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European Technical Assessment

ETA 21/0944
11-11-2021

Technical Assessment Body issuing the ETA: Kiwa Nederland B.V.	
Trade name of the construction product	SonusStripe - Soundproofing load bearing strip
Product family to which the construction product belongs	Load bearing stripes made of corrugated cardboard filled with quartz sand
Manufacturer	Würth GmbH & Co. KG Adolf-Würth-Straße 12-17 D-74653, Künzelsau
Manufacturing plant(s)	Plant 1
This European Technical Assessment contains	19 pages including 8 Annex(es) which form an integral part of this assessment
	Annex C contains confidential information and is not included in the European Technical Assessment when that assessment is publicly disseminated
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 210134-00-1202

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Specific parts

1. Technical description of the product

SonusStripe are strips made of water resistance corrugated cardboard. Hollow spaces filled with a mixture of dry quartz sand; the cutting edges are closed by an adhesive tape.
Of the SonusStripe, the cardboard is laminated or coated with Polyethylene (PE) or Polypropylen (PP) At least at one side.
SonusStripe is used as sound decoupling and load bearing component in floor, walls, ceilings, roofs, under stairs and under machines

1.1 Components

The components mentioned in table 1 must be used for SonusStripe and constructions as decribed in this ETA.

Table 1 - Related components

Product	**Picture**	**Description**
Würth Tape for SonusStripe Black Roll / 66 m		Taping cutting edges of SonusStripe

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 Intended use

SonusStripe strips are load bearing strips for sound decoupling of building components and machines. If a fixing of walls and floors is necessary through SonusStripe, any connectors and screws who are available on the market can be used. SonusStripe is able to absorb vertical loads.

Examples of application areas of SonusStripe are mentioned in Annex A.

2.2 Intended working life

The intended working life of the SonusStripe is assumed to be endless provided that:

- SonusStripe is used in dry conditions:
  - a mean air temperature in the range from 5 °C to 35 °C with a minimum of 0 °C and a maximum of 50 °C;
  - a mean daily air relative humidity (RH) in the range of 20 %RH to 75 %RH. Maximum air relative humidity may only exceed 85 %RH for short periods of time. Rain during assemblytime does not matters.
- SonusStripe and the products works are properly processed;
- the assembly of SonusStripe is performed as per installation guide, under normal site conditions, by adequately trained installers;
- minor damages are repaired /damaged elements are replaced (for example damage caused by impact).

The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded as a means for choosing the right product in relation to the reasonable expected working life of the works.

2.3 Packaging, transport and storage

The SonusStripe is strapped on pallets encased in a thick corrugated cardboard box structure, which is placed over the product. SonusStripe shall be handled and stored with care and be protected from accidental damage. The SonusStripe must be protected from moisture during transport, storage and installation. The SonusStripe should be stored flat, under cover, in dry well ventilated conditions inside. Protect SonusStripe from direct sunlight when stored over a long period of time.

2.4 Cutting to size

Cut SonusStripe on a stable working table with a circle saw or a jigsaw or a cutting knife and take care of general working protection. After cutting SonusStripe, the cutting edges must be sealed. In order to maintain the Würth guarantee, only appropriate Würth Tape may be used. See table 1 for the appropriate tapes for SonusStripe.
For further clarification see Annex B, SonusStripe – Cutting and Taping.

2.5 Use, maintenance and repair

SonusStripe can be nailed, glued, screwed or stapled on top of walls where ceilings or floors will be placed or on floors where the walls getting placed for the next floor. It is important that the laminated side is facing to the outside or weather side. Assembly on buildingside during rain doesen´t matter to SonusStripe.

3. Performance of the product and references to the methods used for its assessment

3.1 BWR 2 – Safety in case of fire

3.1.1 Reaction to fire

SonusStripe is tested in accordance with EN 13501-1 and classified Class E.

3.1.2 Propensity to undergo continuous smouldering

SonusStripe is tested in accordance with EN 16733. SonusStripe does not show propensity to undergo continuous smouldering

3.2 BWR 3 – Hygiene, health and the environment

3.2.1 Water vapour permeability

No performance assessd.

3.3 BWR 4 – Safety and accessibility in use

3.3.1 Creep

No performance assessd.

