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COMMISSION DECISION

of **XXX**

establishing the ecological criteria for the award of the EU Ecolabel for indoor and outdoor paints and varnishes

(Text with EEA relevance)

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel¹, and in particular Article 8(2) thereof,

After consulting the European Union Eco-labelling Board,

Whereas:

- (1) Under Regulation (EC) No 66/2010, the EU Ecolabel may be awarded to products which have a reduced environmental impact during their entire life cycle.
- (2) Regulation (EC) No 66/2010 provides that specific EU Ecolabel criteria are to be established according to product groups.
- (3) In order to better reflect the state of the art of the market for this product group and take into account the innovation of the last years, it is considered appropriate to modify the scope of the product group and establish a revised set of ecological criteria.
- (4) Commission Decision 2009/543/EC² and Commission Decision 2009/544/EC³ addressed separately indoor and outdoor paints. These have been amalgamated into one criteria document in order to reduce the administrative burden for competent bodies and applicants. Moreover, the revised criteria reflect new requirements on hazardous substances that were introduced subsequent to the previous decisions by Regulation (EC) No 66/2010.
- (5) The criteria aim, in particular, at promoting products that have a lower environmental impact along their life cycle, are of high quality, have good performance and long durability, products which contain a limited amount of hazardous substances⁴ and a limited amount of volatile organic compounds. Products with improved performance in relation to these aspects should be promoted via the Ecolabel. It is therefore appropriate to establish EU Ecolabel criteria for the product group 'paints and varnishes'.

¹ OJ L 27, 30.1.2010, p. 1.

² Commission Decision 2009/543/EC of 13 August 2008 establishing the ecological criteria for the award of the Community eco-label to outdoor paints and varnishes (OJ L 181, 14.7.2009, p. 27).

³ Commission Decision 2009/544/EC of 13 August 2008 establishing the ecological criteria for the award of the Community eco-label to indoor paints and varnishes (OJ L 181, 14.7.2009, p. 39).

⁴ Substances with hazard classifications established under Regulation (EC) No 1272/2008 of the European Parliament and of the Council (the CLP Regulation).

- (6) The revised criteria, as well as the related assessment and verification requirements should be valid for four years from the date of adoption of this Decision, taking into account the innovation cycle for this product group.
- (7) Commission Decision 2009/543/EC⁵ and Commission Decision 2009/544/EC⁶ should therefore be replaced by this Decision.
- (8) A transitional period should be allowed for producers whose products have been awarded the EU Ecolabel for indoor and outdoor paints and varnishes on the basis of the criteria set out in Decisions 2009/543/EC and 2009/544/EC, so that they have sufficient time to adapt their products to comply with the revised criteria and requirements.
- (9) The measures provided for in this Decision are in accordance with the opinion of the Committee established by Article 16 of Regulation (EC) No 66/2010,

HAS ADOPTED THIS DECISION:

Article 1

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 Council⁷..
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 amateur 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;

⁵ Commission Decision 2009/543/EC of 13 August 2008 establishing the ecological criteria for the award of the Community eco-label to outdoor paints and varnishes (OJ L 181, 14.7.2009, p. 27).

⁶ Commission Decision 2009/544/EC of 13 August 2008 establishing the ecological criteria for the award of the Community eco-label to indoor paints and varnishes (OJ L 181, 14.7.2009, p. 39).

⁷ Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC (OJ L 143, 30.4.2004, p. 87).

- (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.

Article 2

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

- (1) ‘Paint’ means a pigmented coating material, in liquid or in 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) ‘Woodstain’ 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;
- (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 or fibre-reinforced cement. .
- (7) ‘Binding primers’ means coatings designed to stabilise loose substrate particles or impact hydrophobic properties;
- (8) ‘UV curing paint system’ means the hardening of coating materials by exposure to 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 products used for the preservation of manufactured products during storage by the control of microbial deterioration to ensure their shelf life;
- (11) ‘Dry-film preservatives’ are products used 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 Tetradecane (C₁₄H₃₀);

