



Centrum stavebního inženýrství a. s., Praha
Centre of Building Construction Engineering Prague

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Certifikační orgán
Accredited Test Laboratory, Authorised Body, Notified Body, Certification Body
workplace Zlín - K Cihelně 304, 764 32 Zlín - Louky

Initial Type Testing Report

according to the provisions of § 5 paragraph 1 letter b) of the Order of the Government No. 190/2002 of Coll. of Laws in valid wording (Systems attestation of conformity No. 3) and in accordance with directive 89/106/EHS of Council European Community of December 21, 1988 about convergence of law and administrative regulations of member states concerning building products (Construction Products Directive – CPD), in wording of directive 93/68/EHS of Council European Community of July 22, 1993.

No. 1390 – CPD – 0461 – 10/Z

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Product title:

**Acoustic Soundscreen Elements KOHLHAUER PLANTA® BASIC
(in various implementations)**

Centre of Building Construction Engineering, Inc. Prague (Centrum stavebního inženýrství a.s. Praha), workplace in Zlín, has as Notified Body (NB) No. 1390, performed Initial type testing of the product mentioned below. This report may be used as a basis for issue an EC Declaration of Conformity according to the requirements in the harmonized standard EN 14388:2006 for

Manufacturer:

R. Kohlauer GmbH, Draisstraße 2, 76571 Gaggenau, Germany

Factory:

**R. Kohlauer GmbH, Draisstraße 2, 76571 Gaggenau, Germany
and various other factories with an FPC controlled by R. Kohlauer GmbH**

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Zlín: 29. August 2010



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1 SPECIFICATIONS OF TEST SUBJECT

1.1 Specifications of specimen: Noise barrier KOHLHAUER PLANTA® BASIC

1.2 Description of product

The noise barrier wall panel KOHLHAUER PLANTA® BASIC is a planar component with standard length and height of $L \times H = 3,960 \text{ mm} \times 1,000 \text{ mm}$ and with an allover width of $W = 142 \text{ mm}$ in the middle of the panel a width of $= 122 \text{ mm}$ at its ends. The panels consist of non coated extruded profiles of aluminium as top, bottom and side bars that form a frame-like construction filled with rock wool material of different specific weight. The cage is covered in front and rear with PE net and a welded, zinc coated steel mesh with horizontal size $\varnothing 6/144 \text{ mm}$ and vertical size $\varnothing 8/200 \text{ mm}$ and a peripheral flat bar $4 \times 20 \text{ mm}$ for fixation purpose. The steel mesh is riveted to the side flanges of the horizontal top and bottom aluminium bars and those are riveted at their end to the vertical aluminium bars.

The product is designed to be offered in 3 different acoustic variants that differ by the presence or the absence of an additional acoustic foil placed vertical in the middle of the rock wool plates.

In addition the product will be offered in two different fixation variants that differ by the usage of a steel clamp and a hollow EPDM tube or the usage of pre compressed acoustic foamed ribbon, both variants for fixation and acoustic insulation purpose.

For design details, please refer to Figure 1.

Standard sizes of elements

Length	Height m
3,96	0,5
3,96	1,0

Standard Acoustic Variants

Name	Rockwool density	Item
BASIC	160 kg/m^3	No acoustic foil
BASIC-4	145 kg/m^3	Acoustic foil 4 kg/m^2
BASIC-11	145 kg/m^3	Acoustic foil 11 kg/m^2

Standard Fixation Variants

Name	Fixation / Acoustic Sealing
BASIC - C	EPDM Tube
BASIC - R	Foamed Ribbon

All variants can be combined as necessary for specific project situations.

The panels are mounted into pre-fitted iron poles type HE-A, HE-B or HE-M in a module distance of 4 m .

1.3 Product designation

The boards are designated for building sound absorbing and plantable noise barriers for use externally to reduce the traffic noise of busy roads, motorways and railways or to reduce sound transmission from industrial areas, sports grounds, etc.

