



TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

Technical and Test Institute for Construction Prague

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznamovaný subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body. Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

**Certification Body
Branch 0100 – Prague**

REPORT

of the product certification

certification scheme according to the ČSN EN ISO/IEC 17067 including testing of product samples

No. 010-037078

Trade name:

Control joint profiles

Type / variety: **CJL, CJU, CJP, CJC, CJM, CJY, CJS, CJV**

Applicant:

Expan s.r.o.

INo:	27551466
address:	569 55 Janov 11, Czech Republic
plant:	Expan s.r.o.
INo:	27551466
address:	T. G. Masaryka 536, 570 01 Litomyšl, Czech Republic
order:	Z010160015

Number of pages including the front page: 9 Number of pages of Annexes: 27

Stamp of the Certification Body

Prague, September 29th 2016




Ing. Michal Vostrovský
Head Assessor

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1. General

1.1. Information about the applicant

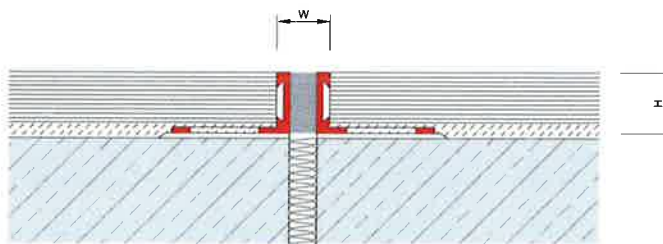
- Applicant: Expan s.r.o.
- INo: 27551466
- Address: 569 55 Janov 11, Czech Republic
- Manufacturer: Expan s.r.o.
- Address: T. G. Masaryka 536, 570 01 Litomyšl, Czech Republic

1.2. Information about the product

1.2.1. Control joint profiles

- **Control joint profiles** are products variously shaped made of a metal matrix (aluminium, stainless steel, brass) combined with elastic insert parts from EPDM or nitrile rubber. The combination of these materials is mechanically and / or pressure vulcanization. The contact surface of metal arms can be perforated for optimal anchoring.
- Colour variety of EPDM insert is basically grey, black, brown, beige, bahama and other custom.
- Stainless steel is supplied in AISI 304 (1.4301) and/or AISI 316 (1.4401) quality with the inspection certificates according to EN 10204/3.1.
- Typical thickness of stainless steel: 0.8 mm, 1.0 mm.
- Aluminium is supplied in EN-AW 1050A quality with the inspection certificates according to EN 10204/3.1.
- Function: preventing the formation of cracks, edge protection tiles, interrupt the transmission of sound, interruption of any floor vibrations, balancing compressive stress.
- Applicable for ceramic tiles, epoxy floors, paints, PVC floors.
- These products are used for dilatation of flooring joints, tiles with high and medium mechanical stress (airport terminals, exhibition centres, hotel lobbies, parking areas, hospitals, museums, shopping malls, retail space, residential buildings, production facilities, warehouses, sport centurms...), but also for building of smaller character (houses, bathrooms , repair, renovation...).

CJL profiles



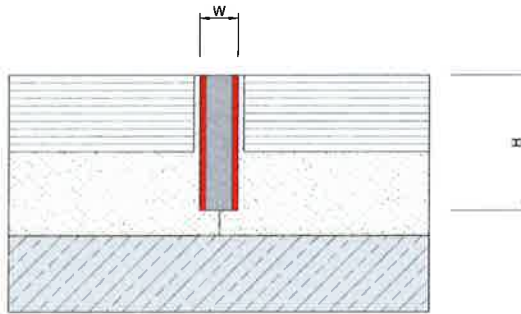
Profiles at 2, 3 and 4.5 mm heights are applied at epoxy, linoleum, PVC coated floors. Prevents the cracking of epoxy coating and gives a decorative aspect. Economize at labour cost and save time during epoxy application.

Aluminium profiles are recommended for common places and not for areas exposed heavy chemical stress. They are ideal for warehouses, airports, shopping malls, public buildings, hotels, residences, etc.