- (14) 'Semi volatile organic compounds' (SVOCs) means any organic compound having a boiling point of greater than 250 °C and which, in a capillary column⁸ are eluting with a retention range between n-Pentadecane (C₁₅H₃₂) to n-Docosane (C₂₂H₄₆)n- for non-polar systems and diethyl adipate (C₁₀H₁₈O₄) to methyl palmitate (C₁₇H₃₄O₂) for polar systems.
- (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 60⁰ 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 60⁰ or at 85⁰ show a reflectance of >60 and ≥10
- (18) 'Matt paints' are those which at an angle of incidence of 85⁰ show a reflectance of <10
- (19) 'Dead matt paints' are those which at an angle of incidence of 85⁰ 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,

Article 3

The criteria for awarding the EU Ecolabel under Regulation (EC) No 66/2010, for a product falling within the product group "paints and varnishes" defined in Article 1 of this Decision as well as the related assessment and verification requirements are set out in the Annex.

Article 4

The criteria and the related assessment requirements set out in the Annex, shall be valid for four years from the date of adoption of this Decision.

Article 5

For administrative purposes, the code number assigned to the product group 'indoor and outdoor paints and varnishes' shall be "44".

Article 6

Decisions 2009/543/EC and 2009/544/EC are repealed.

Article 7

1. This Decision shall apply two months after its adoption date. However applications for the EU Ecolabel for products falling within the product group 'paints and varnishes' submitted within two months from the date of adoption of this Decision may be based either on the criteria set out in Decision 2009/543/EC or 2009/544/EC, or on the criteria set out in this Decision. Applications shall be evaluated in accordance with the criteria on which they are based.

⁸ As specified in 8.2.2 of FprCEN/TS 16516.

2. Ecolabels awarded in accordance with the criteria set out in Decision 2009/543/EC or 2009/544/EC may be used for 12 months from the date of adoption of this Decision.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Commission
Janez POTOČNIK
Member of the Commission

ANNEX

EU ECOLABEL CRITERIA AND ASSESSMENT AND VERIFICATION REQUIREMENTS

Criteria for awarding the EU Ecolabel to paints and varnishes:

1. White pigment and wet scrub resistance
2. Titanium dioxide
3. Efficiency in use
 - (a) Spreading rate
 - (b) Resistance to water
 - (c) Adhesion
 - (d) Abrasion
 - (e) Weathering
 - (f) Water vapour permeability
 - (g) Liquid water permeability
 - (h) Fungal resistance
 - (i) Crack bridging
 - (j) Alkali resistance
 - (k) Corrosion resistance
4. Volatile and Semi-volatile Organic Compounds (VOCs, SVOCs)
5. Restriction of hazardous substances and mixtures
 - (a) Overall restrictions that apply to hazard classifications and risk phrases
 - (b) Restrictions that apply to Substances of Very High Concern
 - (c) Restrictions that apply to specific hazardous substances
6. Consumer information
7. Information appearing on the EU Ecolabel

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 the 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.

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) 1272/2008 of the European Parliament and of the Council 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.

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 of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (‘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 Regulation (EC) No 1907/2006 of 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 should 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 of SVOCs.

Criterion 1. White pigment and Wet Scrub Resistance

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 m² of dry film equal to or lower than that described in Table 1, with 98 % opacity. This requirement only applies to tinting bases (base paints).

Table 1. Relationship between wet scrub resistance and TiO₂ 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 36g/m² for indoor products and 38g/m² 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/m² 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 25g/m² 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.

Criterion 2. Titanium Dioxide pigment

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 following⁹:

For the sulphate process:

⁹ As derived from the Reference Document on Best Available Technology for the Manufacture of Large Volume Inorganic Chemicals (BREF), August 2007.

- SO_x calculated as SO₂: 7.0 kg/ton TiO₂ pigment
- Sulphate waste: 500 kg/ton TiO₂ pigment

For the chloride process:

- If natural rutile ore is used, 103 kg chloride waste/ton TiO₂ pigment
- If synthetic rutile ore is used: 179 kg chloride waste /ton TiO₂ pigment
- If slag ore is used: 329 kg chloride waste /ton TiO₂ pigment

If more than one type of ore is used, the values will apply in proportion to the quantity of the individual ore types used.

