



INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.

třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic
TESTING LABORATORY - TESTING DIVISION

Issues

ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

client:

Semperit Technische Produkte GmbH
Triester Bundesstraße 26, 2632 Wimpassing, Austria
VAT reg. No.: ATU14234201

Values obtained and the assessment of the technical parameters:

Evaluated technical parameters of the leaching tests meet hygienic requirements of the **article 3 paragraph 2 of the Decree No. 446/2021 Coll. amending the Decree No. 409/2005 Coll. Hygienic requirements for articles intended to come into contact with water and for the water treatment, as amended, for articles intended into the long time contact with drinking water.**

Evaluated sample does not negatively influence the sensorial properties of the drinking water.

This Attest was issued on the basis of following document: ALTR No. 472115132-01 from April 27, 2022, issued by Institut pro testování a certifikaci, a.s. Zlín.

Issued on: April 27, 2022

Valid till: April 30, 2025



Dipl. Ing. Jiří Samsonek, Ph.D.
Head of the testing laboratory

Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Evaluation of heavy metals in the mass

Parameter	Unit	Result of measurement ¹⁾	Uncertainty ²⁾
Pb - lead	mg/kg	< 10	-
Cd - cadmium	mg/kg	< 10	-
Ba - barium	mg/kg	< 50	-
Se - selenium	mg/kg	< 10	-
Hg - mercury	mg/kg	< 10	-
Sb - antimony	mg/kg	< 20	-
As - arsenic	mg/kg	< 10	-
Cr - chromium	mg/kg	< 10	-
Ni - nickel	mg/kg	< 10	-
V - vanadium	mg/kg	< 10	-
Sn - tin	mg/kg	< 20	-
Cu - copper	mg/kg	< 10	-
Fe - iron	mg/kg	202	21
Mn - manganese	mg/kg	< 10	-
Zn - zinc	mg/kg	> 300	-

Notes to the table:

¹⁾ symbol „<” means less than limit of detection of the analytical method,
symbol „>” means more than the highest calibration standard

²⁾ 10 rel. % from measured value



Conditions for use of the Attest and associated information:

- 1. The Attest applies only to the sample tested by our laboratory.*
- 2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.*
- 3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.*



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Evaluated parameters of the leachate prepared according to the annex No. 1 of the Decree of the Health Ministry No. 409/2005 Coll.

Evaluation of the 1st leachate into the testing water after 72 hours

Parameter	Unit	Parallel leachate		$K_{72;1}^{1)}$	Uncertainty ²⁾	$K_{0;1}^{3)}$
		15132/01-A	15132/01-B			
Colour	mgPt/l	< 5	< 5	< 5	-	< 5
Turbidity (nephelometry)	ZF _n	< 0,5	< 0,5	< 0,5	-	< 0,5
pH	-	6,1	6,2	6,2	0,2	5,8
TOC ⁴⁾	mg/l	0,69	0,73	0,71	0,09	< 0,60
CHSK _{Mn} ⁵⁾	mg/l	0,27	0,36	0,32	0,10	-
Pb	µg/l	< 0,50	< 0,50	< 0,50	-	< 0,50
Cd	µg/l	< 0,20	< 0,20	< 0,20	-	< 0,20
Zn	mg/l	0,014	0,018	0,016	0,005	< 0,010
Ba	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Fe	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Phenols	mg/l	< 0,005	< 0,005	< 0,005	-	< 0,005
PAU ⁶⁾	µg/l	< 0,001	< 0,001	< 0,001	-	< 0,001
Benzo(a)pyrene	µg/l	< 0,0004	< 0,0004	< 0,0004	-	< 0,0004
PAA ⁷⁾	mg/l	no PAA detected	no PAA detected	no PAA detected	-	no PAA detected



Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Evaluation of the 2nd leachate into the testing water after 72 hours

