for a well-informed proposal to tighten limits.

900 Questions to stakeholders

Questions about criterion 4

- 26. Opinions about the existing criterion 4?
- 27. If a requirement on VOC emissions is added for indoor paints, would that negate the need for improving the total VOC and SVOC contents in criterion 4?
- 28. Do you have any experience with claims like “ultra-low VOC”, “VOC-free” and “zero-VOC”? If so, what are the conditions and proof that lie behind these claims?
- 29. Further discussion about the situation with the SVOC testing methodology would be welcomed.
- 30. Question to CBs mainly: Information on the existence of EU Ecolabel licenses (yes/no) for all product categories considered in this criterion would also be very much appreciated.

901

902 5.5 Criterion 5. Restriction of hazardous substances and mixtures

Existing criterion (consolidated version of Decision 2014/312/EU)

The final product shall not contain hazardous substances and mixtures in accordance with the rules set out in the following sub-criteria which apply to:

- Hazard classifications and risk phrases
- Substances of Very High Concern
- Specific other listed substances

Applicants are required to evidence that the final product formulation complies with the overall assessment and verification requirements together with any additional requirements contained within the Appendix.

5(a) Overall restrictions to hazard classifications and risk phrases

The final product formulation, including all intentionally added ingredients present at a concentration of greater than 0,010 %, shall not, unless expressly derogated in the Appendix, contain substances or mixtures classified as toxic, hazardous to the environment, respiratory or skin sensitisers, or carcinogenic, mutagenic or toxic for reproduction in accordance with Regulation (EC) No 1272/2008 or Council Directive 67/548/EC (1) and as interpreted according to the hazard statements and risk phrases listed in Table 5 of this criteria.

Table 5	
Restricted hazard classifications and their categorisation	
Acute toxicity	
Category 1 and 2	Category 3
H300 Fatal if swallowed (R28)	H301 Toxic if swallowed (R25)
H310 Fatal in contact with skin (R27)	H311 Toxic in contact with skin (R24)
H330 Fatal if inhaled (R23/26)	H331 Toxic if inhaled (R23)
H304 May be fatal if swallowed and enters airways (R65)	EUH070 Toxic by eye contact (R39/41)
Specific target organ toxicity	
Category 1	Category 2
H370 Causes damage to organs (R39/23, R39/24, R39/25, R39/26, R39/27, R39/28)	H371 May cause damage to organs (R68/20, R68/21, R68/22)
H372 Causes damage to organs (R48/25, R48/24, R48/23)	H373 May cause damage to organs (R48/20, R48/21, R48/22)
Respiratory and skin sensitisation	
Category 1A	Category 1B
H317: May cause allergic skin reaction (R43)	H317: May cause allergic skin reaction (R43)
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled (R42)
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	Category 2
H340 May cause genetic defects (R46)	H341 Suspected of causing genetic defects (R68)
H350 May cause cancer (R45)	H351 Suspected of causing cancer (R40)

Existing criterion (consolidated version of Decision 2014/312/EU)

H350i May cause cancer by inhalation (R49)	
H360F May damage fertility (R60)	H361f Suspected of damaging fertility (R62)
H360D May damage the unborn child (R61)	H361d Suspected of damaging the unborn child (R63)
H360FD May damage fertility. May damage the unborn child (R60, R60/61)	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child (R62/63)
H360Fd May damage fertility. Suspected of damaging the unborn child (R60/63)	H362 May cause harm to breast fed children (R64)
H360Df May damage the unborn child. Suspected of damaging fertility (R61/62)	
Hazardous to the aquatic environment	
Category 1 and 2	
Category 3 and 4	
H400 Very toxic to aquatic life (R50)	H412 Harmful to aquatic life with long-lasting effects (R52/53)
H410 Very toxic to aquatic life with long-lasting effects (R50/ 53)	H413 May cause long-lasting effects to aquatic life (R53)
H411 Toxic to aquatic life with long-lasting effects (R51/53)	
Hazardous to the ozone layer	
EUH059 Hazardous to the ozone layer (R59)	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications and risk phrases. In accordance with Article 15 of Regulation (EC) No 1272/2008 applicants shall therefore ensure that classifications are based on the most recent rules on the classification, labelling and packaging of substances and mixtures.

Applicants are required to calculate the hazard classification of the final paint product in order to demonstrate compliance. This shall be in accordance with the methodologies for the classification of mixtures contained in Regulation (EC) No 1272/2008 and all amending legislation. Equivalence between mixture classifications according to the Dangerous Substances Directive 67/548/EEC (referred to as DSD) and those made according to Regulation (EC) No 1272/2008 (the CLP Regulation) can be found in Table 6.

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, or carcinogenic, mutagenic or toxic for reproduction hazardous to the environment, in accordance with Regulation (EC) No 1272/2008 or Directive 67/548/EEC.

Table 6	
Final product classification: CLP versus DSD equivalence	
CLP Mixture classification	DSD equivalent
Acutely toxic	
Specific target organ toxicant	
A respiratory or skin sensitiser	—
CLP Mixture classification	DSD equivalent
A carcinogen, mutagen or reproductive toxicant	Carcinogen, Mutagen or Reproductive toxicant categories 1-3
Hazardous to the environment	N (excluding R53 and R52/53)

5(a)(i) Derogations applying to substance groups

For the purpose of this product group, derogations have been granted for defined groups of substances that may be contained within the final product. These derogations stipulate the hazard classifications that are derogated for each specific substance group and the associated derogation conditions and concentration limits that apply. The derogations are set out in the Appendix:

1. Preservatives added to colourants, binders and the final product

- (a) In-can preservatives
- (b) Tinting machine preservatives
- (c) Dry film preservatives
- (d) Preservative stabilisers

2. Drying and anti-skinning agents

- (a) Drying agents
- (b) Anti-skinning agents

3. Corrosion inhibitors

- (a) Corrosion inhibitors

Existing criterion (consolidated version of Decision 2014/312/EU)

- (b) Verdigris prevention

4. Surfactants

- (a) General purpose surfactants
- (b) Alkylphenoethoxylates (APEOs)
- (c) Perfluorinated surfactants

5. Miscellaneous functional substances with general application

- (a) Silicon resin emulsion in white paints, colourant and tinting bases
- (b) Metals and their compounds
- (c) Mineral raw materials including fillers
- (d) Neutralising agents
- (e) Optical brighteners
- (f) Pigments

6. Miscellaneous functional substances with specialist applications

- (a) UV protectors and stabilisers
- (b) Plasticisers

7. Residual substances that may be present in the final product

- (a) Formaldehyde
- (b) Solvents
- (c) Unreacted monomers
- (d) Volatile Aromatic Compounds and halogenated compounds

5(a)(ii) Derogation conditions applying to production sites

Additional conditions relating to production of paints and varnishes shall apply in the case of derogations for acute toxins or specific target organ toxins. In this case applicants shall submit evidence that they have met the following requirements:

— Substances to which an acute toxic or specific target organ toxins classification applies shall demonstrate compliance with relevant European indicative Occupational Exposure Limit Values (OELV's) or Member State OELV's for the substance(s), with the strictest applying;

— Where there is no reference OELV then the applicant shall demonstrate how health and safety procedures for the handling of the ingoing substance(s) at production sites for the final ecolabelled paint product minimise exposure;

— Substances to which a classification applies as an aerosol or vapour shall demonstrate that workers are not exposed in this form;

— Substances to which the classification applies to in their dry form shall demonstrate that workers cannot come into contact with the substance in this form during manufacturing.