Note:

SO_x emissions only apply to the sulphate process.

The Waste Framework Directive 2008/98/EC, 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.

***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 monitoring data indicating the respective levels of process emissions and waste discharges of wastes.*

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 kind of paints and varnishes

Criteria	Paints and Varnishes (a to j are subcategories of the Directive 2004/CE/42)								
	Indoor paint (a, b)	Masonry paint (c)	Trim and cladding (d)	Outdoor paint (c)	Thick decorative coating indoor and outdoor (c)	Varnish and woodstain (e, f)	Floor covering and paint (i)	Primer (g)	Undercoat and primer (h)
Spreading rate (only on white and not tinting bases) – ISO 6504/1	8 m ² /L	4 m ² /L (elastomeric paint) 6 m ² /L (masonry paint)	6 m ² /L	6 m ² /L	1 m ² /L	-	8 m ² /L	6 or 8 m ² /L (by opacity)	8 m ² /L
Resistance to water – ISO 2812-3	-	-	-	-	-	Resistant to water	Resistance to water	-	-
Adhesion – EN 24624	-	-	-	-	-	-	Score 2	1.5MPa (masonry paint)	1.5MPa (masonry paint)
Abrasion – EN ISO 7784-2	-	-	-	-	-	-	70 mg weight loss	-	-
Weathering – EN 11507 / EN 927-6	-	1000 h	1000 h (outdoor)	1000 h	1000h (outdoor)	1000 h	-	-	-
Water vapour permeability ¹ – EN ISO 7783-2	-	Class II or better	-	Class II or better	Class II or better (outdoor)	-	-	-	-
Liquid water permeability ¹ – EN 1062-3	-	Class III	-	Class II	Class II (outdoor)	-	-	-	-
Fungal resistance ¹ – EN 15457	-	Class 1 or lower	-	Class 1 or lower	Class 1 or lower (outdoor)	Class 0 or lower	-	-	-
Algal resistance – EN 15458	-	Class 1 or lower	-	Class 1 or lower	Class 1 or lower (outdoor)	Class 0 or lower	-	-	-
Crack bridging ¹ – EN 1062-7	-	A1 (elastomeric paint only)	-	-	-	-	-	-	-
Alkali resistance – ISO 2812-4	-	Alkali resistance	-	-	-	-	-	-	Alkali resistance (masonry paint)

Notes: ¹ Only required where marketing claims are made about the paints

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 8m² per litre of product for indoor paints and 6m² for outdoor paints. Products marketed for both – indoor and outdoor shall have a spreading rate (at a hiding power of 98 %) of at least 8m² 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.

Primers and undercoats without opacity shall have a spreading rate of at least 6m² and those with opacity at least 8m². Primers with specific blocking/sealing, penetrating/binding properties and primers with special adhesion properties shall have a spreading rate (at a hiding power of 98 %) of at least 6m² 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 1m² per kg of product.

Elastomeric paints shall have a spreading rate (at a hiding power of 98 %) of at least 4m² per litre of product.

This requirement does not apply to varnishes, woodstains, 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 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 1,5MPa.

Floor coatings, floor paints, floor undercoats, interior masonry primers, metal and wood undercoats shall score inferior or equal to 2 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 (including varnishes). Test conditions are: UVA 4h/60 °C + humidity 4h/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 transparent 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-finishes¹⁰ 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.

¹⁰ EN ISO 2813.

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 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 7783-2.*

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 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 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.*

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 (EC) No 528/2012, 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

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.

3(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 240h 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.

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

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 must 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' next to the Ecolabel. Those with a VOC content of less than 10 g/l may display the text 'low VOC content' next to the Ecolabel.

Table 3. VOC and SVOC content limits

Product description (with subcategory denotation according to Directive 2004/CE/42)	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
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	50 ¹ /60 ²
l. Decorative effect coatings	80	50 ¹ /60 ²
Anti-rust paints	80	60

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 1.0g/l, the methods given in ISO 17895. The SVOC content shall be determined using the method given in ISO 11890-2. The markers given in Table 4 shall be used as the basis for delimiting the Gas Chromatography results for SVOC's. In the case of products used both indoors and outdoors the strictest SVOC limit value for indoor paints shall prevail.

