



Centrum stavebního inženýrství a.s.
(Centre of Building Construction Engineering Plc.)
Autorizovaná osoba, Oznamovaný subjekt, Certifikační orgán
Akreditované zkušební laboratoře
Authorised Body, Notified Body, Certification Body, Accredited Test
Laboratories
**Zlín Laboratory Workstation, K Cihelně 304, 764 32 Zlín-
Louky**



Oznamovaný subjekt 1390, Notified Body 1390
issues

PROTOCOL

of assessing the product performance

according to the Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 (on construction products), attachment V, article 1.4 (system 3) with later amendments

no. 1390-CPR-0001-2015/Z/A

Application no.: 0001/2015/Z

Number of pages including the title page: 11

Number of copies: 3

Copy no.: 2/E

Product name:

**Sound barrier wall NoiStop® Green and NoiStop® Colour
Type 1 - barriers with mounting flanges**

manufactured by the following manufacturer:

**ROCKWOOL BV (RockDelta)
Industrieweg 15
NL-6045 JG Roermond**

in the following manufacturing plant(s):

**Bramster Sp. z.o.o.
Ul. Lasowicka 125
PL-42-622 Nowe Chechło**

The Protocol was made by:

Jaroslav Vávra, Eng.

Deputy OS 1390:

Petr Kučera, CSc, Eng.

Zlín, 13.10.2016



3



1 SPECIFICATION OF THE TESTED ITEM

1.1 Product specification:

Sound barrier walls NoiStop - sound absorption on both sides, made of load-bearing steel structure filled with stone wool.

1.2 Product Description:

NoiStop sound barrier walls are made of load-bearing steel structure filled with Rockwool stone wool.

The NoiStop barriers are divided into two types which differ with the mounting method.

Type 1 - with flanges used to mount the barriers to wall posts. The posts can be made of wood or thin wall steel profile.

Type 2 - without flanges, with barriers being slid into a vertical channel of the wall post made of steel HEA beams.

The load-bearing structure is made of two frames made of steel L profiles 30x30x2 mm, of S 235 JRG2 grade. The profiles are welded in the corners. Inside the frame space a steel reinforcing mesh is welded to its sides, 150/150 mm, made of steel wire Ø 5 mm, S 235 JRG2 grade. The frames are mounted together by means of shims made of 3 mm thick steel plates, 40x92 mm, and the distance between both frames equals to the thickness of mineral wool. The shims are mounted to the frames by means of the stainless steel rivets A4.8x10, DIN 7337. The load-bearing steel structure after preparing and welding is being hot dip galvanized. The space between both frames is filled with sound absorbing stone wool – 175 kg/m³, 100 mm thick. In case of barriers 2.0 m long and shorter the filling is made of NoiStop Green 53363 stone wool, whereas in case of barriers 3.0 m long the filling is made of NoiStop Green 111409 stone wool.

Sound absorbing surface of the boards is covered with polyethylene 7x7 mm mesh in green colour.

Type 1 – with flanges

The frames are mounted together lengthwise by means of shims and also bound with one shim in the middle of the side height. The L profile of the vertical post of one frame has one longitudinal arm prolonged with a steel strap 75x3 mm, of S235 JRG2 grade, which exceeds the barrier contour and creates a mounting flange.

Steel parts of the barriers in NoiStop Colour version are finished with powder paint (the main range consists of 4 standard colours: moss green, anthracite grey, black and white with all RAL shades possible) or NoiStop Green version with surface of steel parts galvanized only.

The barriers in NoiStop Colour and NoiStop Green versions may be manufactured in five different sizes (L x H x W):

- a) 2 000 x 900 x 110 mm
- b) 1 000 x 900 x 110 mm
- c) 2 000 x 450 x 110 mm
- d) 1 000 x 450 x 110 mm
- e) 3 000 x 600 x 110 mm

1.3 Product purpose:

The barriers are intended for use in sound absorbing barrier walls used in the exterior to reduce the traffic noise from frequented communication routes or to reduce the noises caused by industrial areas, sports grounds etc.

NoiStop Green, with maintenance-free galvanized steel frame

The NoiStop Green fence was the first in a series of modular noise fences for private homeowners from RockDelta, a member of the ROCKWOOL® Group.

The galvanized steel frame makes the fence maintenance-free, and the acoustic stone wool core is covered with decorative green polythene netting.

The galvanized steel frame can serve as a trellis for climbing plants, enabling you to create a pleasant, colourful garden environment.

