Certification of construction products

Certification rule 068

Hygiene requirements for products in contact with drinking water
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Foreword

Certification rules describe the conditions under which construction products are SP certified. They consist of product specific rules as well as general rules (Certification rule CR000).

The certification rules state which characteristics are assessed (according to the BBR rules) during certification and also how they are assessed. According to the BBR rules, characteristics may be assessed by an accredited product certification organisation if it is not possible to use CE markings supported by harmonised European standard (hEN) or European Technical Assessments (ETA).

The certification rules are based on applicable standards but may be revised in future, for example in order to harmonise them with European or international standards. They may also be revised if new regulations are introduced or in light of the experience gained from application of the certification rules. The rules will be amended at any time if they need to be refined or supplemented.

Certification rules for hygiene requirements for products in contact with drinking water are established by the SP Certification section manager.

2016-09-12

Johan Åkesson
SP Certification section manager
1 Introduction

This certification rule contains technical information regarding material intended to come into contact with drinking water.

Certification rule 000 contains general information.
If the intended use of the product is not as described in this certification rule, a more detailed analysis will be carried out. In that case, the product will be assessed on the basis of applicable parts of this certification rule and also laws, government orders, regulations, rules, etc.
The certification rule will be updated with applicable rules for the new intended use.

2 Scope

The rules cover material that will come into contact with drinking water.

The rules are not applicable if the time or surface area in contact with drinking water is limited. A limited time is defined as 30 minutes and a limited surface area is defined as < 3% of the total surface area in contact with the water or < 3 mm².

Certain items are excluded from certification such as cartridge and aerator in mixers.

The rules do not cover other product requirements, which are to be examined in separate certification rules. Production controls are covered by certification rule CR074 Production controls for drinking water products.

3 Requirements

Requirements under Swedish building rules, the Swedish Planning and Building Act and the BBR rules, are set out in appendix 1.

4 Hygiene requirements

The following verification/testing must be carried out when a new certificate is issued and at the intervals specified for supervisory inspection. If there are reasons why different testing arrangements are appropriate, they must be approved by SP Certification.

Products with an internal surface treatment (chrome plating or TEA) must be verified as described in 4.1 or 4.2 below. For migration tests, at least one finished product and one untreated product must be tested in order to guarantee suitability both with and without the surface treatment.
Account must be taken of any additional issues presented by the coating.

4.1 Hygiene requirements for metal

The suitability of metals with regard to contact with drinking water can be verified in several ways including migration tests. In principle there are two methods to analyse the migration of metals to drinking water – SS-EN 15664 testing or the NKB rules. SS-EN 15664 testing is a long-term test demonstrating migration from the material.
In Europe there is a list of metals that are suitable for drinking water products – the “4MS composition list”. Impurities in brass alloys are limited to a maximum of 0.02% per substance. For example the maximum concentration of bismuth is 0.02%.

Metals contained in the 4MS composition list or related report/appendix are considered to meet the type approval requirements for the relevant applications as indicated in the list groupings. SP Certification can assess other alloys if their composition is simple and the 4MS list contains similar compositions.

As an alternative to using a material in the “4 MS composition list”, it is also possible, in the case of certain standardised metals with simple compositions, to demonstrate compliance with the functional requirement on the basis of NKB rules for finished products. Maximum lead contents under the relevant NKB rule are described below.

Mixer taps are tested according to NKB 4
The limit for mixer taps intended for drinking water is 5 μg, and for other mixer taps it is 200 μg. If the mixer tap is part of a range of several models manufactured/processed in the same manner and with the same type of material it is sufficient that the mixer with the largest contact surface with drinking water is tested.

Valves are tested according to NKB 13
In the case of valves forming part of a range with the same design, it is sufficient to test one size. If the range includes DN 25, this size shall be tested, otherwise the valve to be tested is the one closest to DN 25.
Of the valves to be covered by the certificate, the valve design with the largest surface area in context with the drinking water must be selected, i.e. a model with an external connection thread. Formula: 5/25 × valve size = maximum value)
DN 10 2.0 μg
DN 15 3.0 μg
DN 20 4.0 μg
DN 25 5.0 μg

Fittings are tested according to NKB 12/18
In the case of fittings forming part of a range with the same design, it is sufficient to test one size. If the range includes DN 28, this size shall be tested, otherwise the fitting to be tested is the one closest to DN 28. Of the fittings to be covered by the certificate, the design with the largest surface area in context with the drinking water must be selected. If the fitting has external threads intended to join two pipes, it is permissible to connect one pipe for the test. Two pipes may be connected for press fittings and push-in fittings. If the certificate covers a model with a compression/push-in fitting and external threads, the model with external threads shall be tested.
Formula: 5/28 × fitting diameter = maximum value)
DN 15 2.7 μg
DN 18 3.2 μg
DN 22 3.9 μg
DN 28 5.0 μg

Manifolds
The maximum lead content in manifolds tested using NKB methods is 5 μg regardless of the size and the number of connections. The assessment is based on the requirements of the mixer tap.
4.2 Hygiene requirements for plastic and rubber

To guarantee that the product is suitable for contact with drinking water, test reports verifying migration and hygiene properties are required. The tests must be carried out by an accredited laboratory according to the German methods KTW and W 270. Equivalent methods may be accepted by SP Certification following assessment. Details may be exempt from requirements if the contact surface area is small or the contact time is short, see the guidelines in section 2.
5 Production control

Production controls are described in certification rule CR074 Production control for drinking water products.

6 References


NKB 4 Nordic product rules for sanitary tapware

NKB 12 Nordic product rules for metal pipe fittings

NKB 13 Nordic product rules for valves

NKB 18 Nordic product rules for plastic pipe fittings

W270 German method to verify microbial growth on organic material

KTW German method to verify migration of harmful substances from organic material

CR000 General certification rules for product certification

CR074 Production control for drinking water products
Requirements

Applicable requirements under the Swedish Planning and Building Act (2010:900), section 8 (4)

<table>
<thead>
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<th>Applicable</th>
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</thead>
<tbody>
<tr>
<td>1 Strength, stability and durability</td>
<td>-</td>
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<tr>
<td>2 Safety in the event of fire</td>
<td>-</td>
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<tr>
<td>3 Protection regarding hygiene, health and environment</td>
<td>X</td>
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<td>4 Safety in use</td>
<td>-</td>
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<td>5 Protection from noise</td>
<td>-</td>
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<td>6 Energy efficiency and heat insulation</td>
<td>-</td>
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<td>7 Suitability for the intended purpose</td>
<td>X</td>
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<tr>
<td>8 Accessibility and usability for people with impaired mobility or orientation capacity</td>
<td>-</td>
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<tr>
<td>9 Water efficiency and waste reduction</td>
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Applicable requirements according to Boverket regulations

<table>
<thead>
<tr>
<th>Requirement under the Swedish Planning and Building Act, section 8 (4)</th>
<th>Construction Regulations of the Swedish Board of Housing, Building and Planning (regulations and general guidance), BBR rules BFS 2011:6 with amendments up to and including BFS 2016:6</th>
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<td>3</td>
<td>6:62, part 1 (2)</td>
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Requirements in certification rules covered by Construction Regulations of the Swedish Board of Housing, Building and Planning (BBR rules)

<table>
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