3.3.2 Pressure resistance

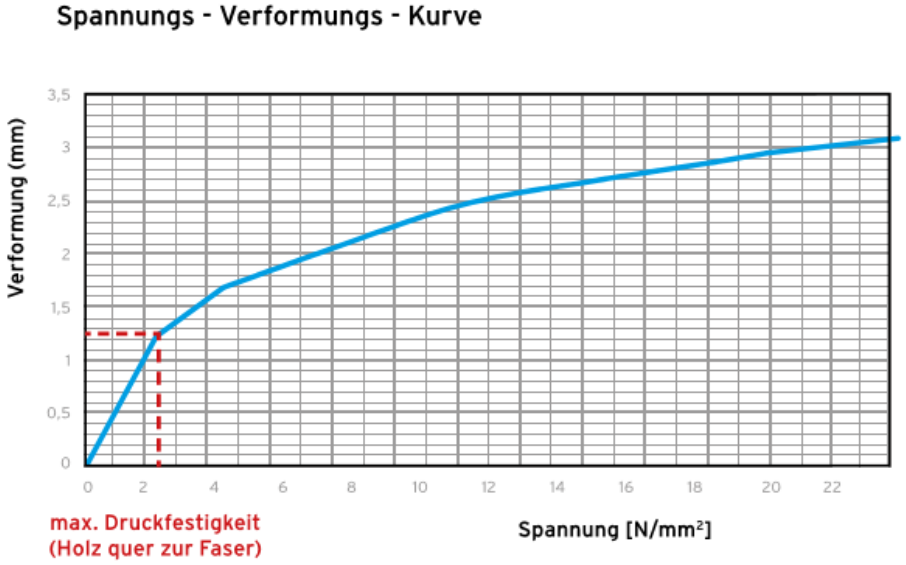
The pressure resistance of SonusStripe is determined according to EN 26891.

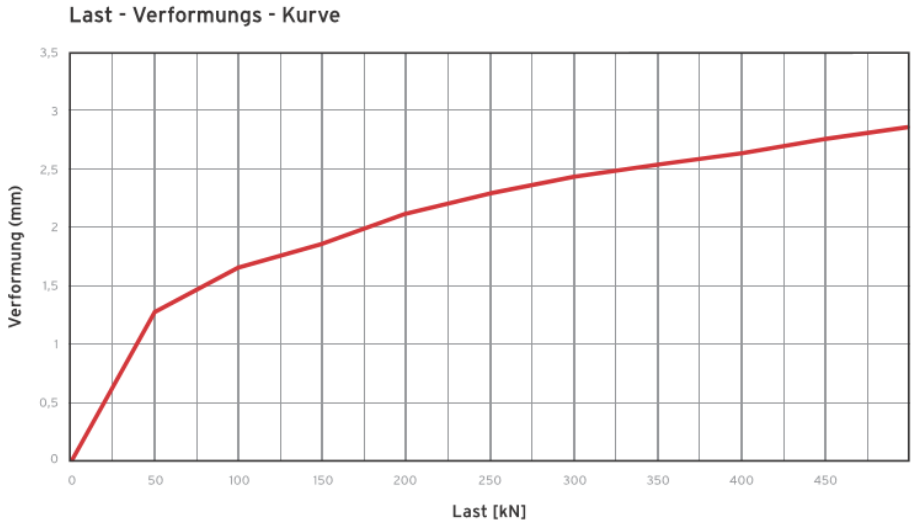
- compressive strength: characteristic $f_{c,k}$ = 23.0 N/mm²;
- compressive strength: design $f_{c,d}$ = 1/1,3 x 23 N/m² = 17.69 N/m², including a typical safety factor of 1.3 as common in timber constructions.

SonusStripe strength modification factor k_{mod} = 0 according to EN 26891.

3.3.3 Deformation

SonusStripe maximum final deformation 3.5 mm +/- 0.5 mm according to EN 26891 Table 2.
The deformation at 2.5 N/mm² is 1.2mm +/- 0.5mm.





3.4 BWR 5 – Protection against noise

3.4.1 Airborne sound insulation

No performance assessd.

3.4.2 Impact sound insulation

No performance assessd.

3.4.3 Dimensions (length, width, thickness)

The dimensions have been determined according to EN 822. The results are shown in table 2.