Brass profiles have a great resistance to mechanical loads as well as chemical stress. Metal band on both sides are joined homogeneously with elastic EPDM insert by hot pressure vulcanisation process. This process is considered to be the firmest joint manufacturable and prevents dust and dirt leaching into the profile and gains the profile water and UV resistance.

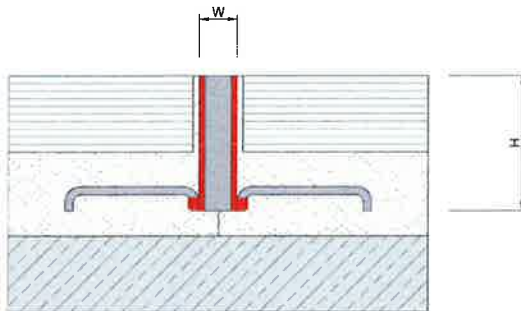
Stainless steel profiles are recommended for areas which are, apart from mechanical loads, exposed to high chemical stress like acids or lye (e.g. strong detergents or salting the surface in winter). They are also ideal for hygiene required and wet floor areas.

CJU profiles



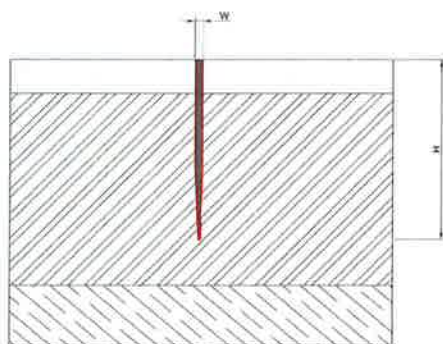
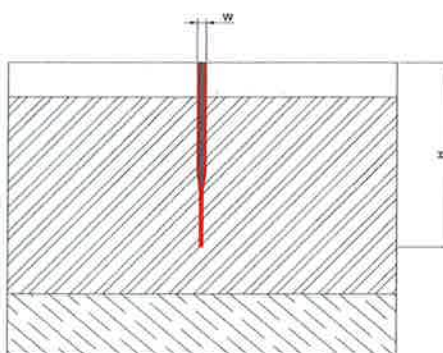
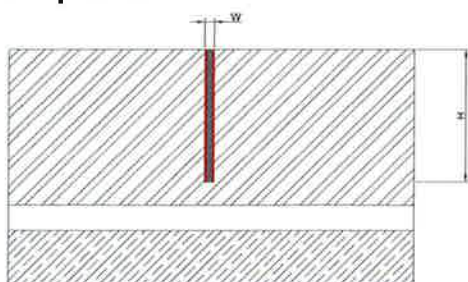
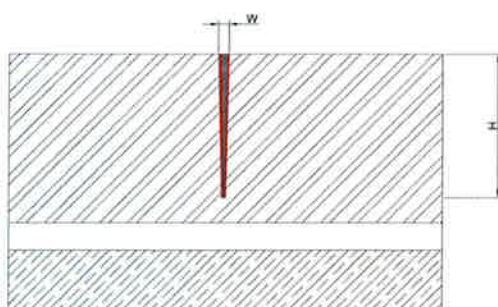
Profiles are designed for areas exposed to extreme loads, production facilities, warehouse, shopping malls, parking areas etc., for interior and exterior application, water and UV resistance.

CJP profiles



Can be manufactured in stainless steel, brass or aluminium depending on the anticipated chemical, mechanical, electro-chemical or any other load to which the floor could be exposed. Recommended for mortar-laid floors. Ideal for heavy pedestrian or vehicle traffic.

CJM, CJY, CJS and CJV are Micro control joint profiles made of a metal matrix (aluminium, stainless steel, brass) and EPDM Moosgummi. This profiles are designed to replace sealants used in floors and walls with ceramic tiles, Terrazzo, granite, marble, epoxy and other type in-situ finishes. Also ideal for joint repairs.

