

## Wall Panels – Green Public Procurement Product Sheet

Green Public Procurement (GPP) is a voluntary instrument. This Product Sheet provides a summary of the GPP criteria developed for the Wall Panels product group. The Background Report provides full details on the reasons for selecting these criteria and references for further information. The format for the purchasing recommendations comes in the form of two sets of criteria:

- The **core criteria** are those suitable for use by any contracting authority across the Member States and address the key environmental impacts for the product in question. They are designed to be used with minimum additional verification effort or cost increases.
- The **comprehensive criteria** are for those procurers wishing to purchase the best products available on the market. These may require additional verification effort or a slight increase in cost compared to other products with the same functionality.

Within the core and comprehensive criteria, the guidance follows the various stages of a public procurement procedure and explains how best to integrate environmental criteria at each stage:

- **Subject matter.** It means the title of the tender, i.e. a short description of the product, works or service to be procured.
- **Technical Specifications.** Provide a clear, accurate and full description of the requirement and standard to which goods, works or services should conform. Description of the minimal technical specifications which all bids need to comply with. Set specific environmental criteria, including hurdles and levels that need to be met for specific products.
- **Selection Criteria.** It is based in the capacity / ability of the bidders to perform the contract. Assist in the identification of appropriate suppliers, for example to ensure adequately trained personnel or relevant environmental policies and procedures are in place.
- **Award Criteria.** The award criteria on the basis of which the contracting authority will compare the offers and base its award. Award criteria are not pass/fail criteria, meaning that offers of products that don't comply with the criteria may still be considered for the final decision, depending on their score on the other award criteria.
- **Contract Performance Clause.** Specify the conditions that must be met in the execution of the contract, for example as to how the goods or services are to be supplied, including information or instructions on the products to be provided by the supplier.

It should be noted that the contractor is bound by the existing legal framework.

Where the verification for the criteria states that other appropriate means of proof can be used, this could include a technical dossier from the manufacturer, a test report from a recognised body, or other relevant evidence. The contracting authority will have to satisfy itself on a case by case basis, from a technical/legal perspective, whether the submitted proof can be considered appropriate.

### 1. Definition and Scope

For the purpose of these Green Public Procurement criteria wall panels are defined as boards that are used in vertical or angled placement (for example in loft conversions) in a building, where the panel itself is not load bearing and its surface is not the final surface seen in the finished building, i.e. it will be plastered, skimmed, painted, papered etc.

Two distinct material types of wall panels have been focused on, as together these materials represent practically the whole wall panel market. These are gypsum plasterboard and wood-based boards. The two materials have been dealt with as separate entities as although their use overlaps, the material content does not and neither do many of the standards they must adhere to.

There are several Ecolabels and standards that exist for wall panels. Some cover both materials, such as the Nordic Swan for Wall Panels, the Australian Good Environmental Choice label, while others cover only one of the materials such as the German Blue Angel for Composite Wood Panels, Canadian Ecolabel for gypsum plasterboards, or the Japanese Ecomark for wood based boards.

Most wall panel products are covered by the Construction Products Directive, and construction products covered by the CPD have to be CE marked. CE marking is accompanied by specific technical information about specific performance of these products.

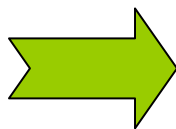
## 2. Key Environmental Impacts

The key impacts of wall panels arise from the energy consumed during manufacture, natural resource consumption occurring due to manufacture, and disposal impacts when products reach the end of their useful life, as well as waste arising during installation.

The area with the largest opportunity for an impact is the waste minimisation and recycling options and diversion from landfill. Thus many of the specifications focus on this aspect.

In addition the off-gassing of binding agents from wood panels during the use phase, i.e. when the panels are installed, has an affect on the internal environment of a building, even if the off-gassing itself is not considered to be an environmental impacts itself.

Key Environmental Impacts	GPP Approach
<ul style="list-style-type: none"> <li>• Impact of the materials used to create the wall panels– resource consumption.</li> <li>• Impact of materials and substances used in production and subsequently released in use</li> <li>• Impact of the energy used at the various stages of manufacturing the wall panels.</li> <li>• Impact of waste, as the wall panels and their waste off-cuts are disposed of at end of life.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote good site management of materials (avoid damage to and waste of materials).</li> <li>• Encourage the purchase of gypsum wall panels using synthetic gypsum and recycled gypsum.</li> <li>• Reduce the use of certain chemical compounds.</li> <li>• Minimise the use of energy in manufacture where possible.</li> <li>• Promote the use of environmentally sound materials.</li> <li>• Encourage the purchase of wood – based boards that use sustainable wood materials.</li> <li>• Promote recycling schemes for construction and demolition waste.</li> </ul>



Please note that the order of impacts does not necessarily translate to the order of their importance.

