Architects’ perception of modified wood: a parallel study in selected countries in Europe and selected regions in USA

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The market, especially in Europe, for new durable products of modified wood has increased substantially during the last few years. This increased interest depends partly on the restricted use of toxic preservatives due to an increased environmental concern and partly on the need for products regarding maintenance. Figure 1 shows the wide variety of engineered wood products (EWPs) nowadays are available on the market for both structural and non-structural uses, but many of these EWPs are still underutilized (Sandberg 2016).

| GLT | CLT | PSL | LSL | LVL |
| Glulam - glued-laminated timber | Cross-laminated timber | Parallel strand lumber | Laminated strand lumber | Laminated veneer lumber |
| SWP | PB | LDF/MDF/HDF | VP | PB |
| Solid wood panel | Plywood board | Low/medium/high-density fiberboard | Veneered particleboard | Particleboard |
| OSB | LS | WPC | TM | WFI |
| Oriented strand board | Light sandwich (honeycomb) panels | Wood plastic composites | Thermally modified wood | Wood fibre insulation boards |

Figure 1: Only recently has wood been developed to form a range of products that are increasingly functional, based on a combination of performance and sustainability requirements. The result is a wide range of materials known as EWPs in contemporary architectural design.
To better understand this situation, a global research project has been undertaken in selected countries of Europe and selection regions in the United States to determine how architects specify EWPs in their profession. Architects are key decision-makers determining material selection in the construction sector (Lähtinen et al. 2017). Their perception of wood and EWPs as building materials is therefore of great importance if non-renewable and fossil-based building materials are to be replaced by wood and EWPs. As a part of this project, the study provides a preliminary study of architects’ perception of modified wood.

Data were collected through an on-line survey (Dillman 2000), and a survey questionnaire was developed by an international group of architects. The study methods included a two-stage survey; in the first stage, personal interviews with a selected group of architects from the architects’ professional organization were conducted. Based on the information given by these in-person interviews, an exploratory web-based survey was subsequently designed.

The specific goals of the study were: (1) to identify the use of modified wood in architectural planning, and (2) to clarify the architects’ knowledge of modified wood and its advantages. The study provides an updated overview of the perceived identity of modified wood products among the architects. New environmentally friendly technologies present designers and architects with new tasks and challenges, as well as opportunities to contribute to the creation of a sustainable environment.

Using information obtained in this and similar studies, region-specific promotion campaigns could be developed with the aim of increasing the use of modified wood in various applications. Long-term cooperative programs, multidisciplinary approaches, including lobbying efforts and promotional campaigns, are needed to ensure that material specifiers have the knowledge and training to be able to use traditional and new wood products that are ideally suited for the building sector.

References


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