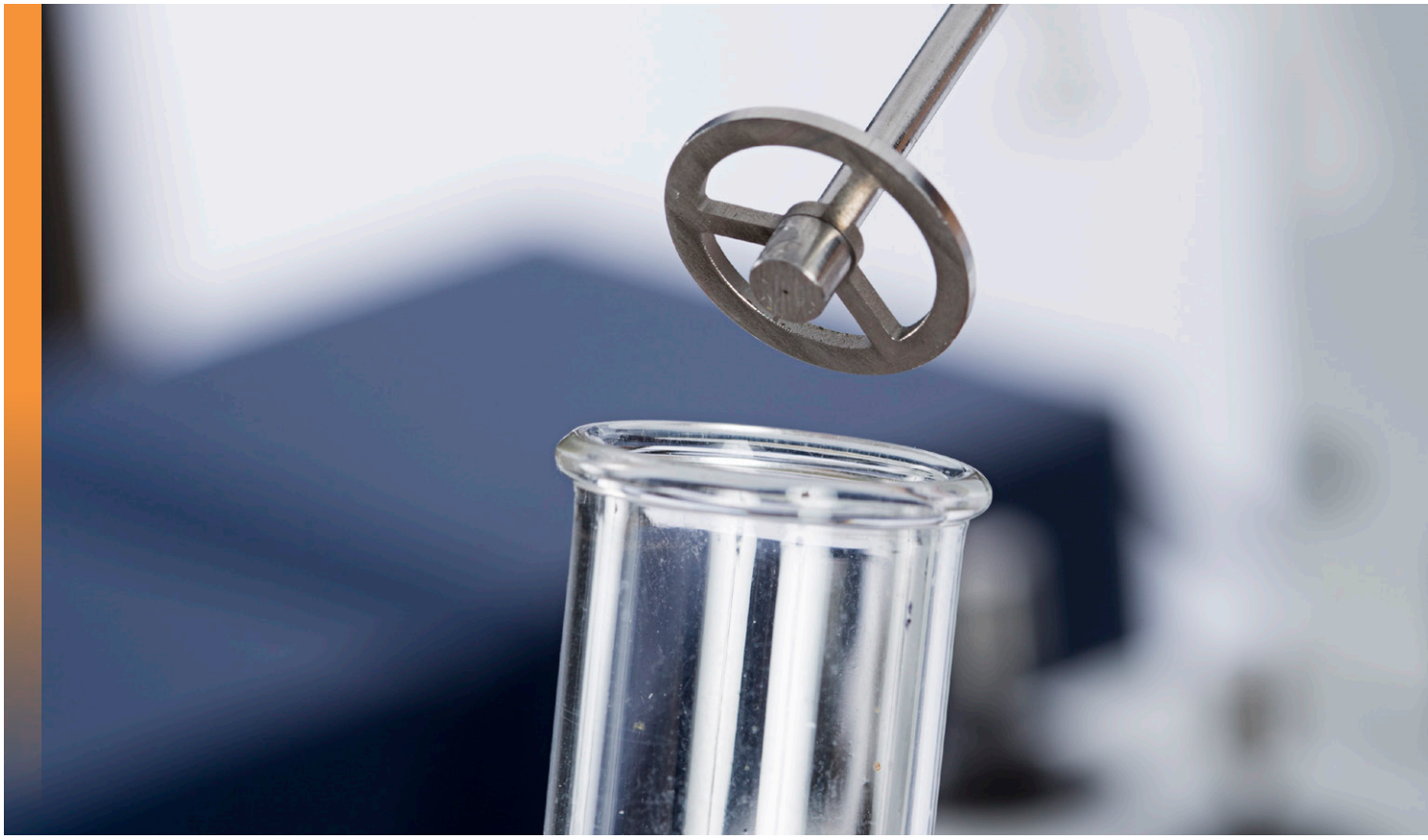
FOSS

Alphatec™ FN^{Q}
Falling Number analysis for grain and flour



Alphatec™ FN^{Q} gives grain receivers a safer and modern way of performing the standard Falling Number test that is used to check sprouting damage in grain and enzyme-activity in flour prior to baking, malting etc.

