INSPECTION
CONCEPTS, INC.

14105 ORANGE AVENUE, PARAMOUNT, CALIFORNIA 90723
TELEPHONE: (562) 408-0978 • FAX: (562) 633-4128

May 11, 2004

Steve Taylor
Omega Products International, Inc.
1681 California Avenue
Corona, CA 92881

Re: IC-1990-04-Greystone Homes
One hour Fire Rating

Dear Steve:

I reviewed the information you submitted regarding the method of construction for the Greystone Homes project. What you presented was ANSI/UL Fire Resistance Rating Design No. U423. For a One-hour wall, this design calls for minimum 20 gage (min. 0.0329" bare metal thickness steel C-studs (3-1.2 inch) spaced a maximum of 24 inches on center. For lateral support, a steel strap, channel or other similar means of support as noted in the design is required. Both face of the wall must be faced with one layer of 5/8 in thick Type X Gypsum wallboard. On the exterior side, the wall panel shall be gypsum sheathing. Gypsum joint shall be staggered on stud bay. Either mineral fiber or glass fiber insulation can be placed in the stud cavity. Fastener shall be Type S-12 steel screw 1-in long, spaced 8 inches on center when applied horizontally and 12 inch on center when installed vertically.

Alternatively, an Aerosmith 0.100 VersaPin (BZD) fastener complying with ER-5585 may be substituted for the Type S-12 screw provided the resistance to wind load is complies with the attached analysis.

If the wall is non-load bearing, then lateral bracing is not required. If the wall is load bearing, then lateral bracing, 1" by 18 gage straps attached to **each side** or with channel bracing attached to each studs with a clip angle.

With the bracing, axial load can be calculated according to the code. Note that if the gypsum wallboard is not staggered on opposite sides, the allowable vertical load must be reduced 10%.

With the above-described system, Omega Diamond Wall can be applied to the system without derating the hourly rating of the wall. With the Diamond Wall Coating over the One-hour assembly, the rating is improved slightly. Testing have shown that cementitious covering over existing one hour rated wall, does not derate the rating. It is important to follow the materials specified for the base one hour rated system to maintain the rating.

Please call me if you have any questions.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER
RONALD I. OGAWA
No. 16286
6-30
STATE OF CALIFORNIA

Ronald I. Ogawa, P. E.

Encl. UL Design No. 423

cc File
RIO

IINSPECTION CONCEPTS, INC
14108 ORANGE AVENUE
PARAMOUNT, CA 90723

OMEGA PRODUCTS INTERNATIONAL, INC.
1681 CALIFORNIA AVENUE
CORONA, CA 92881

OMEGA PRODUCTS INTERNATIONAL
IC-1990-04

AERO SMITH ER-5667

REQUEST BY STEVE TAYLOR OF OMEGA PRODUCTS INTERNATIONAL TO ANALYZE THE AEROSMITH U-NOPUL FASTENERS AS AN ALTERNATE TO THE FASTENERS SPECIFIED IN THEIR ER-4004 REPORT TO ATTACH WOVEN WIRE REINFORCEMENT TO STEEL STUDS. THE U-NOPUL FASTENERS ARE STEEL DRIVE PINS MANUFACTURED FROM AISI 1566 STEEL, HEAT TREATED TO A ROCKWELL C HARDNESS BETWEEN 52 AND 56 AND HAVE A MINIMUM TENSILE STRENGTH OF 240 KSI (1655 Mpa).

THE PINS ARE PRODUCED IN 0.190, 0165, 0.144, ABD 0.100 INCH SHANK DIAMETER AND 3/8, 21/64, 5/16 AND 1/4-INCH DIAMETER HEADS.

PRODUCTS WITH A DIAMETER OF 0.190 HAVE A SMOOTH SHANK AND DESIGNATED AS bzs. THE 0.100, 0.144 AND 0.165 INCH DIAMETER SHANK HAVE A HELICAL SHAPED SHANK AND DESIGNATED AS BZH.

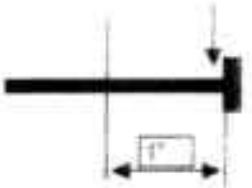
PER ER-5667, THE ALLOWABLE WITHDRAWAL LOAD FOR THE 0.100-INCH DIAMETER IN VARIOUS GAGE STEEL ARE

PIN DIAM	STEEL	WITHDRAWAL
0.1	20	25
0.1	18	40
0.1	16	60

CURRENT OMEGA PRODUCTS ER4004 REQUIRES #8 SCREWS HAVING A 3/8-INCH DIAMETER PAN HEAD SCREWS SPACED AT 7 INCHES ON CENTER FOR ATTACHING WOVEN WIRE REINFORCEMENT TO STEEL STUDS.

ACCORDING TO ANSIB18.6.1-1981, THE THREAD DEPTH OF A #8 SCREW IS 0.023 INCH. THEREFORE THE FINAL DIAMETER OF THE #8 SCREW IS 0.164-2 X 0.023 = 0.118 INCH MAX AND 0.111-INCH MINIMUM.

CHECK TO CAPACITY OF THE AEROSMITH PINS TO SUPPORT THE VERTICAL LOAD BASED ON APPLICATION OF THE WIRE OVER 1-INCH THICK EXPANDED POLYSTYRENE FOAM.



MOIL OF #8 = .049087D^4

DEF = PL^3/3EI
LIMIT DEF TO 0.0313 INCH

MOIL (#8)	9.51688E-06	P=	26.81 LBS
100 PIN	4.9087E-06	P=	13.83 LBS

WEIGHT OF DIAMOND WALL AT 120 PCF = 120/12 = 10 PSF PER INCH OF THICKNESS THEREFORE AT 1/2' THICKNESS, THE WEIGHT OF THE PLASTER IS 5 PSF. WITH THE FASTENER SPACED AT 6 INCH ON CENTER THE WEIGHT IS 3.3 LBS AND 5 LBS PER FASTENER.

IINSPECTION CONCEPTS, INC.
14108 ORANGE AVENUE
PARAMOUNT, CA 90723

OMEGA PRODUCTS INTERNATIONAL, INC.
1681 CALIFORNIA AVENUE
CORONA, CA 92881

OMEGA PRODUCTS INTERNATIONAL
IC-1990-04

WITH THE ALLOWABLE WITHDRAWAL VALUES AND THE FASTENER SPACED AT 6 INCH CENTERS, THE ALLOWABLE NEGATIVE LOAD CAPACITY IS:

Steel Ga	Pin	Withdrawal	stud spcg	stud spcg	fastener spg	Neg (16)	Neg (24)
20	0.1	25	16	24	6	37.5	25
18	0.1	40	16	24	6	60	40
16	0.1	60	16	24	6	90	60

TO USE THE AEROSMITH U-NOPUL FASTENER AS AN ALTERNATE TO THAT SPECIFIED IN ER-4004, THE WITHDRAWAL WHEN INSTALLED IN 20 GAGE STEEL STUDS ARE 27.5 PSF ON STUDS SPACED AT 16 INCHES ON CENTER AND 25 PSF ON STUDS SPACED AT 24 INCHES ON CENTER.