

PROJECT PROFILE

CERTIFICATION EXPLORATION FOR ECOPLAST (MARCH 2022)



Ecoplast Solutions produces structural insulated wall panels. The foam core of the wall panels is made of high-quality polyethylene terephthalate (PET), which is 100% sourced from recycled plastic bottles and bonded with specialized laminates. This high-performance building product is used for residential and light commercial construction, prefabricated houses, grain dryers, and garage packages. The packages include pre-cut panelized walls, floor, and roof sections that are delivered to the site in pre-built sections and can be installed in a matter of a few days.

PROJECT BACKGROUND

As a modular housing company, Ecoplast was asked by its clients if their production met the CSA-A277 "Procedure for certification of prefabricated buildings, modules, and panels" standard. Therefore, the Off-site Construction Research Centre (OCRC) reviewed the requirements for A277 certification, contacted certification bodies for more in-depth information about the certification process and prices. In addition to A277, other certification options that focused more on the product rather than the fabrication were explored. The goal of this research was to help Ecoplast decide whether A277 certification was within the scope and scale of their work and financially reasonable. If it was not achievable at the moment, the research would help them take steps towards meeting the requirements as their company grows.

RESULTS

According to the building code in effect in any province and the Authorities Having Jurisdiction (AHJ), the requirements for a factory-built building are the same as those for site-built buildings. However, it is not possible to verify if a factory-built building is compliant with the building code and AHJ at the installation site, as many of the components are already put in place and built in the factory. Therefore, in order to be able to accept factory-built buildings, they have to be

inspected during construction in the factory to ensure compliance with the local regulations where they are going to be installed.

A277 certification allows a certification body to review the design, details, and drawings of the factory-built structures, as well as the quality program and quality system of the factory. It also involves inspecting the construction process in the factory and labeling the product as compliant with local building codes and requirements. A277 certification and labeling will assure the AHJ that the factory-built structure is compliant with local regulations, eliminating the need for further inspection at the installation site for the certified work conducted in the factory. Projects that can be reviewed for A277 certification include manufactured homes, modular structures, and panels. However, the work conducted on the site, such as erection and transportation, is not certified by A277 and needs to be inspected separately.

RECOMMENDATIONS

The requirements for A277 certification were not applicable to Ecoplast products at the time. Ecoplast produces wall panels without any factory plumbing, electrical, and gas lines. The packages are custom-made for each project and are individually stamped by an engineer. The costs associated with the certification are only reasonable when the packages are mass-produced and include as much factory work as possible, such as mechanical, electrical, plumbing, windows, and doors, etc., while requiring minimal work at the job site. At the current production scale, the expenses for A277 certification and maintenance fees are not economically beneficial to the company.

We recommend that Ecoplast start working on preparing a comprehensive quality program manual and quality system if the company is targeting mass production in the future.