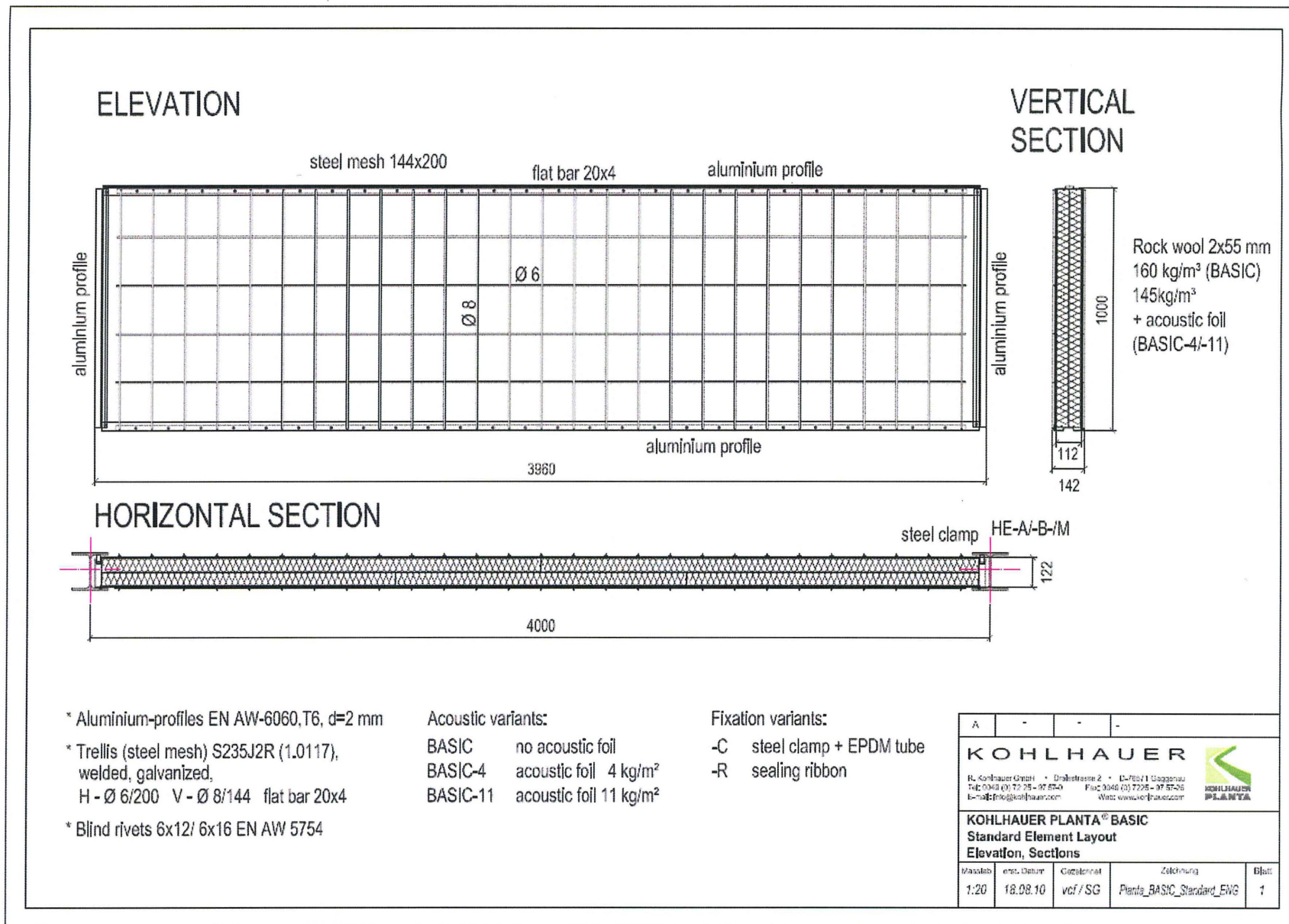
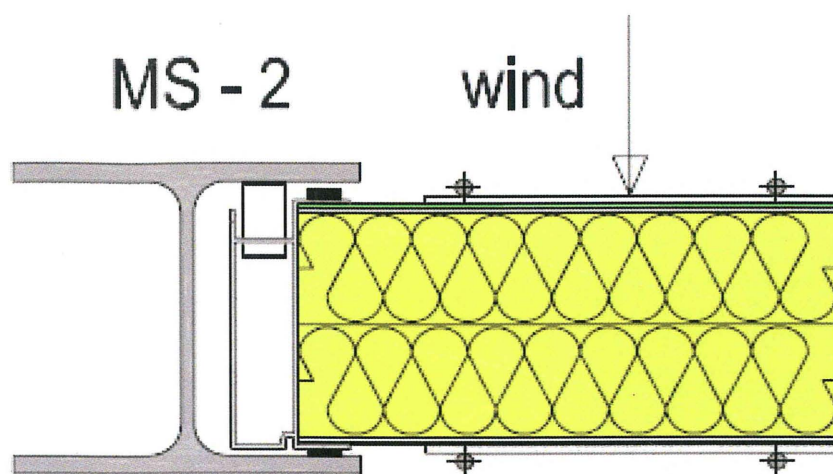