Parameter	Unit	Parallel leachate		K _{72;2} ¹⁾	Uncertainty ²⁾	K _{0;2} ³⁾
		15132/01-A	15132/01-B			
Colour	mgPt/l	< 5	< 5	< 5	-	< 5
Turbidity (nephelometry)	ZF _n	< 0,5	< 0,5	< 0,5	-	< 0,5
pH	-	6,0	6,0	6,0	0,2	5,7
TOC ⁴⁾	mg/l	< 0,60	< 0,60	< 0,60	-	< 0,60
CHSK _{Mn} ⁵⁾	mg/l	0,24	0,30	0,27	0,07	-
Pb	µg/l	< 0,50	< 0,50	< 0,50	-	< 0,50
Cd	µg/l	< 0,20	< 0,20	< 0,20	-	< 0,20
Zn	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Ba	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Fe	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Phenols	mg/l	< 0,005	< 0,005	< 0,005	-	< 0,005
PAU ⁶⁾	µg/l	< 0,001	< 0,001	< 0,001	-	< 0,001
Benzo(a)pyrene	µg/l	< 0,0004	< 0,0004	< 0,0004	-	< 0,0004
PAA ⁷⁾	mg/l	no PAA detected	no PAA detected	no PAA detected	-	no PAA detected



Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Evaluation of the 3rd leachate into the testing water after 72 hours

Parameter	Unit	Parallel leachate		K _{72;3} ¹⁾	Uncertainty ²⁾	K _{0;3} ³⁾
		15132/01-A	15132/01-B			
Flavour	TFN ¹¹⁾	2	2	2	-	1
Odour	TON ¹¹⁾	2	2	2	-	1
Colour	mgPt/l	< 5	< 5	< 5	-	< 5
Turbidity (nephelometry)	ZF _n	< 0,5	< 0,5	< 0,5	-	< 0,5
pH	-	5,9	5,9	5,9	0,2	5,7
TOC ⁴⁾	mg/l	< 0,60	< 0,60	< 0,60	-	< 0,60
CHSK _{Mn} ⁵⁾	mg/l	0,24	0,21	0,23	0,04	-
Pb	µg/l	< 0,50	< 0,50	< 0,50	-	< 0,50
Cd	µg/l	< 0,20	< 0,20	< 0,20	-	< 0,20
Zn	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Ba	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Fe	mg/l	< 0,010	< 0,010	< 0,010	-	< 0,010
Phenols	mg/l	< 0,005	< 0,005	< 0,005	-	< 0,005
PAU ⁶⁾	µg/l	< 0,001	< 0,001	< 0,001	-	< 0,001
Benzo(a)pyrene	µg/l	< 0,0004	< 0,0004	< 0,0004	-	< 0,0004
PAA ⁷⁾	mg/l	no PAA detected	no PAA detected	no PAA detected	-	no PAA detected



Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Notes to the tables:

- 1) $K_{72,n}$ is the concentration of the analyte after 72 hours of leaching, expressed as an average value from two tested samples of parallel leachates after the subtraction of the blank value, the blank values are not subtracted in case of: odour, flavour, pH and TOC
 - 2) the reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%
 - 3) $K_{0,n}$ is the concentration of the analyte after 72 hours of leaching in the blank, expressed as an average value from two tested parallels leachates
 - 4) TOC = total organic carbon
 - 5) $CHSK_{Mn}$ = Permanganate Index Method
 - 6) PAU = Polycyclic aromatic hydrocarbons, sum of benzo(b)fluorantene, benzo(k)fluorantene, benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene
 - 7) these PAAs were screened by LC-MS/MS method: CAS No. 92-67-1, CAS No. 992-87-5, CAS No. 95-69-2, CAS No. 91-59-8, CAS No. 97-56-3, CAS No. 99-55-8, CAS No. 106-47-8, CAS No. 615-05-4, CAS No. 101-77-9, CAS No. 91-94-1, CAS No. 119-90-4, CAS No. 119-93-7, CAS No. 838-88-0, CAS No. 120-71-8, CAS No. 101-14-4, CAS No. 101-80-4, CAS No. 139-65-1, CAS No. 95-53-4, CAS No. 95-80-7, CAS No. 137-17-7, CAS No. 90-04-0, CAS No. 60-09-3, CAS No. 108-45-2 with limit of detection (LOD) of individual PAA = 0,002 mg/l and PAAs: CAS No. 80-08-0, CAS No. 88-68-6, CAS No. 106246-33-7, CAS No. 95-68-1, CAS No. 87-62-7, CAS No. 2243-62-1, CAS No. 62-53-3, CAS No. 95-51-2, CAS No. 108-42-9, CAS No. 106-49-0, CAS No. 106-50-3, CAS No. 823-40-5, CAS No. 121-69-7, CAS No. 6582-52-1, CAS No. 1208-52-2, CAS No. 6358-64-1, CAS No. 95-82-9, CAS No. 94-70-2, CAS No. 2835-68-9, CAS No. 81-16-3, CAS No. 88-44-8, CAS No. 49564-57-0, CAS No. 95-23-8, CAS No. 132-32-1, CAS No. 95-54-5, CAS No. 67014-36-2, CAS No. 156-43-4, CAS No. 90-41-5 with limit of detection (LOD) of individual PAA = 0,005 mg/l
 - 8) TFN = threshold flavour number
TON = threshold odour number
- symbol „<” means less than limit of detection of the analytical method,
concerning parameter TOC - symbol „<” means less than limit of quantification (LOQ) of the analytical method



Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Summary results of evaluation 1st – 3rd leachate into the testing water at (23±2) °C

Parameter	Unit	K _{72;1} ¹⁾	K _{72;2} ¹⁾	K _{72;3} ¹⁾	Limit ²⁾
Flavour	TFN ⁷⁾	-	-	2	acceptable (max. 2)
Odour	TON ⁷⁾	-	-	2	max. 2
Colour	mgPt/l	< 5	< 5	< 5	max. 20
pH	-	< 0,5	< 0,5	< 0,5	-
TOC ³⁾	mg/l	6,2	6,0	5,9	max. 1,0
CHSK _{Mn} ⁴⁾	mg/l	0,71	< 0,60	< 0,60	max. 0,90
Pb	µg/l	0,32	0,27	0,23	max. 1,0
Cd	µg/l	< 0,50	< 0,50	< 0,50	max. 0,50
Zn	mg/l	< 0,20	< 0,20	< 0,20	max. 0,30 ⁸⁾
Ba	mg/l	0,016	< 0,010	< 0,010	max. 0,070 ⁸⁾
Fe	mg/l	< 0,010	< 0,010	< 0,010	max. 0,020
Phenols	mg/l	< 0,010	< 0,010	< 0,010	max. 0,005 ⁸⁾
PAU ⁵⁾	µg/l	< 0,005	< 0,005	< 0,005	max. 0,010
Benzo(a)pyrene	µg/l	< 0,001	< 0,001	< 0,001	max. 0,0010
PAA ⁶⁾	mg/l	no PAA detected	no PAA detected	no PAA detected	max. 0,01 ⁸⁾



Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



ATTEST

No. 472115132-01

on samples:

Rubber plate E628 black colour (from EPDM)

Notes to the table:

- 1) $K_{72;n}$ is the concentration of the analyte after 72 hours of leaching, expressed as an average value from the dual samples of parallel leachates after the subtraction of the blank value, the blank values are not subtracted in case of: odour, flavour, pH and TOC; symbol „<“ means less than limit of detection of the analytical method; concerning parameter TOC - symbol „<“ means less than limit of quantification (LOQ) of the analytical method
- 2) 10% of the hygienic limit for drinking water according to the Czech Ministry of Health Decree No. 252/2004 Coll., as amended, annex 1; the limit valid for TOC is 20 % of the hygienic limit, for $CHSK_{Mn}$ is 30 % of the hygienic limit, for sensorial properties are valid the hygienic limits of the above mentioned Decree; limits are valid for parameter values of the third leachate $K_{72;3}$
- 3) TOC = total organic carbon
- 4) $CHSK_{Mn}$ = Permanganate Index Method
- 5) PAU = Polycyclic aromatic hydrocarbons, sum of benzo(b)fluorantene, benzo(k)fluorantene, benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene
- 6) these PAAs were screened by LC-MS/MS method: CAS No. 92-67-1, CAS No. 992-87-5, CAS No. 95-69-2, CAS No. 91-59-8, CAS No. 97-56-3, CAS No. 99-55-8, CAS No. 106-47-8, CAS No. 615-05-4, CAS No. 101-77-9, CAS No. 91-94-1, CAS No. 119-90-4, CAS No. 119-93-7, CAS No. 838-88-0, CAS No. 120-71-8, CAS No. 101-14-4, CAS No. 101-80-4, CAS No. 139-65-1, CAS No. 95-53-4, CAS No. 95-80-7, CAS No. 137-17-7, CAS No. 90-04-0, CAS No. 60-09-3, CAS No. 108-45-2 with limit of detection (LOD) of individual PAA = 0,002 mg/l and PAAs: CAS No. 80-08-0, CAS No. 88-68-6, CAS No. 106246-33-7, CAS No. 95-68-1, CAS No. 87-62-7, CAS No. 2243-62-1, CAS No. 62-53-3, CAS No. 95-51-2, CAS No. 108-42-9, CAS No. 106-49-0, CAS No. 106-50-3, CAS No. 823-40-5, CAS No. 121-69-7, CAS No. 6582-52-1, CAS No. 1208-52-2, CAS No. 6358-64-1, CAS No. 95-82-9, CAS No. 94-70-2, CAS No. 2835-68-9, CAS No. 81-16-3, CAS No. 88-44-8, CAS No. 49564-57-0, CAS No. 95-23-8, CAS No. 132-32-1, CAS No. 95-54-5, CAS No. 67014-36-2, CAS No. 156-43-4, CAS No. 90-41-5 with limit of detection (LOD) of individual PAA = 0,005 mg/l
- 7) TFN = threshold flavour number
TON = threshold odour number
- 8) 10% of the hygienic limit for drinking water according to the article 3 paragraph 2 of the Decree No. 409/2005 Sb., as amended, the limit valid for PAA is the hygienic limit, limits are valid for parameter values of the third leachate K_{72}

Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.





INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.
třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic
Testing Laboratory – D2

ATTEST No. 472114943-01

Sample identification:

Table I: Samples description and identification

ITC's identification number	Sample identification by client	Description of submitted sample
472115132/01	Rubber plate E628 black colour (from EPDM)	black rubber plates of dimension (10x10) cm

Sampling method used:

The test sample was collected and supplied to the laboratory by the client. The laboratory is not responsible for this way of sampling.

Work request:

The client requested evaluation of selected hygienic parameters of the sample according to the Decree No. **446/2021 Coll. amending the Decree No. 409/2005 Coll.** – *Hygienic requirements for articles intended to come into contact with water and for the water treatment*, as amended, in accordance with the law No. 258/2000 Coll. on Public Health Protection as amended, for contact with drinking water.

The relevant parameters given by the Decree No. 409/2005 Coll., as amended, for the material were tested.

Opinions and interpretations:

Evaluation of fulfilling of the requirements of the Decree No. 409/2005 Coll., as amended, for articles intended into direct long time contact with drinking water:

- In the supplied samples heavy metals content was determined by XRF spectroscopy. All critical elements were under limit of detection of the used analytical method, except iron and zinc – their content were measured in the leachates - see table on the page 2 of this attest.
- The supplied samples are intended into the contact with drinking water.
The article intended into the long time contact with drinking water shall meet requirements of the article 3 paragraph 2 of the Decree No. 409/2005 Coll., as amended - shall not exceed 10 % of the hygienic limit set for drinking water by to the Health Ministry Decree No. 252/2004 Coll., as amended (the limit valid for TOC is 20 % of the hygienic limit, for CHSK_{Mn} is 30 % of the hygienic limit, for sensorial properties are valid the hygienic limits).
Three subsequent 72-hours leachates into the testing water (deionised water of temperature 23 °C according to the conditions from Annex No. 1 of the Health Ministry Decree No. 409/2005 Coll., as amended) were prepared from the supplied samples.
The test results for parallel leachates, the average values subtracted by the blank values and blank values are listed in the tables on pages 3 - 5 of this attest. Summary results of evaluation 1st – 3rd leachate into the testing water at (23±2) °C, together with limit values are listed in the tables on the page 7 of this attest.

The tested parameters from the third leachate **meet the requirements of the article 3 paragraph 2 of the Decree No. 409/2005 Coll., as amended, on the products intended into the long time contact with drinking water.**

Conditions for use of the Attest and associated information:

1. The Attest applies only to the sample tested by our laboratory.
2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.
3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.



INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.
třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic
Testing Laboratory – D2

ATTEST No. 472114943-01

The supplied samples doesn't negatively influence the sensorial properties of the water.

Evaluated by:

MUDr. Beata Janoušková, on April 27, 2022.

Conclusion:

The comparison of the obtained values of the samples with the requirements of the Decree No. 409/2005 Coll., as amended, and the evaluation of the conformity with this regulation are listed on the page 1 of this Attest.

Dipl. Ing. Daniel Vít
Head of the laboratory of analytical chemistry and microbiology

Conditions for use of the Attest and associated information:

- 1. The Attest applies only to the sample tested by our laboratory.*
- 2. The Attest remains in effect until production technology, initial materials and standards or corresponding regulations are changed; however, its validity will extend beyond the period of its effect.*
- 3. If further requirements of national or EU legal regulations apply to the product, the Attest does not replace procedures and documents necessary for assessment of compliance with these regulations.*