Assessment verification: the applicant shall demonstrate compliance with this criterion by providing a declaration of the classification and/or non-classification for:

— The final paint or varnish product based on the methodologies for the classification of mixtures contained in Regulation (EC) No 1272/2008 and all amending legislation

— Paint or varnish formula ingredients that fall within the groups of substances listed below:

(1) Preservatives added to colorants, binders and the final product

- (a) In-can preservatives,
- (b) Tinting machine preservatives,
- (c) Dry film preservatives,
- (d) Preservative stabilisers,

Existing criterion (consolidated version of Decision 2014/312/EU)

- (2) Drying and anti-skinning agents,
 - (a) Drying agents,
 - (b) Anti-skinning agents,
- (3) Corrosion inhibitors
 - (a) Corrosion inhibitors,
 - (b) Verdigris prevention,
- (4) Surfactants
 - (a) General purpose surfactants,
 - (b) Alkylphenoethoxylates (APEOs),
 - (c) Perfluorinated surfactants
- (5) Miscellaneous functional substances with general application
 - (a) Silicon resin emulsion in white paints, colorants and tinting
 - (a) bases,
 - (b) Metals and their compounds,
 - (c) Mineral raw materials including fillers,
 - (d) Neutralising agents
 - (e) Optical brighteners,
 - (f) Pigments,
- (6) Miscellaneous functional substances with specialist applications
 - (a) UV protectors and stabilisers,
 - (b) Plasticisers
- (7) Residual substances that may be present in the final product
 - (a) Formaldehyde,
 - (b) Solvents,
 - (c) Unreacted monomers,
 - (d) Volatile Aromatic Compounds and halogenated compounds
- (8) Substances in binders and polymer dispersions,
 - (a) Binders and cross linking agents,
 - (b) Reaction products and residues

and that are present at concentrations of more than 0,010 %.

This declaration shall be based on information collected according to the requirements in the Appendix.

Active ingredients to which specific concentration limits may apply under Regulation (EC) No 1272/2008 and which may fall below the cut-off value of 0,010 % shall also be identified.

The following technical information shall be provided to support the declaration of the classification or non-classification of ingredients:

(i) For substances that have not been registered under the REACH Regulation or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to the REACH Regulation;

(ii) For substances that have been registered under the REACH Regulation and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non-classified status of the substance;

(iii) For substances that have a harmonised classification or are selfclassified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to the REACH Regulation;

Existing criterion (consolidated version of Decision 2014/312/EU)

(iv) In the case of mixtures: Safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under Regulation (EC) No 1272/2008 together with information relevant to the mixtures hazard classification according to Annex II to the REACH Regulation;

Substances and mixtures shall be characterised in accordance with sections 10, 11 and 12 of Annex II to the REACH Regulation (Requirements for the Compilation of Safety Data Sheets). This shall include information on the physical form and state of the ingredients and shall include identification of manufactured nanomaterial ingredients for which 50 % or more of the particles in the number size distribution have one or more external dimensions in the size range 1 nm-100 nm.

The applicant shall also identify substances and mixtures used in the paint formulation which fall under the specific requirements for derogation as set out in the Appendix. For each derogated substance or mixture supporting information shall be provided showing how the derogation requirements have been met.

5(b) Restrictions that apply to Substances of Very High Concern

In accordance with Article 6(7) of Regulation (EC) No 66/2010 the final product and any ingredients or raw materials, shall not, unless specifically derogated, contain substances that:

- Meet the criteria in Article 57 of the REACH Regulation;
- Have been identified according to the procedure described in Article 59(1) of the REACH Regulation which establishes the Candidate List for Substances of Very High Concern.

No derogation shall be given concerning substances that meet one or both of these conditions, and which are present in a paint or varnish product at concentrations higher than 0.10 % (weight by weight).

Assessment and verification: the applicant shall provide a declaration of compliance with this criterion, supported by declarations of compliance signed by their suppliers. Applicants shall demonstrate that they have carried out a screening of ingoing substances against the current Candidate List for Substances of Very High Concern and the criteria in Article 57 of the REACH Regulation.

5(c) Restrictions that apply to specific hazardous substances

The final product shall not contain the hazardous substances that are specifically identified in the Appendix at or above the specified concentration limits. The restrictions on substances in the Appendix apply to the following paint and varnish ingredients and residues:

- (i) Dry film preservatives
- (ii) Tinting machine preservatives
- (iii) In-can preservatives
- (iv) Preservative stabilisers
- (v) Alkylphenoethoxylates (APEOs) surfactants
- (vi) Perfluorinated surfactants
- (vii) Metals and their compounds
- (viii) Pigments
- (ix) Plasticisers
- (x) Free formaldehyde

Assessment and verification: verification and testing requirements are as specified in the Appendix for each substance and as relevant to specific forms of paint and varnish.

(1)Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (OJ 196, 16.8.1967, p. 1).

REFERENCE IS THEN MADE TO AN APPROXIMATELY 7 PAGE LONG APPENDIX WITH MORE DETAILS AND CONDITIONS OF SPECIFIC DEROGATIONS- NOT REPRODUCED HERE FOR THE SAKE OF BREVITY

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Note: These criteria apply to the final product and any components therein and, unless specified otherwise, applies equally to all paint and varnish products included in the scope.

5.1. Restrictions on Substances of Very High Concern (SVHCs)

The final product formulation shall not contain any ingoing substances or mixtures that meet the criteria referred to in Article 57 of Regulation (EC) No 1907/2006 that have been identified according to the procedure described in Article 59 of that Regulation and included in the candidate list for substances of very high concern for authorisation.

Assessment and verification:

The applicant shall provide a signed declaration that the final product and any components therein do not contain any SVHCs. The declaration shall be supported by safety data sheets of all supplied chemicals and materials used to produce the final product and the components therein.

The list of substances identified as SVHCs and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here:

<https://www.echa.europa.eu/candidate-list-table>

Reference to the list shall be made on the submission date of the EU Ecolabel application.

For unavoidable impurities identified as SVHCs, the concentration of the impurity and an assumed retention factor of 100%, shall be used to estimate the quantity of the SVHC impurity remaining in the final product. Impurities can be present in the chemical product up to 0.0100% w/w, unless further restricted under criterion 7.3.8. Substances known to be released or to degrade from ingoing substances are considered ingoing substances and not impurities.

Justifications for any deviation from a retention factor of 100% (e.g. solvent evaporation) or for chemical modification of a SVHC impurity shall be provided.

5.2. General restrictions based on classifications according to specific hazard classifications defined in Regulation (EC) No 1272/2008.

Unless derogated in Table X+1, the final product and any ingoing substances or mixtures that are present in concentrations exceeding 0,010 % weight be weight of the final product formulation shall not have been assigned any of the hazard classes, categories and associated hazard statement codes stated in Table X, in accordance with Regulation (EC) No 1272/2008.