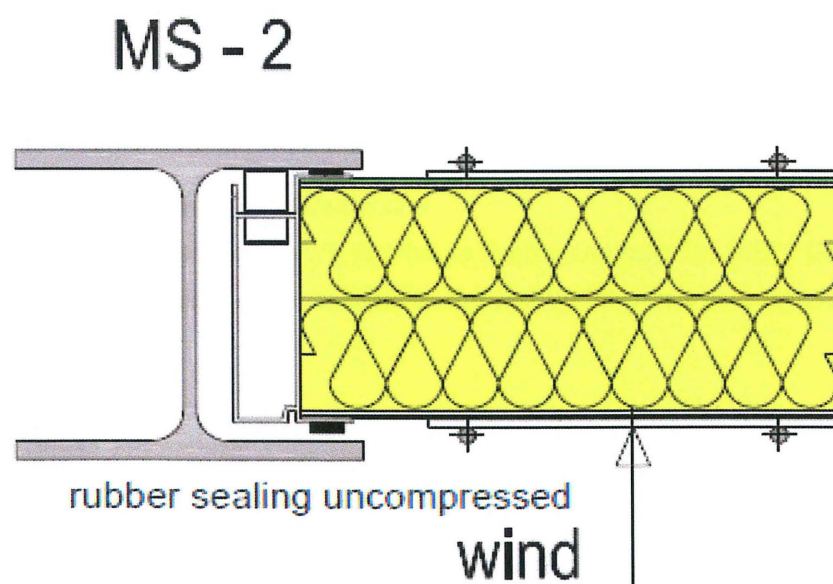