Table 4. Marker compounds to be used in the determination of SVOC content

	Polar systems (water-borne coating products)	Non-polar systems (solvent-borne coating products)
SVOC	Diethyl adipate (C ₁₀ H ₁₈ O ₄) to methylpalmitate (C ₁₇ H ₃₄ O ₂)	n-Pentadecane(C ₁₅ H ₃₂) to n-Docosan (C ₂₂ H ₄₆)

Assessment and verification: the applicant shall provide for the VOC content 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 a test report using the method given in ISO 11890-2. The test should be carried out with reference to the markers specified in Table 4.

Criterion 5. Restriction of hazardous substances and mixtures

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 Appendix 1.

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 Appendix 1, 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 of the European Parliament and of the Council¹¹ or Council Directive 67/548/EC¹² 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 (R49)
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

¹¹ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1).

¹² 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).

	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) 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) 1272/2008 (the CLP Regulation) can be found in table 6.

Table 6. Final product classification: CLP versus DSD equivalence

CLP Mixture classification	DSD equivalent
Acutely toxic	T or T+
Specific target organ toxicant	T, T+ or Xn
A respiratory or skin sensitiser	-
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 that apply. The derogations are set out in Appendix 1 and apply to the following substance groups:

- i. In-can preservatives
- ii. Tinting machine preservatives
- iii. Dry film preservatives
- iv. Preservative stabilisers
- v. Drying and anti-skinning agents
- vi. Corrosion inhibitors
- vii. Surfactants
- viii. Silicon resin emulsion in white paints, colourant and tinting bases
- ix. Metals and their compounds

- x. Mineral raw materials including fillers
- xi. Neutralising agents
- xii. Optical brighteners
- xiii. Pigments
- xiv. UV protectors and stabilisers
- xv. Plasticisers
- xvi. Solvents
- xvii. Unreacted monomers
- xviii. 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 and 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 in 5(a)(i) and are present at concentrations of more than 0,010%*

This declaration shall be based on information collected according to the requirements in Appendix 1.

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 self-classified: 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;

(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 Appendix 1. 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) unless there is no commercially available alternative that can provide the same technical function or the product has a significantly higher overall environment performance compared with other products of the same category.

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 Appendix 1 at or above the specified concentration limits. The restrictions on substances in Appendix 1 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 Appendix 1 for each substance and as relevant to specific forms of paint and varnish.*

Criterion 6. Consumer information

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 1m² of wall x liters 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 painter. 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.*

Criterion 7. Information appearing on the EU Ecolabel

Box 2 of the Ecolabel shall, where relevant, contain the following texts:

- Minimised content of hazardous substances
- Reduced content of volatile organic compounds (VOCs) (where VOC content complies with Criteria 4 and is >10.0 g/l)
- Low content of Volatile Organic Compounds (VOCs) (where VOC content is <10.0 g/l)
- Good performance for indoor use (where indoor criteria has been met)
- Good performance for outdoor use (where outdoor criteria has been met)
- 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.*

