

# Instruction Manual

## Marsh Funnel EN 445





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## 1. Test Implementation

### 1.1 Nature of the process

The time measured in seconds, required by a certain volume to flow through the opening of a funnel under defined conditions, is considered to be the fluidity of the grouting mortar.

### 1.2. Test regulations

EN 445 grouting mortar for tendons  
Fluidity test - Funnel method

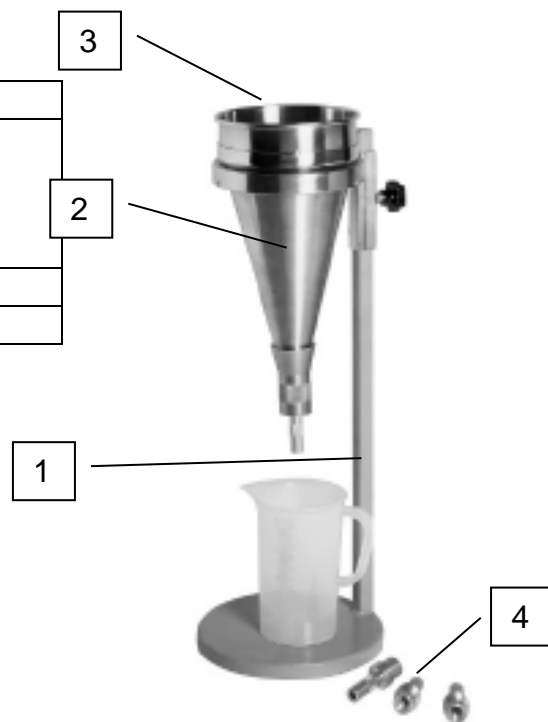
### 1.3. Device description

1	Frame
2	Funnel Volume 1.7 litres $\pm 10\%$ Length 280 mm $\pm 10$ Upper diameter $\varnothing 152$ mm $\pm 3$
3	Sieve (optional)
4	nozzle

Weight 10 kg

#### Tools

Stopwatch  
1-litre vessel  
Wooden stirring stick  
Sieve (optional)



### 1.4. Implementation

- Position funnel axis vertically on solid base over the measuring vessel; all areas must be clean and slightly moistened.
- Attach the sieve.
- Funnel vibration is to be avoided during the test.
- Close lower funnel opening.
- Fill 1.5 litres of grouting mortar slowly through the sieve into the funnel. Pay attention to prevent air bubbles.
- Open lower funnel opening and start stopwatch at the same time.

- The time required to fill the vessel is to be measured to 0.5 s. Lump formation must also be indicated.
- Perform two tests. The first test immediately after mixing, the second test after 30 minutes. Calculate average and compare result with specifications.

## 2. Acceptance of delivery

When accepting delivery of the product, first inspect it for its outer, visible condition. If this inspection is satisfactory, the product may be accepted from the freight forwarder (railways, parcel service, or other haulage company).

If there are no shortcomings, and if there are no transport damages, then use the bill of delivery to make sure that the consignment is complete, and that all parts have been delivered.

If you assume or suspect transport damage, or if transport damage becomes apparent only after you have accepted the delivery, immediately make an exact report of the conditions and any damage as they exist. Send us this report immediately by fax or e-mail. Important: Absolutely do not make any changes to the delivered goods.

After we have studied your report, we can make a decision whether we can:

- Deliver spare parts to you, or
- Send a specialized fitter/installer to your plant, or
- Ask that you return the product to us for repair.

## 3. Warranty

Our **General Terms of Sales and Delivery** apply in all cases.

The Manufacturer guarantees that this Operating Manual has been prepared in conformity with the technical and functional parameters of the machine as delivered. The Manufacturer reserves the right to add supplementary information to this Operating Manual as required.

The guarantee provided by the Manufacturer is the legal guarantee. This guarantee does not cover wear-and-tear parts.

The Manufacturer guarantees trouble-free operation only if the User observes the instructions in this Operating Manual, and only if the User employs the machine for the purpose for which it is intended.

The Manufacturer shall not be liable for damages that may occur if the machine is used for purposes for which it is not intended, or if the User does not observe the instructions and rules for operation as set forth in this Operating Manual.

No claims for damages may be lodged against the Manufacturer if the machine is modified in its structural or constructional characteristics without the prior written consent of the Manufacturer, or if its functional characteristics are modified without such consent.

## 4. Customer Service

Due care and diligence has been taken to ensure the correctness of this instruction manual. However, it cannot be guaranteed that it is free of errors or that the data will continue to apply in case of technical changes.

### 4.1 Issue date of instruction manual

5th edition  
Sept 2018

### 4.2 Copyright

The copyright remains in the possession of

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This instruction manual is only intended for the operator and his personnel. It contains specifications and information which may not be

- duplicated
- disseminated or
- otherwise disclosed.

Contraventions can be prosecuted by law.

### 4.3 Address for supplying spare parts

Please contact the following address directly to clarify technical issues or for spare parts supply:

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