



Victoria Estates Residential Complex

St. Catharines, Ontario

Builder

Joe DiFranco & Son Limited

Framing Contractor

Lukas Smith Construction



Firewall Assemblies Save Time and Money for Residential Builders

When rain or snow hits a construction site, it often means slowing down, but building company Joe DiFranco & Son Limited and the framing crew from Lukas Smith Construction were able to save up to two weeks labour and costs on a recent build—with the help of Georgia-Pacific.

DensGlass® shaftliner performs for both new and renovation projects

Victoria Estates is a 38-unit residential townhome complex. The townhomes, located at Gibson Place and Niagara Street in St. Catharines, Ontario, were the first of a handful of homes in Ontario to be built with Georgia-Pacific area separation wall assemblies.

The builders used Georgia-Pacific DensGlass® Shaftliner fibreglass mat gypsum boards in the construction of 2-hour firewalls and 1-hour party wall assemblies, as an alternative to masonry block in its multi-residential build.

Safety first

Changes to the National Building Code of Canada (2005) allow for the option of using materials other than concrete or masonry in the construction of 2-hour firewalls, based on the system's acceptance by the local building code authorities. The system can also be installed in virtually any weather due to the moisture resistance of fibreglass mat panels, providing additional flexibility for builders and their teams.

Townhomes require strict construction methods to provide residents with safe, fire-resistant and sound-isolating homes. The Georgia-Pacific gypsum area separation wall assembly is designed specifically for use in multi-family, multi-story townhouses as a firewall with a total height up to 68' (20,726 mm). Because it is constructed using gypsum panels, the assembly is easy to erect and secure, and provides a cost-effective 2-hour fire protection system and sound control up to 60 STC, which meets code requirements.

The gypsum core in DensGlass Shaftliner panels is designed to withstand high temperatures from fire. "Gypsum is a non-combustible material which contains chemically combined water molecules," says Ken McLeod, Georgia-Pacific Canada Field Sales Manager. "When the material is exposed to the heat of fire, the water molecule is released as steam, which absorbs and dissipates some of the heat and helps protect the adjoining unit."

The area separation wall is constructed once the framing for one townhouse unit is complete and prior to the construction of the adjacent unit. The assembly is constructed at the foundation and continues either to the underside of the protected roof sheathing for party walls or through the roof to form a parapet as required for firewall construction.

The system uses 1" thick (25.4 mm), 24" (610 mm) wide DensGlass Shaftliner panels, 2½" (53.9 mm) thick, 25-gauge (18 mil) steel H-studs and C-track and

continued

aluminum breakaway clips. The assembly is linked to the adjacent framing with the aluminum breakaway clips, which have a melting point over 1100° Fahrenheit (593° C), explains McLeod. "Under extreme fire conditions, the aluminum clip melts and allows the fire engulfed unit to release away from the firewall, leaving the area separation wall in place to protect the adjacent unit."

The solid 2" (51 mm) area separation wall is constructed a minimum of ¾" (19 mm) away from the adjacent framing, which is typically constructed from wood. In many cases the area separation wall is positioned 1" (25.4 mm) away from wall framing to accommodate the 1" (25.4 mm) DensGlass® Shaftliner panels used as fire blocking between the floor levels. The ULC Design W312 area separation wall assembly was evaluated at a height up to 44' (13,411 mm) and the WHI/ITS GP/WA 120-04 area separation wall assembly was evaluated at a height up to 68' (20,726 mm).

Save time and money

The Georgia-Pacific area separation wall system gave contractors increased scheduling flexibility when constructing the 38-unit Victoria Estates residential complex.

Not only is the area separation wall system fire tested, but DensGlass Shaftliner panels consist of a moisture-resistant core with coated fibreglass mats front and back instead of paper facings like traditional shaftliner panels. The fibreglass mats allow for superior mould and moisture resistance when compared to paper-faced drywall, which allows for installation in any weather.

Victoria Estates Builder, Dominic DiFranco, owner of Joe DiFranco & Son Limited, had already finalized the plans with

masonry block walls, but called the decision to change the plans a smart move. They managed to get the demising walls of the first block of six townhomes up in just over four days. He explained that masonry walls probably would have taken two weeks.

The Georgia-Pacific team provided on-site training for the framing crew. The boards are lighter in weight and allow for quicker and easier builds, because the boards can be installed at the same time as framing. Large panels, like those used at Victoria Estates, which come in 2' (610 mm) widths by 8' (2438 mm), 10' (3048 mm) or 12' (3658 mm) lengths, offer additional efficiency.

The framing crew installed the area separation walls of five units in one day. The framer also commented that had the job been specified in masonry block, the crew would have had to leave the site for over a week while the block walls went up. Eliminating the installation of masonry blocks at Victoria Estates meant a cleaner, less expensive and more efficient build.

Because the assembly will be exposed to the elements during construction, Georgia-Pacific Gypsum DensGlass Shaftliner offers increased protection to the owner, builder and architect with the moisture- and mould-resistant panel, which has a limited warranty against delamination and deterioration for up to 12 months of exposure to normal weather conditions.

In the construction of 2-hour firewalls and 1-hour party wall assemblies using Georgia-Pacific DensGlass Shaftliner fibreglass mat gypsum boards instead of masonry block, building crews can save a significant amount of time and money. Victoria Estates residential unit is a prime example of the product's superiority.

U.S.A. – Georgia-Pacific Gypsum LLC
Canada – Georgia-Pacific Canada LP

Sales Information & Order Placement

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Technical Information

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