Table 2: Dimensions and tolerances

	SonusStripe	
Length	1200 mm	± 3 mm
Width	50 to 800 mm	± 3 mm
Thickness	15 mm	+ 0.5 / - 1.5 mm

3.4.4 Squareness, flatness

The squareness (S_b) and maximum deviation from flatness (S_{max}) have been determined according to EN 824 and EN 825 respectively.

- Deviation from quareness (S_b) : ≤ 1,0 mm/m;
- Deviation in flatness (S_{max}) : ≤ 2 mm.

3.4.5 Density

The density has been determined according to EN 1602.

- SonusStripe ≥ 1300 kg/m³ ± 100 kg/m³.

3.4.6 Flexural strength

The flexural strength has been determined according to EN 520. The results are shown in table 3.

Table 3: Flexural strength

Product	Flexural strength	
	Longitudinal	Transverse
SonusStripe	≥ 4,5 N/mm²	≥ 2,5 N/mm²

3.4.7 Compressive stress / strength
No performance assessd.

3.4.8 Surface hardness
No performance assessd.

3.4.9 Resistance to functional failure from concentrated load
No performance assessd.

3.4.10 Vibration reduction index
The vibration reduction index has been determined according to EN ISO 10848-1. The values and constructions are given in Annex B.

3.5 BWR 6 – Energy economy and heat retention

3.5.1 Thermal conductivity
No performance assessd.

3.5.2 Thermal transmittance
No performance assessd.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

4.1 System of assessment and verification of constancy of performance

According to the decision 2000/447/EC – Commission Decision of date 13 June 2000, published in the Official Journal of the European Union (OJEU) L180/40 of 19/7/2000) of the European Commission, the systems of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply:

Product	Intended use	Levels or classes	Systems
Self-supporting composite lightweight panels	For uses subject to reaction to fire regulations	A(1), B(1), C(1)	1
		A(2), B(2), C(2)	3
		A(3), D , E, F	4

1) Materials for which the reaction to fire performance is susceptible to change during production; (in general, those subject to chemical modification, e.g. fire retardants, or where changes of composition may lead to changes in reaction to fire performance.

2) Materials for which the reaction to fire performance is not susceptible to change during the production process.

3) Materials of Class A that according to Decision 96/603/EC, amended by Decision 2003/424/EC, does not require to be tested for reaction to fire.

4.2 Tasks of the manufacturer

4.2.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European Technical Approval.
Within the framework of FPC the manufacturer shall carry out tests and controls with the prescribed test plan as deposited at Kiwa Nederland B.V., which is part of this European Technical Approval.

The results of the FPC shall be recorded and shall be kept for a period of at least 10 years.
The results of the FPC are evaluated and shall include at least the following information:

- designation of products and the constituents (raw materials);
- method of control or testing (according to control plan);
- date of manufacture of the products and date of testing of the products and the constituents;
- result of control and testing and comparison with requirements and declarations;
- result of treatment of products which do not meet declarations.

On request the results shall be presented to Kiwa Nederland B.V.

The control plan shall contain in detail the extent, nature and frequency of testing and controls to be performed and shall address at least the following items/characteristics and (minimum) frequencies as detailed in table 4.

Table 4 - Control plan for the manufacturer; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC) [**including testing of samples taken at the factory in accordance with a prescribed test plan**]					
Receipt of materials					
1	Specifications cardboard	Delivery ticket or label on package Supplier certificates or supplier tests	Conformity with the order	--	Each delivery
2	Dimensions cardboard (l, b)	Measuring	EN 822	--	Each delivery
3	Squareness cardboard	Measuring	EN 824	--	Each delivery
4	Layers construction of cardboard	Visual	Directions and damages	--	Each delivery
5	Moisture content cardboard	Measuring	Conformity with the order	--	Each delivery
6	Quartz sand	Delivery ticket or label on package Supplier certificates or supplier tests	Conformity with the order	-- --	Each delivery Each delivery
7	Moisture content quartz sand	Proctortest	Conformity with the order	--	Each delivery
8	Tape	Delivery ticket or label on package Supplier certificates or supplier tests	Conformity with the order	--	Each delivery
Production					
9	Dimensions cardboard	Measuring	EN 822	--	Start of (new) production
10	Squareness cardboard	Measuring	EN 822	--	Start of (new) production
11	Moisture content cardboard	Measuring	Conformity with control plan	--	Start of (new) production
12	Layers construction of cardboard	Visual	Directions and damages	--	continuously
13	Moisture content quartz sand	Proctor test	Conformity with control plan	--	Start of (new) production

