

EU^{United}

Municipal
Equipment



**Spreader
Performance Test**

For Safer Roads

Why this spreader test?

The manufacturers of spreading machines associated in EUnited Municipal Equipment and the Engineering Center Bygholm in Denmark have developed an agreed test method with the main intention: **One common test procedure making spreading quality comparable and providing repeatability and reliability, independent from road and weather conditions.**

When spreading thawing agents such as salt or brine on traffic roads, the aim is always:

To apply as much thawing agent as necessary in order to ensure the safety of road traffic under the current weather conditions, but also to minimize the amount of thawing agent in order to limit the environmental impact and to reduce the costs.

Therefore, it is a common interest of manufacturers and users to operate spreading machines - also referred to as spreaders or gritters - in such way, that a homogeneous distribution of spreading material is achieved within the set spreading dosage, width and spreading pattern track.

Since this distribution performance is the most important quality feature of a spreading machine, manufacturers and users have created their own test procedures separately from each other in order to obtain information about the distribution quality. This has resulted in a high variety of different test methods all over Europe. Later on

European experts – manufacturers and users – started at CEN to work out a common test procedure for verifying the distribution quality of spreaders in a European Standard.

As a first result, EN 15597-1 has been published defining a static test method to verify the accuracy of set spreading dosages of thawing material brought out with a spreader in a defined time period.

Subsequently this CEN expert group tried to develop a common dynamic test for verifying the distribution quality during driving and as close as possible to real operating conditions. But these experts could not agree

on standardised test conditions. Due to the different kinds of thawing materials used throughout Europe and the lack of experience in determining the exact quantity of thawing material spread on the road, this group decided to publish a Technical Specification instead of a European Standard. This has led to the situation that all operators choose different methods to determine the precision of the spreading pattern. Until today the test methods have not been specified in detail. The new EUnited spreader performance test is a new approach towards a harmonised European test procedure.

Which manufacturers of spreaders support this test?

All leading European spreading machine manufacturers associated in EUnited Municipal Equipment have agreed to use the EUnited spreader performance test to examine and label their relevant machines. Thus a unique European-wide test has been developed. In future spreaders of Epoke (DK), Giletta (IT), Gmeiner (DE), Küpper-Weisser (DE), Nido (NL), and Schmidt (DE) will be tested and labelled according to the EUnited Spreader performance test.





Who are the partners for this new EUnited test?

EUnited developed this spreader test method together with the Engineering Center Bygholm, which is part of the University of Aarhus in Denmark. This renowned institute is specialised on tests for agricultural fertilizer spreaders and thawing material spreaders for winter maintenance. The staff of this Engineering Center has gathered experience over many years and has continuously improved their test facilities.

How will spreaders be marked?

All spreaders successfully passing the test within the defined tolerances and fulfilling the requirements will be accompanied by a certificate and a label/sticker that will mark the machine. This label will indicate in which spreading width range(s) A (1-6m), B (3-8m) and C (3-12m) the marked spreader was tested. Since the test was only developed at the beginning of 2012, it will not be possible to test and label all spreading machines this year. But the common objective for 2013 is to have all products of the spreader manufacturers associated within EUnited Municipal Equipment tested.

How does the test work?

For a start all spreaders are tested with one specific quality of dry and pre-wetted rock salt which is commonly used all over Europe. The test is carried out inside a hall which guarantees repeatable tests excluding any wind and weather influence. The test track is covered with a special coating which is similar to the typical road asphalt surface. After verification of the static dosage test the spreader mounted on a truck is passing the test track with defined driving speed and dosage settings.

The collecting area is divided into sub-areas. These have a width of 1 m and a length of 2.5 m and are constructed as tiltable plates in order to sample the material that has been spread out. When analyzing the amount of material each single sub-area is raised and material from the different plates is washed through funnels into collecting boxes by flushing water. The amount of collected dry, pre-wetted material or brine is determined by conductivity measurements. This efficient determination method immediately provides the results after each test run, so that all participants know directly whether a test run is positive or not.

Which machines will be tested?

As the test is voluntary, it is up to each manufacturer to decide upon carrying out the test. The test was developed for all sizes of spreaders independent of type, working width and distribution symmetry. It applies to both mounted and towed spreading machines which are used to spread solid thawing material with or without pre-wetted material or liquids.

Will every single machine be tested?

The test will be done on a model basis. The high standards in production within the industry mean that there will be no significant variations between the different units of one model. The testing of models is a common method that is used also for exhaust emissions and the road safety of all types of mobile machinery and vehicles.

Can the test results be compared / reproduced?

Comparability and repeatability were high priority objectives for the development of the EUnited spreader performance test. As it is an indoor test, environmental influences like wind can be excluded by almost 100%. The test facility has a de-humidifying equipment ensuring humidity in stable normal condition.

Spreader Test



How realistic is the test?

The test procedure has been drafted with the premise to mirror a spreading process under real working conditions. Testing parameters and machinery settings are chosen referring to realistic working conditions. The coating of the test area surface is very similar to road asphalt; this was proven by comparison tests. The combination of all these factors ensures highly realistic test conditions.

Are there other / better test procedures?

There are other test procedures, but these tests are outdoor tests influenced by weather conditions. Therefore, such tests cannot be carried out every day

and they are not reproducible. The collection and determination methods of most of other tests are very time consuming and therefore it could take several days to gain the results. This is not suitable for manufacturers who need a reliable test method which is also applicable during the design process of a new spreader.

Test procedure

What is EUnited?

EUnited Municipal Equipment is the European industry association representing the manufacturers of mobile municipal equipment like road sweepers, winter maintenance equipment, refuse collection vehicles and others.

Where can I get further information?

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