Table X. Excluded hazard classes, categories and associated hazard statement codes

Carcinogenic, mutagenic or toxic for reproduction	
Categories 1A and 1B	Category 2
H340: May cause genetic defects	H341: Suspected of causing genetic defects
H350: May cause cancer	H351: Suspected of causing cancer
H350i: May cause cancer by inhalation	
H360F: May damage fertility	H361f: Suspected of damaging fertility
H360D: May damage the unborn child	H361d: Suspected of damaging the unborn child
H360FD: May damage fertility. May damage the unborn child	H361fd: Suspected of damaging the unborn child
H360Fd: May damage fertility. Suspected of damaging the unborn child.	H362: May cause harm to breast fed children
H360Df: May damage the unborn child. Suspected of damaging fertility.	
Acute toxicity	
Categories 1 and 2	Category 3
H300: Fatal if swallowed	H301: Toxic if swallowed
H310: Fatal in contact with skin	H311: Toxic in contact with skin
H330: Fatal if inhaled	H331: Toxic if inhaled
H304: May be fatal if swallowed and enters airways	EUH070: Toxic by eye contact
Specific target organ toxicity	
Category 1	Category 2
H370: Causes damage to organs	H371: May cause damage to organs
H372: Causes damage to organs through prolonged or repeated exposure	H373: May cause damage to organs through prolonged or repeated exposure

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Respiratory and skin sensitization	
Category 1A and 1B	
H317: May cause allergic skin reaction	
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	
Hazardous to the aquatic environment	
Categories 1 and 2	Categories 3 and 4
H400: Very toxic to aquatic life	H412: Harmful to aquatic life with long-lasting effects
H410: Very toxic to aquatic life with long-lasting effects	H413: May cause long-lasting effects to aquatic life
H411: Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420: Harms public health and the environment by destroying ozone in the upper atmosphere	
Endocrine disruptors for human health and the environment	
Category 1	Category 2
EUH380: May cause endocrine disruption in humans	EUH381: Suspected of causing endocrine disruption in humans
EUH430: May cause endocrine disruption in the environment	EUH431: Suspected of causing endocrine disruption in the environment.
Persistent, Bioaccumulative and Toxic	
PBT	vPvB
EUH440: Accumulates in the environment and living organisms including in humans	EUH441: Strongly accumulates in the environment and living organisms including in humans
Persistent, Mobile and Toxic	
PMT	vPvM
EUH450: Can cause long-lasting and diffuse contamination of water resources	EUH451: Can cause very long-lasting and diffuse contamination of water resources

Table X+1. Derogations to restrictions on ingoing substances and mixtures that are classified with one or more of the restricted hazards listed in Table X and are present in concentrations greater than 0,010% (weight by weight) of the final product formulation.

Substance type, substance name and CAS number	Derogated hazard code(s)	Derogation conditions
Preservatives and preservative stabilisers		
<i>Note for combined preservative limits: the maximum quantity of any combination of in-can preservatives that are approved or that have an initial application for approval in progress under Regulation (EC) No 528/2012 for Product Type 6 applications shall be 0,080 % weight by weight of the final product.</i>		
<i>Any permitted use of dry-film preservatives shall be considered as being independent of the allowance for in-can preservatives.</i>		
In-can preservative: N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS No 2372-82-9)	H301, H373, H400, H410	*See horizontal derogation condition at foot of table Cannot be present in the final product formulation in quantities exceeding 0,050 % (weight by weight).
In-can preservative: Sodium pyrithione (CAS No 3811-73-2)	H311, H317, H331, H372, H400, H411, EUH070	*See horizontal derogation condition at foot of table Can only be used up to 0,050 % weight by weight.
In-can preservative: Formaldehyde-releasing in-can preservatives: Bronopol (CAS No 52-51-7):	H301, H317, H331, H400, H411	*See horizontal derogation condition at foot of table The use of any formaldehyde releasing preservatives must be declared by the applicant. Bronopol cannot be added in concentrations >0,020 % weight by weight. The addition of these substances (and any other ingredients that release formaldehyde) shall not result in the content of free

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<p>2-bromo-2-(bromomethyl)pentanedinitrile (DBDCB), CAS No 35691-65-7)</p> <p>EGForm (CAS No 3586-55-8)**</p> <p>(benzyloxy)methanol (CAS No 14548-60-8)**</p>		<p>formaldehyde in the final product exceeding 0,010%, as measured by the Merckoquant method, the VdL RL 03 method or HPLC analysis in accordance with UNI 11775 or an equivalent standard.</p> <p>**EGForm and (benzyloxy)methanol do not have any restricted hazard classifications, but their use is also subject to the free formaldehyde content of the final product.</p>
<p>In can preservative:</p> <p>Isothiazoline or isothiazoline-releasing substances:</p> <p>2,2-dithiobis(N-methylbenzamide) (DTBMA) (CAS No 2527-58-4)</p> <p>1,2-benzisothiazol-3(2H)-one (BIT, CAS No 2634-33-5)</p> <p>2-butyl-benzo(di)isothiazol-3-one (BBIT, CAS No 4299-07-4)</p>	<p>H317, H400, H410</p>	<p>*See horizontal derogation condition at foot of table</p> <p>The total quantity of all isothiazoline substances added to the final product shall not exceed 0,040 % weight by weight.</p> <p>In cases where isothiazoline preservatives are actively added by the paint or varnish manufacturer, the final product shall be tested for isothiazoline content to verify compliance with the combined limit.</p>
<p>Tinting machine preservatives:</p> <p>Same derogations as listed above for in-can preservative apply, plus:</p> <p>3-iodo-2-propynyl butylcarbamate (IPBC, CAS No 55406-53-6)</p>	<p>H317, H331, H372, H400, H410</p>	<p>Applicable to tinting systems.</p> <p>The combined sum of in-can preservatives used in the tinting machine shall not exceed 0,20% weight by weight.</p> <p>The concentration of IPBC shall not exceed 0,10% weight by weight.</p> <p>When mixed with base paint, the overall concentrations of in-can preservatives shall be low enough to demonstrate compliance with any individual limits in the rows above in the final tinted paint product as well as the horizontal derogation condition*.</p>
<p>Dry-film preservatives:</p>	<p>H400, H410, H411, H412 and H317</p> <p>(Additionally, and only for IPBC: H331 and H372)</p>	<p>Only applies to outdoor products and indoor products for use in high humidity areas.</p> <p>*See horizontal derogation condition at foot of table</p> <p>The sum total of dry-film preservatives with any of these derogated hazards shall:</p> <p>Not exceed 0,10 % weight by weight in indoor products for use in high humidity areas</p> <p>Be less than 0,50% weight by weight in outdoor products.</p> <p>Higher concentrations may be permitted in the case of slow release, encapsulated forms of dry film preservatives, but only in cases where the formulation can be tested to demonstrate that the specific formulation of the final product, or read-across formulations, would not be classified with any of the hazards listed in Table X.</p> <p>Any dry-film preservatives classified as H400 or H410 must be non-bioaccumulative, demonstrated by having an octanol-water coefficient (Log K_{ow}) of ≤ 3.2 or a bioconcentration factor (BCF) of ≤ 100.</p>
<p>Preservative stabiliser:</p> <p>Zinc oxide (CAS No 1314-13-2)</p>	<p>H400, H410</p>	<p>*See horizontal derogation condition at foot of table</p> <p>Permitted to be used as a preservative stabiliser, in concentrations up to 0,040 % weight by weight of the final product, when used to stabilise tinting paste or dry film preservations combinations that require 1,2-Benzisothiazol-3(2H)-one (BIT).</p>
<p>Drying and anti-skimming agents</p>		
<p>Driers (siccatives)</p>	<p>H301, H317, H373, H400+, H410+, H412, H413</p>	<p>*See horizontal derogation condition at foot of table</p>

