TRANSLATION: for information only

BELGAQUA

BELGIAN FEDERATION
FOR THE WATER SECTOR

ACCEPTANCE of MATERIALS in CONTACT with DRINKING WATER

Edition 01 May 2016

Approved by the Board of Management of
BELGAQUA in its meeting of 14 February 1996,
modified and augmented on 16 December 1997, 23 April 1998, 23 November 2000,
16 March 2001, 19 January 2004, 13 December 2004, 16 May 2006, 22 June 2010,
20 May 2011 and 26 September 2012.
This edition annulates and replaces all previous versions.

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GENERAL TERMS and CONDITIONS for the ACCEPTANCE by BELGAQUA of MATERIALS in contact with DRINKING WATER and Water intended for the production of drinking Water .

1. GENERAL

1.1. Object and domain

The current general terms and conditions are applicable to all stages of the contractual relationship between BELGAQUA, on the one hand,
and on the other hand, the submitters of owners of approval certificates for materials or more generically construction products, as defined in the directive of the European Communities 89/106/EEC, which are intended for contact with drinking water or with water intended for the production of drinking water in the production and treatment facilities (referred to hereunder as “materials”).

Every request of an acceptance certificate submitted by an individual person or a company by means of the submission form in Annex I, implies the full agreement on all provisions of the current document.

1.2. Limits of Liability

The tests made by BELGAQUA or under its supervision within the framework of these general terms and conditions are designed to check if the materials submitted for acceptance or placed on the market by certificate owners fulfill all the requirements described in Annex II and may subsequently be used (with the limitations which may be specified in the certificate) for the transportation, stocking and distribution of water intended for human consumption.
The certificates are only binding for the water supply services or companies which are members of BELGAQUA and not for third parties. The latter are authorized to take the certificates into consideration, without any liability for BELGAQUA or its members.

2. Submission for acceptance of materials in contact with drinking water.

2.1. Information

When a manufacturer, importer or retailer of materials intended for contact with drinking water or with water used for the production of drinking water so requests, he will receive for information and/or handling of a submission file the following elements:

- a copy of the current general terms and conditions with the following Annexes:
- Annex I : the form for submission of acceptance request
- Annex II: description of the requirements and test methods for organic materials, cement based materials and lubricants in contact with drinking water and water intended for the production of drinking water (HYDROCHECK) or in the case other methods are used, of which BELGAQUA does not have the intellectual ownership, the reference to these methods.
- all kind of useful information about the procedure, the information to be provided by the submitter, the cost of the tests and the fee for the delivery, the registration, follow-up and publication of the acceptance certificate which may be delivered.

2.2. Handling of the submission

By filling and signing the submission form, the submitter gives his full agreement to the current general terms and conditions. In particular, all measures in case of non-compliance described in 3.4. are applicable, even during the examination and testing phase.

As soon as BELGAQUA got the submission form correctly filled and signed by the submitter, if applicable with the technical information supporting the submission, BELGAQUA will inform the submitter that his file is being examined. The actual work will however only be started upon receipt of the fixed fee as stated in 6.3 or, if otherwise agreed, the advance to be paid by the submitter.

BELGAQUA designates one or several experts to examine the materials submitted for acceptance. The submitter shall pass them all information which is necessary for the examination and in particular the samples needed for laboratory tests. The samples shall be provided and conditioned by the submitter at his cost, included the transportation and all related costs if so.
If they are of the opinion that it could be useful or necessary for the full evaluation of the characteristics of the materials, the experts will be allowed access to the production, transformation, conditioning or stocking facilities of the submitter. In the case the experts appointed by BELGAQUA will have to move to facilities under control of the submitter, he will take full care of their personal safety and cover all risks to them and their equipment. The submitter shall undertake all steps by third parties involved in any of the phases foregoing final delivery of the materials in order to provide the same guarantees to the experts when they have to move to the premises of such third parties.

BELGAQUA commits itself to handle on a strictly confidential way all information received from the submitter. In particular, this information shall not be communicated to third parties unless with the explicit consent of the owner of the proprietary information. BELGAQUA shall not mention the existence of a submission for acceptance to third parties, except its own members. In the same way, the submitter will not mention his submission under any form to third parties before having obtained an acceptance certificate from BELGAQUA or undertake any action which could let suppose that an acceptance certificate has already been delivered or that it is likely to be delivered for the material(s) for which a submission has been introduced.

2.3. Technical Analysis

The objective of the technical analysis is to verify that the materials submitted to the tests can be used safely by the water supply companies or services for the transportation, stocking and distribution of drinking water or of water intended for the production of drinking water. Each material will be examined on its own right. When the material consists of more than one layer, each one will be evaluated on its own insofar it influences the water quality, be it during the initial contact period or later.
Only in the case of drinking water meters of which the connection system has an inner diameter of less than 50 millimeters will an acceptance be granted on the whole device when, after checking of the composition of all elements composing the device, no risk of migration of toxic substances into the water may happen. If not all these conditions are entirely fulfilled for one or several of the materials out of which the water meter is made, the generic procedure will be followed for these materials. In the next articles of the current general terms and conditions, all rules applicable to "materials" will by extension also comprise the water meters as a whole device, unless otherwise specified.