Appendix 1

Hazardous substance restriction and derogation list

Substance group	Scope of restriction and/or derogation	Concentration limits (where applicable)	Assessment and verification
<p>1. Preservatives added to colourants, binders and the final product</p> <p>The paint formulation shall only contain preservatives that meet the requirements of 1a, 1b and 1c (as applicable), which are authorised under Directive 98/8/EC of the European Parliament and of the Council¹³ and Regulation (EC) No 528/2012 of the European Parliament and of the Council¹⁴ and for which a risk assessment for professional and/or amateur (non-professional) use is provided in the Assessment Report.</p> <p><i>Applicants should consult the most current authorisation list:</i> http://ec.europa.eu/environment/biocides/annexi_and_ia.htm</p> <p>Preservatives for which a dossier has been submitted for evaluation pending a decision on authorisation or non-inclusion may be used in the interim period up until the adoption of the Decision.</p> <p>Preservatives may be used in indoor paints up to a sum total of in-can and dry film preservatives of 0.160 % w/w and in outdoor paints up to a sum total of in-can and dry film preservatives of 0.71 % w/w. The total may only be exceeded for the specified outdoor dry film preservatives.</p>			
<p>(a) In-can preservatives</p> <p><i>Applicability:</i> All products unless specified otherwise</p>	<p>In-can preservatives classified with the following derogated hazard classifications may be used in ecolabelled products:</p> <p><i>Derogated classifications:</i> H331 (R23), H400 (R50), H410 (R50/53), H411 (R51/53), H412 (R52/53), H317 (R43)</p> <p>In-can preservatives classified with these derogated classifications must also meet the following derogation conditions:</p> <ul style="list-style-type: none"> ○ The sum total concentration shall not exceed 0.060% w/w ○ Substances classified with H400 (R50) and/or H410 (R50/53) shall be non-bioaccumulative. Non-bioaccumulative substances shall have a Log Kow ≤ 3.2 or a Bioconcentration Factor (BCF) ≤ 100. ○ Evidence shall be provided that Authorisation conditions under Directive 98/8/EC and Regulation (EC) No 528/2012 are respected for the product. ○ Where preservatives that are formaldehyde donors are used then formaldehyde emissions from the final product must meet the requirements in substance restriction 7(a) <p><i>The following preservatives are subject to additional derogations and limits on their contribution to the sum total of preservatives (in-can and dry film) in the final product:</i></p> <p><i>(i) Isothiazolinone compounds:</i> - Sum total Isothiazolinone compounds in any product</p>	<p><i>In-can preservatives</i> <i>Sum total in the final product:</i> 0.060% w/w</p> <p><i>Sum totals</i> 0.050%</p>	<p><i>Verification:</i> Declaration by the applicant and their binder supplier supported by CAS numbers and classifications for the active ingredients in the final product and its binder.</p> <p>This shall include calculation by the applicant of the concentration of the active ingredient in the final product.</p> <p>In line with the requirements of the Biocide Regulation (EC) No 528/2012 Article 58(3) all manufactured active 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 shall be identified.</p>

¹³ Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market (OJ L 123, 24.4.1998, p. 1).

¹⁴ 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, 27.6.2012, p. 1).

	<p>- 1,2-Benzisothiazol-2(2H)-one : H301 (R25) - 2-Octyl-2H-Isothiazol-3-one: H311 (R24) - 5-chloro-2-methyl-4-isothiazolin-3-one / 2- methyl-4-isothiazolin-3-one : H301 (R24), H311 (R25)</p>	<p>0.050% 0.050% 0.0015%</p>	
(b) Tinting (colourant) machine preservatives	<p>The derogated hazard classifications and derogation conditions listed under 1(a) shall apply also to preservatives used to protect colour tints whilst stored in machines prior to mixing with base paints.</p> <p>Preservatives added to protect tints that will be dispensed from machines shall not exceed a sum total of 0.20% w/w.</p> <p>The following preservatives are subject to specific maximum concentration limits contributing to the sum total of preservatives in the final product:</p> <p>(i) 5-chloro-2-methyl-4-isothiazolin-3-one / 2- methyl-4-isothiazolin-3-one: H301 (R24), H311 (R25) (ii) 3-iodo-2-propynyl butylcarbamate (IPBC)</p>	<p><i>Sum total in the final product:</i> 0.20% w/w</p> <p>0.015% 0.10%</p>	<p><i>Verification:</i> Declaration by the applicant and/or their tint supplier supported by CAS numbers and classifications for the active ingredients in the final product and its binder.</p> <p>This shall include calculation of the concentration of the active ingredient in the final tint product.</p> <p>In line with the requirements of the Biocide Regulation (EC) No 528/2012 Article 58(3) all manufactured active 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. shall be identified.</p>
(c) Dry film preservatives <i>Applicability:</i> Outdoor paints, indoor paints for specific applications	<p>Dry film preservatives and their stabilisers classified with the following derogated hazard classifications may be used in ecolabelled products: <i>Derogated classifications:</i> H400 (R50), H410 (R50/53), H411 (R51/53), H412 (R52/53), H317 (R43) Dry film preservatives classified with these derogated classifications must also meet the following derogation conditions:</p> <ul style="list-style-type: none"> o The sum total concentration shall not exceed 0.10% w.w o Substances classified with H400 (R50) and/or H410 (R50/53) shall be non-bioaccumulative. Non-bioaccumulative substances shall have a Log Kow ≤ 3.2 or a Bioconcentration Factor (BCF) ≤ 100. o Evidence shall be provided that the conditions set out in the Authorisation conditions for preservatives under the Biocide Directive 98/8/EC and the Biocide Regulation (EC) No 528/2012 are being respected. <p>A higher sum total applies to the following dry film preservatives for the specified applications only: (i) 3-iodo-2-propynyl butylcarbamate (IPBC) - Outdoor wood paints and varnishes</p>	<p><i>Dry film preservatives</i> <i>Sum total in the final product:</i> Indoor paints intended for use in rooms with high humidity, including kitchens and bathrooms 0.10% w/w All outdoor paint applications 0.30% w/w</p> <p><i>Outdoor paints sum total for IPBC combinations:</i> 0.650%</p>	<p><i>Verification:</i> Declaration by the applicant and their binder supplier supported by CAS numbers and classifications for the active ingredients in the final product and its binder.</p> <p>This shall include calculation by the applicant of the concentration of the active ingredient in the final product.</p> <p>In line with the requirements of the Biocide Regulation (EC) No 528/2012 Article 58(3) all manufactured active ingredients for which</p>