The slimline modules are available in different sizes, making it easy to fit them in between trees and bushes already in your garden.

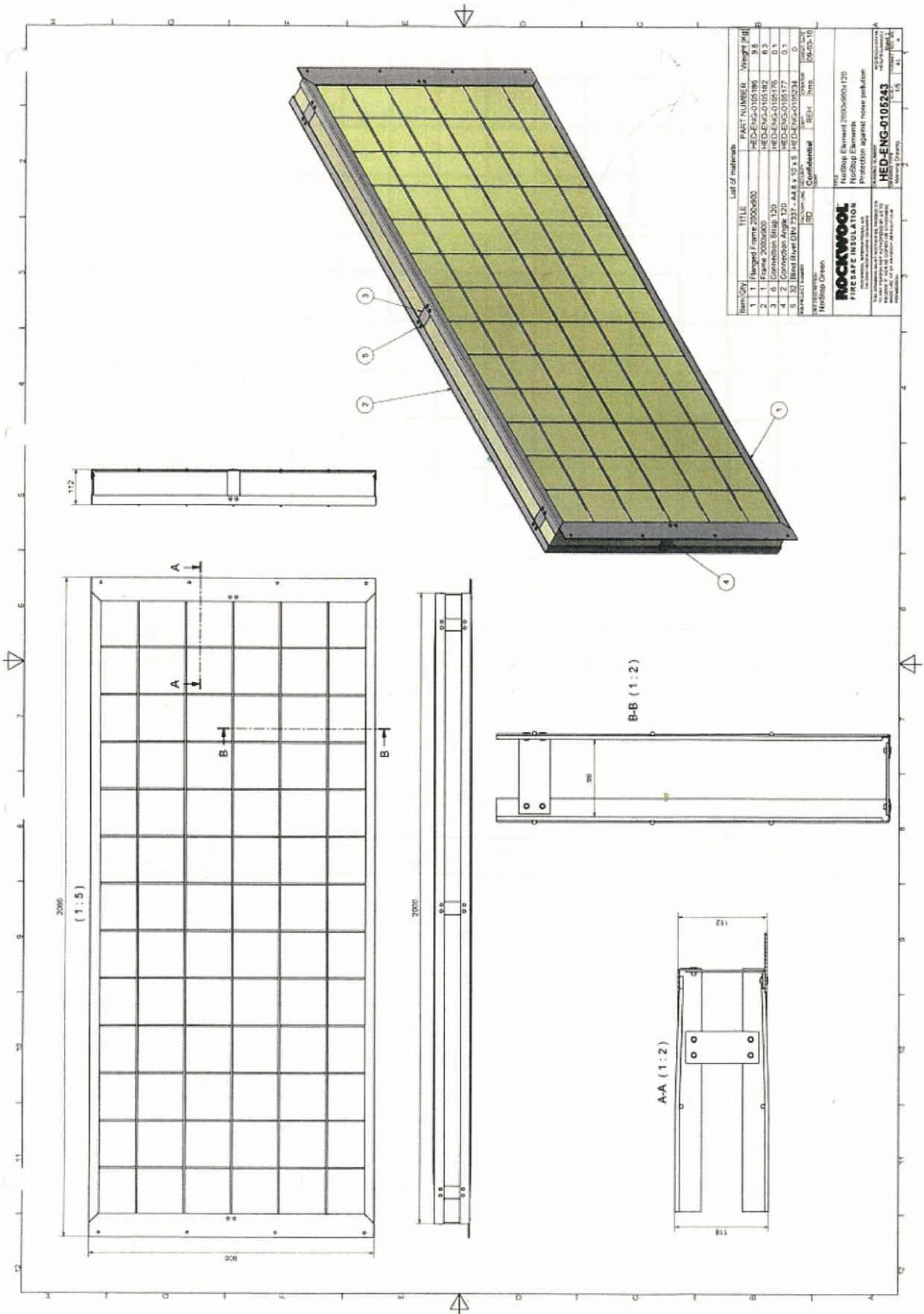
The modules can be installed between wooden or steel posts, depending on the surroundings or the look you'd like to achieve.