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		<p>The sum total drier content shall not exceed 0,10 % weight by weight.</p> <p>+ The derogation for H400 and H410 only applies to cobalt-based drier compounds and such compounds can only be used up to 0,050 % weight by weight.</p>
Anti-skimming agents	H317, H412, H413	<p>*See horizontal derogation condition at foot of table</p> <p>The sum total anti-skimming agent content shall not exceed 0,40 % weight by weight.</p>
Corrosion inhibitors		
Anti-corrosion pigments	H410, H411, H412, H413.	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed in quantities up to 8,0 % weight by weight in interior/exterior trim and cladding paints for metal, one-pack performance coatings, two-pack performance coatings and anti-rust paints.</p> <p>Allowed in quantities up to 2,0 % in all other product categories.</p>
Verdigris prevention	H412, H413	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed in quantities up to 0,50 % weight by weight.</p>
Other, miscellaneous		
Surfactants	H411, H412, H413	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed up to 1,0 % weight by weight in transparent, semi-transparent, white or light-coloured products.</p>
Silicon resin	H412, H413	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed up to concentrations of 2,0 % weight by weight.</p>
Mineral raw materials, including fillers	H373	<p>*See horizontal derogation condition at foot of table</p> <p>Only applies to mineral raw materials and leucophyllite minerals that naturally contain crystalline silica.</p>
Neutralising agents	H311, H331, H400, H410, H411, H412, H413	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed up to 1,0 % weight by weight in varnishes and floor paints, and up to 0,50 % in all other products.</p>
Optical brighteners	H413	<p>*See horizontal derogation condition at foot of table</p> <p>Only allowed up to 0,10 % weight by weight of the final product.</p>
Titanium dioxide	H350i	<p>*See horizontal derogation condition at foot of table</p> <p>The applicant and the TiO₂ supplier(s) shall demonstrate that they have systems in place to minimise worker exposure to dry TiO₂ powder in the workplace (e.g. closed dosing systems, ventilated dosing and mixing areas and personal protective equipment).</p>
Trimethylolpropane	H361fd	<p>*See horizontal derogation condition at foot of table</p> <p>Only when used as an additive in supplied pigments and only up to a maximum concentration of 0,50 % weight by weight of the supplied pigment.</p>
UV stabilisers	H317, H411, H412, H413	<p>*See horizontal derogation condition at foot of table</p>

Proposed updated criterion (no track changes style for the sake of clarity – but this proposed text would effectively replace the current criterion 5 AND the Appendix of Decision 2014/312/EU

		Only applicable to outdoor products and only up to a maximum concentration of 0,60 % weight by weight to the final product formulation.
Binders and cross-linking agents: Adipic acid dihydrazide (CAS No 1071-93-8)	H411	*See horizontal derogation condition at foot of table Only allowed up to 1,0 % weight by weight and when used as an adhesion promoter or as a crosslinking agent.
Methanol (CAS No 67-56-1)	H301, H311, H331, H370	*See horizontal derogation condition at foot of table Only permitted as a residual reaction product of other substances in the product formulation. Allowable residual concentration increases as a function of binder content in the following manner: - Binder content of 10-20%: allowable residual methanol is 0,020 % weight by weight. - Binder content of 20-40%: allowable residual methanol is 0,030 % weight by weight. - Binder content of >40%: allowable residual methanol is 0,050 % weight by weight.

*Horizontal derogation condition: none of the derogations above, either individually or in combination, shall be permitted if they result in the final product being classified with any of the hazards defined in Table X, with the notable exception of H412 and H413 for outdoor products due to the presence of dry film preservatives.

The hazard statement codes generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

The use of substances or mixtures that are chemically modified during the production process, so that any relevant hazard for which the substance or mixture has been classified under Regulation (EC) No 1272/2008 no longer applies, shall be exempted from the above requirement.

This criterion shall not apply to:

- substances not included in the scope of Regulation (EC) No 1907/2006 as defined in Article 2(2) of that Regulation;
- substances covered by Article 2(7)(b) of Regulation (EC) No 1907/2006, which sets out the criteria for exempting substances included in Annex V to that Regulation from the registration, downstream user and evaluation requirements.

Assessment and verification:

The applicant shall provide a signed declaration of compliance with sub-criterion 5.2, a list of all chemicals used, their concentrations in the format supplied, safety data sheets for the chemicals supplied, the quantities added to the final product formulation and any other relevant declarations from suppliers or chemical producers that demonstrate compliance with the relevant requirements.

Substances known to be released or to degrade from ingoing substances are considered ingoing substances and not impurities.

Justifications for any deviation from a retention factor of 100% (e.g. solvent evaporation) or for chemical modification of a restricted impurity shall be provided.

For substances exempted from sub-criterion 5.2 (see Annexes IV and V to Regulation (EC) No 1907/2006), a declaration to this effect by the applicant shall suffice to demonstrate compliance.

Since multiple products or potential products using the same process chemicals may be covered by one EU Ecolabel license, the calculation only needs to be presented for each impurity for the worst-case product within a common family of products covered by the same license.

Regarding information requested from suppliers that may be commercially sensitive, evidence from suppliers can also be provided directly to competent bodies without necessarily providing certain details to the applicant.

5.3. Specific hazardous substance restrictions for ingoing substances.

Proposed updated criterion (no track changes style for the sake of clarity – but this proposed text would effectively replace the current criterion 5 AND the Appendix of Decision 2014/312/EU

(a) Akylphenoethoxylates (APEOs) and their derivatives shall not be used in any paint or varnish preparations or formulations.

(b) Perfluorinated and polyfluorinated compounds (PFAS) shall not be used in any paint or varnish preparations or formulations.

(c) The following phthalates shall not be intentionally added to the final product formulation: DEHP (Bis-(2-ethylhexyl)-phthalate, CAS No); BBP (Butylbenzylphthalate, CAS No); DBP (Dibutylphthalate, CAS No); DMEP (bis-2-methoxyethyl phthalate, CAS No); DIBP (Di-isobutylphthalate, CAS No); DIHP (Di-C6-8-branched alkylphthalates, CAS No); DHNUP (Di-C7-11-branched alkylphthalates, CAS No) and DHP (Di-n-hexylphthalate, CAS No).

(d) The following metals shall not be present in the final product formulation in quantities exceeding 0,010 % weight by weight (per metal): Cadmium, Lead, Chromium (VI), Mercury, Arsenic, Barium, Selenium, Antimony and Cobalt. The only exceptions shall be when the limits are exceeded due to the use of: Cobalt compounds used in driers that comply with the derogation conditions in criterion 5.2, the Barium-containing mineral nepheline syenite and the use of the following pigments: Barium sulphate; Antimony Nickel within an insoluble TiO₂ lattice; Cobalt aluminate blue spinel and Cobalt chromite blue-green spinel.

Assessment and verification:

The applicant shall declare the non-use of the substances in their formulation, supported by declarations from their suppliers about the non-use of these substances in the materials supplied and that are used in formulations subject to the EU Ecolabel license application procedure.

The absence of intentional addition of the phthalate compounds shall be their absence in concentrations greater than 0,010 % weight by weight in the final product formulation.

In the case of the metal restrictions, the product formulation(s) should be tested for metal content via a standard laboratory procedure for digesting powder, liquid or paste samples prior to analysis for metal content via methods such as atomic absorption spectroscopy or inductively coupled plasma spectroscopy.

For demonstrating compliance with exemptions from certain metal content restrictions, the applicant shall declare the content of any metal containing ingredients added to the formulation, supported by a declaration for their supplier(s). In the case of demonstrating that a restricted metal is bonded within a crystal lattice in an insoluble form, compliant results from testing according to DIN 53770-1 or an equivalent standard shall be accepted.

904

905 Rationale for the proposed criterion text

906 Aim of the criterion

907 Criteria 5.1 and 5.2 present the application of Articles 6(6) and 6(7) of the EU Ecolabel Regulation to paint and
908 varnish products. This effectively requires a consistent and horizontal restriction of hazardous substances based
909 on the hazard codes they are associated with and the general concentration they are present at in the final
910 product (i.e. bans apply if present above 0,010 % by weight and not explicitly derogated). Any derogation from
911 the horizontal requirements has to be carefully considered and be clearly stated so that there are no
912 misunderstandings about how the derogation should apply.

913 In addition to the horizontal requirements, which act as a sort of safety net for preventing many hazardous
914 substances from being added to EU Ecolabel products, there is scope to apply more targeted and stricter
915 restrictions on specific individual hazardous substances or groups of substances (i.e. criterion 5.3).

916 Comparison with other ecolabels

917 A direct comparison with other ecolabels is generally not possible here since each ecolabel scheme takes very
918 specific approaches to hazardous substance restrictions that are often cross-cutting to other product groups
919 covered by those same ecolabel schemes.