Samples which are representative of the normal production (taking into account if necessary the treatments or conditioning intended to stabilize the behavior of the materials which are used in a daily base in the production) shall be put at the disposal of BELGAQUA by the submitter and used among others to laboratory tests according to the methods described in Annex II. The tests must allow to verify that the contact between the materials and the types of test water prescribed will not give rise to an alteration of the water quality in such a way that the requirements listed in Annex II would not be satisfied.
The authorized monomers and additives must be listed in the positive list established into the framework of the implementation of directive 89/106/EEC and all related regulations. This European positive list is published *in extenso* in a separate Annex to this text, as well

as on www.belgaqua.be. Every modification, addition or deletion of elements of this positive list will be published in an updated version.
Complementary to this, every substance authorized according to the Regulation (EU) 10/2011 of the Commission of 14 January 2011 as well as the most recent of the Recommandations of the German Federal Institute of Risk Evaluation (Umweltbundesamt BfR) will also be admitted[1]. In case of discrepancy about the authorized migration limits between these documents, the lowest value will be retained.
The submitter will communicate to BELGAQUA the full information about the composition of its products. This information will be treated confidentially as stated under article 2.2.

Only the substances mentioned in the European positive lists referred to here above may be used during the manufacturing, the transformation, the conditioning or the stocking of the materials.
BELGAQUA will refuse the acceptance of all materials which do not comply this requirement and will inform the submitter without delay about this refusal. Examination costs may be charged to the submitter in this case, even in the absence of the execution of tests.

The submissions are treated as quickly as possible, taking into account the information about the composition of the materials and the test necessary samples delivered by the submitter. When, taking into account the normal duration of the tests described in the Annex II, the duration of the technical examination could be abnormally long, the submitter will be informed. The measures to accelerate the course of the examination will be agreed by both parties. In case of more extended delay, the submitter will be authorized to withdraw his application and only the costs incurred or inevitable at the time of notification of the withdrawal will be charged.

2.4. Consideration of existing certificates

The submitter may annex any existing acceptance certificate to his request. If he asks explicitly for this, he can obtain from BELGAQUA to be dispensed of the tests described in 2.3. here above and of the payment of the corresponding costs (only the costs of file treatment, including the first publication into the Directory mentioned in 4.1. hereafter will be charged, according to the provisions of art. 6.3. hereunder). In this case, the submitter will have to demonstrate that the tests have been made according to the methods described in Annex II and that all technical requirements of this Annex II are satisfied. The submitter will also deliver the corresponding full test results and all information about the organism which performed the tests. He will provide in all cases the test pieces as foreseen in the Annex II in order to allow BELGAQUA to make all checks deemed necessary.

The submitter, when asking to take into account an existing certificate, guarantees that the materials for which he presents a submission are in all aspects identical to those for which the certificate has been delivered. In case of infringement to this commitment, the provisions of Art. 3.4 hereunder will be applied.

The certificates and the scientific reports must be written in one of the three official languages of Belgium (French, Dutch, German) or in English. In all other cases, unless explicitly agreed by BELGAQUA, the submitter will provide a translation or this will be done by BELGAQUA and charged to the submitter, who will be informed of the cost of such a translation.

BELGAQUA remains in all cases the final judge of the validity of the test results and of the possibility for the submitter to benefit of the dispense of new tests.

[1] Unless otherwise specified, the limit values mentioned in the Regulation 10/2011 must be divided by a factor 20 for contact with drinking water.

3. Acceptance Certificate

3.1. Delivery of an acceptance certificate

When the technical examination of the submission leads to a positive conclusion, BELGAQUA delivers an acceptance certificate for the material. BELGAQUA informs its members of the delivery of this certificate and adds the references of the materials and of the certificate owners into the next edition of its Directory, according to the provisions of article 4.1.

The certificate owner commits himself to propose and deliver only materials conform to those for which an acceptance certificate has been given by BELGAQUA to the Water Services affiliated to BELGAQUA. If applicable, those deliveries will be made within the limits of tolerance and with the conditionings and treatments as specified in the certificate.

La duration of validity of an acceptance certificate delivered by BELGAQUA is in principle unlimited, subject to the conditions listed in 3.2 and 3.3 hereunder and as far as its owner has paid the periodical fee for the publication in the BELGAQUA Directory as mentioned in 4.1. hereunder. The submitter will inform BELGAQUA without delay and in any case before putting them onto the market, of any modification he envisages to bring to the composition/formulation or to the production process, to the transformation, the conditioning or the stocking of the materials. If applicable, BELGAQUA can stipulate to the certificate owner that the new material, which presents substantial modifications compared to the original material, which may affect the quality of drinking water, must lead to a distinct submission and accordingly to a new technical analysis.

The certificate owner is entitled to mention the acceptance of the materials covered by the certificate (as long as they have not been modified) in a non equivocal way, under his full responsibility and in agreement with the applicable legal conditions - in particular the rules of free competition. The materials may be marked accordingly. However, the certificate owner has to ask the permission of BELGAQUA in order to affix its "logo" and acronym onto the materials, taking into account the intellectual property of BELGAQUA. In case the coverage of the certificate would be interrupted or lost, the certificate owner is obliged to withdraw all irrelevant marking from its products.

The protection of the certificate owner's right against unjustified actions of third parties in the field of the acceptance certificates delivered by BELGAQUA according to the present general terms and conditions lies normally with BELGAQUA. It is understood that the certificate owner may support the actions undertaken by BELGAQUA in this respect.

3.2. Modifications to the requirements and methods

BELGAQUA cannot guarantee the certificate owner against the effects of possible modifications to the requirements as to the test methods of materials. BELGAQUA will inform the certificate owner as soon as there are sufficient indications that such modifications could happen.

3.3. Verification

BELGAQUA is entitled to undertake at its own charge any kind of verifications which are deemed necessary to check the conformity of the materials put on the market by the certificate owner. The materials will in principle de checked at least once every five years.

