

Promoting Eco-efficient Innovation in the Construction Sector

A Contribution from the following members of the Network of Heads of European Environment Protection Agencies to the revision of the Construction Products Directive (89/106/EEC)

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INTRODUCTION

Ten years ago sustainable development became a fundamental objective of the EU when it was included in the Treaty of Amsterdam as an overarching objective of EU policies. The new Article 6 added to the EC Treaty calls for environmental protection requirements to be integrated into the definition and implementation of community policies. Such integration is needed to promote sustainable development. The currently valid 6th Environment Action Programme of the European Community of 22 July 2002 calls for further efforts for integration of environmental protection requirements into the preparation, definition and implementation of Community policies and activities in the different policy areas.

The communication "Industrial policy in an enlarged Europe" (COM(2002)714 final) adopted by the Commission on 11 December 2002 recognizes the need to develop and strengthen policies in the area of sustainable production.

The importance of integration of environmental protection was already recognized in the Construction Products Directive (CPD) and other directives based on the New Approach to technical harmonization and standards developed in the 1980s. The New Approach declares that health and environmental protection represent the essential requirements in the general interest, with which products put on the market must conform. In fact, all of the

current six essential requirements of the CPD contribute to the different dimensions of sustainable development: environmental, economic and social objectives.

The impact of the construction sector on the environment and sustainable development is significant. Buildings account for 40% of the EU's energy demand. Construction uses more raw materials than any other sector; the creation and operation of the built environment accounts for an important consumption of natural resources. Around 50,000 different materials and chemical products are used in the construction sector. The construction process can create significant amounts of waste to be dealt with, and of that a high proportion can be hazardous waste (1/3 of all wastes and 1/3 of hazardous wastes in the UK are due to the construction sector) – all of which can affect human health and the environment. The large volumes of materials and the long life of buildings increase the risk of construction products affecting human health and the environment. There is therefore a great need to know which hazardous substances are emitted from and / or contained in construction products so that the risks can be limited.

In order to make the use of natural resources and chemicals in the construction sector in the future as sustainable as possible this paper formulates suggestions for the revision of the Construction Products Directive and supporting initiatives.

European EPAs have a long experience in implementing Community environmental policy, gaining many insights on practical level. With this paper we would like to share our experience in order to achieve better regulations in the construction sector for all Europeans, our environment and our industry. Our propositions aim at a comprehensive integration of sustainable development and environmental protection requirements in the revised CPD. The following objectives of environmental protection (Art. 174, EC Treaty) are considered:

- prudent and rational utilisation of natural resources,
- protecting human health,
- preserving, protecting and improving the quality of the environment.

There is significant evidence that good environmental regulation does not impede overall competitiveness and economic development¹. On the contrary, properly designed environmental regulation helps to reduce costs, create markets for environmental goods and services, and drive innovation. We believe that our suggestions will help promote eco-efficient innovation in the construction sector.

Member States' requirements for the design and execution of buildings and civil engineering works relating e.g. to health, durability, energy economy and protection of the environment have a direct influence on the nature of construction products employed. These requirements should be reflected in the harmonised standards established under the CPD adequately in the future. In this way one of the fundamental potential advantages of the single market in Europe – to provide for a high level of protection in a cost-efficient manner – can be achieved.

SUSTAINABLE USE OF NATURAL RESOURCES — A NEW REQUIREMENT

The objective of sustainable development can be seen as a goal of each of the current six essential requirements of the CPD. However, in order to ensure that all major aspects of sustainability are covered, a requirement promoting the sustainable use of natural resources in construction works should be added.

— The new requirement could be embedded in the recitals of the revised directive or regulation: The natural resources, to the prudent and rational utilisation of which Article 174 of the Treaty refers, include oil derivatives, minerals, metals, wood and energy, which are essential in the manufacture of construction materials and products.

This requirement can be fulfilled in two specific ways. Firstly in recognising the energy embedded in existing buildings and the need to look at relative merits and benefits between refurbishing old buildings and building new ones. Secondly, at the construction product level through the formulation and manufacturing process of the products, as well as design for the prolonged durability of construction products, and through ensuring the recyclability of the construction products. In addition the use of reclaimed materials in construction can specifically be promoted.

Information on hazardous substances contained is required for all types of products. An aspect specific to construction products is, however, that material is built in for long periods of time and the information needs to be secured for the future as new knowledge about the hazardous properties of substances is generated. Systems that can re-identify construction products are needed. The problems associated with and costs of identifying and cleaning up PCBs and asbestos that have been built in are well-known examples. The sustainable use of resources can be enhanced, when an adequate marking ensures that recyclability is anticipated and when design ensures that any hazardous substances in non-recyclable parts of construction works can be easily separated for suitable treatment.