920 Research and source for the proposals given

921 The whole text for criterion 5 and the Appendix has been overhauled and restructured with the twin goals of
922 making the criteria more readable and trying to align closely with a similar structure to those used in more
923 recently voted EU Ecolabel criteria. The new proposed criteria have the following structure:

- 924 — Horizontal SVHC restrictions (default bans, only allowed if present as impurities and at concentrations
- 925 less than 0,010 % weight by weight).
- 926 — Horizontal CLP restrictions (default bans on any chemicals with certain hazards being in the final
- 927 product at concentrations >0,010 % weight by weight, unless derogated).
- 928 — Specific hazardous substance restrictions (usually complete bans on certain substances).

929 The legal text for the horizontal SVHC and CLP has gradually evolved over the last 8 years or so to become a
 930 more standardised text. However, the paints and varnishes criteria were adopted 10 years ago, when there was
 931 no such relatively standard wording in place. A number of amendments to criterion 5 and the Appendix since
 932 2014 have actually served to make the criteria even more complicated to read than before, because updates
 933 did not always fit well into the pre-existing hazard substance restriction and derogation structure. Now thanks
 934 to the revision process, it has been possible to completely restructure the hazardous substance criteria.

935 References to risk phrases (e.g. R50, R51, R50-53 etc.) are no longer required because the transition period
 936 from risk phrases to hazard codes was finalised back in June 2015.

937 The vast majority of the derogations and limits are the same as already in the 2014 criteria, with the following
 938 main changes:

- 939 — The total limit allowed for in-can preservatives has been increased from 0,060 % to 0,080 %. The
- 940 main reason for this is because the most efficacious preservatives (like MIT and CMIT/MIT) can no
- 941 longer be used in significant concentrations after the CLP reclassifications.
- 942 — The total limit for dry-film preservatives has been reduced from 0,65 % to 0,25 % since the
- 943 higher concentrations would most likely trigger classification of the whole product with H411 or H410.
- 944 — The derogation for Zinc Pyrithione has been removed (this substance is now classified with H360D
- 945 and it was decided not to continue with the derogation for this CMR hazard).
- 946 — A derogation for Sodium Pyrithione has been inserted (this is based on the response to a derogation
- 947 request previously received by the JRC and also to compensate for the removal of Zinc Pyrithione as a
- 948 preservation option, Sodium Pyrithione at least has no CMR hazards).
- 949 — Derogation for Bronopol and other preservatives associated with formaldehyde release (specifically
- 950 DBDCB, EGForm and (benzyloxy)methanol) has been inserted, with a condition on total free
- 951 formaldehyde content in the final product (0,010 %) that is the same limit as in the previous criteria.
- 952 It should be noted that EGForm and (benzyloxy)methanol do not even have restricted CLP hazards, but
- 953 the limitations on their use are more clearly stated within this derogation condition.
- 954 — The total quantity of isothiazolines permitted has been reduced from 0,050 % to 0,040 % and also
- 955 includes DTBMA, an isothiazoline releaser, in the limit. Furthermore, a requirement to test for
- 956 isothiazoline content has been inserted if these preservatives are used. This test requirement is based
- 957 on findings from a consumer study by “60 millions de consommateurs” that sometimes found
- 958 isothiazoline contents higher than those claimed by the manufacturers – presumably due to a lack of
- 959 awareness of isothiazoline coming in supplied raw materials.
- 960 — The additional hazards for IPBC of H331 and H372 that needed derogation are now inserted as
- 961 well, correcting an oversight in the original criteria.
- 962 — A new horizontal derogation requirement has also been inserted which basically means that the
- 963 derogations only apply if they do not result in the final product being classified with any of the CLP
- 964 hazards listed in Table X. The two main reasons for doing this are: (i) some of the hazards are additive
- 965 in nature, especially the H4XX ones, and so taking advantage of two derogations could lead to the
- 966 mixture being classified, and (ii) this approach conveniently deals with any future changes in specific
- 967 concentration limits for triggering mixture classification (as has been happening with isothiazolines for
- 968 the H317 hazard – still ongoing for BIT).
- 969 — It is also clearly stated in the horizontal derogation condition that there are some limited cases where
- 970 a final product can be classified (for H412 and H413) – only when this classification is due to the use
- 971 of dry-film preservatives in outdoor products. This exemption was already in place in the existing
- 972 criteria, but was not clearly presented.

973 Looking at the derogation for anti-corrosion pigments, where up to 8.0 % by weight of H410 and/or H411
 974 pigments is allowed, it is difficult to imagine how such high limits could be compatible with the final product
 975 not being classified. If these pigments are really needed, then it needs to be reconsidered if these products are
 976 suitable for the EU Ecolabel. In this line, a question to be answered by stakeholders, especially by CBs
 977 is whether any licenses have been awarded to anti-rust paints. Another specific product to which
 978 information about licenses is needed is thick decorative coatings for indoor and outdoor (paints).

979 The main change in criterion 5.3 is the move to clearly ban perfluorinated substances and also to extend this
980 ban to poly-fluoroalkyl substances (PFAS) is in line with the recent approach for EU Ecolabel detergent criteria
981 and due to the same reasons as cited in their rationale, namely concerns about the increasing evidence of the
982 extremely high resistance to environmental degradation and subsequent persistence of these substances, their
983 accumulation in the bodies of humans and animals, and their association with adverse health effects, including
984 reproductive and developmental issues, liver and kidney damage, an elevated risk of certain cancers, and
985 immunotoxicity, and weakening of vaccine-responsiveness.

986 Questions to stakeholders

Questions about criterion 5

31. Opinions about the proposals for criterion 5?
32. Which of the derogations in the current criteria have been most commonly used? How is this flagged in an EU Ecolabel license files? Some seem unrealistic, like the anti-corrosion pigments.
33. Would it be technically feasible to ban all phthalates in the EU Ecolabel for paints and varnishes rather than the ones specified in criterion 5.3 (c)?²⁰
34. Are there any issues with obtaining declarations from suppliers for certain requirements?
35. Do you have any derogation requests to flag for discussion? (see Annex I for the type of information required).

987

988 5.6 Criterion 6. Consumer information

Existing criterion (consolidated version of Decision 2014/312/EU)

6(a) The following texts shall appear on or be attached to the packaging:

- 'Minimise paint wastage by estimating how much paint you will need'
- 'Recover unused paint for re-use'.
- 'Reuse of paint can effectively minimise the products' life cycle environmental impact'

6(b) The following general information and advice shall be provided on or be attached to the packaging:

- How to estimate the amount of paint needed prior to purchase in order to minimise paint wastage and a recommended amount as a guideline (e.g. for 1 m² of wall x litres of paint is needed).
- How to deal with the 'unused paint' together with, where available, a web-link or contact details from which the consumer can find more detailed information.

6(c) The following advice and recommendations on how to handle the paint shall be provided on or be attached to the packaging:

- Safety measures for the user. This shall include basic recommendation on personal protective equipment that should be worn. It shall also include additional measures that should be taken when using spray equipment.
- The use of cleaning equipment and appropriate waste management (in order to limit water and soil pollution). For example, text advising that unused paint requires specialist handling for safe environmental disposal and therefore it should not be thrown away with household or commercial waste (e.g. 'Do not put residual paint down the kitchen sink or toilet, or into a waste bin').
- Storage of the paint in appropriate conditions (before and after opening), including, where appropriate, safety advice.

Assessment and verification: the applicant shall declare that the product complies with the requirement and provide the competent body with the artwork or samples of the user information and/or a link to a manufacturer's website containing this information as part of the application. The recommended amount of paint given as a guideline shall be provided.