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
14	Filling of cardboard	Visual, weighing	Conformity with control plan	--	Start of (new) production
Finished product					
15	Visual check of the product	Visual check	Adhesion of tape, damages	all	Continuously
16	Length and width	Measuring	EN 822	1	Daily
17	Thickness	Measuring	EN 520 / 5.4	1	Daily
18	Squareness	Measuring	EN 824	1	Daily
19	Flatness	Measuring	EN 825	1	Daily
20	Weight	Weighing board/strip	Acc. to control plan	1	Daily
21	Flexural strength	Testing	EN 520 / 5.7	3	Every batch, min. once per month
22	Compressive strength/strain	Testing	EN 826	3	Every batch, min. once per month
23	Surface hardness	Testing	EN 520 / 5.12	1	Every batch, min. once per month
24	Fire performance		EN ISO 11925-2	1	Every batch, min. once per month

4.2.2 Declaration of performance

The manufacturer shall draw up a Declaration of Performance stating that SonusStripe is in conformity with the provisions of this European Technical Approval.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

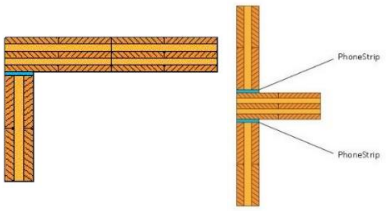
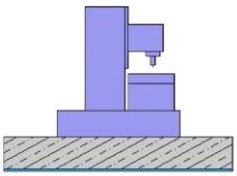
All materials of the products shall be in accordance with the provisions laid down in this ETA.
All materials used in the partitions shall fulfil the criteria in this ETA.
Changes to the product/production process, which could result in this deposited data / information being incorrect, should be notified to the approval body before the changes are introduced. The approval body will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and so whether further assessment / alterations to the ETA, is necessary.

Issued in Rijswijk on 11-11-2021 by

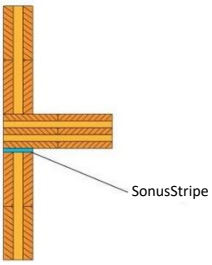
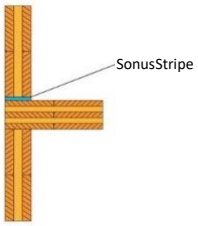
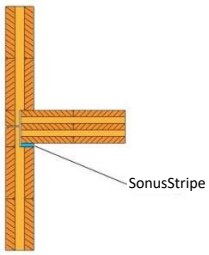
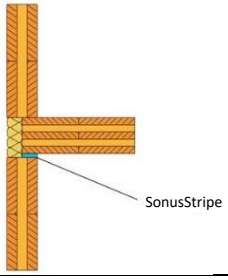
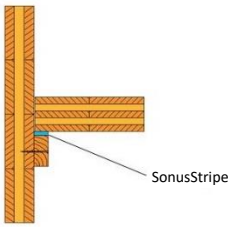
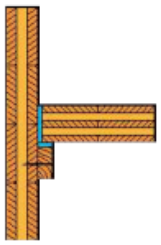
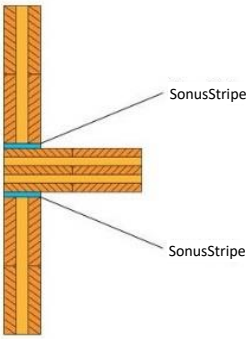
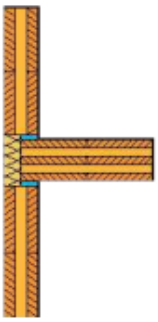
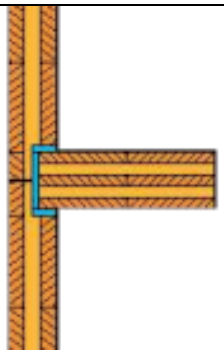
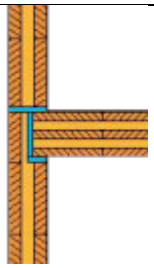
Ron Scheepers
Kiwa Nederland B.V.