Figure 1 Drawing of frame KOHLHAUER PLANTA® BASIC

Figure 2 – Manner of panel lodgement into the post



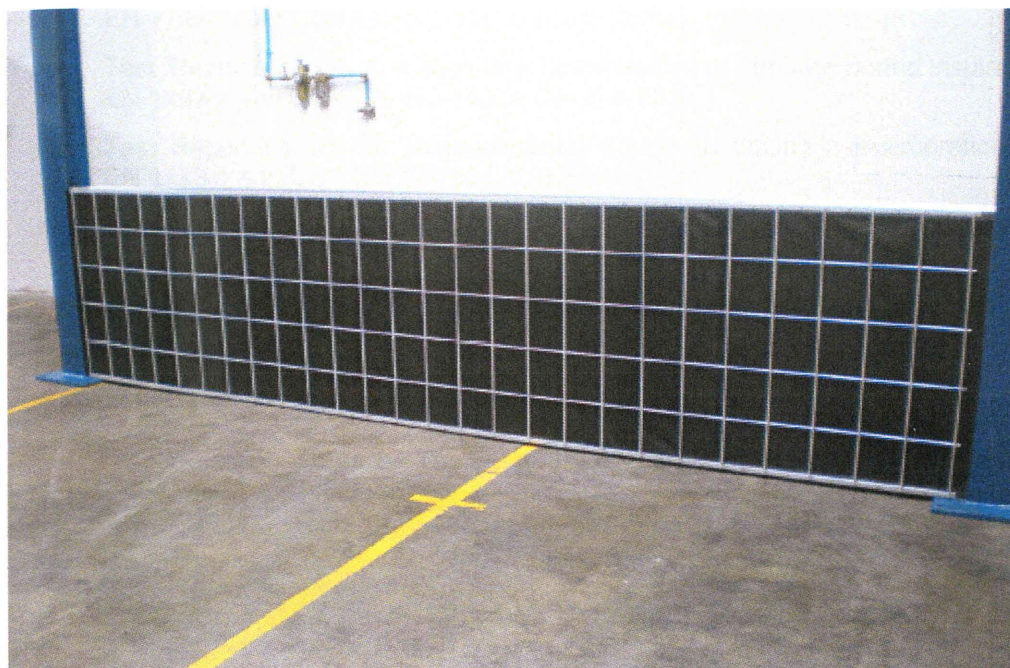
rubber sealing compressed



rubber sealing uncompressed

wind

Figure 3 - Noise barrier KOHLHAUER PLANTA® BASIC



2 SAMPLE TAKING

Samples was taken by: Manufacturer

Samples was provided by: R. Kohlhauser GmbH, Draisstraße, 76571 Gaggenau, Germany

The date of delivery of the sample to the testing laboratory: see individual test reports

Specimen No.:

3 TEST RESULTS

Initial type testing have been carried out by laboratories:

- Centre of Building Construction Engineering, workplace Zlín
- Centre of Building Construction Engineering, workplace Prague
- MPA STUTTGART. Materialprüfungsanstalt. Universität Stuttgart

The results of tests are given in these documents:

- Test Report No. SZ-10-013/Z. Testing of resistance to the influence of wall self-weight and determination of resistance to dynamic snow load according to ČSN EN 1794-1. CSI Zlín 2010
- Test Report No. 431/10. Test of resistance to wind load according to ČSN EN 1794-1. CSI Zlín 2010
- Test Report No. 273/10. Laboratory Measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
- Test Report No. 274/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.

- Test Report No. 275/10. Laboratory Measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
- Test Report No. 276/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.
- Test Report No. 530/10. Laboratory Measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
- Test Report No. 531/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.
- Test Report No. 9019506P - 2010-1/BI. Test for resistance of impact of stones of a road traffic noise reducing device according to EN 1794-1, Annex C. MPA Stuttgart 2010
- Test Report No. 15110 on fire and technical characteristics. CSI Prague 2010

The summary of results is given in the following table 1.

Table 1 – The summary of results of the initial type tests

Characteristic		Testing or calculation standard	Classification standard	Measurement results		
				PLANTA [®] BASIC	PLANTA [®] BASIC-4	PLANTA [®] BASIC-11
1	Sound absorption DL_{α}	EN 1793-1	EN 1793-1	9 dB A3	12 dB A4	13 dB A4
2	Sound insulation DL_R	EN 1793-2	EN 1793-2	28 dB B3	27 dB B3	29 dB B3
3	Resistance to load *) Dead-weight of the acoustic element: - dry - reduced wet	EN 1794-1 Annex B	EN 1794-1 Annex B	1,15 kN 2,93 kN		
	Maximum vertical load to be withstood by the panel a tough base:	EN 1794-1 Annex B	EN 1794-1 Annex B	5,20 kN/m		
	Maximum normal (90°) load (wind load and static load)	EN 1794-1 Annex A	EN 1794-1 Annex A	2,10 kN/m ²		