Sample	Parameters
Wheat, rye, barley, sorghum, flour and any samples requiring international standard compliant Falling Number analysis	Weather damage and Alpha-amylase and related enzyme activity and starch properties in grain and flour

Dedicated Analytical Solutions

Avoiding steam and hot surfaces or liquids

Alphatec™ FN^{Q} helps grain receivers to avoid safety issues with the standard Falling Number test.

Existing equipment for the Falling Number test has not changed for decades. Now, based on extensive FOSS experience with automation of laboratory analysis, the new FOSS Falling Number analyser includes important improvements such as a cooling lid that prevents a rush of steam when loading samples, avoiding potential injury. In addition, an insulated sample bath avoids hot surfaces and reduces risk of burns. An overflow direct into waste also stops hot water spillage.

Touch screen operation

New technology improves usability over existing solutions with a touch screen that can reduce training costs by allowing rapid, error-free use by anyone. Other smart usability features are built into the practical design such as the detachable rack and rear connectors.

A new way to meet industry standard methods

FOSS is a respected supplier with a proven track record of 11.000 installed grain analysis instruments worldwide. As a new addition to the extensive FOSS portfolio, the Alphatec™ FN^{Q} offers a modern and competitively-priced alternative to existing solutions backed by a unique level of customer support for smooth and uninterrupted analytical operations.

The Falling Number method is recognised by international bodies such as the ICC, AACC, ISO and ASBC in the standards: ICC/No. 107/1 (1968), AACC/No. 56-81B (1972), ISO/No. ISO/DIS 3093 (1974) and ASBC Barley 12-A.

Technology

The Falling Number System is an important test for measuring the soundness of traded grain. The test is based on the alpha-amylase enzyme activity in grains which helps to spot sprouting damage. It is also important for optimising flour enzyme activity to ensure final product quality of bread, pasta, noodles and malt.

Equipment and method

In conformance with all recognised Falling Number methods, Alphatec™ FN♎ consists of a boiling water bath and a system for inserting up to two sample tubes into the bath.

The sample tubes are placed in the boiling water bath, the starch begins to gelatinise and the slurry becomes more viscous. The slurry is mixed to ensure that the gelatinisation is homogeneous in the sample. As the alpha-amylase enzyme starts to break down the starch and the viscosity decreases.

The amount of sprouted grain is proportional to the alpha-amylase activity. The higher the alpha-amylase activity, the lower the viscosity of the slurry and the faster the stirrer will fall to the bottom. More sprouted grain therefore results in a lower Falling Number.

Safety First

The Falling Number method requires the use of boiling water and this always presents potential safety risks if not well managed. Addressing two key concerns with existing Falling Number instruments, Alphatec™ FN♎ has carefully designed openings to the water bath to direct potentially scalding steam away from the hands of operators. In addition, the metal water bath has been placed in an insulated case to ensure that external surfaces are safe to touch.

Touch screen operation

A modern touch screen user interface allows for full control of the instrument and all relevant settings and options.

The standard method

1. Sample Preparation
For grain a 300 gram sample is ground in a suitable laboratory mill equipped with a 0.8 mm sieve. The large sample is to avoid sampling error. For flour a representative sample is taken.

2. Weighing
7.0 ± 0.05 g of whole meal or flour is weighed and put into a Viscometer tube. The flour amount should be moisture corrected by measuring the actual moisture content of the sample.

3. Dispensing
25 ± 0.2 ml of distilled water is added to the tube.

4. Shaking
Sample and water are mixed by vigorously shaking the tube to obtain a homogeneous suspension.

5. Stirring
The Viscometer tube with the stirrer inserted is put into the boiling water bath and the instrument is started. After 5 seconds the stirring begins automatically.

6. Measuring
The stirrer is automatically released in its top position after 60 (5 + 55) seconds and is allowed to fall down under its own weight.