	Specific concentration limits applies to the following preservatives: (ii) - 2-Octyl-2H-Isothiazol-3-one: H311 (R24) - Outdoor wood paints and varnishes	0.050%	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. shall be identified.
(d) Preservative stabiliser	Zinc oxide is derogated for use in outdoor paints as a stabiliser for dry film preservative combinations that require zinc pyrithione or 1,2 Benzisothiazol-3(2H)-one (BIT).	0.050%	<i>Verification:</i> Declaration by the applicant and their raw material suppliers.
2. Drying and anti-skinning agents			
(a) Driers <i>Applicability:</i> All paints products	<i>Derogated classifications:</i> H301 (R24), H317 (R43), H373 (H48/20-22), H412 (R52/53), H413 (R53) Cobalt driers in alkyd paints, which are additionally classified with H400 (R50) and H410, are derogated for white and light coloured paints only up to the following concentration limit:	Sum total drier content 0.10% w/w Cobalt drier content 0.050%	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.
(b) Anti-skinning agents <i>Applicability:</i> All paints products	<i>Derogated classifications:</i> H412 (R52/53), H413 (R53), H317 (R43)	0.40% w/w	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.
3. Corrosion inhibitors			
(a) Anti corrosion pigments <i>Applicability:</i> Where required	<i>Derogated classifications:</i> H410 (R50/53), H411 (R51/53), H412 (R52/53), H413 (R53) Concentration limits that shall apply: (i) Paints Directive 2004/42/EC classes d,i, j (ii) All other products	8.0% w/w 2.0% w/w	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by SDS.
(b) Verdigris prevention <i>Applicability:</i> Where required	<i>Derogated classifications:</i> H412 (R52/53), H413 (R53)	0.50% w/w	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.
4. Surfactants			
(a) General purpose surfactants	<i>Derogated classifications:</i> H411 (R51/53), H412 (R52/53), H413 (R53) <i>The following sum total values apply to the ready to</i>	Sum total surfactants in the ready to use	<i>Verification:</i> Declaration shall be provided by the applicant, raw material

