MFPA Leipzig GmbH

Leipzig Institute for Materials Research and Testing

Testing, Inspection and Certification Authority for Construction Products and Constructions Types

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Work Group 2.1
Experimental Construction Mechanics

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Testing laboratory accredited by DAkkS GmbH according to DIN EN ISO/IEC 17025. The certificate can be seen on www.mfpa-leipzig.de

Test Report No. PB 2.1/23-049-2-2r1

15 November 2024

Replaces Test Report No. PB 2.1/23-049-2-2 from 19th October 2023

Subject matter:	Determining the self weight (wet, reduced wet, dry) according to DIN EN 1794-1:2011 - Appendix B, DIN EN 1794-1:2018 – Appendix B and DIN EN 1794-1:2003* – Appendix B, for an absorptive noise reducing element made of recycled PVC and internal strips of mineral wool
Dimensions:	(L x H x T) 2.97 m x 0.25 m x 0.050 m
Product designation:	„KLIK-LOK Absorptive“
Client:	Genwork Ltd Bromley Street, Lye, Stourbridge, West Midlands, DY9 8HU United Kingdom
Test date:	25.10.2023 - 26.10.2023
Editor:	Dipl.-Ing. (FH) Volker Ahnert, M.Sc.

This test report consists of 4 pages and 1 annex.

1 Assignment

Genwork Ltd did assign MFPA Leipzig GmbH to perform tests in order to determine the self-weight of the noise reducing element „KLIK-LOK Absorptive“ when dry, reduced wet and wet according to DIN EN 1794-1:2011-Annex B, DIN EN 1794-1:2003 – Annex B and DIN EN 1794-1:2018 – Annex B.

2 Test object

According to the information provided by the client, the noise reducing elements were wall elements made of mainly recycled PVC with additional additives and stabilisers. The exact composition was not specified by the client. Each noise reducing element consisted of a total of 5 chambers with an outer wall thickness of about 4.3 mm (inner web thickness about 3.0 mm). Each chamber of the noise reducing element has a bead on the side facing the roadway (see Figure A1-1 of Annex 1). On the side facing the roadway, the noise reducing element also has recesses as shown in Figure A1-1 of Appendix 1. The chambers contained continuous running glass-fleece laminated strips of mineral wool of the type "Earthwool Building Slab RS100" (cross-sectional dimensions: 0.040 m x 0.030 m) with a gross density of approx. 100 kg/m³. The noise reducing elements are fitted over each other with a positive fit by means of the tongue-and-groove systems arranged on the long sides. In practice, the element is inserted into vertical steel profiles and fixed in the chamber on the side facing the roadway using spacers made of coniferous wood (45 mm x 85 mm; C24). The softwood spacers are fixed to the steel posts at a maximum distance of 1000 mm using M8 x 60 stainless steel screws as shown in Figure 2 (distance offset by 500 mm from opposite bearing side). The distance between the noise reducing elements and the web of the supporting steel post equals 10 mm. The size of the spacers is selected by the client in such a way that a firm bearing in the steel profile is ensured. A technical drawing of the noise reducing element is attached to Annex 1.

Dimensions

- Total length: 2,970 mm
- Height (as when installed): 250 mm
- Total thickness: 50 mm