The certificate owner will give his support to the correct execution of these verifications, among others by delivering free of charge the test samples requested by BELGAQUA. BELGAQUA is not obliged to inform the certificate owner in advance, but will avoid as

much as possible to disturb the normal activities of the certificate owner without serious reasons.

In the case departures or non-conformities would be discovered, BELGAQUA will inform the certificate owner of the results of the verifications. The certificate owner shall indicate by returned mail which corrective measures he intends to take and what has been done or shall be done with the non-compliant materials. He commits himself to interrupt all deliveries and inform his clients about the stocks of relevant materials they could still possess until full resolution of the problems.

3.4. Measures in case of infringement

When a non-conformity is being identified during a verification or if it appears that the submitter or certificate owner has not respected his contractual obligations, BELGAQUA is entitled to withdraw the certificate and/or to claim for a compensation by the submitter or certificate owner, which amounts to four times the fee for the initial acceptance certificate. BELGAQUA will also be entitled to terminate the contractual relationship with the faulty submitter or certificate owner.

3.5. Sub-contracting

The certificate owner is obliged to inform BELGAQUA when he contracts the production, the transformation, the conditioning or stocking of materials for which he has obtained an acceptance certificate by BELGAQUA to a third party. He remains however full responsible for the fulfillment of his contractual obligations by mentioned third party, in particular regarding the technical conformity of the materials.

If the certificate owner his not able to provide such guarantees, he shall invite the contracted third party to submit himself a request for acceptance to BELGAQUA.

4. Publications

4.1. Publications by BELGAQUA

BELGAQUA publishes at least once a year for its members a Directory of all accepted materials for which the certificate owners have paid the periodical publication fee mentioned in 6.3. hereunder, being understood that the first publication is done automatically and free of charge after the delivery of the certificate insofar as the submitter has fulfilled all his obligations. By paying the periodical publication fee, the certificate owner confirms that the materials put onto the market at the time of payment have not been modified in comparison to those for which a certificate has been delivered and that they are within the limits of tolerance and have undergone all conditionings or treatments as specified in the certificate.

A certificate delivered during one of the years before that of the publication remains valid only if the certificate owner has paid the fee mentioned here above. The updated list of certificates can be found on www.belgaqua.be

4.2. Publications by the certificate owners

As described here above the certificate owners are entitled to mention by all appropriate means the rights following from the certificate given by BELGAQUA.

BELGAQUA is by no way responsible for abusive use of this right of the certificate owner to publish information about the certificate or the accepted material. In particular, the certificate owner guarantees BELGAQUA against any claim for damage introduced by third parties against the publications of the certificate owner.

5. Settling of disputes

Every dispute about the validity, the interpretation or the execution of the current general terms and conditions shall be definitely settled according to the rules of CEPANI, by three referees who will constitute an arbitration board. One of the three referees will be designated by BELGAQUA, the second by the submitter or certificate owner and the third one will be designated in common agreement of the first two. The arbitration will take place in the Region of Brussels-Capital. The arbitration will be done according to the Belgian law. Both parties agree to accept the conclusions of the arbitration board.

Every request from the submitter or certificate owner for a ruling of the arbitration board will be notified by registered to the Director of BELGAQUA, mentioning the challenged decision and the reasons of his request.

The ground for complaint of BELGAQUA will be notified to the submitter or certificate owner by the Director of BELGAQUA.

The arbitration board will decide upon the costs of the procedure and to which party they will be charged.

6. Additional provisions

6.1. Complaints

When the certificate owner is being informed of complaints of users of the materials such that there is a risk of deterioration of the quality of the drinking water, he has to inform BELGAQUA of these complaints without delay.

When BELGAQUA is being informed of similar complaints about materials for which an acceptance certificate has been granted and which have not been modified, it informs the certificate owner and suggests the measures to be taken in order to remedy the problems. When the certificate owner has handled in good faith and he has taken good care at all stages of production, transformation, conditioning or stocking of the materials, BELGAQUA will undertake at its charge the verifications and acceptance procedure of a modified version of the materials.

The provisions of current article 6.1 are also applicable when the measures described in 3.4., among others these related to the right of BELGAQUA to get a compensation have been applied.

6.2. Responsibility

BELGAQUA refuses any responsibility of any kind for damages appearing within the framework of the current general terms and conditions, of the submissions for acceptance certificates and the delivery of such certificates, unless it can be proven that BELGAQUA committed a serious fault or negligence which is the direct cause of the damage.

The certificate owner guarantees BELGAQUA against every lawsuit for damages by third parties in the framework of the current general terms and conditions.

6.3. Fees

The receipt and handling of submission for acceptance of materials in contact with drinking water, including the delivery of acceptance certificates, the registration of the references of the materials and the first publication in the Directory published by BELGAQUA give rise to the payment of a fee to BELGAQUA by the submitter.

The amount of the fee is fixed in principle by the Board of management of BELGAQUA. It will be communicated to the submitter with the information package described in 2.1. here above.

In some specific cases, the handling of the submission will be done on the basis of an estimate. In such a case, BELGAQUA will inform the submitter and fix the amount of the fee.

The annual publication fee mentioned in 4.1. is also fixed by the Board of management of BELGAQUA. When paying the annual fee, the certificate owner confirms that the materials he puts onto the market at this date are still made according to the specifications of the materials for which an acceptance certificate has been granted.