Sizes (L x H x W)

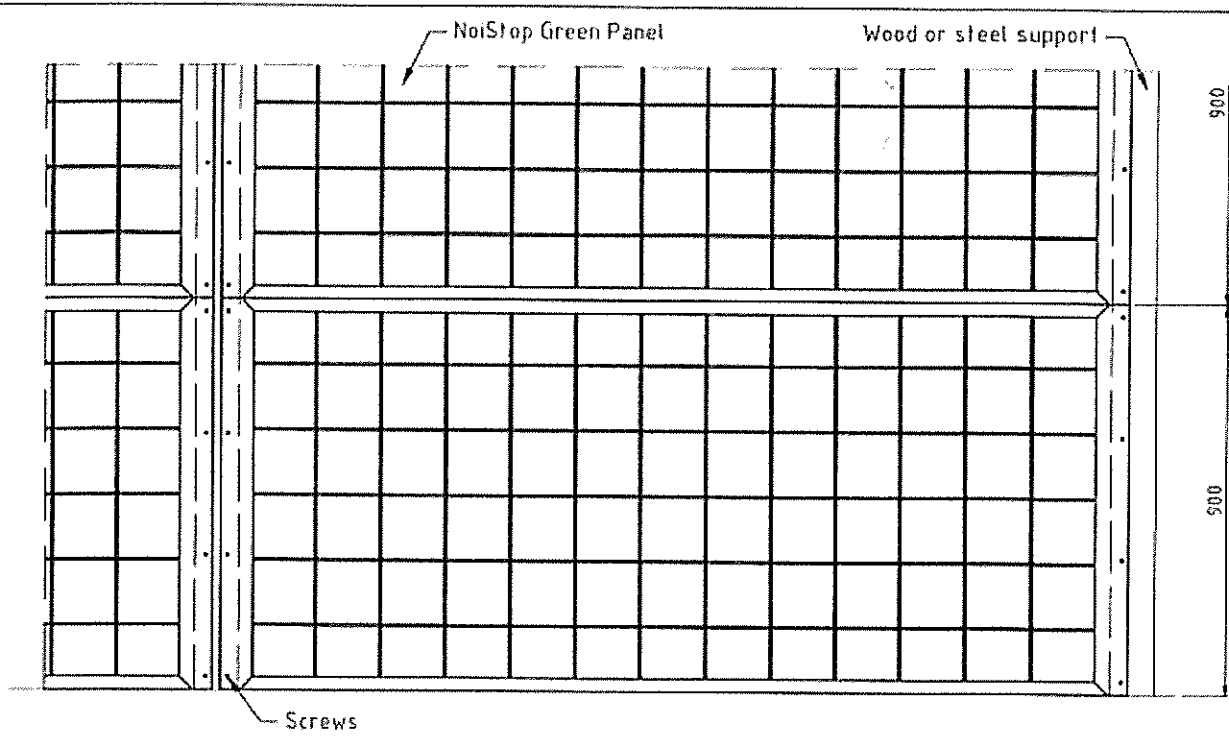
200 x 90 x 11 cm
100 x 90 x 11 cm
200 x 45 x 11 cm
100 x 45 x 11 cm
300 x 60 x 11 cm



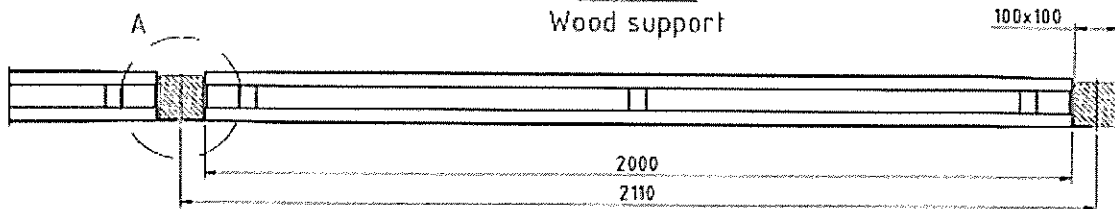
Sound absorbing barrier of type 1, version a)



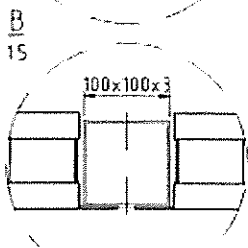
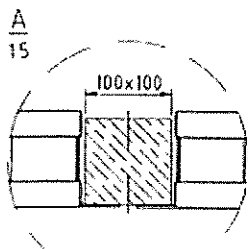
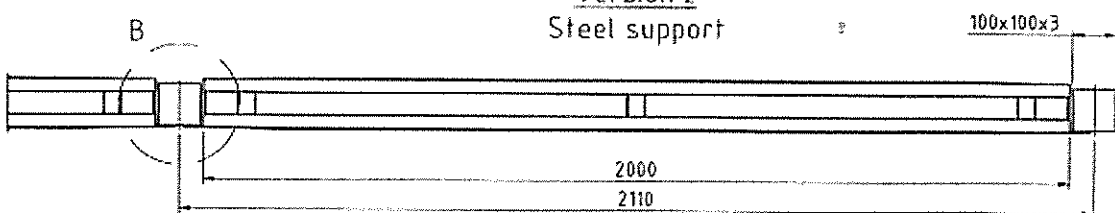
Mounting the sound absorbing barrier into a wall – type 1, version a)