	Normal (90°) load that the structural element withstands (wind load, static load, and dead-weight) height of barrier 4 m 6 m	EN 1794-1 Annex A, B	EN 1794-1 Annex A, B	2,10 kN/m ² 1,90 kN/m ²
	Maximum flexural moment at ground level (dynamic load when clearing snow)	EN 1794-1 Annex E	EN 1794-1 Annex E	4,80 kNm
	Maximum normal (90°) load (dynamic load when clearing snow)	EN 1794-1 Annex E	EN 1794-1 Annex E	13,40 kN/2 m x 2 m
4	Resistance to impact by stones	EN 1794-1 Annex C	EN 1794-1 Annex C	The internal element (mineral wool) was only damaged insignificantly Result complies with requirements of EN 1794-1, Annex C
5	Danger of falling debris	EN 1794-2 Annex B	EN 1794-2 Annex B	NPD
6	Light reflection	EN 1794-2 Annex B	EN 1794-2 Annex B	NPD
7	Release of hazardous substances	EN 1794-2 Annex C	EN 1794-2 Annex C	Manufacturer declares that used materials don't contain dangerous substances
8	Resistance against shrub fire	EN 1794-2 Annex A	EN 1794-2 Annex A	Class 1
9	Durability - acoustic properties - non-acoustic properties	EN 14389-1 EN 14389-2	EN 14389-1 EN 14389-2	NPD NPD

*) Parameters were appointed for PLANTA® BASIC; the other types use the same Al frame and steel mesh as well

NPD ... No Performance Determined

4 CONCLUSION

NB 1390 verifies conformity of the declared characteristics of the evaluated product with the results of the initial type tests according to the used articles and Annex ZA EN 14388.

5 VALIDITY OF INITIAL TYPE TESTING REPORT

The initial type testing report is issued for definite specific constructional alternatives of the product arising during the production and assembly, provided the production processes and other productive technical documentations were complied with and under assumption that the quality of the production will be constant. This report is valid for the product made according to the given documentation. The report has unlimited time validity, more precisely, the report applies only to the time when a change occurs in some of the evaluated characteristics given by a change in documentation drawing for product construction, if there is a change of some of the used components in accordance with catalogues of suppliers, if the existing technical documentation validity is terminated, if there is a change of technologic process or material structure and up to the moment of the change of lawful requirements for product evaluation, or up to the moment when a further report updating the survey of the produced alternatives in accordance with newly expressed numerical values of relevant technical parameters and physical quantities is issued.

6 BASES UTILIZED FOR REPORT PREPARATION

1. Application for the performance of the Notified Body activity No. 0461/10/Z
2. PLANTA® BASIC barriers. Survey of types. R. Kohlhauser GmbH, Gagenau 2010
3. Test Report No. SZ-10-013/Z. Testing of resistance to the influence of wall self-weight and determination of resistance to dynamic snow load according to ČSN EN 1794-1. CSI Zlín 2010
4. Test Report No. 431/10. Test of resistance to wind load according to ČSN EN 1794-1. CSI Zlín 2010
5. Test Report No. 273/10. Laboratory measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
6. Test Report No. 274/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.
7. Test Report No. 275/10. Laboratory measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
8. Test Report No. 276/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.
9. Test Report No. 9019506P - 2010-1/BI. Test for resistance of impact of stones of a road traffic noise reducing device according to EN 1794-1, Annex C. MPA Stuttgart 2010
10. Test Report No. 15110 on fire and technical characteristics. CSI Prague 2010
11. Document of QM system. R. Kohlhauser GmbH, Gagenau 2010
12. Test Report No. 530/10. Laboratory Measurement of Airborne Sound Insulation according to ČSN EN 1793-2 and ČSN EN ISO 140-3. CSI Zlín 2010.
13. Test Report No. 531/10. Measurement of Sound Absorption in reverberation room according to ČSN EN 1793-1 and ČSN EN ISO 354. CSI Zlín 2010.