Annex A Application Area SonusStripe

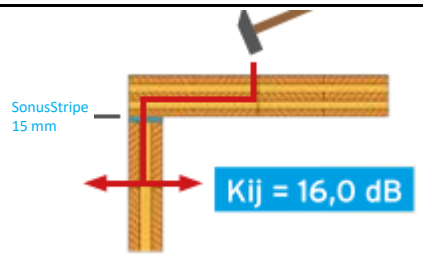
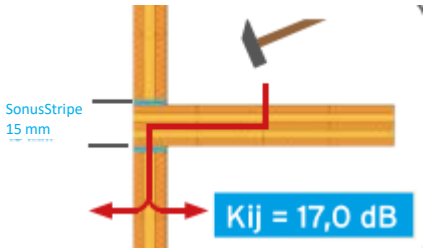
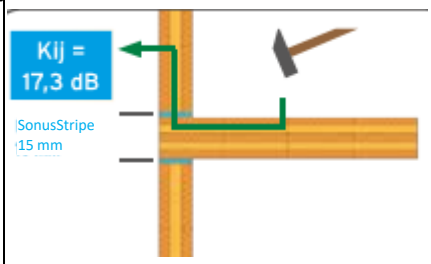
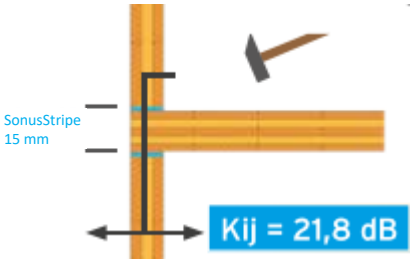
A.1 Application area SonusStripe in General for wood, concrete and steel

		Machines 
End-grain to end-grain - Joint	L – Joint T - Joint	SonusStripe

A.2 Application area SonusStripe in wood, concrete and steel, examples

		
L – Joint	**L – Joint**	**L – Joint**
		
L – Joint	**L – Joint**	**L – Joint**
		
T - Joint	**T - Joint**	**T - Joint**
		
T - Joint		

Annex B Joint sound insulation Kij

Type	Joint Constructions	Joint insulation Kij	Joint	System drawing
1	**Tested build-up** Floor: 140 mm, 5 layer CLT Lower wall: 100 mm, 3 layer CLT **Joint execution and connecting material:** **SonusStripe 15 mm**; countersunk head screws with full thread 8.0 x 240/230 mm at 300 mm centers	16 dB	L - Joint	
2	**Tested build-up** Upper wall: 100 mm, 3 layer CLT Floor: 140 mm, 5 layer CLT Lower wall: 100 mm, 3 layer CLT **Joint execution and connecting material:** Floor / upper wall: **SonusStripe 15 mm**; angle joint 105 x105 x 90 mm screwed at 106 cm centers. Floor / lower wall: **SonusStripe 15 mm**; countersunk head screws with full thread 8.0 x 240/230 mm at 300 mm centers	17 dB	T - Joint	
3	**Tested build-up** Upper wall: 100 mm, 3 layer CLT Floor: 140 mm, 5 layer CLT Lower wall: 100 mm, 3 layer CLT **Joint execution and connecting material:** Floor / upper wall: **SonusStripe 15 mm**; angle joint 105 x105 x 90 mm screwed at 106 cm centers. Floor / lower wall: **SonusStripe 15 mm**; countersunk head screws with full thread 8.0 x 240/230 mm at 300 mm centers	17,3 dB	T - Joint	
4	**Tested build-up** Upper wall: 100 mm, 3 layer CLT Floor: 140 mm, 5 layer CLT Lower wall: 100 mm, 3 layer CLT **Joint execution and connecting material:** Floor / upper wall: **SonusStripe 15 mm**; angle joint 105 x105 x 90 mm screwed at 106 cm centers. Floor / lower wall: **SonusStripe 15 mm**; countersunk head screws with full thread 8.0 x 240/230 mm at 300 mm centers	21,8 dB	T Joint	

Annex C Production location

Plant 1:

Wolf Bavaria GmbH
Gutenbergstraβe 8
D-91560 Heilsbronn, Germany