Version 1
Wood support



Version 2
Steel support



DEVIATIONS FOR DIMENSIONS WITHOUT TOLERANCES				TOTAL WEIGHT
WELDING EN ISO 13920 GRADE B	GEOMETRICAL TOL. EN ISO 22768-2 GRADE K	LIN. & ANG TOL. EN ISO 22768-1 GRADE M		
ACTIVITY NUMBER	SCALE 1:10	INT HND	CHECK	DATE 20.01.2015
FACTORY LINE RD	MODUL NUMBER	INT REV	CHECK REV	REV DATE
TITLE Method of fixing - wood or steel support - panels with flanges				
DESCRIPTION Protection against noise pollution				
DRAWING NUMBER				
DRAWING TYPE Working Drawing				FORMAT A1
REV NR 0				

THIS DRAWING MUST NEITHER BE PASSED ON TO ANY PERSON NOT AUTHORIZED BY US TO RECEIVE IT, NOR BE COPIED OR OTHERWISE MADE USE OF BY ANYBODY WITHOUT OUR PERMISSION

2 SAMPLING

Sample has been prepared and delivered by: Bramster Sp. z.o.o., ul. Lasowicka 125, PL-42-622 Nowe Chechlo

Date of sample delivery to the test laboratory: 28.11.2014

Sample ID number: 146/S/14 and 147/S/14

3 TEST RESULTS

The test results are presented in the following documents:

1. Test Protocol no. 303/14 – Windload Resistance Test according to CSN EN 1794-1 standard, Appendix A, of the 01.02.2015, AO 212, CSI a.s., Zlín Laboratory Workstation
2. Test Protocol no. SZ-15-001 – Resistance to own load of the wall and resistance to dynamic loads during removal of snow, as per CSN EN 1794-1 standard, of 18.02.2015, AO 212, CSI a.s., Zlín Laboratory Workstation
3. Test Protocol no. 042/15 – Resistance to stone impact damage Test according to CSN EN 1794-1 standard, Appendix C, of the 03.02.2015, CSI a.s., Zlín Laboratory Workstation
4. Test Protocol no. 01-15-63: Determination of the own load of the Rockwool mat sample sampled from the NoiStop sound absorbing barriers, CSI a.s., Zlín Laboratory Workstation, 02.02.2015
5. Test Protocol no. 036/15 – Laboratory measurement of Airborne sound insulation according to CSN 1793-2 standard, CSN EN ISO 10140-2, of the 15.01.2015, CSI a.s., Zlín Laboratory Workstation
6. Test Protocol no. 037/15 - Determination of the sound absorption (reverberation room method) according to CSN EN 1793-1, CSN EN ISO 354, of the 16.01.2015, CSI a.s., Zlín Laboratory Workstation
7. Evaluation of sound absorbing parameters of the sound barriers NoiStop Green and NoiStop Colour as per CSN EN 1793-1 standard, of the 21.01.2015, CSI a.s., Zlín Laboratory Workstation
8. Evaluation of fireproof characteristics of the NoiStop sound barrier, of the 03.03.2015, CSI a.s.
9. Evaluation no. HSZ-15-009 – Long-term performance – Non-acoustic performance as per CSN EN 14389-2 standard, of the 26.02.2015, CSI a.s., Zlín Laboratory Workstation

Table no. 1 – Summary of the results obtained for NoiStop Green and NoiStop Colour sound absorbing barriers: type 1)

Feature	Testing procedure	Classification	Measured values - sound absorbing barrier		
			a) 2 000 x 900 x 110 mm	b) 1 000 x 900 x 110 mm	c) 2 000 x 450 x 110 mm
1 Sound absorption DL_{α}	CSN EN 1793-1 CSN EN 1793-3	CSN EN 1793-1	A3 category $DL_{\alpha}=8$ dB	A2 category $DL_{\alpha}=7$ dB	A3 category $DL_{\alpha}=8$ dB
2 Sound insulation DL_R	CSN EN 1793-2 CSN EN 1793-3	CSN EN 1793-2	B2 category $DL_R=22$ dB	B2 category $DL_R=22$ dB	B2 category $DL_R=22$ dB