989

²⁰ Phthalates banned in criterion 5.3 (c) are: DEHP (Bis-(2-ethylhexyl)-phthalate, CAS No); BBP (Butylbenzylphthalate, CAS No); DBP (Dibutylphthalate, CAS No); DMEP (bis-2-methoxyethyl phthalate, CAS No); DIBP (Di-isobutylphthalate, CAS No); DIHP (Di-C6-8-branched alkylphthalates, CAS No); DHNUP (Di-C7-11-branched alkylphthalates, CAS No) and DHP (Di-n-hexylphthalate, CAS No).

Proposed updated criterion

No proposed changes to criterion 6 at this stage.

990

991 Rationale for the proposed criterion text

992 The content of this criterion may be sensitive to any changes in the product group scope, so it is not
993 recommended to review criterion 6 in any detail until the scope is agreed.

994 The only proposal for now is the possibility to request that the consumer information is also available on the
995 website of the product (e.g. if space is lacking in the product packaging), having the information also reachable
996 via QR code (which is already happening for some products).

997

998 5.7 Criterion 7. Information appearing on the EU Ecolabel

Existing criterion (consolidated version of Decision 2014/312/EU)

The optional label with text box shall contain, where relevant, the following texts:

- Minimised content of hazardous substances
- Reduced content of volatile organic compounds (VOCs): x g/l
- Good performance for indoor use (where indoor criteria have been met) or
- Good performance for outdoor use (where outdoor criteria have been met) or
- Good performance for both indoor and outdoor use (where both indoor and outdoor criteria have been met)

The guidelines for the use of the optional label with text box can be found in the 'Guidelines for use of the Ecolabel logo' on the website:

http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

Assessment and verification: the applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a declaration of compliance with this criterion.

999

Proposed updated criterion

No proposed changes to criterion 7 at this stage.

1000

1001 Rationale for the proposed criterion text

1002 The content of this criterion may be sensitive to any changes in the product group scope and any completely
1003 new criteria (for example on VOC emissions and carbon footprint), so it is not recommended to review criterion
1004 7 in any detail until the scope and criteria are agreed.

1005

1006 5.8 New criterion on VOC emissions?

1007 There is a strong case for setting requirements on VOC emissions for paints and varnishes, at least for indoor
1008 products where occupant health is an issue. Exposure to VOCs has been linked with a variety of health and
1009 allergy impacts and there are a number of national VOC labels that aim to help consumers to select low VOC
1010 emission products. This aspect was already raised during the final stages of the previous revision process but
1011 could not be taken into account. In this line, previous discussions suggested to reassess the feasibility of setting
1012 criteria for indoor air quality requirements based on emission rates in the next revision of the EU Ecolabel
1013 criteria.

Proposed updated criterion on VOC emissions

Note: only applicable to indoor paints and varnishes

Emissions of VOCs and SVOCs shall not exceed the limits defined in the table below.

Parameter	3-day test results	28-day test results
TVOC*	< 3000 µg/m ³	< 300 µg/m ³
TSVOC*		< 100 µg/m ³
R value**		≤ 1.0
Formaldehyde		< 20 µg/m ³
Sum of any other Carcinogenic 1A or 1B VOCs apart from formaldehyde	< 10 µg/m ³	< 1 µg/m ³

* TVOC and TSVOC are as defined in EN 16402 and including quantification of any non-target compounds

** R value, as defined in EN 16402

Assessment and verification:

The applicant shall submit a copy of an EN 16402 test report for each of the products being covered by the EU Ecolabel license application. In cases of products with identical formulations but different packaging volumes or types, one test report shall suffice. In cases of products based on the same formulation but with multiple different shades, a test report for the worst-case formulation shall be suffice, so long as it is clearly explained why that particular product formulation represents the worst-case.

For the calculation of the R value, reference should be made to the latest set of agreed EU LCI values available at the time of testing. These values can be consulted here on the European Commission website: https://single-market-economy.ec.europa.eu/sectors/construction/eu-lci-subgroup/eu-lci-values_en

1014

1015 Rationale for the proposed criterion text

1016 Aim of the criterion

1017 This criterion aims to provide a safeguard to distinguish and encourage products that do not only have a low
1018 VOC and SVOC content, but which emit only low levels of VOCs when applied, and especially low levels of those
1019 individual VOC substances that are considered to be especially problematic for human health.

1020 Comparison with other ecolabels

1021 The Nordic Swan criteria for paints and varnishes (v4.1) set limits on emissions of category 1 carcinogenic VOCs
1022 of 1 µg/m³ after 28 days and 300 µg/m³ for total VOCs after 28 days.

1023 The Blue Angel criteria (UZ-12a) set the same limits as the Nordic Swan, plus other limits at 3 days for the
1024 same parameters (3000 µg/m³ for total VOCs and 10 µg/m³ for carcinogenic VOCs except formaldehyde) and
1025 other limits for additional parameters after 28 days (R value, TSVOC, TVOC without LCI, and formaldehyde).

1026 The proposed criteria for (indoor) EU Ecolabel paints and varnishes broadly aligns with the Blue Angel approach,
1027 although it does not go so far as to also require limits on TVOC without LCI values, since the added value of
1028 this data is questionable given that we already measure TVOC emissions and the R value.

1029 Just focusing on the 28-day values, it is also possible to compare the ambition level with national VOC label
1030 emission limits in the table below.

1031 Table 6. Comparison of similar 28-day VOC emission limits with EU Ecolabel paints and varnish proposal

Parameter	EU Ecolabel	Blue Angel*	Nordic Swan*	AgBB 2021	Belgian VOC label	French VOC label	Italian decree
TVOC	< 300 µg/m ³	< 300 µg/m ³	< 300 µg/m ³	< 1000 µg/m ³	< 1000 µg/m ³	< 1000 µg/m ³	< 1500 µg/m ³
TSVOC	< 100 µg/m ³	< 100 µg/m ³		< 100 µg/m ³	< 100 µg/m ³		
R value	≤ 1.0	≤ 1.0		≤ 1.0	≤ 1.0	≤ 1.0	

Parameter	EU Ecolabel	Blue Angel*	Nordic Swan*	AgBB 2021	Belgian VOC label	French VOC label	Italian decree
Formaldehyde	< 20 µg/m ³	< 20 µg/m ³		< 100 µg/m ³	< 100 µg/m ³	< 10 µg/m ³	< 60 µg/m ³
Other CMR cat. 1 substances	< 1 µg/m ³	< 1 µg/m ³	< 1 µg/m ³	< 1 µg/m ³	< 1 µg/m ³	< 1 µg/m ³	

1032 *Blue Angel refers to "DE-UZ 12a on low-emission and low-pollutant paints and varnishes (v.8)"; Nordic Swan refers to "096 Paints and
1033 varnishes, v4.1"; AgBB, Belgian VOC label and French VOC limits refer to a summary webpage of Eco-Institut (see here: [https://www.eco-](https://www.eco-institut.de/en/portfolio/belgische-voc-verordnung/)
1034 [institut.de/en/portfolio/belgische-voc-verordnung/](https://www.eco-institut.de/en/portfolio/belgische-voc-verordnung/)) and the Italian Decree known as the CAM regulation (mentioned here:
1035 <https://www.eurofins.com/consumer-product-testing/services/certifications-international-approvals/voc/legal-requirements/>).

1036 Source: Own elaboration.

1037

1038 Research and source for the proposals given

1039 The shift to water-based formulations has created major reductions in VOC emissions and there is an existing
1040 criterion on VOC content that requires the total amount of VOCs in EU Ecolabel paints and varnishes to be
1041 significantly less than the legal limits. However, limits on total VOC do not give the full picture when trying to
1042 consider the impact of coatings on indoor air quality.

