

PSSDB LOAD BEARING WALL WITH WINDOW OPENING  
- EFFECT OF BUTT JOINT IN DRY BOARD



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**LAPORAN AKHIR PENYELIDIKAN "PSSDB LOAD BEARING WALL WITH WINDOW  
OPENING – EFFECT OF BUTT JOINT IN DRYBOARD"**

Merujuk kepada perkara di atas, bersama-sama ini disertakan 3 (tiga) naskhah Laporan Akhir Penyelidikan bertajuk "PSSDB Load Bearing Wall with Window Opening – Effect of Butt Joint in Dryboard".

Sekian, terima kasih.

Yang benar,



**SITI HAWA HAMZAH**

Ketua

Projek Penyelidikan

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## ABSTRACT

Profiled steel sheet dry board or PSSDB system is a new innovative composite construction system with a potential to be expanded in application as an alternative to flooring, wall unit and roofing system. In this study, load-bearing walls with window opening were constructed using PSSDB. The investigation was carried out experimentally to determine the structural behaviour and to see the effect of butt joint in the dry boards. The PSSDB load bearing wall system consists of two dry boards (Cemboards) attached to profiled steel sheet (Bondek II), the core of panel, using mechanical connectors (self-drill screws).

Several aspects such as literature review, testing method and analysis of results were included in this research. The samples tested were three (3) numbers of PSSDB walls with window opening and butt joint in the dry boards, and three (3) numbers of PSSDB walls with window opening but without butt joint in the dry boards. The size of each sample is 1000 mm high x 1320 mm wide x 78 mm thick with window opening of size 400 mm x 400 mm x 78 mm. The connectors were fixed at a 100 mm center to center in the longitudinal axis. The samples were subjected to axial compressive load and comparisons were made between the two sets of samples. The average value of the ultimate load capacity for PSSDB load bearing wall with butt joint was found to be 286 kN, while that for the samples of PSSDB load bearing wall without butt joint was 260 kN. The maximum lateral deflection values for both types of PSSDB walls were 10.7 mm and 13.5 mm respectively. Significant effect of butt joint in dry board were seen in the reduced number of cracks by about 33% in comparison to that without butt joint.