

MFPA Leipzig GmbH

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

Leipzig Institute for Materials Research and Testing
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Work Group 2.1 - Experimental Construction Mechanics

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Test Report No. PB 2.1/13-038-1-2

05 September 2013

No. Copy 1

Object of the test:

Test of the **stone impact resistance** of a noise reducing element in conformity with Appendix C of DIN EN 1794-1:2011 consisting of a pane made of polymethyl methacrylate (PMMA) with a thickness of 10 mm and a circumferential frame of hollow aluminium sections, dimension (L x H) 2.00 m x 2.00 m

Designation: **Plexiglas® Soundstop XT**

Client:

Evonik Para-Chemie GmbH
Hauptstrasse 53
2440 Gramatneusiedl

Austria

Date of inspection:

20.06.2013

Editor:

Dipl.-Ing. (FH) Volker Ahnert

This test report consists of 3 pages and 1 Annex.

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Deutsche
Akkreditierungsstelle
D-PL-11021-01-00

Test laboratory accredited by DAKKS GmbH according to DIN EN ISO/IEC 17025. The accreditation only applies to the test methods listed in the certificate (in this document marked with *) which can be seen on www.mfpa-leipzig.de

Notified testing laboratories, inspection bodies and certification bodies recognized according to the Construction Products Law (NB 800) and the State Building Code (SAC 02).

Gesellschaft für Materialforschung und Prüfungsanstalt für das Bauwesen Leipzig mbH (MFPA Leipzig GmbH)

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1 General Statements

For the applicant Evonik Para-Chemie GmbH a noise reducing element designated Plexiglas® Soundstop XT was tested at MFPA Leipzig for resistance to stone impact. The tested element is a single-layer pane made of PMMA with a thickness of 10 mm that is framed with hollow aluminium sections. In its practical application this noise reducing element is being positioned between HEB-profiles.

- Total length: 2000 mm
- height (in installation position): 2000 mm
- mass of the element: 67 kg
- aluminium alloy: ENAW-6063 T66
- thickness of the hollow aluminium section in the area of the upper and lower belt: 1,5 mm
- thickness of the hollow aluminium section in the area of the upper and lower belt: 3,3 mm

Further statements regarding the ingredients of the specimen have not been indicated by the client.

2 Performing the Test

The test was performed in conformity with DIN 1794-1:2003, Appendix C - Resistance to stone impact. The test was performed in conformity with aforementioned directive (refer to the sketch below):

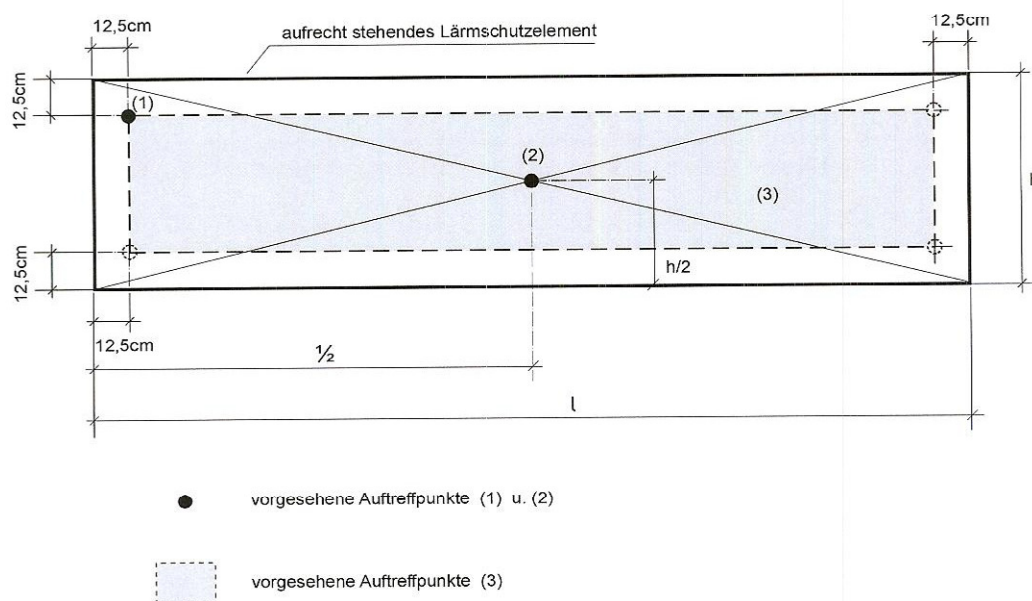


Figure 1: Reference points for the impact tests in conformity with the guideline

Due to the fact that an embrittlement of the construction material can not be excluded the decision of a two hour storage of the noise reducing element at -20°C before the actual impact test has been made according to DIN EN 1794-1:2011 Appendix C.3.4. Following this preconditioning the stone impact simulation could start at the respective predefined impact points.

The front surface of the PMMA-panel has been marked with three impact points according to the above mentioned code. The testing temperature was 20°C .

point (1): in the area of one corner of the test surface

point (2): in the area of the middle of the test surface

point (3): at another point selected at random within the test surface

Stone impact was simulated with a model M "Schmidt" concrete test hammer on the aforementioned impact points (30 Nm of impact energy).

The evaluation of the test was performed by the editor if not otherwise declared.

