

Leak Test

Ensuring the Airtightness of a Storage Facility



CA/ULO/DCA rooms are specifically designed to achieve and maintain extremely low oxygen levels. To accomplish this, it is crucial to have storage facilities that are completely airtight.

When the oxygen content inside a storage facility is lower than the oxygen content outside, a partial pressure difference arises. This means that oxygen tends to move from the outside into the facility. The greater the disparity in oxygen percentages, the larger the partial pressure difference. A significant pressure difference necessitates enhanced airtightness requirements.

Insufficiently airtight storage facilities will hinder the optimal functioning of CA equipment, preventing effective CA/ULO/DCA conservation.

Conducting a Storage Facility Leak Test

To evaluate the airtightness, a leak test must be performed on the storage facility. This test involves subjecting the facility to underpressure or/and overpressure. The following steps can be followed:

- Connect an external blower to the 50 mm lead-through.
- Utilize a connected aeration fan.
- Read the pressure in millimeters of water column (mm H₂O) from the connected pressure gauge.

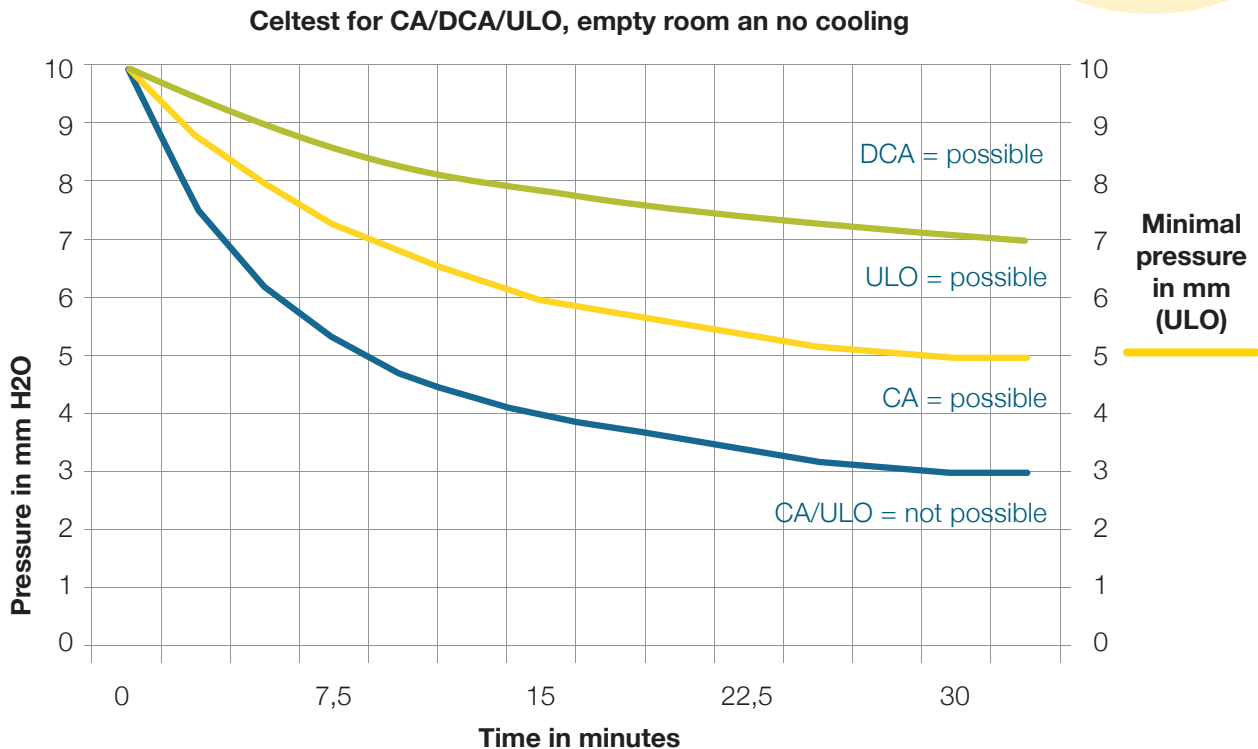
Important Note:

Maintaining a constant temperature inside the storage facility is crucial. Temperature fluctuations cause air expansion or contraction, thereby affecting the test results. Consequently, the cooling system should be turned off during the test. It is recommended to conduct the test when the temperature inside the facility matches the ambient temperature.

Testing Principle

The storage facility is pressurized to 10 mm water column and observed for a specific period of time. During this time, the facility may experience a certain pressure decrease. The graph below illustrates the acceptable pressure decrease. The facility is considered adequately airtight if, after 30 minutes, the pressure inside the facility remains higher than or equal to 5 mmwc. If this criterion is not met, the storage facility is not sufficiently airtight for ULO applications.

For tenders, we assume at least the 0.1 cm/100 m³ value (measured on underpressure and nowadays overpressure). This should be sufficient to realize the modern DCA conditions (to below 0.5 % O₂).



Standards

CA Gastight: Refers to a room that is airtight in applications where slight pressure differentials may occur, and the entry of oxygen into the room does not disrupt the process or product.

ULO Gastight: Denotes a room that is airtight in applications where pressure differences can arise, and the entry of oxygen into the room disrupts the process or product.

Important Note: A leak-tightness test provides a snapshot of the current condition but does not guarantee future performance.