<p><i>Applicability:</i> Surfactants in colourant and tinting bases, white finishes, dispersing agents and primers.</p>	<p><i>use final product:</i> - White and light coloured products - All other colours</p> <p>The derogation applies to the surfactant formulation supplied to the paint manufacturer. Specific restrictions apply to Alkylphenoethoxylates (APEOs) and Perfluorinated surfactants.</p>	<p>product: 1.0% w/w 3.0% w/w</p>	<p>suppliers and/or their surfactant supplier supported by CAS No's and classifications for the surfactants used.</p>
<p>(b) Alkylphenoethoxylates (APEOs)</p> <p><i>Applicability:</i> Surfactants in colourant and tinting bases, white finishes, dispersing agents and primers.</p>	<p>Alkylphenoethoxylates (APEOs) and their derivatives shall not be used in any paint or varnish preparations or formulations. <i>An indicative list of APEO's and their derivatives is provided in the Blue Angel criteria document RAL-UZ12a¹⁵.</i></p>	n/a	<p><i>Verification:</i> A declaration of non-use shall be provided by the applicant and their raw material suppliers supported by CAS No's and classifications for the surfactants used.</p>
<p>(c) Perfluorinated surfactants</p> <p><i>Applicability:</i> Surfactants in colourant and tinting bases, white finishes, dispersing agents and primers.</p>	<p><i>Long chain perfluorinated surfactants, as specified in the OECD definition below, shall not be used:</i></p> <p>(i) Perfluorocarboxylic acids with carbon chain lengths $\geq C8$, including perfluorooctanoic acid (PFOA); (ii) Perfluoroalkyl sulfonates with carbon chain lengths $\geq C6$, including perfluorohexane sulfonic acid (PFHxS) and perfluorooctane sulfonate (PFOS); and (iii) Precursors of these substances that may be present in the surfactant or as a residue in the paint or varnish product</p> <p>Perfluorinated surfactants may only used in paint that is required to be resistant or repellent to water (see efficiency of use criteria 1b and 1g respectively) and a spreading rate of greater than 8 m²/l (see efficiency of use criteria 1a).</p>	n/a	<p><i>Verification:</i> A declaration of non-use shall be provided by the applicant and their raw material suppliers supported by CAS numbers and identification of chain length for the surfactants used.</p>
<p>5. Miscellaneous functional substances with general application</p>			
<p>(a) Silicon resin emulsion in white paints, colourant and tinting bases</p> <p><i>Applicability:</i> All paints products</p>	<p><i>Derogated classifications:</i> H412 (R52/53), H413 (R53)</p>	2.0% w/w	<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>

¹⁵ The Blue Angel *Basic criteria for award of the environmental label: Low-Emission and Low-Pollutant Paints and Varnishes, RAL-UZ 12a*

<p>(b) Metals and their compounds</p> <p><i>Applicability:</i> All products</p>	<p><i>The following metals or their compounds shall not be present in the product or the ingredients used in the product above the specified cut-off limit:</i> Cadmium, lead, chromium VI, mercury, arsenic, barium, selenium, antimony and cobalt.</p> <p><i>The following derogations apply:</i> - Barium, antimony and cobalt in pigments (see restriction 5(f)) - Cobalt in driers (see restriction 2(a))</p>	<p>0.010% cut-off per listed metal</p>	<p><i>Verification:</i> Declaration by the applicant and their raw material suppliers.</p>
<p>(c) Mineral raw materials including fillers</p> <p><i>Applicability:</i> All paints products</p>	<p><i>Mineral raw materials including crystalline silica and leucophyllite minerals containing crystalline silica are derogated for H373 (R48/20).</i></p> <p>Mineral raw materials containing metals referred to in restriction 5(b) may be used if laboratory testing shows that the metal is bonded within a crystal lattice and is insoluble (see test method applicable).</p> <p><i>The following fillers are derogated on this basis:</i> - Nepheline syenite, containing barium</p>		<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications. Applicants wishing to use binders containing restricted metals shall submit test reports carried out in accordance with the listed standard.</p> <p><i>Test method:</i> DIN 53770-1 or equivalent</p>
<p>(d) Neutralising agents</p> <p><i>Applicability:</i> All paints products unless specified</p>	<p><i>Derogated classifications:</i> H311 (R24), H331 (R23), H400 (R50), H410 (R50/53), H411 (R51/53), H412 (R52/53), H413 (R53)</p> <p><i>The following concentration limits shall apply:</i> - Varnishes and floor lacquers - All other products</p>	<p>1.0% w/w 0.50% w/w</p>	<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>
<p>(e) Optical brighteners</p> <p><i>Applicability:</i> All paints products</p>	<p><i>Derogated classifications:</i> H413 (R53)</p>	<p>0.10% w/w</p>	<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>
<p>(f) Pigments</p> <p><i>Applicability:</i> All products</p>	<p>Pigments containing metals shall only be used where laboratory testing of the pigment shows that the metal chromophore is bonded within a crystal lattice and is insoluble.</p> <p><i>The following metal containing pigments are derogated for use:</i> - Barium sulphate - Antimony nickel within an insoluble TiO₂ lattice</p>	<p>n/a</p>	<p><i>Verification:</i> Test results demonstrating that the pigment chromophore is bonded within a crystal lattice and is insoluble.</p> <p><i>Test method:</i> DIN 53770-1 or</p>