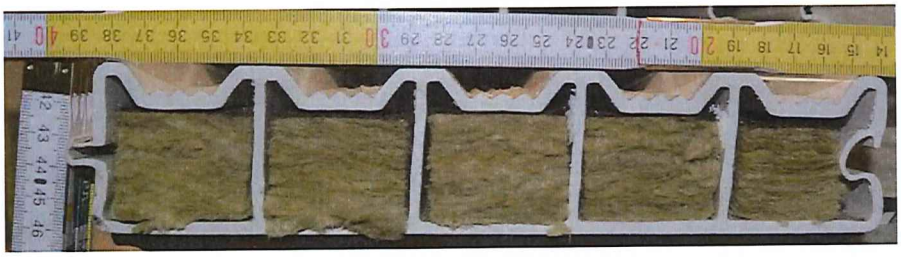

Figure 1: Structure of the tested noise reducing element in cross-section

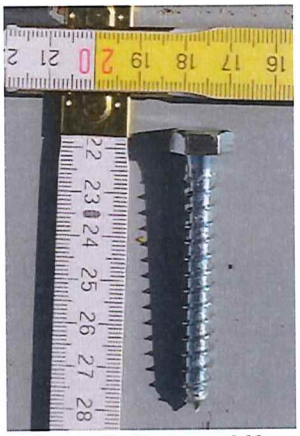

Figure 2: Screws M8 x 60

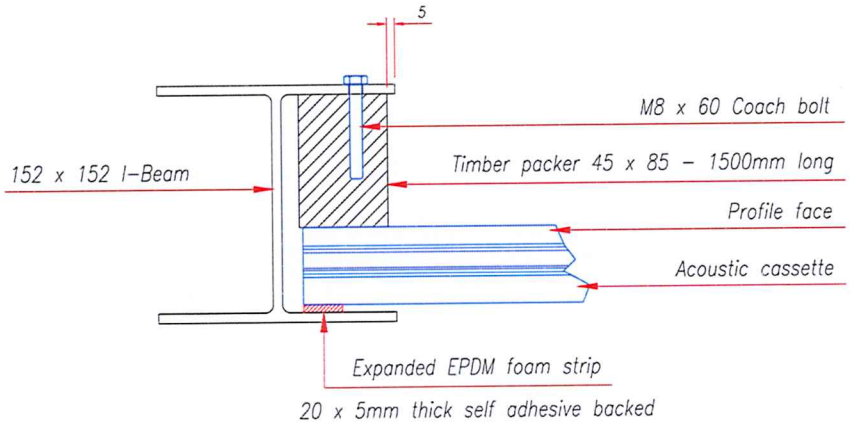

Figure 3: Structure of the tested noise reducing element in cross-section

3 Performing of the test

The test was performed according to the aforementioned standard. The element was initially weighed dry and then stored in water for 24 h. Then the element was removed, set up vertically as per the application and weighed again after 10 minutes (reduced wet). The determined weights in dry, wet and reduced wet condition are shown in Table 1.

The element`s self weight when wet is a theoretical value that can only be reached if all of the porous materials and cavities absorb all the water and the openings are closed or other ways are prevented to keep the water from draining. Due to the increasing water pressure and the size of the present openings this event will not occur. The value was nevertheless determined and specified in the table. The evaluation of the test was performed by the editor if not otherwise declared.

Table 1: The noise reducing element's (made of PVC) self-weight when dry, reduced wet or wet

state	kg	kN
dry	14.2	0.139
reduced wet	19.7	0.193
wet	21.0	0.206

On the basis of a rectangular probability distribution the measurement uncertainty equals to 0.99 %. This value is based on the following uncertainties:

- Measuring uncertainty of the measuring devices
- Procedural error

Within the scope of validity of ZTV Lsw 06 this test report is valid up to a maximum of 5 years from the date of issue.

The results of the tests exclusively relate to the items tested. This document does not replace a certificate of conformity or suitability according to national and European building codes. The sampling stage/test item production has not been carried out by the laboratory. The results of the test apply to the sample as received.

