



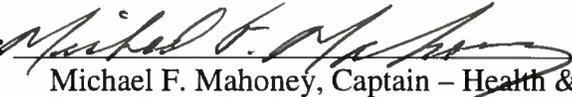
Loudoun County
Department of Fire, Rescue, and Emergency
Management
HEALTH AND SAFETY BULLETIN



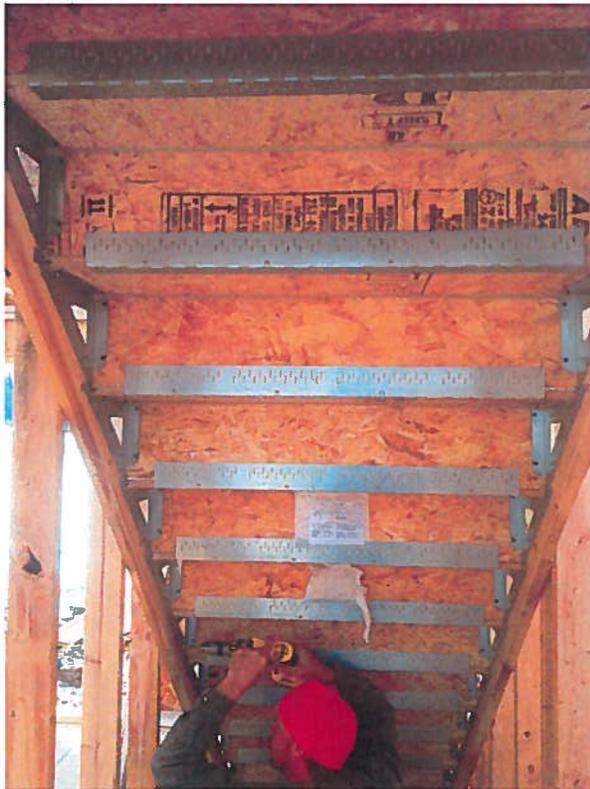
Subject: I-Stair Systems

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Approved: 
Michael F. Mahoney, Captain – Health & Safety Officer

The photos below are of a new type of stair assembly that is being built into new residential construction. Instead of using 2" x 12" lumber for the stringers on the sides and middle, it uses a 2" x 4" board, only on the edges. The steps and risers are ¾ inch OSB. These are connected using a metal plate, similar to that of a gusset plate found on manufactured trusses. The triangles holding the steps are light-weight steel, and attached to the 2" x 4"s by glue and nails.





Building and Development advised us that this system is approved for using in residential units, which includes single-family houses, townhouses, and inside the residential portion of condominiums and apartments configured with a two or multi-story concept. Currently, these will not be found in common areas of condominiums and apartments due to their lower load rating.

According to the manufacturer, the stairs going from a main floor to the upstairs should be protected with drywall. However, in an unfinished area, such as from the basement to the main floor, drywall is not required. Currently, County Building and Development has no requirement to have these stairs enclosed with drywall. With residents often storing combustible items under their steps, this would likely result in the stairs failing more rapidly than if protected in the event of a fire situation.

Additional information can be obtained at <http://greenmaltese.com/tag/i-stairs/>. Please see the attached I-Stair brochure. Remember the inherent risk of collapse when this I-Stair System is exposed to fire, especially when unprotected such as the unfinished basement steps.

The I-Stair System is already being installed in some of the new homes being built in Hamilton. The Office of Health and Safety encourages personnel to work with contractors/homeowners to perform site visits where these steps may be utilized. If any personnel observe this type of stair system being installed in their first due area, please advise the Office of Health and Safety via ohs@loudoun.gov.

Special thanks to Captain Derrick Crawford and Lieutenant Andrew Hopkins for bringing this construction type to our attention. All officers are highly encouraged to review this bulletin and web link with their crews.

“Everyone Goes Home”



Pre-built i-stair; Superior and Efficient

> Pre-built installation is simple and fast

No layout or cutting stringers No hanger boards
No temp treads No installing treads & risers
Saves frame and finish labor.

> Ordered by the framer or from the plans

Installs in 10 to 15 minutes and is
ready for drywall, skirt boards & carpet.

> Tread-risers, glue-screw to steel stringers

No 2x12 shrink, split or twist

> Solid & Safe during construction.

Potential buyers & clients climb stairs safely
No temp treads during construction

> Code compliant immediately at installation.

Less construction liability exposure



Greatly exceeds code requirements for weight loads.
Tested by Progressive Engineering Inc.
58640 State Road 15 Goshen, IN 46528
ISO 17025 Accredited

i-stair includes;

- > Galvanized steel stringer brackets, nailed to 2 x 4 stringers with 1-1/2" joist-hanger nails.
- > Galvanized steel hinge-gusset, pressed with 50 ton to 3/4" osb treads & risers
- > Tread-riser-gusset glued & screwed to brackets.
- > 5/16" x 4" lag screws for bolting to wall studs.
- > Water-shield for under basement stringers

i-stair installation;

- > Set stair & nail top riser tight to joist header & subfloor.
- > Glue stringers and bottom riser to floor.
- > Lag-screw stringers to wall studs (supplied).
- > Nail 2x4s drywall backers between stringers.
(for under stair drywall only)

no layout no cut no hanger no temporary treads no waste no squeaks no callbacks