CJM profiles**CJY profiles****CJS profiles****CJV profiles****1.3. List of documentation submitted by the manufacturer to the product certification**

- Test report 219604 from 26.01.2016 for EPDM RAL 7046, SAVATECH d.o.o.,
- Inspection Certificate 3.1 according EN 10204 No. 10115585556 issued on 29/09/2015 for 1,00x1000x2000 304/4307, Heat 15107433, MARCEGAGLIA,
- Inspection Certificate 3.1 according EN 10204 No. 1439424/01 issued on 05/08/2015 for EN-AW 1050A, 1,00x1250x2500 Heat 07488301, MARCEGAGLIA.

1.4. List of the other documentation used during the product certification

- Product data sheets - Control joint profiles: CJL, CJU, CJP, CJC, CJM, CJY, CJS, CJV,
- Listing from Commercial Register of Companies.

1.5. Technical specification and technical regulations relating to the product certification (as amended)

- ČSN 73 0212-5:1994 Geometrical accuracy in building industry - Accuracy control - Part 5: Accuracy control of building components,
- ČSN EN ISO 527-1:2012 Plastics - Determination of tensile properties - Part 1: General principles,
- ČSN EN ISO 527-3:1997 Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets,
- ČSN EN 1849-2:2010 Flexible sheets for waterproofing - Determination of thickness and mass per unit area - Part 2: Plastic and rubber sheets for roof waterproofing,
- ČSN EN 1850-2:2001 Flexible sheets for waterproofing - Determination of visible defects - Part 2: Plastic and rubber sheets for roof waterproofing,
- ČSN EN ISO 8339:2006 Building construction - Jointing products - Sealants - Determination of tensile properties (Extension to break),
- ČSN EN ISO 868:2003 Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness),
- ČSN ISO 37:2012 Rubber, vulcanized or thermoplastic – Determination of tensile stress-strain properties,
- ASTM E1399E/E1399M-97 (Reapproved 2013) Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems,
- ČSN EN ISO 10545-13:1998 Ceramic tiles - Determination of chemical resistance,
- ČSN ISO 3302-1:2015 Rubber - Tolerances for products - Part 1: Dimensional tolerances,
- ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi,
- JIS Z 2801 – Antimicrobial products – Test for antimicrobial activity and efficacy (ISO 22196).

1.6. Information about previous product certification

- Products have not been previously certified by Certification Body.

2. Product assessment

2.1. Method and scope of assessment, technical requirements

Assessed properties (according to the documents referred to in part 1.5):

- For EPDM rubber layer: Thickness, surface density (ČSN EN 1849-2), visible defects (ČSN EN 1850-2), tensile properties (ČSN EN ISO 527-1, 3), Shore hardness A (ČSN EN ISO 868)
- For control joint profiles: visible defects (ČSN EN 1850-2), dimensions - Thickness of metal, Visible width, Installation Height (ČSN 73 0212-5), tensile properties- Secant Modulus, Elongation at break (EN ISO 8339), chemical resistance (ČSN EN ISO 10545-13), Minimum and Maximum Joint Widths and Movement Capability (ASTM E1399E)

2.2. List of the Test Reports:

- Test Report No. 010-036754 of 20. 06. 2016, Chemical resistance of control joint profile CJL ALU H3 and CJL NE H12,5, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5,

- Test Report No. 010-037050 of 02. 09. 2016, EPDM rubber, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5,
- Test Report Z-031-16 of 27. 06. 2016, Test of hardness by shore – EPDM rubber, issued by JD Dvorak, s.r.o., testing laboratory,
- Test Report No. 010-036802 of 27. 06. 2016, Control joint profile CJL DILATACE ALU H3, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5,
- Test Report No. 010-036803 of 27. 06. 2016, Control joint profile CJL DILATACE NE H10, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5,
- Test Report No. 010-036804 of 27. 06. 2016, Control joint profile CJL mini dilatace ALU H12,5, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5,
- Test Report No. 010-037137 of 15. 09. 2016, Control joint profile CJL NE H10, issued by TZÚS Praha, s.p., Testing Laboratory,
- Test Report No. 010-036938 of 12. 08. 2016, Control joint profile CJU DILATACE ALU H30, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
- Report AZL 16/0402-01a of 11. 07. 2016, Antimicrobial products – Test for antimicrobial activity and efficacy, issued by Textile Testing Institute Brno,
- Report AZL 16/0739 of 18. 07. 2016, Evaluation of the resistance to fungi, issued by Textile Testing Institute Brno.