	<ul style="list-style-type: none"> - Cobalt aluminate blue spinel - Cobalt chromite blue-green spinel 		equivalent
6. Miscellaneous functional substances with specialist applications			
(a) UV protectors and stabilising agents for outdoor paints Applicability: <i>Outdoor paints</i>	<i>Derogated classifications:</i> H317 (R43), H411 (R51/53), H412 (R52/53), H413 (R53),	0.60% w/w	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.
(b) Plasticisers in paint and varnish. <i>Applicability:</i> Where included in the formulation	<i>The following phthalates shall not be intentionally added as plasticisers:</i> DEHP (Bis-(2-ethylhexyl)-phthalate) BBP (Butylbenzylphthalate) DBP (Dibutylphthalate) DMEP (Bis(2-methoxyethyl) phthalate) DIBP (Diisobutylphthalate) DIHP (Di-C6-8-branched alkyphthalates) DHNUP (Di-C7-11-branched alkyphthalates) DHP (Di-n-hexylphthalate)	Concentration limit for any individual phthalate: 0.010%	<i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.
7. Residual substances that may be present in the final product			
(a) Formaldehyde <i>Applicability:</i> <i>All products.</i>	Free formaldehyde shall not be intentionally added to the final product. The final product shall be tested in order to determine its free formaldehyde content. The sampling requirements for testing shall reflect the product range. <i>The following sum total limit value shall apply:</i> The following derogations are made from this requirement: (i) Where preservatives that are formaldehyde donors are required as an in-can preservative to protect a specific type of paint or varnish and where the formaldehyde donor is used in the place of isothiazolinone preservatives. (ii) Where polymer dispersions (binders) provide the function of formaldehyde donors instead of in-can preservatives. <i>In these cases the sum total shall not exceed the following limit value:</i>	0.0010% 0.010%	<i>Verification:</i> The free formaldehyde content shall be determined for the white base, each transparent tinting base and the colour tint which is predicted to contain the highest theoretical amount of formaldehyde. <i>Test method:</i> 0.0010% limit value: Determination of the in-can concentration using the Merckoquant method. If the outcome is not definitive according to this method then high-performance liquid chromatography (HPLC) shall be used to confirm the in-can concentration. 0.010% limit value: (1) All paints: Determination of the in-can formaldehyde concentration by means of analysis using VdL-RL 03 or high-performance liquid chromatography (HPLC).

			<p><i>and</i></p> <p>(2) Indoor paints and varnishes: Determination by means of analysis according to ISO 16000-3. Emissions must not exceed 0.25 ppm upon first application and they must be less than 0.05 ppm after 24 hours from the first application.</p>
<p>(b) Solvents</p> <p><i>Applicability:</i> All products.</p>	<p><i>Derogated classifications:</i> H304 (R65)</p>	2.0% w/w	<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>
<p>(c) Unreacted monomers</p> <p><i>Applicability:</i> To be specified</p>	<p>Unreacted monomers present from binders including acrylic acid may be present in the final product up to a sum total limit.</p>	0.050% w/w	<p><i>Verification:</i> Declaration shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>
<p>(d) Volatile Aromatic Hydrocarbons and halogenated solvents</p>	<p>Volatile Aromatic Hydrocarbons and halogenated solvents shall not be present in the final product.</p>	n/a	<p><i>Verification:</i> A declaration of non-use shall be provided by the applicant and their raw material suppliers supported by CAS numbers and classifications.</p>