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January 19, 2006

Attn: Fred Serpico
Marino Ware Inc.
777 Greenbelt Parkway
Griffin, GA, USA
30223

RE: Evaluation of Marino Ware Steel Stud and Wall System Fire Endurance Test, Qualification of 3.5" (min) Steel Stud in Lieu of Wood Stud Framing

Dear Mr. Serpico:

Intertek Testing Services NA Ltd. has conducted an Engineering Evaluation based on Fire Test results in Intertek report 3072596, dated May 20, 2005. This evaluation was requested by Marinoware personnel in order to substitute 3-1/2" minimum depth steel studs in replacement of the wood stud framing members as follows:

Steel Framing – Bearing: 3-1/2" minimum depth x 1-5/8" minimum flange x 0.0346 minimum gauge, spaced 24" on center maximum and 1/2" from shaft wall surface.

Steel Framing – Non Bearing: 3-1/2" minimum depth x 1-1/4" minimum flange x 0.0179 minimum gauge, spaced 24" on center maximum and 1/2" from shaft wall surface.

STANDARDS AND CRITERIA:

ASTM-E119, Standard Methods of Fire Tests of Building Construction and Materials.
CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction and Materials.

NFPA-251, Fire Tests of Building Construction and Materials.

UBC-7-1-94, Uniform Building Code Standard.

UL-263, Fire Tests of Building Construction and Materials.

EVALUATION:

Based on the test results in the above referenced report, It has been determined that the two layers of 1" gypsum liner board in the center of the wall assembly described on page 2 of this evaluation provide adequate resistance to flaming on the non fire side of the wall. Further, the wall passed the 1/2 time hose stream test where the two layers of gypsum liner were considered to provide the resistance to the hose stream.

It has been concluded that substituting the wooden studs in the wall assembly with a steel stud of the same depth in the same configuration will provide equal or greater resistance to flaming and heat generation on the fire side. Therefore, the damage to the liner board would be equal or less than of the tested wall assembly, so the hose stream

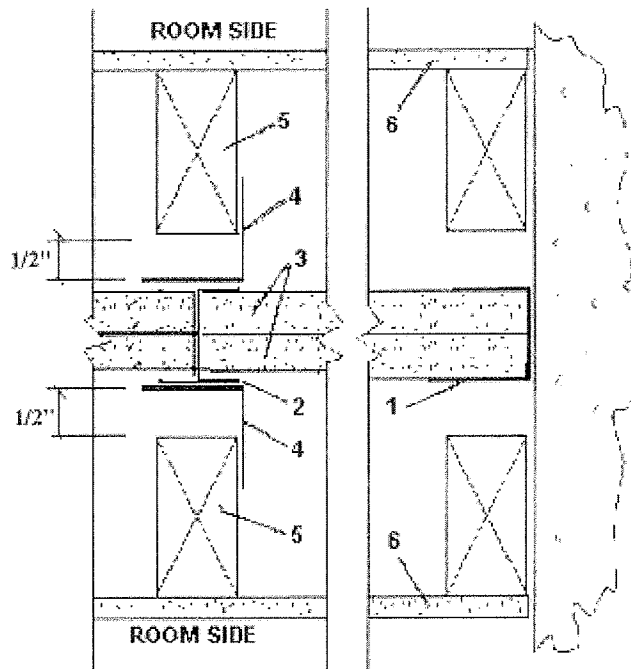
resistance would be maintained. Further, the air gap between the inner liner of gypsum and the outer layer of gypsum is consistent, so the temperature rise on the unexposed surface will not rise above that in the tested wall assembly.

Further, the H-Stud Non Bearing Load Wall Assembly was exposed to fire on a separated side of the wall assembly and the two layers of 1" gypsum liner board provided adequate resistance to flaming on the non fire side. Thus, the 2 hour fire rating applies to the 2 layers of 1" gypsum liner and 25 gauge steel H Studs.

Since the non fire side of the wall assembly is unaffected, providing the separation assembly is installed as per Intertek report 3072596 as shown in Figure 1, the protected non fire side of the wall assembly can be either non load bearing or load bearing to the specified design criteria.

The tested wall assembly with the permitted substitution of framing studs is described on the following page.

**FIGURE 1: DESIGN NO. MW/WA 120-03
 ASSEMBLY RATING - 2 HOURS, SYMMETRICAL AREA SEPARATION WALL**



1.	Floor, Upper, Corner and Intersection C Runners*: Marinoware 'C' shaped runner, 2-1/8" wide, minimum 25 gauge galvanized steel. Runners attached to floor, ceiling, or structural members with steel fasteners located at 24" oc maximum.
2.	Steel Studs*: MarinoWARE 2" wide, minimum 25 gauge galvanized steel 'H' shaped studs. Studs are cut to length 1/2" less than the wall height and friction fit to gypsum liner boards.
3.	Gypsum Liner Boards: 1" thick Listed Type X Gypsum liner boards, supplied in nominal 24" width. Two boards back-to-back are inserted against the web of the track and into the recess of the studs
4.	Aluminium Clips: 2" long x .050" thick aluminum angle attached to wood framing with 1-1/4" Type W drywall screws and to alternate steel stud flanges staggered between exposed sides using framing screws.
5.	Wood Framing: Nominal 2" x 4" wood framing, spaced 24" oc maximum and spaced 1/2" from shaft wall surface. -OR- Steel Framing - Bearing: 3-1/2" min. depth x 1-5/8" min. flange X 0.0346" min. gage, spaced 24" oc maximum and 1/2" from shaft wall surface. Steel Framing – Non Bearing: 3-1/2" min. depth x 1-1/4" min. flange X 0.0179" min. gage, spaced 24" oc maximum and 1/2" from shaft wall surface.
6.	Gypsum Wallboard: 1/2" thick gypsum wallboard applied vertically or horizontally to wood framing, and fastened with 1-1/2" drywall screws 12" oc. Joints are finished with paper tape and joint compound. Exposed screw heads are finished with joint compound.

*Components bearing the Warnock Hersey Certification Mark.

CONCLUSION:

Based on the results of Intertek Report 3072596 and the rationale presented in this evaluation letter, the assembly described on page 2 achieves a 2 hr resistance rating and 1 hour membrane rating per the following standards:

ASTM-E119, Standard Methods of Fire Tests of Building Construction and Materials.
CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction and Materials.

NFPA-251, Fire Tests of Building Construction and Materials.

UBC-7-1-94, Uniform Building Code Standard.

UL-263, Fire Tests of Building Construction and Materials.

Designs listed are minimum construction requirements to achieve fire rating.

Unless otherwise noted, fire ratings apply to tests conducted on both sides.

In addition, as the non fire side of the wall assembly was unaffected, this protected non fire side of the wall assembly can be either non load bearing or load bearing to the specified design criteria.

These results apply only to the tested and evaluated assembly, unless all products required per the described assembly carry code recognized certification marks.

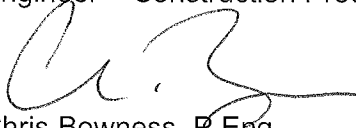
If you have any questions regarding this matter, please contact the undersigned at 1-800-668-TEST.

Sincerely,

Intertek Testing Services NA Ltd.



Matt Lansdowne, EIT
Engineer – Construction Products



Chris Bowness, P.Eng.
Manager - Engineering Services