


UTL-A014-2018 ASSESSMENT REPORT

**Variation of The Fire Resistance
Performance of 4 hour Fire
Resistance Gypsum Block
Walls**

Project Number UTL-C026	Date of Issue: 17 Sep 2018	Page 1 of 5 Pages Copy 1 of 1 Copies	
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1. CLIENT

Fujian Jumbo New Material Corporation Limited
Industrial Zone,
Changshan Overseas Chinese Economic Development Zone
Zhangzhou, Fujian, China

2. INTRODUCTION

This report gives UTL's assessment of the fire resistance of symmetric, non-loadbearing fully insulated fire resistance "Jumbo" 80 mm thick block wall of fire resistance of 241 minutes integrity and insulation in accordance with BS EN 1364-1 : 1999 " Fire resistance tests for non-loadbearing elements – Part 1: Walls".

The modified gypsum block walls are required to be capable of a performance of 241 minutes integrity and insulation as tested and described in test report IT 16-186 by Forte Testing and Consultant Company Limited.

3. BACKGROUND

A "Jumbo" test report of 80 mm thick gypsum block wall was tested in accordance with BS EN 1364-1 : 1999 and achieved a fire resistance of 241 minutes integrity and insulation. All aspects of the test were conducted under the procedures of BS EN 1363-1:1999 "Fire resistance test – Part 1 : General requirements". Full details of the specimens and test results are recorded in test report test report IT 16-186 provided by client.

4. ASSUMPTION

The gypsum walls will be constructed in a similar manner from materials and components of the same manufacturer. The mortar composition, and the density and composition of the block will be as tested.

It is assumed that any adjacent supporting masonry, concrete structures or any structure as an associated construction which has known fire resistance same as the specimen being tested is capable of providing the required level of fire performance to effectively support the construction for the required periods of not less than 240 minutes.

The construction shall be of sufficient strength to resist any thermally stress and shall be capable of providing adequate fixing.

This assessment only considered the thermal insulation and integrity based on test report IT 16-186, strengthen of the supporting system is out of the scope in this assessment. This assessment does not consider maintenance, durability or service requirements (e.g. wind pressure and imposed structural load on the walls). The walls only support their self-weight.



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5. BASIC OF ASSESSMENT

It is proposed that the Jumbo gypsum block wall construction tested under reference IT 16-186 was modified as 100 mm and 150 mm thick and with a height of up to eight meter without affect the fire resistance performance of the gypsum block wall.

6. DISCUSSION

As mentioned above, the fire resistance of the test construction shall be assessed against integrity and insulation only.

6.1 Integrity

In the fire resistance test IT 16-186, the gypsum block wall was constructed in such a way that integrity failure of the structure does not occur at the end of the fire resistance period i.e. without failure of sustained flaming, gap gauge and cotton pad tests. The factors which involve in maintain integrity is whether the gypsum block will crack or not. Increase in compressive strength normally will increase the density of the material as a result benefit the integrity criteria subject to the limit of the compression failure. The sponsor provided a test result LRN : MR0161003-3 dated 19 Oct 2016 for the compressive strength of the gypsum block comply with BS EN 13279-2 : 2004 which is 13.3 N/mm². This compressive strength is sufficient for the Jumbo 80 in the test increased its thickness to 100 and 150 mm by 8 m height and will maintain its integrity for 241 minutes subject to the fire testing standard.

6.2 Insulation

The insulation of a material depends on the thermal conductivity of system. There is no relationship in between the surface area but the thickness of the material. Therefore, increase in thickness of the wall will only benefit the insulation performance of the wall. It is acceptable for the proposed thickness have a fire resistance of not less than 241 minutes under same conditions of construction.


7. CONCLUSION

It is concluded that the Jumbo fire resistance block wall, when increase in thickness, the block wall in accordance with integrity and insulation criteria described in BS 476 : Part 20/22 : 1987 is expected to be satisfied for the purposed periods of 60, 120 and 240 minutes, providing the supporting reports being currently valid.

8. LIMITATION AND VALIDITY

This assessment address itself solely to the elements and subjects discussed and do not cover any other criteria. All other details not specifically referred to should remain as tested or assessed.

This assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, UTL reserves the right to withdraw the assessment unconditionally but not retrospectively.

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There is no actual products supplied by sponsor for UTL endorsement in this assessment report. If any fire-resistance test in the future confirms that the assessment here is inapplicable, we would be entitled to abolish the right to use the assessment.

There is no any variation in details supplied by the sponsor in this assessment report except the height and thickness of the block wall used in the system. This assessment report is valid provided no modifications are made to the systems detailed in related reports.

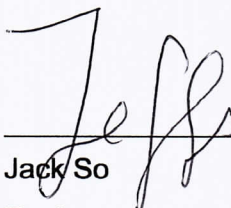
8. DECLARATION BY : FUJIAN JUMBO NEW MATERIAL CORPORATION LIMITED


We, Fujian Jumbo New Material Corporation Limited when distributing copies of this report confirm that :

1. All test results, data, records and related information are provided by Fujian Jumbo New Material Corporation Limited under authorization of owner;
2. For any information that could adversely affect the conclusion of this assessment, Fujian Jumbo New Material Corporation Limited agree to withdraw this assessment by UTL.


Fujian Jumbo New Material Corporation Limited

Prepared by :


Jack So
Engineer



Note : This report will not valid unless 100% full payment was received by UTL and a declaration by sponsor

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