Without payment within 30 days after sending of the invoice, a reminder will be sent by registered mail, augmented with administrative costs. If the certificate owner has not yet paid the fee within this new 30 days period, BELGAQUA will be entitled to strike the references to the corresponding certificates out of its Directory. The defaulting certificate owner if he so wishes, will have to submit a new request for publication in the next edition of the Directory.

6.4. Confidentiality

BELGAQUA takes all relevant measures, among others with regard to its staff or the experts hired for the examination of the submissions in order to ensure the confidential treatment of the information related to the materials in contact with drinking water.

The submitter or certificate owner will refrain from seeking to get confidential information about competitors or their products whenever they have contacts with the staff of BELGAQUA, with the water supply companies and with the experts hired by BELGAQUA, even when these are no longer employed by the water supply companies or by BELGAQUA. This provision remains applicable even after the termination of the contract.

6.5. Termination of the contract

Each of the parties can terminate the contract by sending a dully motivated registered mail to the other party. The termination becomes effective after completion of a three months notice period.

When it appears that one of the parties has seriously injured its contractual obligations, the other party is entitled to terminate the contract immediately.

The termination of the contract however does not cancel the financial obligations of the submitter or certificate owner towards BELGAQUA. In particular, any amount of money already paid to BELGAQUA for a submission or as publication fee remains its property.

7. Final provisions

The current general terms and conditions have been approved in their initial version by the Board of management of BELGAQUA on February 14, 1996. The came into force for the first time on March 1, 1996.

The current modifications enter into force on 01 October 2012.

BELGAQUA - Belgian Federation for the Water Sector
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Annex I

Submission for Acceptance by BELGAQUA of a material intended to be placed in contact with drinking water or water intended for production of drinking water

1. Identity of the submitter

Name of the company: ……

Full Address: street…… Nr, Box : ……

Zip Code …… Town:……

Country: ……

Telephone: …… Telefax: ……

E-mail: …… VAT Nr: ……

Represented validly by: Name, First Name: ……

Function:……

2. Description of the object of the submission (one sheet for each distinct material)

Type of material: ……

Mark, Brand name:
……

Model, diameter : ……

Special Characteristics: ……

……

Existing certificates, term of validity: ……

The undersigned, here above mentioned, representing validly the company …… submits herewith to BELGAQUA the request for acceptance of the material designated here above.
By doing so, he agrees to the general terms and Conditions and to the tariff of the fees for the handling of this request and the possible granting of an acceptance certificate.
He commits himself to deliver to BELGAQUA or to any person designated by BELGAQUA all samples and information which are deemed necessary for the handling of this submission.

Date, signature

(Annex: samples, technical documents, composition of the materials, existing certificates, test reports, etc.)

Annex II

HYDROCHECK

Methods and requirements for the chemical, organoleptic and bacteriological examination of organic materials, cement based materials and lubricants in contact with drinking water and water intended for the production of drinking water.

PART ONE: ORGANIC MATERIALS

1. Object and scope

This document describes how the influence of organic materials upon the chemical, organoleptic and bacteriological characteristics of drinking water and water intended for production of drinking water (designated hereafter as *drinking water)* with which they come into contact has to be examined and to set maximum limits to this influence.

Regarding the migration of substances into drinking water, this document refers to the Decrees of the Regional Governments for the transposition into Belgian law of the European directive 98/83/EC on the quality of water intended for human consumption and sets altogether a maximum concentration of total organic carbon (TOC).

2. Control of the composition

The submitter must communicate in full the composition of the material. In particular, for each substance being used, the full denomination and the CAS number must de provided. The composition will be verified on the basis of the positive list established into the framework of the implementation of directive 89/106/EEC and all related regulations. This European positive list is published *in extenso* in a separate Annex to this text, as well as on www.belgaqua.be. Every modification, addition or deletion of elements of this positive list will be published in an updated version.
Complementary to this, every substance authorized according to the Regulation (EU) 10/2011 of the Commission of 14 January 2011 as well as the most recent of the Recommandations of the German Federal Institute of Risk Evaluation (Umweltbundesamt BfR) will also be admitted. In case of discrepancy about the authorized migration limits between these documents, the lowest value will be retained.

For the elastomers, the tests on specific migrations will in principle not be performed. The specific conditions applicable to elastomers are restricted to their use as ancillaries.

3. Principle

The material to be examined is being placed into contact with a simulating liquid under well defined conditions. When the material is made up of more than one layer, each one which may influence the water quality either by direct contact, by diffusion of substances through the superficial layers or as a result of the activity of micro-organisms will be examined on its own right.

One shall control what is being found into the simulating liquid in comparison with a control sample:

1° odor, flavor, color, turbidity and total organic carbon (TOC) in order to evaluate the influence upon the organoleptic characteristics of the drinking water and to check the total migration of organic substances.

2° the predictable concentration of substances having migrated in order to check the specific migrations.

3° the aerobic germs at 22°C and the oxygen depletion (this last measurement only in the case of elastomers) and the coliform bacteria (36±2°C) in order to evaluate the stimulation of the bacterial growth. For this test, the control blanco is being made with a unpolished (by sandblasting) glass plate of the same surface as the sample to be tested.

4. Samples

As test samples, one shall use either piping pieces (coated or not), or glass, aluminum or stainless steel plates (max. 100 x 100 x 3 mm) coated on both sides with the material to be examined, according to the indications given by the manufacturer.

For pipes with the internal and external walls made out of the same material, sections of pipe may be used.

For elastomers, one shall use as much as possible finished pieces as they appear in real situation or, if not possible, samples made with a similar production device.