1043 As buildings become more energy efficient, they also tend to become more airtight, and this exacerbates any
1044 issues with emissions of pollutants into the indoor air. To some extent, these concerns are reflected in the
1045 revision of the Construction Products Regulation (CPR), where VOC emissions from relevant construction
1046 products should be tested according to EN 16516 test standard. However, only some categories of coatings are
1047 included within the scope of the CPR and it appears that decorative coatings are not included.

1048 Thanks to the developments with the CPR, and the existing EN 16402 standard, there is a well-defined standard
1049 procedure in place for testing VOC emissions from coating products. A common criticism of testing for total
1050 VOC emissions is that not all VOCs are equally harmful to human health. This valid critique can now be
1051 addressed to some extent by comparison of emissions of individual VOCs against agreed EU LCI values, as
1052 published on the European Commission [website](#) for around 150 individual VOCs. By comparing individual VOC
1053 emission results against its EU LCI value, a coefficient can be generated (R_i) and the sum of these coefficients
1054 leads to the total R value.

1055 Considering the cost of VOC emission testing and the high number of very similar product formulations that
1056 can exist, it was deemed reasonable to allow for testing of worst-case formulations to ensure compliance with
1057 the same family of products. As per the general assessment and verification requirements set out in the
1058 preamble to the Annex of the draft legal text, Competent Bodies reserve the right to request further testing in
1059 case of any doubts about the worst-case representation.

1060 What do Green Building Certification schemes say?

1061 Another important potential market driver is the potential for gaining points (or meeting mandatory
1062 requirements) for paints and varnishes that have a low VOC content and/or low VOC emissions that help ensure
1063 low VOC concentrations in indoor air.

1064

1065 Table 7. Examples of VOC related requirements for green building schemes

Scheme	Requirements - method and limits
BREEAM Indoor Air Quality criteria	1. The total volatile organic compound (TVOC) concentration in indoor air has to be measured post-construction but should be measure pre-occupancy. Sampling should be performed in rooms that will be occupied for long periods of time such as bedrooms, living rooms, classrooms, offices, etc. The TVOC has and does not exceed 300µg/m ³ , the emissions are related to an averaged over 8 hours, according to the European Concerted Action on Indoor Air quality and its Impact on Man Report No.11: Guidelines for Ventilation Requirements in buildings (1992), from the Commission of the European Communities.
	2. Additionally, the TVOC sampling and analysis has to be performed in accordance with ISO 16000-57 and ISO 16000-68 or ISO 16017-19 to be accepted as an earned criterion by BREEAM.

Scheme	Requirements - method and limits	
DGNB Office building and residential	Evaluation of incomparable VOC measurements (measured more than four weeks after completion)	ISO 16000: TVOC of ≤ 3000 or ≤ 300 $\mu\text{g}/\text{m}^3$ US EPA TO-1, TO-15, TO-17 and TO-11A: ≤ 3000 or ≤ 300 $\mu\text{g}/\text{m}^3$ ASHRAE 189-1 and California Department of Public Health) Standard Method V1.1: ≤ 500 or ≤ 200 $\mu\text{g}/\text{m}^3$
LEED Credit for VOC emissions for materials used in the building interior.	For the VOC emissions evaluation, 2 option to meet the criteria are presented, with one being focus on the California Department of Public Health (CDPH) Standard Method and the second according to CEN TS 16516 and complies with the LCI values from Table 1 of the German AgBB Testing and Evaluation Scheme (2015) and a formaldehyde limit of 10 micrograms per cubic meter. Additionally, the range of total VOCs after 28 days has to be measured as specified in EN 16516 and reported (TVOC ranges: 0.5 mg/m^3 or less, between 0.5 and 5 mg/m^3 , or 5 mg/m^3 or more). For the VOC content evaluation products should meets the VOC content limits outlined in one of the applicable standards and additionally, for projects in North America, methylene chloride and perchloroethylene may not be intentionally added.	

1066 *Source: Own elaboration.*

1067

1068 Questions to stakeholders

Questions about proposed new criterion on VOC emissions for indoor paints and varnishes
<p>36. Opinions about the proposal for VOC emission criteria?</p> <p>37. How much does testing cost according to EN 16402?</p> <p>38. Is there sufficient testing capacity for these types of test?</p>

1069

1070 5.9 New criterion on carbon footprinting or PEF?

Proposed updated criterion on carbon footprinting of paint and varnish products
<p>The life cycle carbon footprint of the paint or varnish products shall be assessed according to one of the following methods, with preference being given in the order of the list below.</p> <ul style="list-style-type: none"> — A cradle-to-grave analysis using the latest Environmental Footprint datasets and according to relevant Product Environmental Footprint Category Rules (PEFCR) that are valid at the date of the application for the EU Ecolabel license. — A cradle-to-grave analysis using the latest Environmental Footprint datasets and according to general Product Environmental Footprint methodology set out in Commission Recommendation (EU) 2021/2279. — A cradle-to-grave analysis reporting on modules A to C of the EN 15804 method and using any combination of specific and generic data for ingredients and reference flows. — A cradle-to-gate analysis using module A of the EN 15804 method and using any combination of specific and generic data for ingredients and reference flows. <p>Except in the case where the PEFCR is followed the carbon footprint shall be reported using a functional unit of per m^2 per year.</p> <p>Any datasets and calculation rules used shall be those in force at the date of the application for the EU Ecolabel.</p> <p>Assessment and verification:</p> <p>The applicant shall provide the Competent Body with a full formulation of the paint or varnish product(s) and the associated carbon footprints of each ingredient. Reference flows for fuel, electricity, water, wastewater, normal waste and hazardous waste shall also be provided. Transport assumptions (distance and mode) shall be explained for each ingredient coming to the factory as well as an average distribution scenario for sold products. Assumed losses due to</p>

spoilage, spillage and misapplication shall be communicated as will an assumed spreading rate in m²/L, which should be the same as communicated on any packaging, if mentioned there.

The assumed lifetime before reapplication shall be estimated and explained in terms of the results of durability testing of the paint or varnish product(s).

- 1071
- 1072 Rationale for the proposed criterion text
- 1073 Aim of the criterion
- 1074 The overall goal of the EU Ecolabel is to encourage the production and consumption of products with an
1075 excellent environmental performance when considered from a whole life cycle perspective. Therefore, setting a
1076 requirement on life cycle impacts would be an obvious way to go.
- 1077 Comparison with other ecolabels
- 1078 The authors are not aware of any other ecolabels with requirements on life cycle carbon footprint.
- 1079 Research and source for the proposals given
- 1080 Considering the relatively recent PEFCR for paints and the multiple relevant EF datasets for ingredients and
1081 materials used in paints and varnishes, there is a sufficient body of data and methodological rules set out both
1082 in the PEFCR for paints and more generally in Commission Recommendation (EU) 2021/2279, that could serve
1083 as a basis for carrying out a PEF analysis. However, there are issues with the expiry of datasets and the validity
1084 period of the PEFCR themselves. Another issue is that the PEFCR were only developed for paints, not for
1085 varnishes and definitely not for many of the additional products that are still being considered for inclusion in
1086 the scope (e.g. road marking paints, aerosol spray paints etc.). Consequently, a mandatory requirement for a
1087 PEFCR analysis, while ideal, is likely to create a number of practical issues.
- 1088 In parallel, there are other relevant EU policy developments that make the carbon footprinting of paints and
1089 varnishes a more realistic requirement than was previously the case. First of all, the recast Construction
1090 Products Regulation will set in place requirements for all construction products to have a carbon footprint
1091 analysis made available to purchasers of the product or material. While not all paints and varnishes may fall
1092 under the scope of the CPR, when they are used to coat construction products, there will be a clear demand
1093 from the construction product manufacturers to have carbon footprint information about the coatings they use.
- 1094 At the broader level, the recast Energy Performance of Buildings Directive will set requirements for a whole life
1095 carbon footprint calculation to be carried out for all new buildings from 2030 onwards. Paints and varnishes
1096 will no doubt only form a small part of the total carbon footprint of buildings, but the information will be
1097 required and assumptions about the reapplication of coatings every X years will increase their contribution over
1098 the typical 50 year study period for the building.
- 1099 A major obstacle to inserting requirements like this into EU Ecolabel criteria has been the expected cost of
1100 meeting these requirements. A full Environmental Product Declaration for any product will tend to cost several
1101 thousands of Euros and it is not clear what role Competent Bodies (CBs) are supposed to have when assessing
1102 and verifying compliance with such criteria. Consequently, if this criteria is to be practical, there will need to be
1103 a simple calculation methodology and freely available online tool with generic carbon footprints for ingredients
1104 where suppliers can basically “self-assess” and generate the results. The role of the CB would then be to verify
1105 that all the input data is supported by declarations on the formulation and durability test results etc. Allowance
1106 should also be made to overwrite generic data assumptions in case suppliers can provide an EPD for supplied
1107 ingredients. This way, suppliers and producers would be encouraged to make or source lower carbon materials.
1108 However, any such specific claims should indeed be official EPDs and be third party certified and be valid at the
1109 date of application.
- 1110 Questions to stakeholders