### 3. GPP Criteria for Gypsum Plasterboard Wall Panels

#### 3.1. Core GPP Criteria for Gypsum Plasterboard Wall Panels

<b>SUBJECT MATTER</b>
Purchase of environmentally sound wall panels.
<b>TECHNICAL SPECIFICATIONS</b>
<p>1. Paper used in the manufacture of gypsum panels must be either from:</p> <ol style="list-style-type: none"> <li>a. 100% recycled wood/paper, and/or</li> <li>b. Paper made of wood, wood fibres or wood particles stemming from legally harvested forests.</li> </ol> <p><b>Verification a:</b> Provision of appropriate documentation verifying that the paper or wood used is 100% recycled, i.e. from a national or EU certification scheme.</p> <p><b>Verification b:</b> The legal origin of timber/wood fibres can be demonstrated with a chain-of-custody tracing system being in place. These voluntary systems may be 3<sup>rd</sup>-party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system.</p> <p>Certificates of chain of custody for timber/wood fibres certified as FSC<sup>[2]</sup>, PEFC<sup>[3]</sup> or any other equivalent means of proof will also be accepted as proof of compliance. If timber/wood fibre stems from a country that has signed a Voluntary Partnership Agreement (VPA) with the EU, the FLEGT license may serve as proof of legality<sup>[4]</sup>. Other means of proof that will be accepted includes a relevant and valid CITES certificate or other equivalent and verifiable means such as the application of a "due diligence" system. For the non-certified virgin material bidders shall indicate the types (species), quantities and origins of the timber/wood fibres, together with a declaration of their legality. As such the timber/wood fibres shall be able to be traced throughout the whole production chain from the forest to the product.</p>
<p>2. The gypsum content must be at least 2% recycled gypsum board (by weight, based on an annual average, not including gypsum taken from FGD sites). Where higher percentages are possible these should be selected in preference.</p> <p><b>Verification:</b> Appropriate proof must be provided that this criterion is met. For example, the supply of quality control or production documentation.</p>

<sup>2)</sup> FSC (Forest Stewardship Council): <http://www.fsc.org/en>

<sup>3)</sup> PEFC (Programme for the Endorsement of Forest Certification): <http://www.pefc.org/internet/html>

<sup>4)</sup> The FLEGT (Forest Law Enforcement Governance and Trade) action plan was adopted by the EU in 2003. The Action Plan outlines a series of measures to address illegal logging in developing countries. The Plan defines a timber licensing system to guarantee the legality of imported wood products. In order to obtain the license, Voluntary Partnership Agreements (VPAs) have to be signed between timber-producing countries and the EU. Timber products, which have been legally produced in VPA partner countries, will be licensed for the legality of production; more information at: <http://ec.europa.eu/environment/forests/flegt.htm>

<b>AWARD CRITERIA</b>	
<b>Additional points will be awarded:</b>	
1.	<p>In proportion to the increased percentage of recycled gypsum in the purchased plasterboard.</p> <p><b>Verification:</b> Appropriate proof must be provided that this criterion is met. For example through the provision of documentation covering proof of recycled input.</p>
2.	<p>Paper used in the manufacture of gypsum panels is made from wood, wood fibres or wood particles stemming from forests that are verified as being sustainably managed so as to implement the principles and measures aimed at ensuring sustainable forest management, on condition that these criteria characterize and are relevant for the product.</p> <p>In Europe, these principles and measures shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2 to 4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).</p> <p><b>Verification:</b> Acceptable proof of sustainable harvest for timber may be provided for by means of a tracing system being in place. These voluntary systems may be 3<sup>rd</sup> party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system. Certificates of chain of custody for the wood fibres certified as FSC, PEFC or any other equivalent means of proof, will also be accepted as proof of compliance.</p>

<b>CONTRACT PERFORMANCE CLAUSES</b>	
1.	<p>Information on wall panel covering materials, such as paint types, that will not hinder the recycling or diversion of gypsum plasterboard at end-of-life must be made available.</p> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.</p>
2.	<p>Appropriate and acceptable user information describing the handling, installation procedures, surface treatment applications, recycling and/or disposal methods shall be provided with the product or on the packaging or labels.</p> <p><b>Verification:</b> Compliance with these requirements shall be demonstrated by providing examples of labels, packaging and point of sale information. Other appropriate means of proof will also be accepted.</p>
3.	<p>The bidder must demonstrate that the contractor installing the wall panels has in place effective policies and procedures to ensure that waste arising from the installation, i.e. off cuts, trimming losses, damaged boards etc. is properly dealt with in a sustainable manner, such as recovery, recycling or diverting from landfill where possible through an appropriate collection scheme.</p> <p><b>Verification:</b> Possible means of proof include EMAS and ISO 14001 certificates or equivalent certificates issued by bodies conforming to Community law or the relevant European or international standards concerning certification based on environmental management standards. Other appropriate means of proof will also be accepted.</p>

## Comprehensive GPP Criteria for Gypsum Plasterboard Wall Panels

### SUBJECT MATTER

Purchase of environmentally sound wall panels.