3	Resistance to loads Own load of the sound absorbing component - dry weight - wet weight	CSN EN 1794-1, Appendix B	CSN EN 1794-1, Appendix B	0.50 kN 0.59 kN	0.28 kN 0.32 kN	0.28 kN 0.33 kN
	Maximum vertical load born by the element (load of the upper components)	CSN EN 1794-1, Appendix B	CSN EN 1794-1, Appendix B	Value of no importance. Each barrier transfers its own weight only.		
	Maximum perpendicular (90°) load, which may be born by the element (wind load, static load)	CSN EN 1794-1, Appendix A	CSN EN 1794-1, Appendix A	2.49 kN/m ²	5.82 kN/m ²	4.62 kN/m ²
	Perpendicular (90°) load, which may be born by the element (wind load, static load)	CSN EN 1794-1, Appendix A, B	CSN EN 1794-1, Appendix A, B			
	It does not depend on the wall height:			2.49 kN/m ²	5.82 kN/m ²	4.62 kN/m ²
	Maximum bending moment (dynamic load during removal of snow)	CSN EN 1794-1, Appendix E	CSN EN 1794-1, Appendix E	1.18 kNm	0.65 kNm	1.09 kNm
	Maximum perpendicular (90°) load (dynamic load during removal of snow)	CSN EN 1794-1, Appendix E	CSN EN 1794-1, Appendix E	9.96 kN/2mx2m	21.0 kN/2mx2m	18.5 kN/2mx2m
4	Resistance to the stone impact	CSN EN 1794-1, Appendix C	CSN EN 1794-1, Appendix C	In compliance with the resistance requirements.		
5	Risk of falling fragments	CSN EN 1794-2, Appendix B	CSN EN 1794-2, Appendix B	NPD	NPD	NPD
6	Resistance to fire of the shrubbery	CSN EN 1794-2, Appendix A	CSN EN 1794-2, Appendix A	Class 1	Class 1	Class 1
7	Reflection of light	CSN EN 1794-2, Appendix B	CSN EN 1794-2, Appendix B	NPD	NPD	NPD

8	Emission of dangerous substances	CSN EN 1794-2, Appendix C	CSN EN 1794-2, Appendix C	Declaration of the components manufacturer. The product does not emit dangerous substances.		
9	Durability - Acoustic Features	CSN EN 14389-1	CSN EN 14389-1	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years
	- non-acoustic features	CSN EN 14389-2	CSN EN 14389-2	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years

Feature	Testing procedure	Classification	Measured values - sound absorbing barrier	
			d) 1 000x450x110 mm	e) 3 000x600x110 mm
1 Sound absorption DL_a	CSN EN 1793-1 CSN EN 1793-3	CSN EN 1793-1	A2 category $DL_a=7$ dB	A3 category $DL_a=8$ dB
2 Sound insulation DL_R	CSN EN 1793-2 CSN EN 1793-3	CSN EN 1793-2	B2 category $DL_R=22$ dB	B2 category $DL_R=22$ dB
3 Resistance to loads Own load of the sound absorbing component - dry weight - wet weight Maximum vertical load born by the element (load of the upper components) Maximum perpendicular (90°) load, which may be born by the element (wind load, static load)	CSN EN 1794-1, Appendix B	CSN EN 1794-1, Appendix B	0.16 kN 0.19 kN	0.52 kN 0.61 kN
	CSN EN 1794-1, Appendix B	CSN EN 1794-1, Appendix B	Value of no importance. Each barrier Transfers its own weight only.	
	CSN EN 1794-1, Appendix A	CSN EN 1794-1, Appendix A	11.0 kN/m ²	1.10 kN/m ²