Questions about proposed new criterion on whole life carbon for paints and varnishes:

39. Opinions about the proposal for whole life carbon criteria?
40. What is the interest of CEPE or other associations in having a freely available online calculator?
41. Are you interested in forming and participating in a sub-group on this matter?

1111

1112 5.10 Other criteria areas to be considered

1113 Other criteria areas that may be considered relevant are:

- 1114 — Requirements on biobased content: this is a relevant area based on claims made by products on
1115 the market, but it does not seem to translate into genuine environmental benefits at the level of the
1116 final product. Not proposed to be included unless there is a clear demand for this.
- 1117 — Requirements on microplastics: this is a relevant requirement but is a very novel area. Discussion
1118 needed on what potential requirements could be set (if any). Only relevant if microplastics are actually
1119 added to some paint or varnish products within the scope.
- 1120 — Requirements on CO₂ footprint: This requirement is relevant to grant the label only to the paints
1121 and varnishes with the lowest climate impacts in the market. This would require a standardised
1122 calculation method and input parameters, which is simpler than the PEF, but takes into account the
1123 overall PEF methodology. This could either be an information requirement, or a minimum requirement
1124 with a set limit value.

1125 Questions to stakeholders

Questions about potential additional criteria

- 42. Opinions about the need for criteria on biobased content? If supportive, what would you propose to require?
- 43. Opinions about the need for criteria on microplastics? If supportive, what would you propose to require?
- 44. Opinions about the need for criteria on CO₂ footprint? If supportive, what would you propose to require?

1126

1127	List of abbreviations	
1128	AP	Acidification
1129	BPR	Biocidal Products
1130	CB	Competent Bodies
1131	CC	Climate Change
1132	CEPE	European Council of the Paint, Printing Ink, and Artist's Colours Industry
1133	CO ₂	Carbon dioxide
1134	CO ₂ eq	Carbon dioxide equivalent
1135	CPR	Construction Products Regulation
1136	E-Fr	Eutrophication, freshwater
1137	E-Ma	Eutrophication, marine
1138	E-Te	Eutrophication, terrestrial
1139	E-Tox	Ecotoxicity, freshwater
1140	ECHA	European Chemicals Agency
1141	EF	Environmental Footprint
1142	EFIA	Environmental Footprint Impact Assessment
1143	EN	European Norm
1144	EPD	Environmental Product Declaration
1145	EPBD	Energy Performance of Buildings Directive
1146	ER	Resource depletion, fossil
1147	ESPR	Ecodesign for Sustainable Products Regulation
1148	EU	European Union
1149	EUEB	European Union Ecolabelling Board
1150	EUEL	European Union Ecolabel
1151	GWP	Global Warming Potential
1152	HTox-c	Human toxicity, cancer
1153	HTox-nc	Human toxicity, non-cancer
1154	IR	Ionising Radiation
1155	ISO	International Organization for Standardization
1156	JRC	Joint Research Centre
1157	LCA	Life Cycle Assessment
1158	LCI	Life Cycle Inventory
1159	LCIA	Life Cycle Impact Assessment
1160	LCS1	Life Cycle Stage 1: Raw material acquisition and pre-processing stage
1161	LCS2	Life Cycle Stage 2: Manufacturing stage
1162	LCS3	Life Cycle Stage 3: Distribution stage
1163	LCS4	Life Cycle Stage 4: Use stage
1164	LCS5	Life Cycle Stage 5: End-of-life stage
1165	LU	Land Use

1166	MR	Resource depletion, minerals & metals
1167	NGO	Non-governmental Organization
1168	OD	Ozone Depletion
1169	REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
1170	PEF	Product Environmental Footprint
1171	PEFCR	Product Environmental Footprint Category Rules
1172	PM	Particulate Matter
1173	POF	Photochemical Ozone Formation
1174	PRODCOM	'PRODUCTION COMMUNAUTAIRE' (Community Production)
1175	PVC	Pigment Volume Concentration
1176	VOC	Volatile Organic Compound
1177	SVOCs	Semi-Volatile Organic Compounds
1178	TiO ₂	Titanium dioxide
1179	WU	Water Use
1180	ZnS	Zinc sulphide

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1204 Annexes

1205 Annex 1. Substitution information and Derogation request form

1206 1. Common information requirements

To be treated as confidential?	<input type="checkbox"/> Yes <input type="checkbox"/> No
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1207

Contact name	
Organisation	
Email	
Telephone No.	
Supplementary documents attached	

1208

1a. Chemical substance name(s)	
1b. CAS, EC or Annex VI numbers	
1c. Current EU regulatory status	
1d. CLP Classifications from the EU Ecolabel hazard listing ²¹	
1e. Proportional contribution to final product classification (for mixture ingredients)	

²¹ The relevant Commission Decision for the product group should be checked, but in general, the restricted CLP classifications are grouped as follows:

- Group 1 hazards: Category 1A or 1B carcinogenic, mutagenic and/or toxic for reproduction (CMR): H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df.
- Group 2 hazards: Category 2 CMR: H341, H351, H361, H361f, H361d, H361fd, H362; Category 1 aquatic toxicity: H400, H410; Category 1 and 2 acute toxicity: H300, H310, H330; Category 1 aspiration toxicity: H304; Category 1 specific target organ toxicity (STOT): H370, H372.
- Group 3 hazards: Category 2, 3 and 4 aquatic toxicity: H411, H412, H413; Category 3 acute toxicity: H301, H311, H331; Category 2 STOT: H371, H373.

The purpose of grouping is to aid the derogation process, for example, a much stronger case needs to be presented for derogation of a group 1 hazard than a group 3 hazard.

For product groups where exposure routes to skin or inhalation pathways are foreseen, the H317 and H334 hazards would be placed amongst the Group 2 hazards.

1f. Existing scientific evidence and risk assessments relating to the substance	
1g. Functional need and significance to the final product	
1h. Typical concentration in the final product and specific components or articles	

1209

1210 2. Additional information required for derogation requests

2a. The relevance of the hazard classification(s) along the life cycle of the product (e.g. manufacturing, use, disposal)	
2b. Market availability of alternatives and the potential for substitution	

1211

1212 3. Additional information required about substitutes

<i>3a. Comparative evaluation of environmental performance</i>	
3b. The relevance of the hazard substitution along the life cycle of the product (e.g. manufacturing, use, disposal)	
3c. Compliance with product performance and functional requirements	
3d. Market diffusion and technical maturity	

1213

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