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Improved assurance of drinking water quality in buildings

Amendments to Drinking Water Ordinance provide more protection against legionella and chemicals in installation materials

A number of amendments to the Drinking Water Ordinance (*TrinkwV*) have boosted the quality standards for drinking water. The centre of attention has been drinking water pipes and systems in buildings which, as has been determined, may not impair the quality of drinking water. Starting this November the drinking water supply systems in commercially used buildings and apartment buildings must be tested for legionella. Up to now this obligation applied only to public buildings. "This considerable improvement in consumer protection will help to avoid legionella contamination of drinking water", said Thomas Holzmann, Vice-President of the Federal Environment Agency (UBA). Certain technical regulations governing construction and operation of new drinking water supply systems have also become binding. This is to ensure that no unsuitable materials are used in drinking water systems which might emit traces of chemicals into the drinking water. Germany has become the first country in the European Union (EU) to introduce a limit on uranium in drinking water.

Drinking water supply systems in commercially used buildings and in accordance with the Drinking Water Ordinance installations in apartment buildings, too, must be tested for legionella as of November 2011. The 1st Ordinance to amend the Drinking Water Ordinance of 3 May 2011 has laid this down in law. The law had formerly only applied to buildings in which water was supplied to the general public. The ordinance also establishes for the first time a so-called technical measures trigger value for the presence of legionella. That value is set at 100 colony-building units per 100 millilitres water. If this level is reached or exceeded, public health offices can require the operator to determine the cause of, and eliminate the source of, pollution. Legionella can cause serious, sometime fatal pneumonia or flu-like Pontiac fever. Although humans are not carriers of the disease they are infected by inhaling aerosols. Dangerous amounts of legionella can accumulate in warm water, such as may occur when necessary temperatures (< 25 for cold water and > 55 °C for hot water) are not reached as a result of construction defects. Inoperative and illegally disconnected pipes in the system can also promote legionella growth since water stagnates there.

Water system components are now more strictly regulated by the Drinking Water Ordinance to better protect drinking water quality in Germany against contamination. Systems operators must comply with established best practice. Effectively immediately, only pipes and fittings that emit a minimum, if any, chemicals and which have been tested to meet that requirement may be used. Quality marks provide such proof. Any new installation of components that have not been tested now amounts to a misdemeanour offence. The background to this overhaul in legislation is evidence that chemicals from faulty and improper installation materials can dissolve into drinking water. They can deteriorate water quality and foster bacteria (legionella) growth. An added benefit is the better protection against contamination by non-potable water (rainwater or heating system water). The compulsory installation of a protective device ensures that water of inferior quality from backflow does not enter the drinking water supply system.

Another amendment to *TrinkwV* concerns the heavy metal uranium. As of 1 November, Germany will be the only country in the EU to have established a limit value on uranium in drinking water, capping it at 10 microgrammes per litre of water. However, this change is only relevant to a few, mostly small drinking water areas in which the presence of uranium occurs in higher concentrations. The metal is relatively toxic and is now subject to a limit in drinking water in Germany that is very low in global comparison. This will ensure that sensitised persons are also provided protection against the renal damage that uranium can cause. The radioactivity of uranium, on the other hand, is only of concern for health in concentrations that are ten times or higher.

Further information and links:

Amended Drinking Water Ordinance (in German):

http://www.gesetze-im-internet.de/trinkwv_2001/BJNR095910001.html

UBA publication *Rund ums Trinkwasser*

<http://www.umweltbundesamt.de/uba-info-medien/4083.html>

UBA background paper *Legionellen im Trinkwasser*.

<http://www.umweltbundesamt.de/uba-info-medien/3983.html>

UBA Executive Summary of 9.12.2009 (updated on 01.11.11) regarding new cap for uranium in drinking water (in German):

[Kurz begründung der gesundheitlichen Leit- und Grenzwerte](#)

Position paper by Drinking Water Commission at UBA (TWK) of 03.11.2008 on six frequently asked questions about uranium in drinking water (in German):

[Uran im Trinkwasser - Stellungnahme der TWK zu sechs häufig gestellten Fragen PDF / 128 KB](#)

Dessau-Roßlau, 28 October 2011