### TECHNICAL SPECIFICATIONS

1. Paper used in the manufacture of gypsum panels must be either from:
  - a. 100% recycled wood/paper, and/or
  - b. Paper made of wood, wood fibres or wood particles stemming from legally harvested forests.

**Verification a:** Provision of appropriate documentation verifying that the paper or wood used is 100% recycled, i.e. from a national or EU certification scheme.

**Verification b:** The legal origin of timber/wood fibres can be demonstrated with a chain-of-custody tracing system being in place. These voluntary systems may be 3<sup>rd</sup>-party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system.

Certificates of chain of custody for timber/wood fibres certified as FSC<sup>[2]</sup>, PEFC<sup>[3]</sup> or any other equivalent means of proof will also be accepted as proof of compliance. If timber/wood fibre stems from a country that has signed a Voluntary Partnership Agreement (VPA) with the EU, the FLEGT license may serve as proof of legality<sup>[4]</sup>. Other means of proof that will be accepted includes a relevant and valid CITES certificate or other equivalent and verifiable means such as the application of a "due diligence" system. For the non-certified virgin material bidders shall indicate the types (species), quantities and origins of the timber/wood fibres, together with a declaration of their legality. As such the timber/wood fibres shall be able to be traced throughout the whole production chain from the forest to the product.

2. The gypsum content must be at least 5% recycled gypsum board (by weight, based on an annual average, not including gypsum taken from FGD sites). Where higher percentages are possible these should be selected in preference.

**Verification:** Appropriate proof must be provided that this criterion is met. For example, the supply of quality control or production documentation.

3. Where panels contain potentially radioactive material (e.g. from slag products, ash from coal fires, phosphogypsum) it must be demonstrated that the gamma index (my) or the activity index (I1) is less than 1.

Radioactive substances in the panel material are expressed as gamma index/activity index in accordance with:

$$CK/3000 + CRa/300 + CTh/200 < 1.0$$

The radium index must not exceed:  $CRa/100 = 1.0$

In the above mentioned formula CK, CRa and CTh signifies respectively the concentration of Potassium-40, Radium-226 and Thorium-232, expressed in bequerel

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<sup>4)</sup> The FLEGT (Forest Law Enforcement Governance and Trade) action plan was adopted by the EU in 2003. The Action Plan outlines a series of measures to address illegal logging in developing countries. The Plan defines a timber licensing system to guarantee the legality of imported wood products. In order to obtain the license, Voluntary Partnership Agreements (VPAs) have to be signed between timber-producing countries and the EU. Timber products, which have been legally produced in VPA partner countries, will be licensed for the legality of production; more information at: <http://ec.europa.eu/environment/forests/flegt.htm>

<p>per kilogram (Bq/kg) of the material. 1% Potassium is equivalent to 310 Bq/kg Potassium-40, 1 ppm Uranium is equivalent to 12.3 Bq/kg of Radium-226 and 1 ppm Thorium with 4.0 Bq/kg of Thorium-232.</p> <p><b>Verification:</b> The bidder must provide appropriate proof that this criterion is met. For example, an independent laboratory testing report or any other appropriate proof will also be accepted.</p>
<p>4. Gypsum plasterboard shall not contain, as a final product, any chemical product classified as:</p> <ul style="list-style-type: none"> <li>• carcinogenic (R40, R45, R49)</li> <li>• mutagenic (R46, R68)</li> <li>• harmful or toxic to the reproductive system (R60, R61, R62, R63)</li> <li>• toxic (R23, R24, R25, R26, R27, R28).</li> </ul> <p>Regulation (EC) No 1272/2008, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, gives the following H-phrases which relate to the above R-phrases. The final product will not release or leach out any substances or preparations that are classified with the listed H-phrases, below under normal usage conditions:</p> <ul style="list-style-type: none"> <li>• carcinogenic (Carcinogenic 1A, 1B and 2: H350, H350i, H351)</li> <li>• mutagenic and cause heritable genetic damage (Mutagenic 1B and 2: H340 and H341)</li> <li>• harmful to the reproductive system (Reproductive 1A, 1B and 2: H360F, H360D, H361f, H361d, H360FD, H361fd, H360Fd, and H360Df)</li> <li>• toxic (Acute Toxicity 1, 2 and 3: H330, H331, H311, H301, H310, H300, Aquatic Chronic 2: H412)</li> </ul> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report or material safety data sheets.</p>
<p>5. Gypsum plasterboard must not be impregnated, labelled, coated or otherwise treated in a manner which would prevent recycling and / or composting in Europe.</p> <p><b>Verification:</b> The bidder must provide appropriate proof that this criterion is met. For example, relevant test certificates and information sheets or any other appropriate proof will also be accepted.</p>