Only the material to be examined may come into contact with the simulating liquid. In the case that other materials could come into with the simulating liquid, it has to be checked in how far they could influence the result.

For the number of test samples and the contact surface needed, refer to the description of the corresponding tests.

5. Check of the organoleptic characteristics and of the total migration of organic substances.

5.1. Simulating liquids

Simulating liquid A: solution of 420 mg sodium bicarbonate ($NaHCO_3$) and 1 mg of free chlorine per liter of demineralised (1) water.

Simulating liquid B: solution of 150 mg of carbon dioxyde (CO_2) per liter of demineralised water

(1): conductivity ≤ 3 µS/cm
The simulating liquid B must be used only upon request of the user.

5.2. Preparation of the samples

The samples are being rinsed during 1 hour under flowing tap water and then rinsed with the simulating liquid.

5.3. Parameters and execution of the test.

Surface/volume ratio

- 10 ± 2 dm^2/l for pipes
- 2,5 ± 0,5 dm^2 /l for tanks and reservoirs
- 1,5 ± 0,3 dm^2 /l for ancillaries (packings excluded)

Minimum volume of simulating liquid and method

The minimum volume of the simulating liquid is 1 liter.

Introduce the simulating liquid and the samples into closed jars. Place the whole thing into darkness and at a temperature of 22 - 25 °C.

The total duration of the tests is three times 24 hours with renewal of the simulating liquid after 24 and 48 hours. Use different samples for each simulating liquid (A or B).

5.4. Determinations to be performed

On the resulting simulating liquid perform the following determinations by comparison to the control simulating liquid:

- odor
- taste (flavor)
- color
- turbidity
- TOC

The determinations must be made according to standard ISO methods or equivalent methods.

For the simulating liquid A, the free residual chlorine must in the first place de eliminated by addition of sodium thiosulfate, both into the test liquid and into the control liquid, before starting the measurements.

5.5 Requirements

Into the simulating liquid of the last 24 hours of the test, one may measure no more than the following values:

- odor index: 3 at 25 °C (6 for elastomers)
- flavor index: 3 at 25 °C (6 for elastomers)
- color: 5 mg Pt/l (*)
- turbidity: 1 FTU
- TOC: 3 mg C/l.

(*): moreover, the contact liquid may have no visually observable color.

6. Check of the specific migration

6.1. Simulating liquid

Simulating liquid A: demineralised water.

Simulating liquid B: solution of 150 mg of carbon dioxyde (CO_2) per liter of demineralised water.

The simulating liquid B must be used only upon request of the user.

6.2. Preparation of the samples

The samples are being rinsed during 1 hour under flowing tap water and then rinsed with the simulating liquid.

6.3. Parameters and execution of the test .

Surface/volume ratio

- 10 ± 2 dm^2/l for pipes
- 2,5 ± 0,5 dm^2 /l for tanks and reservoirs
- 1,5 ± 0,3 dm^2 /l for ancillaries (packings excluded)

Minimum volume of simulating liquid and method

The minimum volume of the simulating liquid is 1 liter.

Introduce the simulating liquid and the samples into closed jars. Place the whole thing into darkness and at a temperature of 22 - 25 °C.

The total duration of the tests is one time 10 days.

6.4. Determinations to be performed

The concentration of the substances of which the migration can be expected into the resulting test liquid have to be determined.

In order to make these determinations possible, the producer of the material must communicate the composition of the material by indicating, for each of the substances to be monitored, the CAS number or the usual chemical denomination.

6.5. Requirements

Specific migrations: conform to the European Positive List referred to under 2; "Control of the composition" and published as an Annex to the current text. In addition, and unless specified in the table hereunder, 50 % of the parametric values indicated in the Decrees of the Belgian regional governments for the implementation of the directive 98/83/EC:

Aluminum	100 µg/l	Iron:	100 ug/l
Ammonium:	0,50 mg/l	Fluorides:	1,5 mg/l
Antimony:	2,5 µg/l	Total HPCA (1):	0,1 µg/l
Arsenic:	5,0 µg/l	Manganese:	25 µg/l
Benzene:	1,0 µg/l	Mercury:	0,5 µg/l
Benzo(a)pyrene:	0,010 µg/l	Nickel:	10 µg/l
Boron:	1,0 mg/l	Lead:	5,0 µg/l
Bromates:	10 µg/l	Selenium	5,0 µg/l
Cadmium:	2,5 µg/l	Styrene:	20 µg/l
Vinyl chloride	0,5 µg/l	Tetrachloroethylene + Trichloroethylene	10 µg/l
Chromium:	25 µg/l		
Copper:	100 µg/l	Total Trichlorobenzenes:	20 µg/l
Cyanides:	50 µg/l	Total trihalomethanes (2)	100 µg/l
1,2 - Dichloroethane:	3,0 µg/l	Xylene:	500 µg/l
Epichlorhydrin:	0,10 µg/l	Zinc:	100 µg/l
(1): Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Indenol(1,2,3-cd)pyrene		(2): Bromoform, Bromodichloromethane (for this substance: 60 µg/l), Chloroform, Dibromochloromethane	

7. Check of the stimulation of bacterial growth

7.1. Equipment required

- jars of 2 liters
- bacterial inoculum: surface water out of which a volume is being taken into which the presence of coliforms could be observed. The inoculum must contain at least 10^3 and maximum 10^5 aerobic germs at 22 °C.
- dilution water: supply water free of chlorine, filtrated on membrane filters with a pore diameter of 0,45 µm.

7.2. Execution of the test

Place the test sample (surface = 1,0 ± 0,2 dm^2) into a jar, after rinsing. Add the necessary volume of bacterial inoculum.

