Date of issue: Monday, 29 January 2023

Premier Building Products Limited
Auckland
Steve Allison

BTS2230 CERTIFICATE OF TEST: TR230127-1

Measurement of the Density of Gypsum Boards

1. Objective:

1.1 BEAL Testing Services were contracted by Premier Building Products Ltd. to verify that their 10 and 13mm thick paper faced gypsum plaster boards, when installed in accordance with the manufacturer's instructions, will meet the performance requirements of the New Zealand Building Code, and specifically NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a).

2. Methodology:

2.1 3 samples each of 10mm and 13mm Standard Plasterboard were taken at random from different pallets at the Premier Building Products warehouse at 17 Gabador Pl, Mt Wellington, Auckland.

2.2 Samples were rough cut from full sheets and trimmed in the workshop before testing to remove tapered edges and edge tape prior to testing.

2.3 Samples were then measured across the face at the edges and through the centre using a steel rule, and at 4 points around the edges using a digital electronic caliper. Samples were then weighed using a digital tuning fork balance.

2.4 Results are tabulated on the attached sheet with density calculated per sample.

3. Criteria:

3.1 A minimum density of 600 kg/m^3 is required to satisfy NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a) for use as a structural ceiling diaphragm.

4. Condition of Samples

4.1 The specimen boards were supplied by the client and prepared at room conditions, being 24°C and 83% humidity.
4.2 Tapered edges of the sheets were removed.

5. Results:

5.1

Recordings		Volume (m^3)	Weight (g)	Density (kg/m3)
Sample	Description			
1	PBP 10mm Std Plasterboard 1	0.000718687	563.70	784.3471622
2	PBP 10mm Std Plasterboard 2	0.000799087	611.35	765.0608823
3	PBP 10mm Std Plasterboard 3	0.000756877	566.61	748.6152975
4	PBP 13mm Std Plasterboard 1	0.000960496	719.96	749.5709615
5	PBP 13mm Std Plasterboard 2	0.000978442	737.48	753.7287025
6	PBP 13mm Std Plasterboard 3	0.000923494	685.32	742.0943701

5.2

Results (kg/m^3)		
	Maximum	784.35
	Minimum	742.09
	Average	757.24
	Range	5.39%

6. Comment:

6.1 Results obtained demonstrate that densities for all samples exceed the minimum density of 600 kg/m^3 required to satisfy NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a) for use as a structural ceiling diaphragm.

7. Attachments:

7.1 Figure 1 – Photograph of samples.

Dean Buckeridge NZCD(Arch)

Building Element Assessment Laboratory Limited

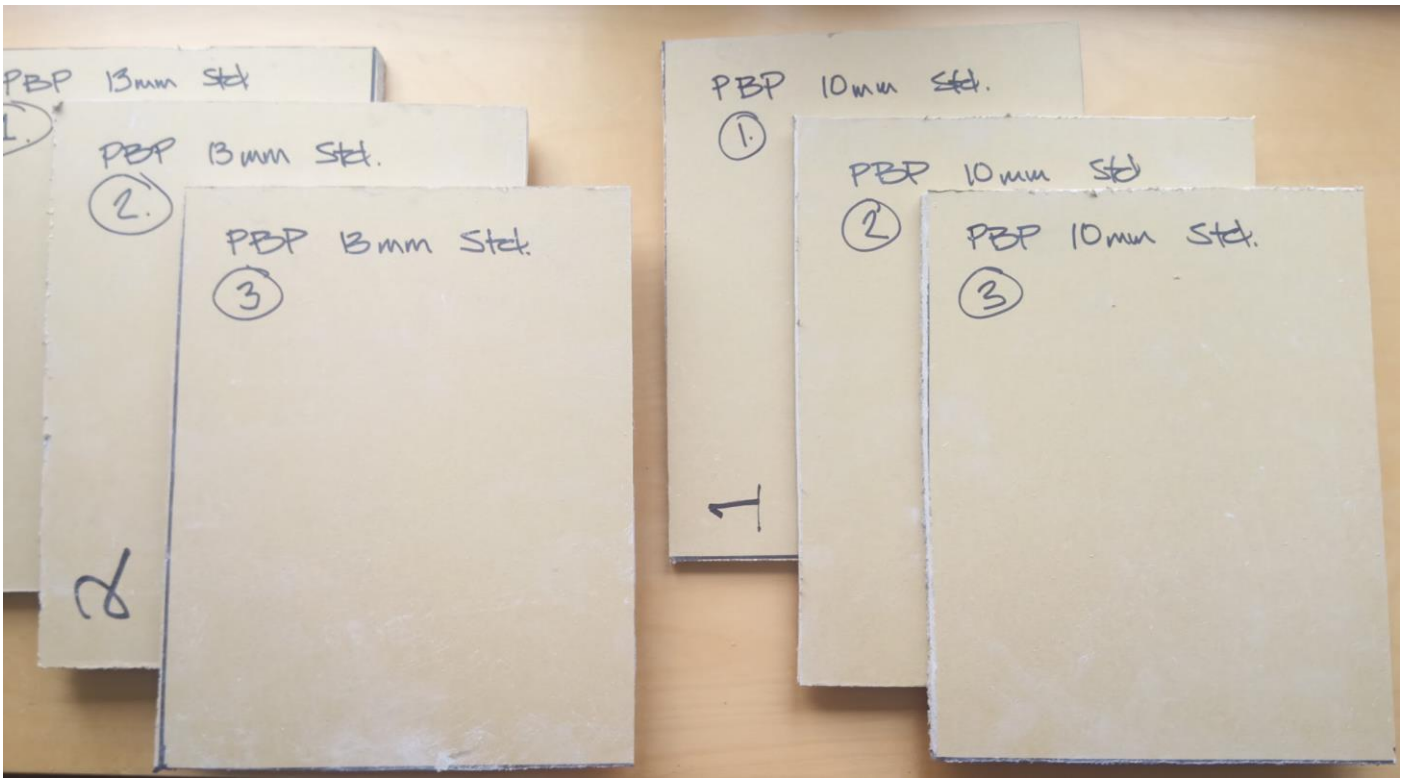

Figure 1 – 10mm and 13mm Plasterboard