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Accelerated Weathering to ASTM D2898 Method B of Cease-Fire Technologies FR Timber Coating System

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Accelerated Weathering to ASTM D2898 Method B of Cease-Fire Technologies FR Timber Coating System

1. CLIENT

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2. OBJECTIVE

The client requested BRANZ Ltd to conduct accelerated weathering of fire-retardant coated radiata pine samples using the ASTM D2898 Method B for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing, as part of the testing requirements outlined within the Australian Bush Fire Standard AS3959-1999. After the accelerated weathering, the samples were submitted for cone calorimeter testing, as outlined in BRANZ Report FH3409.

3. SAMPLE DESCRIPTION

Ten specimens identified as CF2 were supplied by the client for accelerated weathering. The samples were identified by the client as fire retardant coated radiata timber. The painted coating system was white in colour and was identified by the client to comprise in order of application.

FRT-1 CFT Primer (85 µm thickness)
FRT-2 CFT Fire Retardant Coating (350 µm thickness)
FRT-3 CFT Interior / Exterior Top Coat (170 µm thickness)

These samples were assigned a BRANZ sample code 05/010.

4. TEST DESCRIPTION

The test specimens were subjected to a test regime based upon the ASTM D2898 Method B for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing. All of the test specimens were subjected to a 24 hour cycle consisting of 4 hours wetting, 4 hours drying using UV lamps & air movement across the specimens, 4 hours wetting, 4 hours drying using UV lamps & air movement across the specimens, and 8 hours rest. This cycle was repeated for a total of 1000 hours. The moderately fine water spray was applied uniformly over the exposed surface of the samples at an approximate rate of 12.5 L/min/m^2. All of the samples were rotated in the cabinet at regular intervals. All samples were dried to constant weight in a controlled climate room set at 50 ±5 %RH and 23 ±2°C before being subjected to cone calorimetry testing.

5. RESULTS

Figures 1-3 show the CF2 samples after 6 hours, 688 hours and 1000 hours accelerated weathered respectively. The accelerated weathering seemed to have no significant effect on the

aesthetic appearance of the coating. There was no evidence of any blistering, cracking or peeling at any stage of the weathering procedure.

Figure 1. – 6 hours exposure

Figure 2. – 688 hours exposure

Figure 3. – 1000 hours exposure