Leipzig, 15 November 2024

Dr.-Ing. I. Wojan
Head of Work Group

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Enclosure 1

Technical drawing provided by the client

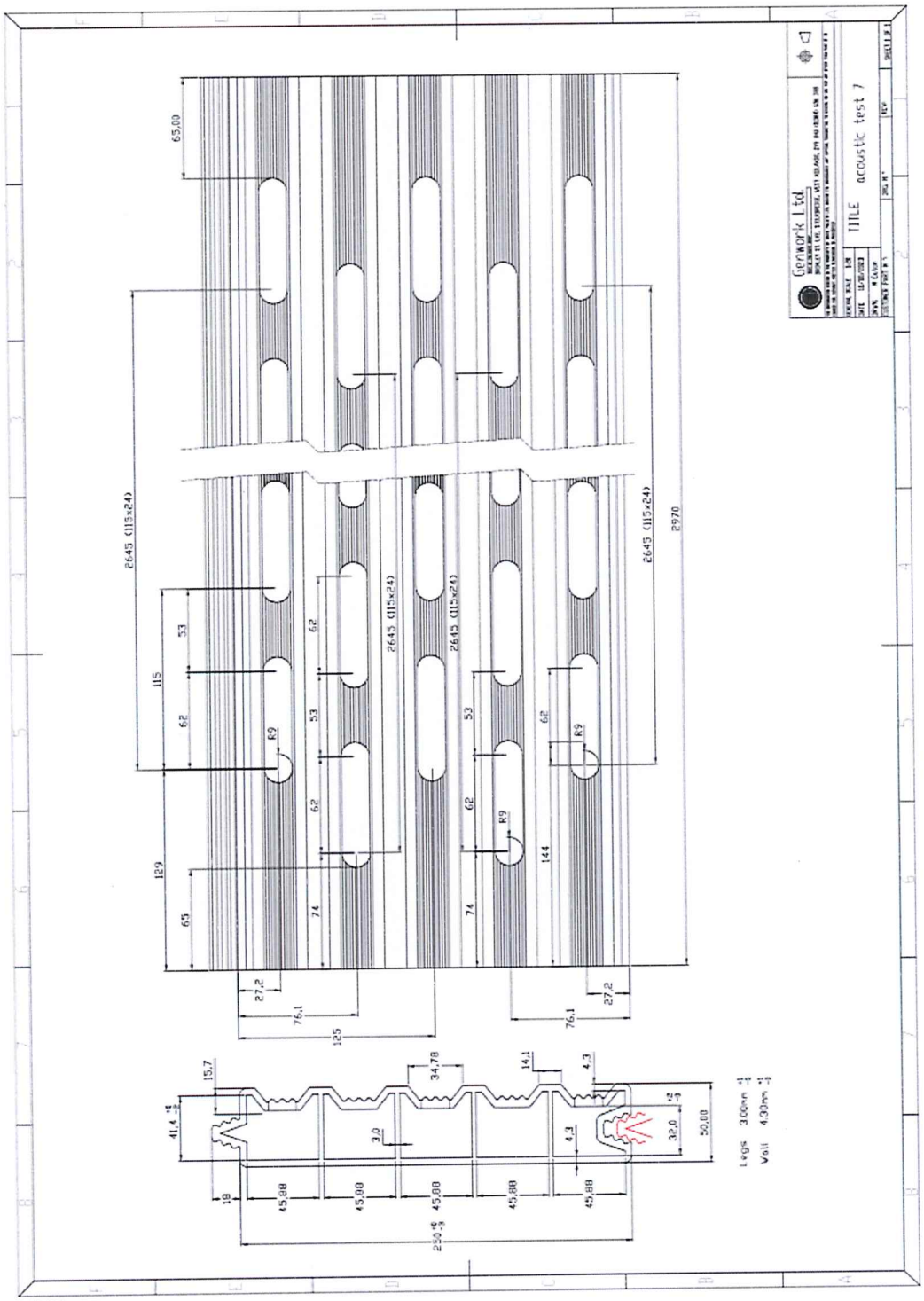

Figure A1-1: Technical drawing provided by the client