Gastight Coating

Various techniques can be employed to achieve gas-tightness in a room, such as sealing the joints between panels during installation or applying special finishes to the concrete floor during construction.

If these measures prove insufficient or if you need to make an existing cold store airtight, a gas-tight coating can be utilized. One example of such a coating is Ribbfill. It is a rubber-like substance that can be applied along with fiberglass tissue at the joints.



Preparations for testing

In order to properly test your rooms, the room must be equipped with two feedthroughs with which the leak-tightness test can be carried out. This so-called installation set consists of a 50 mm transit and a tap for connecting the test equipment. If your room is not equipped with this set, you can order it at Ribbstyle.

Testkit

Consisting of two parts	€ 75,00
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Measuring equipment

To test your rooms you need measuring equipment with which you can measure the pressure difference in the room. You also need a device with which you can bring the room to underpressure or overpressure. Nowadays we test the cells with a digital meter on which the amount of millimeters of water column (mmw) can be read from your mobile phone. You can order both devices from us in a kit.

Materials kit

Equipment	€ 250,00
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Test performed by Ribbstyle

Price per cell

Number of cells	Testing	Track down
1-5	€ 220,00	€ 220,00
5-10	€ 200,00	€ 200,00
10 or more	€ 175,00	€ 175,00

Testing the rooms

Room testing consists of two parts. First, testing the room for leak tightness. During this test, the room is tested for its tightness and it is determined on the basis of the described method whether or not a room meets the requirements. In addition, there is also the option of carrying out a test in which the leakage is detected in a room that does not meet the requirements. You can easily perform both tests yourself. If you want to have the tests performed by Ribbstyle than that is also possible. We use fixed rates for these tests. If you have a special situation, you can contact us for more information.



Discover our strength

RibbStyle is an international manufacturer and supplier of high-quality coatings for a wide range of industries. Every customer is unique to us. Every project is carefully prepared and supervised by us.

Our strength is reflected in:

- Knowledge
- Quality
- Service
- Local presence

Would you like to know what the benefits of our coatings are for your company? Contact us and ask about the possibilities.

Knowledge

We have years of knowledge and experience. This is reflected in our advice. Because we are involved and have short lines of communication with the clients, we ensure an accurate approach.

Quality

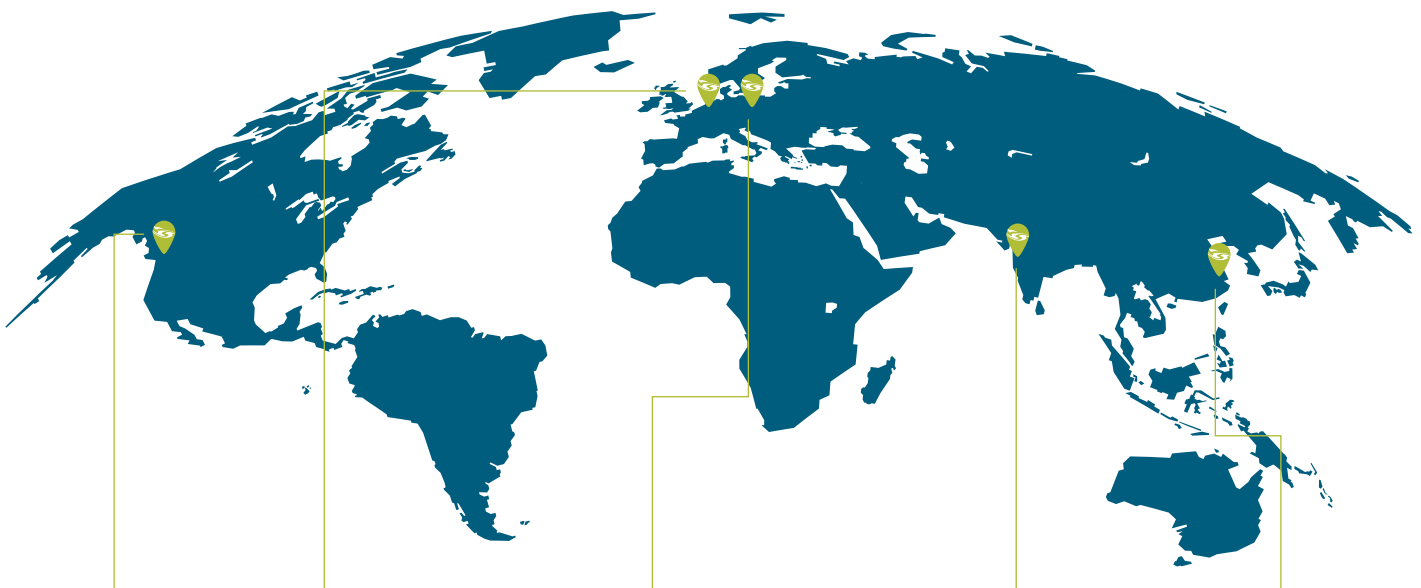
We use a unique technique with multiple layers. The combination of these layers into a system provides our customers with a long-term solution.

Service

Every project is tailor-made with direct service during and after applying and delivering our coatings. We pay extensive attention to aftercare. If there are any issues, we will look for a suitable solution.

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We are internationally oriented with a focus on the local market. RibbStyle has multiple branches all over the world.



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