2.3. Evaluation of the results of the product tests and assessment

2.3.1. Properties of EPDM rubber layer

Product characteristic	Test Report	The test procedure	Test results	Required / declared level	Evaluation
Thickness	010-037050	ČSN EN 1849-2	5,01 mm	(5±0,2) mm	Pass
Surface density	010-037050	ČSN EN 1849-2	7000 g·m ⁻²	≥ 6000 g·m ⁻²	Pass
Visible defects	010-037050	ČSN EN 1850-2	without visible defects	without visible defects	Pass
Tensile strength at F _{max}	010-037050	ČSN EN ISO 527-1,3	4,9 MPa	≥ 4,5 MPa	Pass
Elongation at F _{max}	010-037050	ČSN EN ISO 527-1,3	586,9 %	≥ 500 %	Pass
Hardness Shore A	Z-031-16	ČSN EN ISO 868	54,74	≥ 50	Pass

2.3.2. Control joint profiles – CJL ALU H3

Material	Aluminum profile - attest
Material	EPDM rubber insert (dark brown colour)

Product characteristic	Test Report	The test procedure	Test results	Required / declared level	Evaluation
Visible defects	010-036802	ČSN EN 1850-2	without visible defects	without visible defects	Pass
Thickness of ALU	010-036802	ČSN 73 0212-5	1,09 mm	(1,0±0,1) mm	Pass
Visible width	010-036802	ČSN 73 0212-5	9,68 mm	(10±0,4) mm	Pass
Installation Height	010-036802	ČSN 73 0212-5	4,33 mm	(4±0,4) mm	Pass
Secant Modulus at 25%	010-036802	EN ISO 8339	1,28 N/mm ²	≥ 0,8 N/mm ²	Pass
Elongation at break	010-036802	EN ISO 8339	187,1 %	≥ 140 %	Pass
Chemical resistance	010-036754	EN ISO 10545-13	See table bellow	---	Pass

Chemical substance	Concentration	Result
ammonium chloride	[100 g/l]	UA
citric acid	[100 g/l]	ULA

Note: UA, ULA ... no visible changes

2.3.3. Control joint profiles – CJL NE H10

Material	Stainless steel AISI 304/1.4301 - attest
Material	EPDM rubber insert (grey color – RAL 7038)

Product characteristic	Test Report	The test procedure	Test results	Required / declared level	Evaluation
Visible defects	010-036803	ČSN EN 1850-2	without visible defects	without visible defects	Pass
Thickness of Stainless steel	010-036803	ČSN 73 0212-5	0,72 mm	(0,8±0,1) mm	Pass
Visible width	010-036803	ČSN 73 0212-5	8,79 mm	(8,8±0,1) mm	Pass
Installation Height	010-036803	ČSN 73 0212-5	9,98 mm	(10,0±0,2) mm	Pass
Secant Modulus at 25%	010-036803	EN ISO 8339	1,4 N/mm ²	≥ 0,8 N/mm ²	Pass
Elongation at break	010-036803	EN ISO 8339	185,5 %	≥ 140 %	Pass
Chemical resistance	010-036754	EN ISO 10545-13	See table bellow	---	Pass
Minimum joint width	010-037137	ASTM E1399E	3,75	---	Pass
Maximum joint width	010-037137	ASTM E1399E	6,25	---	Pass
Cyclic Movement – 500 cycles	010-037137	ASTM E1399E	2,50	---	Pass
Antimicrobial activity -Staphylococcus aureus -Escherichia coli	16/0402-01a	JIS 2801	R ≥ 6,12 R ≥ 6,22	---	Pass
Resistance to Fungi	16/0739	ASTM G 21-09	No growth	No growth	Pass