<p><b>AWARD CRITERIA</b>  <b>Additional points will be awarded for:</b></p>
<p>1. In proportion to the increased percentage of post consumer recycled gypsum in the purchased plasterboard.</p> <p>OR</p> <p>In proportion to the increased percentage of post consumer recycled gypsum diverted from the manufacturers take back scheme to a composting facility or is used in cement manufacture or equivalent approved diversion method.</p> <p><b>Verification:</b> Appropriate proof must be provided that this criterion is met. For example through the provision of documentation covering proof of recycled input.</p>
<p>2. Paper used in the manufacture of gypsum panels is made from wood, wood fibres or wood particles stemming from forests that are verified as being sustainably managed</p>

so as to implement the principles and measures aimed at ensuring sustainable forest management, on condition that these criteria characterize and are relevant for the product.

In Europe, these principles and measures shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2 to 4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).

**Verification:** Acceptable proof of sustainable harvest for timber may be provided for by means of a tracing system being in place. These voluntary systems may be 3<sup>rd</sup> party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system. Certificates of chain of custody for the wood fibres certified as FSC, PEFC or any other equivalent means of proof, will also be accepted as proof of compliance.

#### CONTRACT PERFORMANCE CLAUSES

1. Information on wall panel covering materials, such as paint types, that will not hinder the recycling or diversion of gypsum plasterboard at end-of-life must be made available.

**Verification:** Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.

2. Appropriate and acceptable user information describing the handling, installation procedures, surface treatment applications, recycling and/or disposal methods shall be provided with the product or on the packaging or labels.

**Verification:** Compliance with these requirements shall be demonstrated by providing examples of labels, packaging and point of sale information. Other appropriate means of proof will also be accepted.

3. The bidder must demonstrate that the contractor installing the wall panels has in place effective policies and procedures to ensure that waste arising from the installation, i.e. off cuts, trimming losses, damaged boards etc. is properly dealt with in a sustainable manner, such as recovery, recycling or diverting from landfill where possible through an appropriate collection scheme.

**Verification:** Possible means of proof include EMAS and ISO 14001 certificates or equivalent certificates issued by bodies conforming to Community law or the relevant European or international standards concerning certification based on environmental management standards. Other appropriate means of proof will also be accepted.

### 3.2. Explanatory notes

The contracting authority shall have regard to local circumstances and evaluate whether specialised board may be necessary – for example boards with increased moisture resistance.

Production of gypsum plasterboard must meet the European, national and regional regulations and standards for the emissions to air from the manufacturing process, especially dust and sulphur dioxide and water discharges including suspended solids and chemical oxygen demand, COD.

The contracting authority may wish to include a contract performance clause to ensure that levels of waste plasterboard (from off-cuts and damaged boards from weather conditions, incorrect storage, etc) are kept to a minimum.

**Award criteria**

Contracting authorities will have to indicate in the contract notice and tender documents how many additional points will be awarded for each award criterion. Environmental award criteria should, altogether, account for at least 10 to 15% of the total points available.

**Packaging:**

Article 3 of the Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, defines packaging as being:

All products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. 'Non-returnable' items used for the same purposes shall also be considered to constitute packaging.

The extent to which packaging is an important environmental consideration for a product depends on a number of variables including product lifetime and packaging material. For example, for a short lived product, packaging is more likely to be important than it is for a long lived product. Similarly, packaging is less likely to be significant in life cycle terms for an energy using product.

Where the contracting authority views packaging as a significant issue they may wish to seek information from potential suppliers to confirm they have taken into account the environmental impact of their packaging option and that the supplier is consistent with the contracting authority's policies.