7. The Falling Number
The total time in seconds from the start of the instrument until the stirrer has fallen a measured distance is registered by the instrument. This is the Falling Number.

Secure your investment with a FossCare™ Support Agreement

Let FOSS take care of you for a maximum return on your analytical investment. Get a four year warranty as part of the new FossCare Premium Preventive Maintenance Agreement or two years as part of any other FossCare agreement. In addition to the peace of mind afforded by the warranty period, the continual preventive maintenance pays off by keeping your analytical instruments working perfectly every day, year after year.

Why preventive maintenance?

As with any analytical solution, it is essential that your FOSS instrument receives regular maintenance to ensure optimal performance and extended lifetime. Avoiding expensive downtime is a matter of following factory standards and preventively replacing parts before they wear out. In turn, this helps ensure reliable and consistent results at the highest level.

Preventive and predictive maintenance combined with global support from 300 dedicated service, application, software and calibration specialists keeps your instrument running perfectly all year round.

Benefits of a FossCare™ Support Agreement:

- Extended Warranty (two or four years depending on the chosen agreement)
- Regular maintenance; the instrument is diagnosed, cleaned, adjusted, tested, fine tuned and recalibrated
- Minimal downtime from replacing components before they are worn out
- Consistent, accurate and reliable results you can always trust
- Preventative maintenance visits when it suits you (your business)
- 24/7 phone support - no need to worry about closing hours or PO
- Low, fixed service budget prevents unexpected expenses
- Discounts on additional services, spares, training and software upgrades

Contact your local Foss office for more information.

Specifications

Feature	Specification
Alphatec FNº	
Dimensions (W x D x H)	350 x 260 x 507 mm
Weight	18 kg
Power requirements	1200 W
Water supply	Connect to water tap or FOSS Cooler unit >0.4 L/min, <30 ˚C, <0.5 Mpa
Altitude	Up to 3000 m
Temperature	Indoor use, 5-40 ˚C
Approvals	Conforms with standards such as AACC No. 56-81.03, ICC No. 107/1, ISO DIS 3093

Feature	Specification
Alphatec Cooler	
Dimensions (W x D x H)	360 x 260 x 370 mm
Weight	6 kg
Power requirements	100-240 VAC 50-60 Hz
Altitude	Up to 3000 m
Temperature	Indoor use, 5-40 ˚C
Water Recirculation Capacity	0.4 L/min

The equipment is CE labeled and complies with the following directives:

- Electro Magnetic Compatibility (EMC) Directive 2004/108/EC
- Low Voltage Directive (LVD) 2006/95/EC
- WEEE Directive 2002/96/EC
- REACH Regulation 1907/2006/EC
- RoHS Directive 2011/65/EU

THE SAFE WAY TO TEST FALLING NUMBER

- Cooling lid prevents rush of steam when loading samples, avoiding potential injury
- Insulated sample bath avoids hot surfaces and reduces risk of inadvertent burns
- Overflow direct into waste eliminates hot water spillage

THE MODERN FALLING NUMBER INSTRUMENT

- User friendly interface and touch screen reduces training cost by allowing rapid, error-free use by anyone
- Practical design with detachable rack and rear connectors
- Renewed falling number solution based on new technology developments and extensive FOSS experience with automation of laboratory analysis

A NEW ALTERNATIVE TO MEET INDUSTRY STANDARD METHODS

- Falling Number solution with same approvals and accuracy, but from FOSS, the maker of the renowned Infratec™ Grain Analyzer
- Unique level of customer support provided with FOSS grain analysis solutions avoids interruptions to your grain receival operations
- Respected supplier with proven track record of 11.000 installed grain analysis instruments ensures reliability and suitability for the job

FOSS

FOSS
Foss Allé 1
DK-3400 Hilleroed
Denmark

Tel.: +45 7010 3370
Fax: +45 7010 3371

info@foss.dk
www.foss.dk

P/N 1026720, Issue 1GB, June 2014