Place into a second jar the same volume of bacterial inoculum (as control sample). Fill both jars with dilution water until obtaining 1 liter of total volume and cover them with an aluminum sheet.

Incubate during a half week in darkness at 22 - 25 °C. Shake the content of the jars after three and a half days. Transfer the sample + 10 ml of liquid out of the first jar and 10 ml of liquid out of the second jar into two new jars and fill up with dilution water until getting 1 liter in each jar.

Repeat this handling every 3,5 days until the end of the test. (see 7.4.).

7.3. Bacteriological analysis

The following measurements shall be made as well on the test liquids as on the control liquids:

- aerobic germs at 22 °C
- coliform bacteria (36±2 °C)

For the elastomers, one shall measure:

- coliform bacteria (36±2 °C)
- oxygen depletion

The measurements shall be made according to an ISO standard method or equivalent.

7.4. Requirements

The numbers of aerobic germs found into the test liquids may not be more than 10 times as numerous than into the control liquids.

The tests must be performed during six full weeks.

The material is being considered as stimulating the bacterial growth when this limit value is being exceeded during three successive liquids.

Moreover, the following values may not be exceeded into the last test liquid:

- coliforms: 0/100 ml

The oxygen depletion during the last four measurements may not exceed 4 mg per liter in average value.

Moreover, there may not be detected a visible biofilm onto the test sample or a turbidity into the liquid, which can be confirmed as bacterial growth by examination under the microscope.

PART TWO: CEMENT BASED MATERIALS

1. Object and scope

This part specifies the examination methods and the requirements for cement based materials in contact with drinking water or water with which drinking water is being produced.

As cement based materials one shall also include cement coatings of steel or cast iron pipes, concrete pipes, pipes in cement reinforced with natural mineral fibers and reservoirs in concrete as well as all preparations made out of cement into which additives have been added.

Remark:

the water intended to come into contact with cement based materials must fulfill the following requirements:
- *concentration of hydrogen carbonate of at least 60 mg HCO_3/l (=1mmol/l; = 5° F of hydrogen carbonate alkalinity),*
- *calcium concentration of at least 40 mg Ca per liter,*
- *pH between 6,5 and 8,2.*

For the transport and stocking of water that does not fulfill these requirements, it is recommended to use another material.

Regarding the migration of substances into drinking water, this document refers to the Decrees of the Regional Governments for the transposition into Belgian law of the European directive 98/83/EC on the quality of water intended for human consumption and sets altogether a maximum concentration of total organic carbon (TOC).

2. Check of the composition

The submitter has to deliver the full composition of the material. In particular, for each of the substances used, the full chemical name and CAS number have to be given. The composition shall be checked with reference to the positive list established into the framework of the implementation of directive 89/106/EEC and all related regulations. This European positive list is published *in extenso* in a separate Annex to this text, as well as on www.belgaqua.be. Every modification, addition or deletion of elements of this positive list will be published in an updated version.
Complementary to this, every substance authorized according to the Regulation (EU) 10/2011 of the Commission of 14 January 2011 as well as the most recent of the Recommandations of the German Federal Institute of Risk Evaluation (Umweltbundesamt BfR) will also be admitted. In case of discrepancy about the authorized migration limits between these documents, the lowest value will be retained.

3. Principle of the migration tests

The material to be evaluated is being put into contact during three weeks, under well defined conditions with a simulating liquid which is renewed on every working day. One shall measure into the last liquid, in comparison to a control sample (blanco), the concentration of a list of substances of which the migration may be expected.

4. Samples

Preferably take as sample a section of pipe (of the smallest available diameter of the product range submitted for acceptance) or if this is not possible in practice, prisms (ideally 5 cm of line), made specifically for this sake, of the material in contact with drinking water.
When a section of pipe is being used as sample, the submitter will provide samples foreseen of a watertight obturation on one side, made into a material which will not influence the migration results, among others by corrosion of metallic parts or others.

It is important that only the part of the material to be evaluated comes into contact with the simulating liquid. If it cannot be avoided that other materials come also into contact, it should be evaluated in how far it will not modify the analysis results.

For the ratio between the contact surface of the samples and the volume of the simulating liquid, the following values have to be considered:

- 10 ± 2 dm^2/l for pipes,
- 2,5 ± 0,5 dm^2/l for reservoirs,
- 1,5 ± 0,3 dm^2/l for ancillaries.

5. Simulating liquid

Demineralised or distillated water, into which 84 mg/l $NaHCO_3$ and 110 mg/l $CaCl_2$ are added, in order to obtain hydrogen carbonate alcalinity of 5°F and a hardness of 10°F. The products to be used must be of analytical quality.

6. Modus operandi

6.1. Preparation of the samples

The samples must first of all be conditioned by the submitter during 28 days at 20 °C and 100 % relative humidity.
After this, rinse them during one week with flowing tap water under a flow of 0,5 liter per minute. The tests will be started after this rinsing period.

6.2. Contact phase

According to the type of sample, fill the pipe sections with the simulating liquid or place the samples vertically into glass containers. In order to determine the ratio contact surface /volume of simulating liquid, one has to take into account the really exposed surface. Add the needed volume of simulating liquid (min. 1 liter) and place

the containers into darkness at 22 - 25 °C. The total contact time is of three weeks with renewal of the simulating liquid on each working day.