	Perpendicular (90°) load, which may be born by the element (wind load, static load and own load) when supported along its entire length It does not depend on the wall height:	CSN EN 1794-1, Appendix A, B	CSN EN 1794-1, Appendix A, B	11.0 kN/m ²	1.10 kN/m ²
	Maximum bending moment (dynamic load during removal of snow)	CSN EN 1794-1, Appendix E	CSN EN 1794-1, Appendix E	0.63 kNm	0.62 kNm
	Maximum perpendicular (90°) load (dynamic load during removal of snow)	CSN EN 1794-1, Appendix E	CSN EN 1794-1, Appendix E	40.8 kN/2mx2m	4.03 kN/2mx2m
4	Resistance to the stone impact	CSN EN 1794-1, Appendix C	CSN EN 1794-1, Appendix C	In compliance with the resistance requirements.	
5	Risk of falling fragments	CSN EN 1794-2, Appendix B	CSN EN 1794-2, Appendix B	NPD	NPD
6	Resistance to fire of the shrubbery	CSN EN 1794-2, Appendix A	CSN EN 1794-2, Appendix A	Class 1	Class 1
7	Reflection of light	CSN EN 1794-2, Appendix B	CSN EN 1794-2, Appendix B	NPD	NPD
8	Emission of dangerous substances	CSN EN 1794-2, Appendix C	CSN EN 1794-2, Appendix C	Declaration of the components manufacturer. The product does not emit dangerous substances.	
9	Durability - Acoustic Features	CSN EN 14389-1	CSN EN 14389-1	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years
	- non-acoustic features	CSN EN 14389-2	CSN EN 14389-2	NPD Declaration of the components manufacturer at least 25 years	NPD Declaration of the components manufacturer at least 25 years

4 CONCLUSIONS

The Notified Body 1390 confirms the conformity of the evaluated product features with the test results for the product as per paragraphs applied and the appendix ZA EN 14388 + REVISION 1.

5 THE VALIDITY OF THE PROTOCOL OF ASSESSING THE PRODUCT PERFORMANCE

The Protocol of assessing the product performance is issued for specified design of the product and its structure resulting from manufacture and assembly methods considering rigid adherence to the production process procedures and other technical documentation and while keeping the constant high quality during the manufacture process. This Protocol is valid for the product manufactured and finished as per the submitted documentation. The Protocol is valid without time limitations, or is valid till the day of change of any of the assessed features, as a result of change of the drawing documentation for product design, change of some of the components used as per supplier's catalogue, expiration of existing technical documentation, change of technological procedure or material composition and till the moment of change of any legal requirements related to the assessed product or till the date of issue of a new Protocol updating the list of manufactured versions with new values of relevant technical parameters and physical quantities. Without the prior written consent of the Notified Body, this Protocol cannot be reproduced partially, but as its complete content only.

6 REFERENCE MATERIALS USED FOR ELABORATION OF THE PROTOCOL – APPENDICES

1. Application for performing the activities of the Notified Body no. 0001/2015/Z
2. Drawing documentation of the NoiStop sound barriers
3. Sound absorbing filling characteristics
4. Test Protocol no. 303/14 – Windload Resistance Test according to CSN EN 1794-1, Appendix A, of 01.02.2015, AO 212, CSI a.s., Zlín Laboratory Workstation
5. Test Protocol no. SZ-15-001 – Resistance to own load of the wall and resistance to dynamic loads during removal of snow, as per CSN EN 1794-1 standard, of 18.02.2015, AO 212, CSI a.s., Zlín Laboratory Workstation
6. Test Protocol no. 042/15 – Resistance to stone impact damage Test according to CSN EN 1794-1 standard, Appendix C, of the 03.02.2015, CSI a.s., Zlín Laboratory Workstation
7. Test Protocol no. 01-15-63: Determination of the own load of the Rockwool mat sample sampled from the NoiStop sound absorbing barriers, CSI a.s., Zlín Laboratory Workstation, 02.02.2015
8. Test Protocol no. 036/15 – Laboratory measurement of Airborne sound insulation according to CSN 1793-2 standard, CSN EN ISO 10140-2, of the 15.01.2015, CSI a.s., Zlín Laboratory Workstation
9. Test Protocol no. 037/15 - Determination of the sound absorption (reverberation room method) according to CSN EN 1793-1, CSN EN ISO 354, of the 16.01.2015, CSI a.s., Zlín Laboratory Workstation
10. Evaluation of sound absorbing parameters of the sound barriers NoiStop Green and NoiStop Colour as per CSN EN 1793-1, of 21.01.2015, CSI a.s., Zlín Laboratory Workstation

11. Evaluation of fireproof characteristics of the NoiStop sound barrier, of the 03.03.2015, CSI a.s.
12. Evaluation no. HSZ-15-009 – Long-term performance – Non-acoustic performance as per CSN EN 14389-2 standard, of the 26.02.2015, CSI a.s., Zlín Laboratory Workstation
13. Product end-of life Declaration Certificate
14. Product Safety Data Sheet - health requirements conformity and environmental requirements conformity