

TESTING AND
ASSESSMENT OF A
12 MM TEMPORARY
HOARDING INFILL
PANEL TO
AS 4687.3:2022



Technical Report For
SAVEBOARD

REPORT NO: 23-1177-B3
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In Confidence to the Client:

SAVEBOARD

15 Production Avenue
Warragamba NSW 2752

TESTING AND ASSESSMENT OF A 12 MM TEMPORARY HOARDING INFILL PANEL TO AS 4687.3:2022

Date of Testing: 30 October to 31 October 2023

TEST SYNOPSIS:

Temporary hoarding infill panels, proprietary base mounts, supporting back braces and studs were delivered to the MTS laboratory by the client for testing and compliance assessment (see Fig. 1).

At the request of the client, tests were to be conducted to determine the performance attributes of assembled temporary hoardings in accordance with AS 4687:2022 TEMPORARY FENCING AND HOARDINGS – PART 3: TEMPORARY HOARDINGS.

The following tests were to be conducted in accordance with AS 4687.3 ‘TEMPORARY HOARDINGS’:

- CLAUSE 2.5: TEMPORARY HOARDING INFILL RIGIDITY PERFORMANCE
- APPENDIX B: IMPACT TEST FOR TEMPORARY HOARDINGS

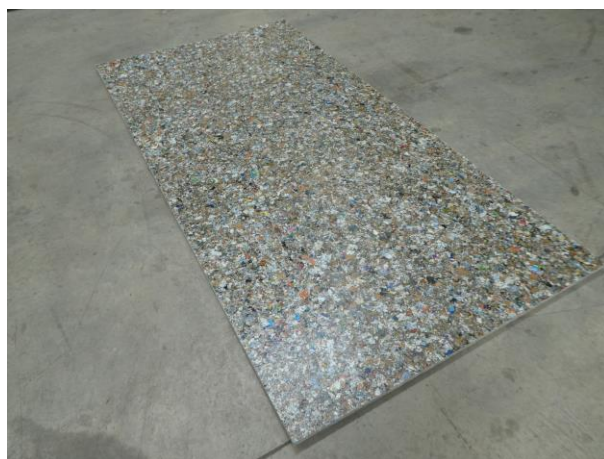


FIG. 1
12MM TEST SAMPLE

TEST ITEM DETAILS:

Upon arrival at the MTS laboratory, the infill panels, proprietary base mounts, supporting back braces and studs were inspected for dimensions. Details from the inspection and the client’s documented specifications are provided as follows:

Test Location:	<i>Melbourne Testing Services</i>
Product Description:	<i>12 mm Multi-use Hoarding Infill Panel</i>
Infill Panel:	<i>2400 × 1200 × 9 mm (l × w × t)</i>
Vertical Support (Stud):	<i>1,200 mm (nom.) Centre to Centre</i> <i>90 × 45 (l × w) MGP10 Pine, 2400 mm High</i>
Horizontal Support (Stud):	<i>90 × 45 (l × w) MGP10 Pine</i>
Base Mount Dimensions:	<i>465 × 350 × 115 mm (l × w × h)</i>
Base Mount Qty:	<i>3 (stacked height 250 mm)</i>
Base Mount Mass:	<i>Stackable Plastic Encased Concrete Blocks; 18 kg each</i> <i>Total Mass Per Vertical Support 3 Blocks × 18 kg = 54 kg</i>

TEST ITEM DETAILS (CONT.):**Supporting Back Brace:***1700 mm (overall length)**Ø 32 mm; Galvanised Steel Circular Hollow Section (CHS)**Contains Two (2) × 200 mm long CHS lengths, welded to the underside of the bottom plate at 100 mm Centres. Telescopically located within the base mount.***Top Plate:***45 × 150 × 8 mm (w × h × t)***Bottom Plate:***160 × 62 × 8 mm (w × l × t)***Screws:***Phillips 8G × 40 mm Screws (gauge × length)**Used at Infill Panel to Vertical Support, 45 mm Face at 200 mm Vertical Centres**Phillips 8G × 65 mm Screws (gauge × length)**Used to fasten Horizontal and Vertical Support Studs***TEST SETUP:**

Three (3) temporary hoarding panels were assembled on the MTS laboratory test floor. As shown in Figures 4 and 5, a horizontal stud member was installed at the bottom of the assembly. The horizontal stud was assembled perpendicular to the four (4) vertical studs and secured using 8G × 65 mm screws at each vertical stud location.