**4. GPP Criteria for Wood-Based Wall Panels**

**4.1. Core GPP Criteria for Wood-Based Wall Panels**

<b>SUBJECT MATTER</b>
Purchase of environmentally sound wall panels.
<b>TECHNICAL SPECIFICATIONS</b>
<p>1. Virgin wood material used shall come from legal sources.</p> <p><b>Verification:</b> The legal origin of timber/wood fibres can be demonstrated with a chain-of-custody tracing system being in place. These voluntary systems may be 3<sup>rd</sup>-party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system.</p> <p>Certificates of chain of custody for timber/wood fibres certified as FSC<sup>[2]</sup>, PEFC<sup>[3]</sup> or any other equivalent means of proof will also be accepted as proof of compliance. If timber/wood fibre stems from a country that has signed a Voluntary Partnership Agreement (VPA) with the EU, the FLEGT license may serve as proof of legality<sup>[4]</sup>.</p>

<sup>2)</sup> FSC (Forest Stewardship Council): <http://www.fsc.org/en>

<sup>3)</sup> PEFC (Programme for the Endorsement of Forest Certification): <http://www.pefc.org/internet/html>

<sup>4)</sup> The FLEGT (Forest Law Enforcement Governance and Trade) action plan was adopted by the EU in 2003. The Action Plan outlines a series of measures to address illegal logging in developing countries. The Plan defines a timber licensing system to guarantee the legality of imported wood products. In order to obtain the license, Voluntary Partnership Agreements (VPAs) have to be



<p>Other means of proof that will be accepted includes a relevant and valid CITES certificate or other equivalent and verifiable means such as the application of a "due diligence" system. For the non-certified virgin material bidders shall indicate the types (species), quantities and origins of the timber/wood fibres, together with a declaration of their legality. As such the timber/wood fibres shall be able to be traced throughout the whole production chain from the forest to the product.</p>
<p>2. Wood panels that use formaldehyde-containing binding agents shall not exceed the emission limit of the E1 standard for formaldehyde following EN13986, 0.13 mg / m<sup>3</sup> of air (or 0.1ppm). This includes coated boards and pre-coating.<sup>1</sup></p> <p><b>Verification:</b> The bidder must provide appropriate proof that this criterion is met. For example, an independent laboratory test report or any other appropriate proof will also be accepted.</p>

<p><b>AWARD CRITERIA</b>  <b>Additional points will be awarded for:</b></p>
<p>1. The proportion (%) of timber that is recycled or reused timber. The greater this percentage the greater the level of award points offered.</p> <p><b>Verification:</b> Bidders must provide a signed declaration indicating the level of this criterion the products are able to meet. Other appropriate means of proof will also be accepted.</p>
<p>2. The final product made of wood, wood fibres or wood particles stemming from forests that are verified as being sustainably managed so as to implement the principles and measures aimed at ensuring sustainable forest management, on condition that these criteria characterize and are relevant for the product.</p> <p>In Europe, these principles and measures shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2 to 4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).</p> <p><b>Verification:</b> Acceptable proof of sustainable harvest for timber may be provided for by means of a tracing system being in place. These voluntary systems may be 3<sup>rd</sup> party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system. Certificates of chain of custody for the wood fibres certified as FSC, PEFC or any other equivalent means of proof, will also be accepted as proof of compliance.</p>

<p><b>CONTRACT PERFORMANCE CLAUSES</b></p>
<p>1. Information on wall panel covering materials, such as paint types, that will not hinder the recycling or diversion of wood based panel boards at end-of-life must be made</p>

signed between timber-producing countries and the EU. Timber products, which have been legally produced in VPA partner countries, will be licensed for the legality of production; more information at: <http://ec.europa.eu/environment/forests/flegt.htm>

<sup>1</sup> The standard EN 13986 refers to CE marking for wood based panel products in construction. The test requirements for formaldehyde class E1 is listed in Annex B of the Standard. Class E1 stipulates 8 mg or less of formaldehyde per 100 g oven dry board for unfaced particleboard, OSB, and MDF under test method EN 120. It stipulates 3.5mg/m<sup>2</sup>h or less of formaldehyde release for all other panel products under test method EN 717-2.

<p>available.</p> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.</p>
<p>2. Appropriate and acceptable user information describing the handling, installation procedures, surface treatment applications, recycling and/or disposal methods shall be provided with the product or on the packaging or labels.</p> <p><b>Verification:</b> Compliance with these requirements shall be demonstrated by providing examples of labels, packaging and point of sale information. Other appropriate means of proof will also be accepted.</p>
<p>3. The bidder must demonstrate that the contractor installing the wall panels has in place effective policies and procedures to ensure that installation waste is properly dealt with in a sustainable manner, such as recycling or diverting from landfill where possible.</p> <p><b>Verification:</b> Possible means of proof include EMAS and ISO 14001 certificates or equivalent certificates issued by bodies conforming to Community law or the relevant European or international standards concerning certification based on environmental management standards. Other appropriate means of proof will also be accepted.</p>

#### 4.2. Comprehensive GPP Criteria for Wood-Based Wall Panels

<b>SUBJECT MATTER</b>
Purchase of environmentally sound wall panels.