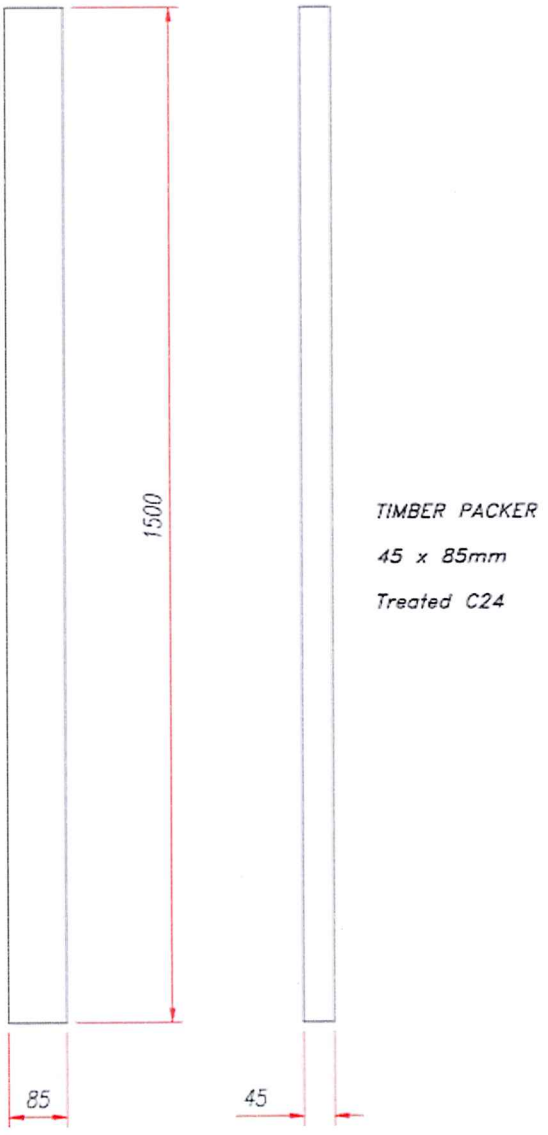

Figure A1-2: Technical drawing provided by the client – wood spacer

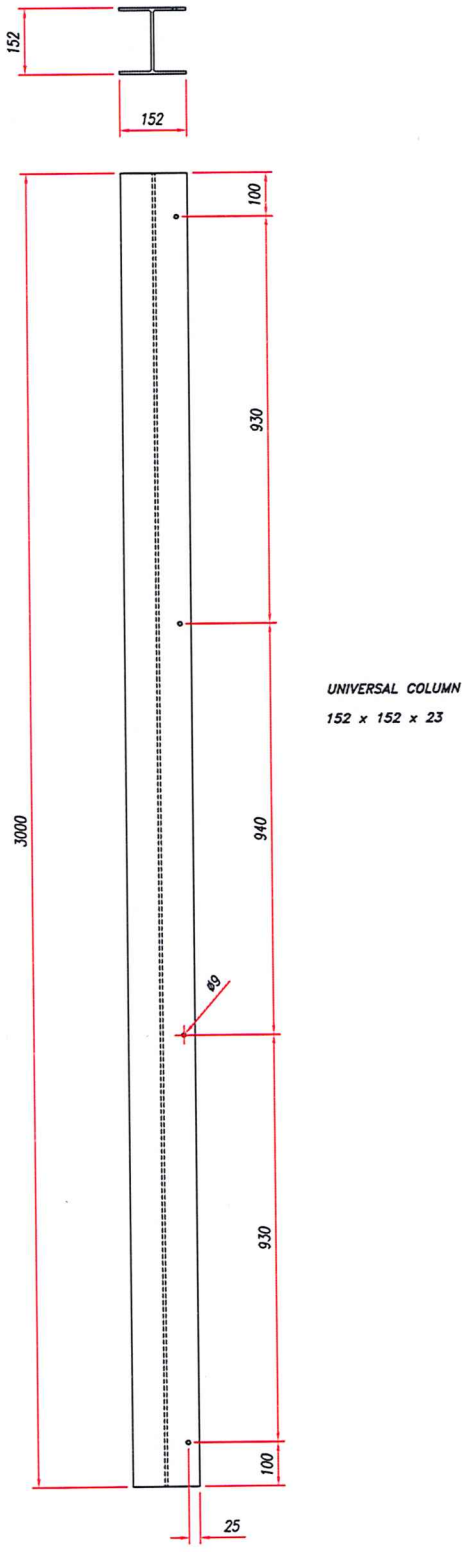

Figure A1-3: Technical drawing provided by the client – steel post – load bearing component