The new requirement could call for the construction work to be designed, built and demolished in such a way that the use of natural resources is sustainable, in particular as a result of:

- the securing of the recyclability of the construction work, its materials and parts after demolition;
- the [adequate] durability of the products used;
- the use of environmentally compatible secondary materials in the construction work;

1 See e.g. "The Contribution of Good Environmental Regulation to Competitiveness — Paper by the Network of Heads of European Environment Protection Agencies", November 2005;

The requirement would promote formulation and design of recyclable products and component systems, with either a limited content of dangerous substances or accompanying information on the presence of hazardous substances so that they can later be found and separated during demolition and refurbishment

In CE-marking the requirement could be implemented through giving information on the period of time after installation during which the product meets or exceeds the current performance requirements, the percentage and type of recycled or secondary materials used to manufacture the product, and on the presence or absence of hazardous substances in construction products. Here European requirements to limit the presence of dangerous substances in construction products would make recycling easier. This would help make construction and demolition waste more valuable and hence more likely to be re-used in an environmentally benign application.

SOCIAL DIMENSION OF SUSTAINABILITY — HEALTH ASPECTS OF THE USERS OF THE CONSTRUCTION WORKS

The current CPD already takes into account the most important aspect of the social dimension of sustainability as far as construction products are concerned, i.e. health aspects of the users of the construction works. Health impacts are addressed in several essential requirements (hygiene, health and the environment; noise protection). Although the directive covers human health in an exemplary manner, the revision is an opportunity to ensure good implementation.

Standardisation work is proceeding in the field of construction products in contact with drinking water and emissions from construction products into indoor air. The revision should support the implementation of this work in a practical way.

The current CPD requires construction products to satisfy the essential requirements where the works are subject to regulations containing such requirements. So far only a few member states have precise, substance-based regulation for example for indoor air quality in place, although voluntary labelling systems have become popular. In order to promote health it may be worth considering whether the revised CPD could encourage the member states to set minimum standards for the essential requirements of the directive more actively.

In this context it could be useful to verify within the Commission, in accordance with the principles of subsidiarity and proportionality as set out in Article 5 of the

Treaty, whether general principles providing for a system of indoor climate minimum requirements and its objectives could be

established at Community level more effectively, while the detailed implementation would be left to Member States, thus allowing each Member State to choose the regime which corresponds best to its particular situation. This approach has been implemented successfully for example in Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.

Here a harmonised solution to tackle the CPDs requirement that construction works and their heating, cooling and ventilation installations must be designed and built in such a way that the amount of energy required in use will be low, having regard to the climatic conditions of the location and the occupants, has been found.

European minimum requirements for products are also recommended in the fourth report of the High Level Group on Competitiveness, Energy and the Environment "CONTRIBUTING TO AN INTEGRATED APPROACH ON COMPETITIVENESS, ENERGY AND THE ENVIRONMENT POLICIES". Such requirements are seen as a way to enhance performance with little or no international competitiveness distortions and strengthen the single market as one of EU's key assets. The report cites the eco-design of energy using products (EuP) Directive as a good example. A similar approach is suggested to be developed in other product areas where contributions to CO₂ reductions or resource efficiency are significant. We agree with the recommendation and regard minimum requirements for emissions from construction products into indoor air as important.

The lack of information on health and environmental impacts of products is a market barrier hindering the huge potential for environmental improvements through application of less harmful materials by industry. The users of construction products want information on hazardous substances. Information and knowledge are essential for product choice. The 6th Community action programme on the environment aims to ensure that individual consumers, enterprises and public bodies in their roles as purchasers, are better informed about the products in terms of their health and environmental impact. This requires the uptake of labelling which allows purchasers to compare environmental performance between products of the same type. In order to avoid unnecessary trade barriers through national labels information on for example the release of hazardous substances should in our opinion be integrated into CEmarking.

ENVIRONMENTAL DIMENSION OF SUSTAINABILITY — A NEW FOCUS WITH LINKS TO OTHER DIRECTIVES AND REGULATIONS

Currently the CPD requires in its essential requirement “Hygiene, health and the Environment” construction works to be designed and built in such a way that they will not be a threat to the hygiene or health of the occupants or neighbours. Pollution of air, water and soil are mentioned as possible threats. In the revision the environment should be given equal status, particularly given its impact on human health and wellbeing.

The revision should add climate to the subjects of protection – including both the mitigation (reduction) of emissions under the essential requirement “Hygiene, health and the environment”, and taking account of adaptation to the changes already underway in our climate under further essential requirements, where appropriate. Changes such as prolonged droughts, overheating, or intense downpours to be experienced could be addressed under essential requirements like “Safety in use” and “Energy recovery and heat retention”.

Climate emissions are important in practice as one of the major sources of fluorinated greenhouse gases (causing almost half of their current emissions) is blowing agents in foams for thermal insulation. Several member states regulate the use of fluorinated greenhouse gases in construction products and a practical solution for CE marking could be provided by the revision. This would also support the implementation of the propositions concerning fluorinated gases in the European Commission’s Communication “Limiting Global Climate Change to 2 ° Celsius: The way ahead for 2020 and beyond.”