<b>TECHNICAL SPECIFICATIONS</b>
<p>1. Virgin wood material used shall come from legal sources.</p> <p><b>Verification:</b> The legal origin of timber/wood fibres can be demonstrated with a chain-of-custody tracing system being in place. These voluntary systems may be 3<sup>rd</sup>-party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system.</p> <p>Certificates of chain of custody for timber/wood fibres certified as FSC<sup>[2]</sup>, PEFC<sup>[3]</sup> or any other equivalent means of proof will also be accepted as proof of compliance. If timber/wood fibre stems from a country that has signed a Voluntary Partnership Agreement (VPA) with the EU, the FLEGT license may serve as proof of legality<sup>[4]</sup>. Other means of proof that will be accepted includes a relevant and valid CITES certificate or other equivalent and verifiable means such as the application of a "due diligence" system. For the non-certified virgin material bidders shall indicate the types (species), quantities and origins of the timber/wood fibres, together with a declaration</p>

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<sup>3)</sup> PEFC (Programme for the Endorsement of Forest Certification): <http://www.pefc.org/internet/html>

<sup>4)</sup> The FLEGT (Forest Law Enforcement Governance and Trade) action plan was adopted by the EU in 2003. The Action Plan outlines a series of measures to address illegal logging in developing countries. The Plan defines a timber licensing system to guarantee the legality of imported wood products. In order to obtain the license, Voluntary Partnership Agreements (VPAs) have to be signed between timber-producing countries and the EU. Timber products, which have been legally produced in VPA partner countries, will be licensed for the legality of production; more information at: <http://ec.europa.eu/environment/forests/flegt.htm>

<p>of their legality. As such the timber/wood fibres shall be able to be traced throughout the whole production chain from the forest to the product.</p>
<p>2. Wood panels that use formaldehyde-containing binding agents shall be better than the E1 standard for formaldehyde following EN13986. This includes coated boards and pre-coating.</p> <p><b>Verification:</b> The bidder must provide appropriate proof that this criterion is met. For example, an independent laboratory test report or any other appropriate proof will also be accepted.</p>
<p>3. The content of free formaldehyde in glues for plywood panels or laminated wood panels may be up to 0.5% w/w.</p> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report.</p>
<p>4. Composite wood panels including phenol-containing binding agents must not exceed a phenol concentration of 14µg/m<sup>3</sup> in the test room.</p> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report.</p>
<p>5. Composite wood panels containing PMDI-based binding agents (Polymeric Methylene Diphenyl Diisocyanate) must not emit more than 1µg/m<sup>3</sup> (detectable) of the monomer MDI.</p> <p><b>Verification:</b> Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report.</p>
<p>6. The final product shall not contain chemical products classified as:</p> <ul style="list-style-type: none"> <li>• carcinogenic (R40, R45, R49)</li> <li>• mutagenic (R46, R68)</li> <li>• harmful or toxic to the reproductive system (R60, R61, R62, R63)</li> <li>• toxic (R23, R24, R25, R26, R27, R28).</li> </ul> <p>Regulation (EC) No 1272/2008, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, gives the following H-phrases which relate to the above R-phrases. The final window product will not release or leach out any substances or preparations that are classified with the listed H-phrases, below under normal usage conditions:</p> <ul style="list-style-type: none"> <li>• carcinogenic (Carcinogenic 1A, 1B and 2: H350, H350i, H351)</li> <li>• mutagenic and cause heritable genetic damage (Mutagenic 1B and 2: H340 and H341)</li> <li>• harmful to the reproductive system (Reproductive 1A, 1B and 2: H360F, H360D, H361f, H361d, H360FD, H361fd, H360Fd, and H360Df)</li> <li>• toxic (Acute Toxicity 1, 2 and 3: H330, H331, H311, H301, H310, H300, Aquatic Chronic 2: H412)</li> </ul> <p>Nevertheless, the content of formaldehyde shall not exceed the E1 standard for formaldehyde following EN13986, 0.065 mg / m<sup>3</sup> of air (or 0.05ppm). Where a panel contains pMDI the emissions must not emit more than 1µg/m<sup>3</sup> (detectable) of the monomer MDI.</p>

**Verification:** Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report or material safety data sheets.

**AWARD CRITERIA**

**Additional points will be awarded for:**

1. The proportion (%) of timber that is recycled or reused timber. The greater this percentage the greater the level of award points offered.