6.3. Determinations to be performed

Perform the following measurements on the last simulating liquid, in comparison with a pure simulating liquid:
- the concentration of calcium, magnesium and sulfate,
- the concentration of aluminum (Al), lead (Pb), cadmium (Cd), copper (Cu), nickel (Ni), zinc (Zn), chromium (Cr), arsenic (As), mercury (Hg) and antimony (Sb).
- the concentration of substances of which a migration can be expected on the basis of the composition of the cement based material.

7. Requirements

Into the simulating liquid of the last 24 h. of the test, one may not find concentrations higher than the following values (compared to the blanco):

aluminum	100 µg/l	mercury	0,5 µg/l
antimony	2,5 µg/l	nickel	10 µg/l
arsenic	5,0 µg/l	lead	5,0 µg/l
cadmium	2,5 µg/l	selenium	5,0 µg/l
calcium	270 mg/l	sulfate	250 mg/l
chromium	25 µg/l	TOC	1,0 mg/l
copper	100 µg/l	zinc	100 µg/l
magnesium	50 mg/l		

Observation: the values listed here above are taken out of the Decrees of the Regional Governments transposing in Belgian law the European directive 98/83/EC about the quality of water intended for human consumption.

Concentrations of other substances: with the exception of the values listed in the table here above, all the values specified in said legislation must be respected as well as the values listed in the European positive lists referred to under 2. "Check of the composition" here above.

PART THREE: LUBRICANTS

1. Introduction

This part specifies the examination methods and the requirements for lubricants used for laying pipes for conveying drinking water or water with which drinking water is being produced. Under lubricant is understood any kind of product applied onto "materials in contact with drinking water " in order to reduce the friction during pipe laying.

The requirements to lubricants depend upon the solubility of the product. A lubricant is considered as non-soluble when, after having been applied onto a glass plate, it has not been dissolved after having been hanged during two times one hour in a container filled with tap water.

2. Check of the composition

The submitter must deliver the full composition of the material In particular, for each substance being used, the full denomination and the CAS number must de provided.

For non-soluble lubricants, the composition must be verified on the basis of the positive list established into the framework of the implementation of directive 89/106/EEC and all related regulations. This European positive list is published *in extenso* in a separate Annex to this text, as well as on www.belgaqua.be. Every modification, addition or deletion of elements of this positive list will be published in an updated version.
Complementary to this, every substance authorized according to the Regulation (EU) 10/2011 of the Commission of 14 January 2011 as well as the most recent of the Recommandations of the German Federal Institute of Risk Evaluation (Umweltbundesamt BfR) will also be admitted. In case of discrepancy about the authorized migration limits between these documents, the lowest value will be retained.

For soluble lubricants, it is supposed that the lubricant (after the installation is being put into service) may be found with a concentration of maximum 0,1 g/l. Under these conditions, the maximum acceptable concentrations as specified in the Decrees of the Regional governments for the transposition in Belgian law of the European directive 98/83/EC about the quality of water intended for human consumption, may not be exceeded, as well as the migration limits defined into the European positive lists referred to here above. The compliance to these conditions will be verified by calculation for the chemical parameters.

3. Samples

For soluble lubricants, no test plates have to be prepared.

For non-soluble lubricants, a glass plate will be covered with the product to be tested. The lubricant must be applied as specified by the producer (as well for the thickness of the layer as for the application method).

The ratio between the contact surface of the samples and the volume of simulating liquid is 1,5 ± 0,3 dm^2/l.

4. Check of the organoleptic characteristics

4.1. Test liquid

4.1.1. Soluble lubricant

The measurements are made with a solution of 0,1 g of lubricant into 1 l of inoculum.

4.1.2. Non-soluble lubricant

Prepare the samples by hanging them during one hour in 1 l of tap water at 22 - 25 °C (without agitating or shaking). At the end of this time, one shall check (visually) the presence of the lubricant. The full surface of the test plate must still be covered. If this is not the case, the lubricant will be considered as soluble.

The test plate is then placed during 24 hours in a closed container filled with tap water, to be stocked into darkness at 22 - 25 °C.

4.2. Determinations to be performed

On the test liquid obtained as described in 4.1, perform the following measurements (compared to the blanco):

- odor
- flavor
- color
- turbidity
- TOC (only for non soluble lubricants)
- pH.

The measurements will be performed according to an ISO standard or equivalent method.

4.3. Requirements

Into the test liquid, one may measure no more than the following values:

- odor index: 6 at 25 °C
- flavor index: 6 at 25 °C
- turbidity: 1 FTU
- TOC: 3 mg/l (measurement only for non-soluble lubricants)
- pH: 6,5 to 9,2
- color: 20 mg/l Pt/Co

5. Check of the stimulation of bacterial growth

5.1. Equipment needed

- bacterial inoculum: surface water out of which a volume is being taken into which the presence of coliforms could be identified. The inoculum must contain at least 10^3 and maximum 10^5 aerobic germs at 22 °C.
- dilution water: tap water free of chlorine, filtered on membrane filter with a pore diameter of 0,45 µm.

5.2. Execution of the test

5.2.1. Soluble lubricant

Dissolve in a first jar 1 g of lubricant into 1 l of inoculum. Divide this solution into 5 x 200 ml in flasks.
Placer into a second series of 5 flasks the same volume of inoculum (blanco).

Let the flasks to incubate during three days and a half in darkness at 22 - 25 °C.
Take three flasks with test liquid and three flasks of the blanco for analysis. Leave the other flasks to incubate further.
Repeat this handling every 3,5 days until the end of the test (see. 5.4).

