Exova Warringtonfire Aus Pty Ltd
Unit 2, 409-411 Hammond Road
Dandenong, Victoria 3175
Australia

Postal Address:
PO Box 4282
Dandenong South, Victoria 3164
Australia

T: +61 (0)3 9767 1000
F: +61 (0)3 9767 1001
W: www.exova.com

Testing. Advising. Assuring.

EWFA Assessment Report No.	24348-00.2	Page 1 of 3

Report Sponsor	Issue Date	Expiry Date
Finewood Ventech Pty Ltd, 32 Thornycroft Street, Campbellfield, VIC 3061	20/11/2015	30/11/2020

Introduction

This is an assessment of the fire hazard properties of "fire retardant treated MDF, FR MDF" using data obtained in accordance with AS/NZS 3837: 1998 (amdt 1) - "*Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter*", the data was assessed in accordance with Specification A2.4 of the Building Code of Australia.

For the verification of fire hazard properties the Building Code of Australia 2009 (BCA) Specification C1.10 requires testing to ISO 9705 "Fire tests – Full scale room test for surface products" or AS/NZS 3837: 1998 (amdt 1). ISO 9705 is commonly referred to as the "ISO room fire test", whilst AS/NZS 3837 is better known as the "Cone calorimeter test".

As an alternative to an ISO 9705 test the BCA permits testing to AS/NZS 3837: 1998 (amdt 1) in conjunction with the prediction method outlined in Specification A2.4 of the BCA.

The main outcome from these tests is a material's "group number". The materials group number is an indication of its 'time to flashover' in the ISO room fire test. The group number may be gained directly from testing a material in the above mentioned ISO room fire test, or alternatively be predicted using data obtained from testing of the material in the cone calorimeter.

Referenced Test Report	Reference Date	Test Standard	Test Sponsor
EWFA 23845-00b.1	7/08/2009	AS/NZS 3837: 1998	Finewood Ventech
EWFA 24227-00a.1	4/12/2009	AS/NZS 3837: 1998	Finewood Ventech

TESTING AUTHORITY	Exova Warringtonfire Aus Pty Ltd	
Address	PO Box 4282 DANDENONG SOUTH VIC 3164 Unit 2, 409-411 Hammond Road DANDENONG VIC 3175	
Phone / Fax	61 (0)3 9767 1066 / 61 (0)3 9767 1001	
ABN	81 050 241 524	
Email / Home Page	www.exova.com	
Authorisation	Prepared By: D. Nicholson	Reviewed By: K. G. Nicholls

Referenced Tested Data

Summary of Test Data

EWFA 23845-00b.1 comprised a 18.5mm thick Fire Retardant MDF, impregnated with Phosphatic Salt and when tested achieved a group number predicted by BCA Specification A2.4 of Group 1 and an average Specific Extinction Area of 98.3m^2/kg. During testing the three specimens exhibited unsustained ignition at 75, 81 and 102 seconds respectively.

EWFA 24227-00a.1 comprised a 3.0mm thick Fire Retardant MDF, impregnated with Phosphatic Salt and when tested achieved a group number predicted by BCA Specification A2.4 of Group 1 and an average Specific Extinction Area of 21.5m^2/kg. During testing specimens failed to ignite within 10 minutes and testing was ceased as per section 2.5.2(i).

Relevance of Test Data

The referenced cone calorimeter tests EWFA 23845-00b.1 and EWFA 24227-00a.1 were conducted in accordance with AS/NZS 3837: 1998. Since the referenced tests an amended standard AS/NZS 3837:1998 (amdt 1) has been issued. The apparatus, specimen, test procedure and calculation requirements of AS/NZS 3837: 1998 (amdt 1) are unchanged from the earlier Standards. Amendment No. 1 was raised to address significant differences observed between group numbers achieved by applying empirical correlations to predict the time to flashover using AS3837 test results and measured results achieved in AS ISO 9705. The use of empirical correlations has been shown to be valid for essentially homogeneous materials that do not melt or shrink away from a flame. AS/NZS 3837: 1998 (amdt 1) provides examples of materials for which the correlation has been shown to be valid and includes the following:

(a) Painted or unpainted paper faced gypsum plasterboard
(b) Solid timber and wood products such as particle board and plywood
(c) Rigid non- thermoplastic foams such as polyurethane

The referenced tests were performed on specimens of Fire Retardant MDF, impregnated with Phosphatic Salt. The material is a solid wood product similar to the example provided by AS/NZS 3837: 1998 (amdt 1) and is therefore considered a material for which the correlation has been shown to be valid.

In light of the above it is considered that the results of the referenced tests EWFA 23845-00b.1 and EWFA 24227-00a.1 are suitable for the prediction of group numbers in accordance with Specification A2.4 of the Building Code of Australia.

Proposed Variations

It is proposed the group number of 1 be applied to Finewood Ventech Fire Retardant MDF, impregnated with Phosphatic Salt of thickness 3mm or greater that are treated to the same level by volume as the tested material.

Discussion of Variations

The critical aspects of the performance in a test to AS3837 are whether the specimen ignited and the specimen thickness. The thickness of the specimen can increase the rate the specimen heats up and can burn simultaneously on both exposed and unexposed surfaces.

By inspection of the results from EWFA 24227-00a.1, it is confirmed that the 3mm thick specimen ignited though ignition was not sustained and self extinguished before the end of the 10 minute test. By inspection of the results from EWFA 23845-00b.1, it is confirmed that the 18.5mm thick specimen did not ignite before the end of the 10 minute test.

It is expected that specimens of thickness between 3mm and 18mm would exhibit behaviour similar to either the 3mm specimen or the 18.5mm specimen and therefore in absence of any introduced fire hazard, it is considered that these intermediate thicknesses would also achieve group 1 if tested to AS3837.

The proposal also includes the option of MDF thicker than 18.5mm. The key aspect of this proposal is that the retention of fire retardant be the same for the thicker MDF as it was for the 18.5mm thick on a pro rata basis based on the volume of the finished product.

By inspection of the results for average Specific Extinction Area, it is observed that the value decreases as the material thickness increases.

If the fire retardant retention for the thicker MDF is similar to that of the 18.5mm tested MDF, it is expected that thicker specimens would exhibit similar or better performance to that of the 18.5mm MDF tested in EWFA 23845-00b.1.

Assessment Conclusion

Based on the previous discussion it is considered that Finewood Ventech Fire Retardant MDF, impregnated with Phosphatic Salt at a thickness of 3mm or greater will achieve a group number of one and the average Specific Extinction Area of 98.3m2/kg or less.

Requirements

The results of this assessment apply to samples of FR MDF where the penetration depth of the phosphatic salt fire retardant treatment is the full thickness of the MDF board and is uniform throughout. The flame retardant additive concentration must not on a pro rata basis be less than the tested MDF at 3mm and 18.5mm thickness

Conditions / Applicability

This assessment report does not provide an endorsement by Exova Warringtonfire Aus Pty Ltd of the actual products supplied. The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions. The assessment can therefore relate only to the actual prototype test specimens, testing conditions, and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report be reviewed on or, before, the stated expiry date. The assessment is valid provided no modifications are made to the systems detailed in this report. This report may only be reproduced in full without modifications by the report sponsor. Copies, extracts or abridgments of this report in any form shall not be published by other organisations or individuals without the permission of Exova Warringtonfire Aus.