The updated requirement could call for construction work to be designed and built in such a way that it will not impair human health, environmental quality or the climate during construction, use or demolition, in particular as a result of any of the following:

- emissions of dangerous substances, e.g. volatile organic compounds (VOC), green house gases or dangerous particles, into indoor or outdoor air,
- emissions of dangerous radiation,
- release of dangerous substances into drinking water, groundwater, surface water, marine waters or soil,
- faulty discharge of waste water, emission of flue gases or faulty disposal of waste,
- the presence of dampness in parts of the works or on surfaces within the works.

The key priorities in the area of “environment and health and quality of life” have been defined on European level in the 6th Community action programme on the environment of 22 July 2002. Applied into implementing the essential requirement ‘Hygiene, health and the environment’ of the CPD the main objective is to make sure that chemicals are only used in construction products in ways that do not lead to a negative impact on health and the environment.

This goal consists of several tasks that are linked to the REACH Regulation and Water Framework Directive:

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- to ensure that emissions from construction products do not endanger the quality of ground, surface and marine water nor a healthy indoor air quality;
 - to substitute dangerous chemicals in construction products by safer chemicals or safer alternative technologies;
 - to ensure that substances of very high concern must be subject to authorisation before their use in construction products;
 - to stop emissions of “Priority Hazardous Substances” from construction products, in line with the provisions of the Water Framework Directive and;
 - to ensure the integration of the concepts and approaches of the Water Framework Directive and of other water protection directives in the Construction Products Policy.

In order to facilitate a functioning interface between the CPD and Community environmental and chemical legislation, an update of the interpretative document drafted according to Article 3 of the current CPD for the essential requirement “Hygiene, health and environment” would provide helpful guidance. Many aspects aiming at protecting human health and the environment from risks caused by construction works are regulated at national level. In the interpretative document mentioned above guidance supporting the use of harmonised tools in emerging regulation could also be viable.

VISION FOR THE FUTURE

Our vision is that in the future CE marking and free trade are granted only for construction products that are verified safe for human health and the environment. To achieve this goal we strongly recommend a tight time frame for the implementation in the revised CPD. CE marked construction products should not be allowed to be traded after the new regulation or directive comes into force unless their environmental performance is declared.

The suggestions we have made call for minimum environmental performance requirements and use Europe's standardisation system as a regulatory compliance tool. However, in line with recommendations of the High Level Group on Competitiveness, Energy and the Environment we believe that in future European standards for construction products need to become a still more efficient driver for innovation and market development and change from a compliance to a competitiveness and sustainability tool. The High Level Group on Competitiveness, Energy and the Environment argues for ambitious voluntary specifications coupled with the existing mandatory minimum requirements to drive product performance upward. They also support standards based on a lifecycle perspective.

Work is in progress to create certified environmental product declarations (EPDs) for construction products, but certified EPDs will probably not cover more than a limited number of products over the next few years. A standard is being drafted in CEN for a method of preparing voluntary environmental declarations of buildings.

This standard should be available by 2010. Documentation at product level is required to be able to set up a method for complete buildings.

We propose — in line with the propositions of the High Level Group on Competitiveness, Energy and the Environment — that the CPD includes environmental product declarations in its revision on a voluntary basis. This would both increase the availability of EPDs as well as their demand and use.

The declaration makes statements for example on the energy and resources used and the product's contribution to climate change over its entire life cycle.

When European standards for construction products support voluntary EPDs, they could become a sustainability tool helping to implement also the European Commission's proposals for keeping climate change to manageable levels.

RECOMMENDATIONS AT A GLANCE

In order to make the use of natural resources and chemicals in the construction sector in the future as sustainable as possible this paper has formulated technical suggestions for the revision of the Construction Products Directive and supporting legislation. With these suggestions we wish to contribute to a single market in Europe, which provides for a high level of protection in a cost-efficient manner.

1. We think a requirement promoting the sustainable use of natural resources in construction works should be added into the future CPD. The sustainable use of resources can be enhanced, when an adequate product marking and appropriate design ensure that any hazardous substances in construction works can be easily separated for suitable treatment during demolition. Here European requirements to limit the presence of dangerous substances in construction products would make recycling easier (as e.g. in the RoHS-Directive).
2. We support European minimum requirements for products (as e.g. in the EuP Directive) and consider especially product groups affecting human health with limited possibility of choice for dwellers like construction products for indoor spaces and drinking water applications as important. We would welcome information on hazardous substances in CE-marking to facilitate product choice.
3. We suggest that the environment should be given equal status with human health in the CPD. We ask for the revision to add climate to the subjects of protection. In order to facilitate a functioning interface between the CPD and

Community environmental and chemical legislation we see the need for an updated guidance document in this issue.

4. We are in favour of CE marking and free trade only for construction products that are verified safe for human health and the environment. We urge the CPD to promote environmental product declarations in its revision on a voluntary basis. We believe that this would make the CPD a more capable driver for eco-efficient innovations.



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