P21 RACKING TEST RESULTS EVALUATION
1200mm 10mm standard Baier board both sides, Baier board fastener pattern
3 100x3.75 nails each side as P21 restraint, M12 bolts to plate concrete floor
30x2.5 galv clouts 150mm centres No holddowns
Calculated to BRANZ TR No. 10. NZS 3604 1990
Forest Research Institute, PB 3020 Rotorua. TE Lab

Summary		
Earthquake	**63 (U)**	**BU/m**
Wind	**73 (U)**	**BU/m**

Date of test:-	**17-Sep-08**	Ship No. **2461**	Tested by Doug Gaunt
Date of calcn:-	**18-Sep-08**	Job No. **TE08-017**	Data Analysed by Doug Gaunt

	Serviceability Cycles		Ultimate Cycles				
	Cycle to H/300 or DLQ or DLW 8.00 X mm		Cycle to Displacement y=(mm)			Wall dimensions L(mm) 1200	H(mm) 2400
Lab Number Plus direction Minus direction	Loads S kN	Residual Defln, C mm	Maximum Load P(kN)	def @ P y (mm)	P/2 (kN)	d at P/2 d mm	4th,R kN
247885 plus	**3.50**	**5.00**	**4.15**	**25.0**	2.08	**2.7**	**3.20**
minus	**3.50**	**4.00**	**4.45**	**25.0**			**3.80**
247886 plus	**3.60**	**4.50**	**4.30**	**25.0**	2.15	**3.0**	**3.65**
minus	**3.95**	**3.50**	**4.70**	**25.0**			**4.25**
247887 plus	**3.55**	**4.50**	**4.32**	**25.0**	2.16	**2.3**	**3.80**
minus	**3.55**	**4.10**	**4.20**	**25.0**			**3.80**
	(S)	(C)	(P)	(y)		(d)	(R)
Avgs	3.61	4.27	4.35	25.00	2.13	2.67	3.75
CoV %	4.34	11.05	4.18	0.00	1.78	10.75	8.22

y = average failure deflection or peak deflection of the three tests.
d = average first cycle displacement at half peak, (the very first cycle wall reaches the load)
R = Residual load, P = Peak Load, S = Serviceability load

Displacement Recovery Factor (k1)	k1 = 1.4 - C/X	0.87	(.8 <= K1 <= 1.0)
Resistance (earthquake - servicabilibity limit state	F = k1xS	3.13	
Average Structural Displacement Ductility factor	u = y/d	9.38	
Ductility Modification factor	K4 =	1.00	
DLW = Selected deflection limit for wind forces	DLQ = Selected deflection limit for earthquake forces		

P21 TR 10 Supplement Calculations
Branz Technical Recommendation No. 10. NZS 3604 1990
Limit States Values
1200mm 10mm standard Baier board both sides, Baier board fastener pattern
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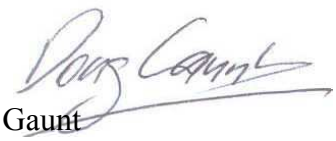
Earthquake Rating		***Ultimate***		***Serviceability***
EQ Ultimate	20 x K4 x R =	75.00	20/ 0.48 x F/ k4 =	130.30
	62.5	**BU/m**	**Limited by**	**Ultimate limit state**
Wind Rating		***Ultimate***		***Serviceability***
Wind Ultimate	20* P =	87.07	20 / 0.563 x F =	111.09
	72.6	**BU/m**	**Limited by**	**Ultimate limit state**

Figure 4 : *P21 calculations for the BBS2 Baier 1200mm walls with nails on a concrete floor*

Please feel free to contact me to discuss this information.



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