The hoarding assembly was braced using a concrete counterweight system, with four (4) stacks of three (3) 18 kg proprietary base mounts (see Fig. 5). Two (2) 8G × 40 mm screws were used to fasten the back brace to each vertical stud, where the screws were mounted diagonally across the top plate (see Fig. 3). Finally, the lower section of the back brace was inserted into the securing holes of the base mounts to hold the assembly in place.

The hoarding infill panel was assembled to each respective vertical stud using 8G × 40 mm screws, fastened at nominally 15-17 mm horizontally from the edge of each panel. The highest screw at each hoarding panel was fastened 100 mm vertically from the top edge of the panel. The screws were installed into the panel and timber stud assembly at 200 mm vertical centres.

TEST PROCEDURE:***Nail Penetration Test***

Nail penetration testing was conducted in accordance with AS 4687.3 CLAUSE 2.5 'TEMPORARY HOARDING INFILL RIGIDITY PERFORMANCE'. The test was performed using a pneumatic nail gun (SPEAR AND JACKSON; PROJECT AIR; MODEL NO. FN3490) placed approximately 1 m away from the infill panel on the internal face (see Fig. 2). A steel nail with dimensions Ø 3 × 75 mm was selected as the projectile. Three (3) nails were fired directly into the hoarding infill panel. Upon completion of the test, the infill panel was visually examined for any indication of penetration of the nail through the infill panel.

In the event that no nail penetration was evident, the hoarding infill panel was to be considered of sufficient rigidity to prevent errant ballistic projectiles (i.e. nails) from passing through the panelling.

TEST PROCEDURE (CONT.):***Impact Test***

Impact testing was conducted in accordance with AS 4687.3 APPENDIX B by releasing a 37 kg, 150 mm diameter torispherical shaped steel indenter at a set height through a pendulum arc into the internal face of the temporary hoarding assembly (see Fig. 4). As described in AS 4687.3 CLAUSES B3 and B4, a three (3) panel hoarding assembly was set up to facilitate impact testing at four (4) different test locations on the centre panel, as shown by AS 4687.3 FIGURE B.4 and provided in Figure 6.

All impact tests were conducted using the mandatory impact energy of 150 joules; this corresponds to a pendulum swing height (h_i) of 420 mm. A conservative height of 450 mm was utilised to account for any potential energy losses due to friction or resistance. Impact testing was undertaken on each of the four (4) locations as shown in Figure 6 of this report.

Upon completion of each impact strike, a thorough visual examination of the hoarding assembly was undertaken to assess for the following:

- Signs of penetration of the infill material/panel
- Signs of failure at the connection between the panel and support frame
- Signs of cracking or fractures on the panel's framework
- Overturning of the assembly



FIG. 2
NAIL PENETRATION TEST SETUP



FIG. 3
TOP OF SUPPORTING POST

TEST PROCEDURE (CONT.):