**Verification:** Bidders must provide a signed declaration indicating the level of this criterion their products are able to meet. Other appropriate means of proof will also be accepted.

2. The final product made of wood, wood fibres or wood particles stemming from forests that are verified as being sustainably managed so as to implement the principles and measures aimed at ensuring sustainable forest management, on condition that these criteria characterize and are relevant for the product.

In Europe, these principles and measures shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2 to 4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).

**Verification:** Acceptable proof of sustainable harvest for timber may be provided for by means of a tracing system being in place. These voluntary systems may be 3<sup>rd</sup> party certified, often as part of ISO 9000 and/or ISO 14000 or EMAS management system. Certificates of chain of custody for the wood fibres certified as FSC, PEFC or any other equivalent means of proof, will also be accepted as proof of compliance.

**CONTRACT PERFORMANCE CLAUSES**

1. Information on wall panel covering materials, such as paint types, that will not hinder the recycling or diversion of wood based panel boards at end-of-life must be made available.

**Verification:** Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.

2. Appropriate and acceptable user information describing the handling, installation procedures, surface treatment applications, recycling and/or disposal methods shall be provided with the product or on the packaging or labels.

**Verification:** Compliance with these requirements shall be demonstrated by providing examples of labels, packaging and point of sale information. Other appropriate means of proof will also be accepted.

3. The bidder must demonstrate that the contractor installing the wall panels has in place

effective policies and procedures to ensure that installation waste is properly dealt with in a sustainable manner, such as recycling or diverting from landfill where possible.

**Verification:** Possible means of proof include EMAS and ISO 14001 certificates or equivalent certificates issued by bodies conforming to Community law or the relevant European or international standards concerning certification based on environmental management standards. Other appropriate means of proof will also be accepted, such as an independent laboratory testing report.

### 4.3. Explanatory notes

The contracting authority shall have regard to local circumstances and evaluate whether specialised board may be necessary – for example boards with increased moisture resistance.

The room in which the boards are installed should meet the European, national and regional indoor air quality requirements.

The contracting authority may wish to include a contract performance clause to ensure that levels of waste plasterboard (from off-cuts and damaged boards from weather conditions, incorrect storage, etc) are kept to a minimum.

#### **Award criteria**

Contracting authorities will have to indicate in the contract notice and tender documents how many additional points will be awarded for each award criterion. Environmental award criteria should, altogether, account for at least 10 to 15% of the total points available.

#### **Packaging:**

Article 3 of the Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, defines packaging as being:

All products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. 'Non-returnable' items used for the same purposes shall also be considered to constitute packaging.

The extent to which packaging is an important environmental consideration for a product depends on a number of variables including product lifetime and packaging material. For example, for a short lived product, packaging is more likely to be important than it is for a long lived product. Similarly, packaging is less likely to be significant in life cycle terms for an energy using product.

Where the contracting authority views packaging as a significant issue they may wish to seek information from potential suppliers to confirm they have taken into account the environmental impact of their packaging option and that the supplier is consistent with the contracting authority's policies.

## 5. Cost Considerations

Internal walls are a standard component of most buildings, certainly those used as homes or work places. Wall panels were traditionally considered to be high bulk, low value products where the low value ascribed to the materials resulted in considerable damage and wastage, and consequently over-ordering was performed deliberately.

The raw materials required for both types of boards are generally low cost but product prices will be affected by rising energy costs and competition for raw material in the case of wood.

The availability of the cheaper FGD gypsum, a by-product from the energy sector that needs to be disposed ensures the cost of gypsum remains stable at these low prices. The three main producers of plasterboard in Europe all use FGD gypsum in their manufacturing process,<sup>2</sup> but levels of consumption are undisclosed due to competition rules.

As discussed in section 4.1.1 of the Technical Background Report, FGD gypsum is incorporated into gypsum products as standard practice. No distinction between gypsum sources is made, and correspondingly no distinction between the environmental credentials of specific products is made, although there is much reference to including recycled gypsum which often means FGD gypsum. It is therefore not currently possible to differentiate plasterboard products by price with a potentially improved environmental profile due to their recycled content. As discussed above FGD gypsum has a high purity, so can be combined with lower purity natural gypsum that otherwise could not be used.

The primary sources of raw material for wood based panels are small forest round-wood (that is wood too small for use as timber), sawmill products and post-consumer and post-industrial reclaimed wood.<sup>3</sup> Raw material costs are affected by fluctuations in European and world market demand for timber, often affected by demand for timber for construction and severe weather events. The increasing popularity of using virgin wood to generate energy concerns the panel sector, as it represents a potential threat to wood supplies and costs.