3 Final Evaluation

The hammer's striking pin did not cause damages at the glazing of the element that lead to chippings, cracks or penetration of the panel. Therefore the tested noise reducing element designated Plexiglas® Soundstop XT meets the requirements of Appendix C.2 of DIN EN 1794-1:2011. A photo-documentation is attached in Annex 1.

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 refer to the described test objects but not to the main unit. This document does not replace a certificate of conformity or suitability according to national and European building codes.

Leipzig, 05 September 2013

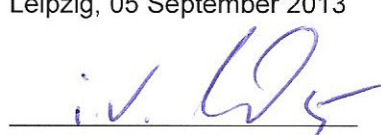
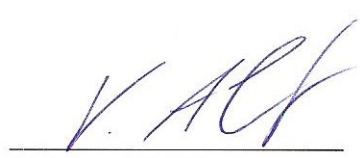
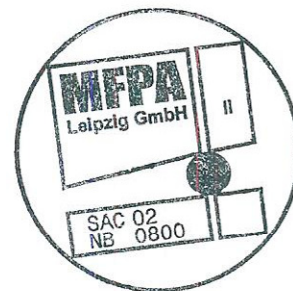

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Testing Engineer



Figure A1-1: test of the PMMA-panel in the area of one corner of the test surface (point 1)



Figure A1-2: test of the PMMA-panel in the middle area of the test surface (point 2)



Figure A1-3: test of the PMMA-panel at another point selected at random within the test surface (point 3)

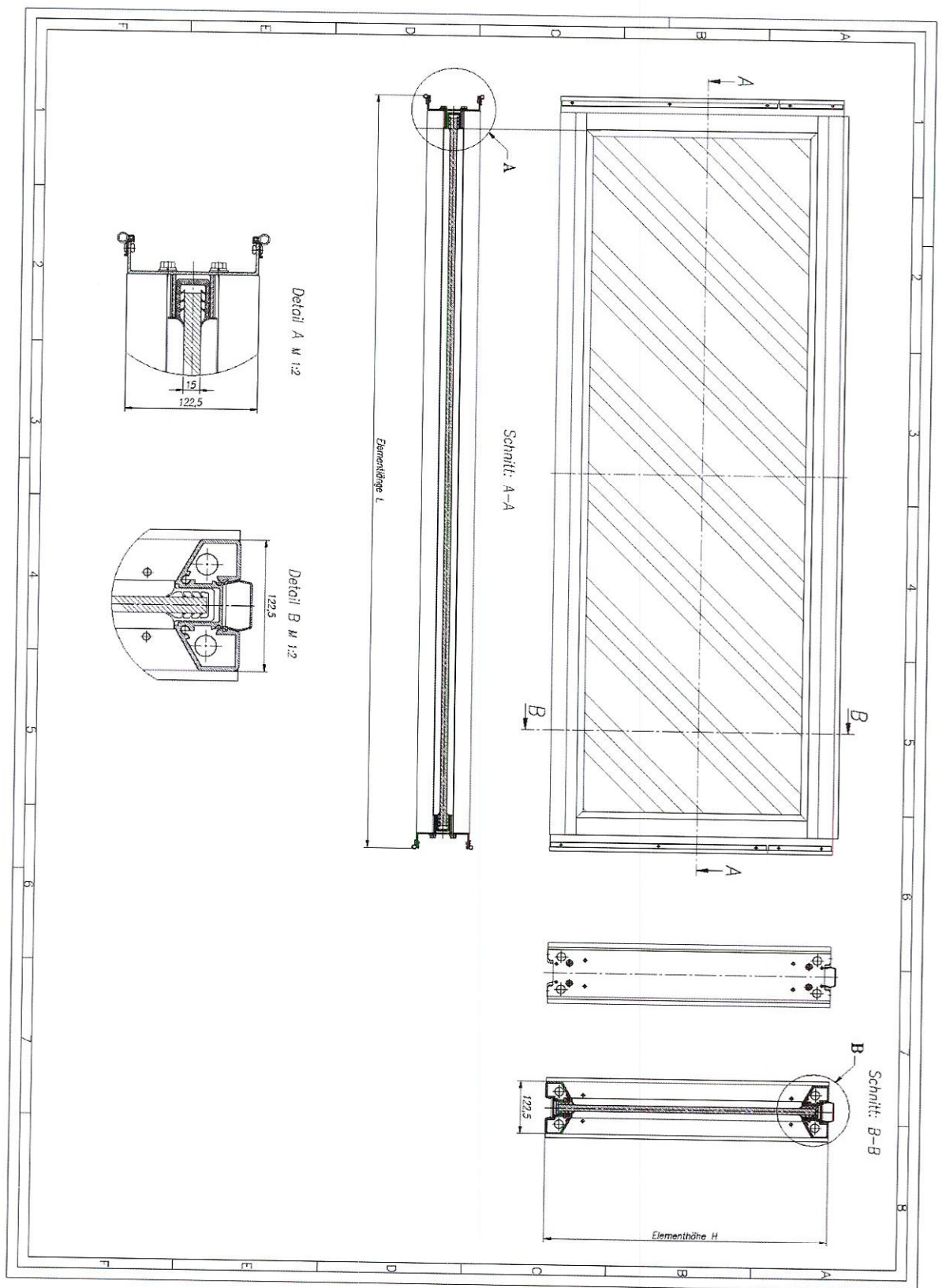


Figure A2-1: Technical drawing provided by the client