5.2.2. Non-soluble lubricant

All tests are made in triplicate.
Prepare the test plates as described in 4.1.2, first alinea. Place the test plates into 1 l of inoculum (ratio surface/volume: 1,5 dm^2/l). Pour 1 l of inoculum (blanco) into a second series of jars.

Let the test and blanco liquids incubate during three and a half days into the dark at 22 - 25 °C. Shake the content of the jars (taking care not to damage the test plate !) and take 200 ml of the test liquid 200 ml of the blanco out of each jar for analysis. Fill the jars up again until 1 l with dilution water.
Repeat this handling every 3 1/2 days until the end of the test (see. 5.4). If it appears that the lubricant has disappeared from the test plate after a certain number of incubations, the test will be terminated and the evaluation will be done on the basis of the results obtained at that time.

5.3. Bacteriological analysis

The following determinations shall be performed as well on the test liquids as on the control liquids (blancos):

- Oxygen depletion (average value of 3 analyses)
- coliform bacteria (36 °C)

The measurements will be performed according to ISO standard or equivalent methods.

5.4. Requirements

The tests shall be continued until the disappearance of the coliforms (36±2°C) into the test liquid.

In the case of a soluble lubricant, the product will be considered to be stimulating the bacterial growth when the coliforms have not yet disappeared after four periods of three and a half days.
In the case of a non-soluble lubricant, the product will be considered to be stimulating the bacterial growth when the coliforms have not yet disappeared after six weeks.

Moreover:
- the oxygen depletion (test-blanco) during the four last periods may not exceed 4 mg/l.
- there may not appear a visible biofilm on the test plate or a turbidity into the liquid, which can be confirmed as microbial growth by a microscope examination.

FOURTH PART: METALLIC MATERIALS

1. Object and scope

The underlying specification describes the methods for the examination and the requirements for the acceptance of metallic materials in contact with drinking water used in water supply pipes, reservoirs, devices, connections and other ancillaries. The submission for acceptance includes a precise description of the materials, products and/or objects refered to.

This specification is established according to the principles defined in the procedure which has been adopted in the framework of the cooperation agreement signed by the Health authorities of Germany, France, the Netherlands and the United Kingdom for the evaluation of materials in contact with drinking water. It includes the requirement of conformity of the composition of the material to the list of admitted compositions (ACL), established on the basis of the tests covered by the standard EN-15664, parts 1 and 2.

2. Check of the composition

The submitter must disclose the full composition of the material. In particular, for each of the substances used, the full chemical denomination and the CAS number must be indicated. This composition must be covered by a certificate delivered by an accredited analysis laboratory, including a detailed report of the executed measurements, whose date is atmost 6 calendar months prior to the date of submission of the request for acceptance.

The check will confirm the compatibility of the composition mentioned in this report with the values indicated in the most recent version of the list of admitted compositions (ACL), established on the basis of the tests covered by the standard EN-15664, parts 1 and 2. This list can be consulted at the address *www.umweltbundesamt.de*. This list is also taken over in the reference "Regeling van de Staatssecretaris van Infrastructuur en Milieu van 29 juni 2011, nr. BJZ2011048144, houdende regels met betrekking tot bij de drink- en warm tapwatervoorziening te gebruiken materialen en chemicaliën (Regeling materialen en chemicaliën drink- en warm tapwatervoorziening)" (Staatscourant 2011, nr. 11911).

3. Check of samples

At this stage of the procedure it is not foreseen to execute additional tests on the effect of contact with drinking water of the materials and products included in the submission for acceptance.

4. Periodical checks

The validity of the certificate deliverd in case of conformity to the requirements of this procedure must be confirmed for every period of 12 months starting at the date of anniversary of the delivery of the certificate, on the basis of the submission of a certificate of composition established in the same way as described under 2 here above. In the absence of such confirmation within the foreseen time frame, the certificate will be cancelled.

Acceptance by BELGAQUA of materials in contact with drinking water and water intended for the production of drinking water.

List of tariffs (Euro, excl. VAT) applicable as from October 1, 2012

Acceptance and laboratory tests

Acceptance of organic materials in general (per material):	
- based on full testing :	3.850,- (1)
- based on accepted test reports:	1.250,- (1)
Acceptance of elastomers and lubricants (per material):	
- based on full testing :	1.930,- (1)
- based on accepted test reports :	990,- (1)
Acceptance of metallic based materials (per material):	760,- (1)
Acceptance of cement materials (per material):	
- based on full testing :	3.750,- (1)
Acceptance of cold water meters as a whole device (3):	
- first model:	3.690,- (1)
- devices of identical composition:	1.230,- (1)
Part tests as specified in the HYDROCHECK method (per material):	
- organoleptic tests and global organic migration (2):	550,-
- bacteriologic tests for organic materials, except elastomers and lubricants (2):	1.250,-
- bacteriologic tests for elastomers and lubricants (2):	930,-

Publications

Publication of the references in the annual Directory of BELGAQUA (per material, period of 12 months after the first period):	
- organic materials in general, except elastomers:	760,-
- cement based materials:	760,-
- metallic materials:	340,-
- cold water meters as a whole device:	760,-
- elastomers and lubricants:	490,-

For any other case, please contact Belgaqua.

(1): includes the first mention in the annual Directory of BELGAQUA

(2): part test, performed upon request of the submitter and which does not give right in its own to an acceptance certificate.

(3): covers the technical examination on the basis of the composition of the materials which constitute the pieces of the cold water meters with an inner diameter of the connection of less than 50 mm. and its possible acceptance on this basis as a whole device by BELGAQUA. If some materials of the water meters need to be examined through the full procedure, the specific tariffs will be charged in addition.