**FIG. 4
IMPACT TEST SETUP**



**FIG. 5
TEST ASSEMBLY**

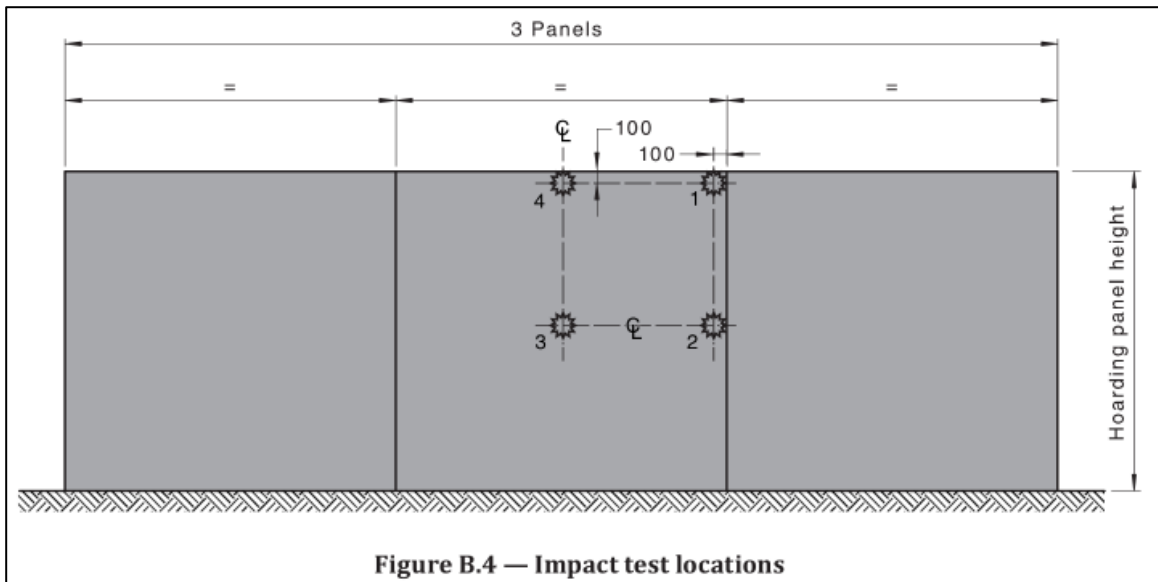


Figure B.4 — Impact test locations

FIG. 6

EXTRACT FROM AS 4687.3 FIGURE B.4 – IMPACT TEST LOCATION AND SETUP

Test Observations:

The hoarding infill panel is considered compliant with AS 4687.3 CLAUSE 2.5 ‘TEMPORARY HOARDING INFILL RIGIDITY PERFORMANCE’ as the infill panel was visually examined to be sufficiently rigid in preventing errant ballistic projectiles from passing through the panel.

The hoarding infill panel was found to withstand and absorb the impact energy of at least 150 joules at the specified locations, without the observation of the following:

- Signs of penetration of the infill material/panel
- Signs of failure at the connection between the panel and support frame
- Signs of cracking or fractures on the panel’s framework
- Overturning of the assembly

Therefore, the tested temporary hoarding assembly, including the infill panel, is considered to be compliant with AS 4687.3 APPENDIX B.

TEST SUMMARY:

The test results confirm that the 12 mm multi-use hoarding infill panel, as described and reported herein, with 200 mm vertical screw centres, meets the minimum requirements as specified in the following sub-clauses of Australian Standard AS 4687.1:2022 TEMPORARY FENCING AND HOARDINGS – GENERAL REQUIREMENTS:

CLAUSE 3.3.4 (A): SIMULATED IMPACT LOAD FOR STABILITY (Q_{ih1})

CLAUSE 4.3.3 (A): STABILITY (Q_{ih1})

The test results confirm that the 12 mm multi-use hoarding infill panel, as described and reported herein, with 200 mm vertical screw centres, meets the minimum requirements as specified in the following sub-clauses of Australian Standard AS 4687.3:2022 TEMPORARY FENCING AND HOARDINGS – TEMPORARY HOARDINGS:

CLAUSE 2.5: TEMPORARY HOARDING INFILL RIGIDITY PERFORMANCE

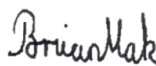
APPENDIX B: IMPACT TEST FOR TEMPORARY HOARDINGS

Notes:

- 1) Melbourne Testing Services (MTS) Pty Ltd shall not be liable for loss, cost, damages or expenses incurred by the client or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall MTS be liable for consequential damages including, but not limited to, lost profit, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested.
- 2) MTS shall take no responsibility for the interpretation or misinterpretation of the procedures or calculation methods as provided herein or for the appropriateness or validity of the test procedures for the test items described and reported herein.
- 3) The number of specimens tested herein is not necessarily statistically significant. It remains the responsibility of the reader to conduct rigorous statistical analyses and employ appropriate load reduction safety factors as required.
- 4) This report is specific to the temporary hoarding panels described herein, in their state at the time of testing. It should not be taken as a statement that all similar temporary hoarding panel assemblies or components of temporary hoarding panel assemblies in all states of repair, would also perform in a similar manner to items described herein.
- 5) MTS shall take no responsibility for the procurement and authenticity of the temporary hoarding panels as described herein.
- 6) MTS shall take no responsibility for the onsite installation procedures used for the temporary hoarding panels described herein.
- 7) It remains the responsibility of the client to ensure that the temporary hoarding panels tested are representative of the entire product batch.
- 8) Compliance as stated in the report is strictly limited to the temporary hoarding infill rigidity performance listed in AS 4687.3:2022 Clauses 2.5 and impact testing performance attributes when tested in accordance with AS 4687.3:2022 Appendix B. This report does in no way validate the tested item for any other performance attribute other than that specifically reported herein.



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