Where buildings are not able to use the industry standard board sizes it is possible to purchase speciality sizes of boards as part of a bespoke service. As is to be expected this will cost more than the standard service, and will have a minimum order quantity which may be considerable.

Over the lifetime of the boards they will undergo wear and tear through the rooms being used and may need resurfacing from time-to time. It is likely that this can be achieved by a skim coat of plaster or heavy duty paper on either type of board when a building is refurbished, rather than a replacement internal wall or replacement wall panels.

At disposal stage, either during installation or end of life, increasing landfill costs and restrictions throughout the European Union will result in increased disposal costs. These increased costs are most likely to be passed onto the end purchasers of the buildings through the overall contractual construction costs, rather than being totally borne by the construction companies themselves.

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<sup>2</sup> Characterisation of Mineral Wastes, Resources and Processing technologies – Integrated waste management for the production of construction material, WRT 177 / WR0115, Case Study: Flue gas desulphurisation (FGD) gypsum in plasterboard manufacture, Dr Andrew M Dunster BRE, [http://www.smartwaste.co.uk/filelibrary/Plasterboard\\_FGD\\_gypsum.pdf](http://www.smartwaste.co.uk/filelibrary/Plasterboard_FGD_gypsum.pdf)

<sup>3</sup> All Party Parliamentary Group for the Wood Panel Industry, UK, <http://www.appgwoodpanelindustry.co.uk/>

## 6. Relevant EU legislation and information sources

### 6.1. EU Legislation

- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31989L0106:EN:HTML>
- Council Directive 93/68/EEC amending many Directives including 89/106/EEC (construction products)  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993L0068:EN:HTML>
- Council Landfill Directive 1999/31/EC encourages waste minimisation, recycling and recovery of waste.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0031:EN:HTML>
- Council Directive 2003/87/EC establishing the ETS for Green House gas emission allowance trading.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:275:0032:0046:en:PDF>  
[http://ec.europa.eu/environment/climat/emission/pdf/ets\\_revision\\_proposal.pdf](http://ec.europa.eu/environment/climat/emission/pdf/ets_revision_proposal.pdf)
- REACH Regulation 1907/2006 ensuring the Registration, Evaluation, Authorisation and Restriction of Chemical substances.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:396:0001:0849:EN:PDF>
- Management of Waste from Extractive Industries (MWEI ) 2006/21/EC  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:102:0015:0033:EN:PDF>
- The Classification, Packaging and Labelling of Dangerous Substances Directive 67/548/EEC  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31967L0548:EN:HTML>
- The CLP Regulation (EC) No 1272/2008. The Regulation of 16 December 2008 on classification, labelling and packaging of substances and mixtures  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:en:PDF>
- Council Directive 94/62/EC to reduce packaging and packaging waste.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31994L0062:EN:HTML>
- Commission Decision (97/129/EC) of 28 January 1997 establishing the identification system for packaging materials pursuant to European Parliament and Council Directive 94/62/EC on packaging and waste packaging  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997D0129:EN:HTML>
- Directive amending Directive 94/62/EC on packaging and packaging waste 2004/12/EC  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:047:0026:0031:EN:PDF>
- Waste Framework Directive 2008/98/EC  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:312:0003:0030:EN:PDF>
- Directive on the indication by labelling and standard product information of the consumption of energy and other resources by energy related products 2010/30/EU

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0001:0012:EN:PDF>

- Energy Performance of Buildings Directive (EPBD) 2010/31/EU  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0013:0035:EN:PDF>

## **6.2. Ecolabels and other Criteria Sources**

- German Blue Angel  
[http://www.blauer-engel.de/en/blauer\\_engel/index.php](http://www.blauer-engel.de/en/blauer_engel/index.php)
- Nordic Swan  
Panels for the building, decorating and furniture industry, Version 4.3, 19 March 2003 – 31 March 2010. <http://www.svanen.nu/>
- The New Zealand Ecolabelling Trust  
<http://www.enviro-choice.org.nz/specifications/EC-19-07GypsumPlasterboardProducts.pdf>
- Good Environmental Choice Australia  
<http://www.aela.org.au/ProductsRegister.htm>
- Environmental Choice Canada  
Certification Criteria Document CCD-020, Gypsum Wallboard
- Japan Ecomark, Product Category No. 123 and 111.  
[www.ecomark.jp/english](http://www.ecomark.jp/english)
- WRAP Plasterboard Programme  
<http://www.wrap.org.uk/construction/plasterboard/index.html>
- International Organisation for Standardisation  
Ref 1131  
<http://www.iso.org/>
- European Committee for Standardisation  
[www.cen.eu/cenorm/homepage.htm](http://www.cen.eu/cenorm/homepage.htm)