Chemical substance	Concentration	Result
ammonium chloride	[100 g/l]	UA
citric acid	[100 g/l]	ULA
sodium hypochlorite	[20 g/l]	UA
potassium hydroxide	[30 g/l]	ULA

Note: UA, ULA ... no visible changes

2.3.4. Control joint profiles – CJL mini dilatance ALU H12,5

Material	Aluminum profile - attest				
Material	Microporous EPDM rubber insert				
Product characteristic	Test Report	The test procedure	Test results	Required / declared level	Evaluation
Visible defects	010-030304	ČSN EN 1850-2	without visible defects	without visible defects	Pass
Thickness of ALU	010-036804	ČSN 73 0212-5	0,99 mm	(1,0±0,1) mm	Pass
Visible width	010-030304	ČSN 73 0212-5	3,80 mm	(4±0,2) mm	Pass
Installation Height	010-030304	ČSN 73 0212-5	12,63 mm	(12,5±0,2) mm	Pass
Secant Modulus at 25%	010-030304	EN ISO 8339	0,45 N/mm ²	≥ 0,4 N/mm ²	Pass
Elongation at break	010-030304	EN ISO 8339	213,5 %	≥ 140 %	Pass

2.3.5. Control joint profiles - CJU ALU H30

Material	Aluminum profile - attest				
Material	EPDM rubber insert (grey colour – RAL 7038)				
Product characteristic	Test Report	The test procedure	Test results	Required / declared level	Evaluation
Visible defects	010-036938	ČSN EN 1850-2	without visible defects	without visible defects	Pass
Thickness of ALU	010-036938	ČSN 73 0212-5	1,06 mm	(1,0±0,1) mm	Pass
Visible width	010-036938	ČSN 73 0212-5	10,00 mm	(10±0,2) mm	Pass
Installation Height	010-036938	ČSN 73 0212-5	30,03 mm	(30±0,1) mm	Pass
Secant Modulus at 100%	010-036938	EN ISO 8339	1,32 N/mm ²	≥ 0,8 N/mm ²	Pass
Elongation at break	010-036938	EN ISO 8339	183,8 %	≥ 140 %	Pass

3. Conclusion

- The sample of product is in accordance to the requirements of the technical specification and technical regulations referred in paragraph 1.5.
- The findings made by the representative shall also apply to other members of the products group.
- Findings and conclusions mentioned in this Report are valid providing the conditions under them the conformity assessment was carried out remain unchanged (e.g. technical regulations, technical specifications, production technology, incoming raw and manufacturing equipment).

4. Annexes

1. Test Report No. 010-036754 of 20. 06. 2016, Chemical resistance of control joint profile CJL ALU H3 and CJL NE H12,5, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
2. Test Report No. 010-036802 of 27. 06. 2016, Control joint profile CJL DILATANCE ALU H3, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
3. Test Report No. 010-036803 of 27. 06. 2016, Control joint profile CJL DILATANCE NE H10, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
4. Test Report No. 010-036804 of 27. 06. 2016, Control joint profile CJL mini dilatance ALU H12,5, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5

5. Test Report No. 010-036938 of 12. 08. 2016, Control joint profile CJU DILATACE ALU H30, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
6. Test Report No. 010-037050 of 02. 09. 2016, EPDM rubber, issued by TZÚS Praha, s.p., Accredited Testing Laboratory No. 1018.5
7. Test Report No. 010-037137 of 15. 09. 2016, Control joint profile CJL NE H10, issued by TZÚS Praha, s.p., Testing Laboratory
8. Report AZL 16/0402-01a of 11. 07. 2016, Antimicrobial products – Test for antimicrobial activity and efficacy, issued by Textile Testing Institute Brno
9. Report AZL 16/0739 of 18. 07. 2016, Evaluation of the resistance to fungi, issued by Textile Testing Institute Brno
10. Test Report Z-031-16 of 27. 06. 2016, Test of hardness by shore – EPDM rubber, issued by JD Dvorak, s.r.o., testing laboratory