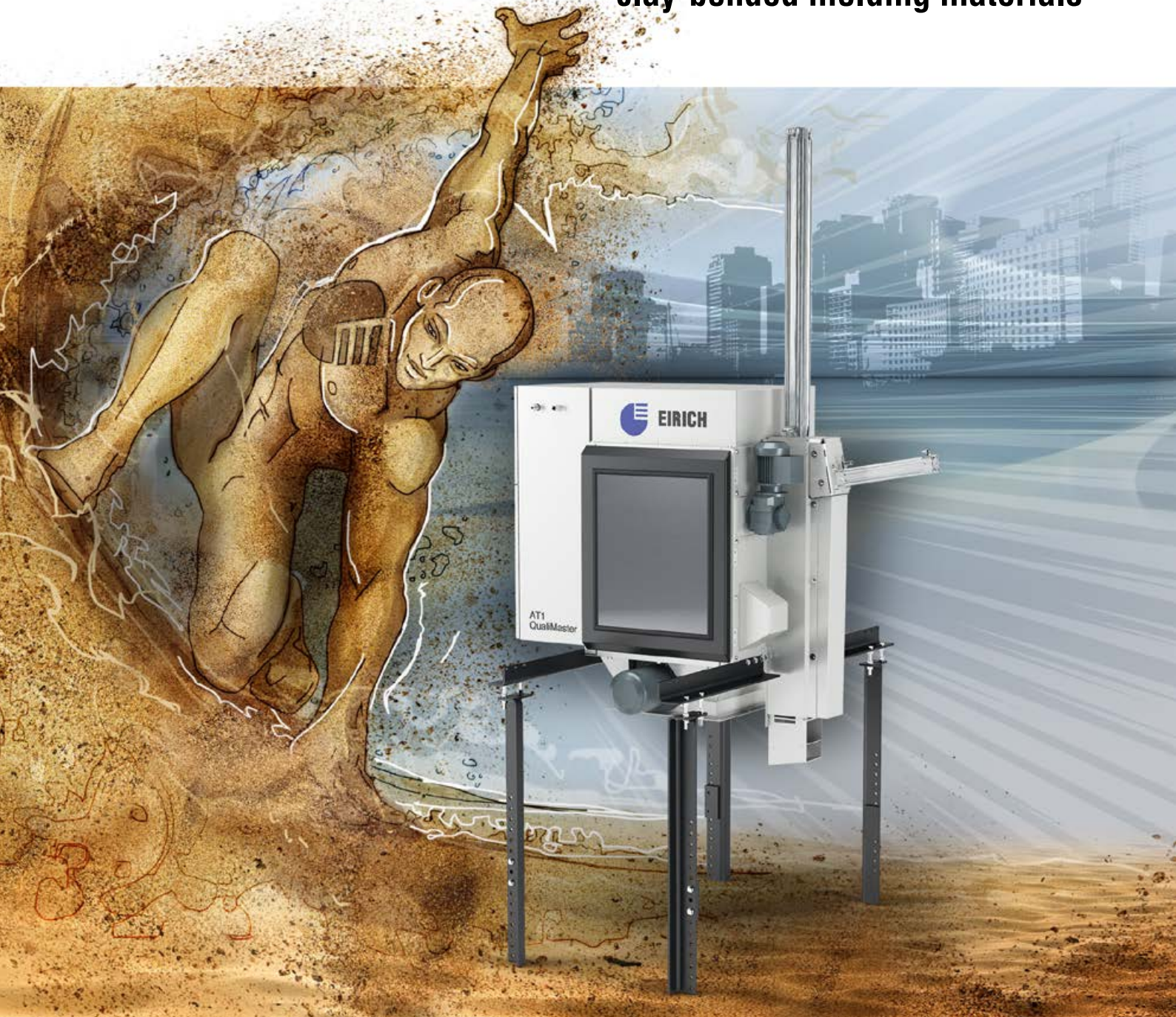


# QualiMaster



Quality systems for the preparation of  
clay-bonded molding materials



# Benefit from your molding material preparation system.

*A molding material preparation system that always provides exactly the molding material you need will give a boost to your production cycle.*

*As a specialist for the processing of clay-bonded molding materials, we offer you solutions that are precisely tailored to your requirements: Moisture correction system QualiMaster AC1, QualiMaster AT1 and the software QualiMaster SandReport/SandExpert are the quality-relevant elements of EIRICH plants for molding sand preparation.*

## Perfect your processes

Take advantage of new opportunities for increased casting quality and more flexibility in the production sequence.

## Quality, diversity and flexibility

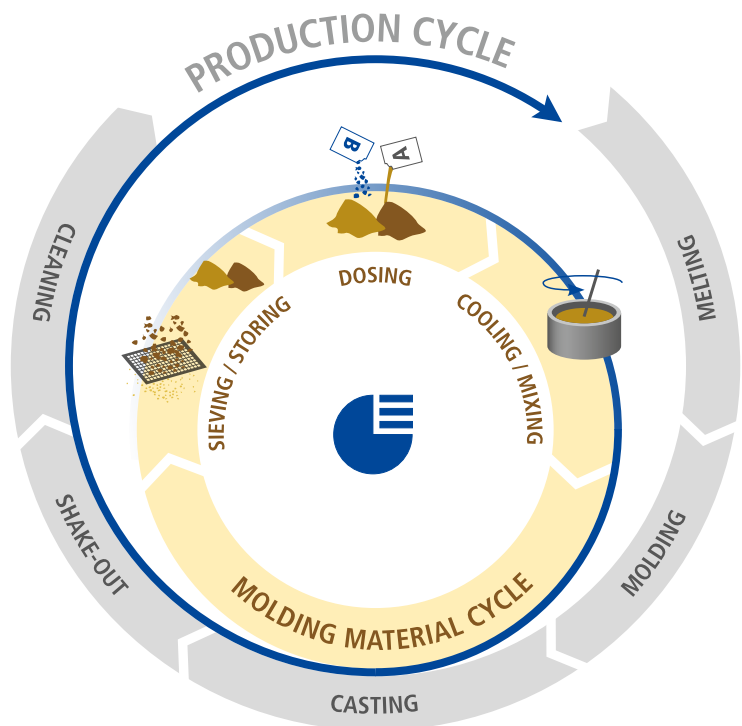
The demands on the quality and surface of your castings are constantly growing. As models become more and more complex and pattern plates are changed more frequently, the quality of molding material is becoming increasingly important.

## Energy, resources, sustainability

Save energy and preserve resources. Our QualiMaster quality system with its customized software modules will support you.

## Process optimization, autonomous production, Industrial Internet of Things

With a concept of consistent data integration, networked processes and the EIRICH software QualiMaster SandExpert, you can implement preventive molding sand control.



## ► ARE YOU READY FOR YOUR NEXT LEVEL?

The basis for quality assurance in molding sand preparation and networked processes:

**Moisture correction  
system QualiMaster AC1**

1

2

**QualiMaster AT1 Eco** measures the compactibility of the molding material. This is the first step towards reproducible molding material quality.

The active clay content determines the strength of a mold.  
The **QualiMaster AT1 Profi** additionally measures the shear strength and determines the deformability.

3

4

The **QualiMaster AT1 ProfiPlus** now offers additional measuring options for springback and gas permeability.

While **QualiMaster SandReport** SandReport is the tool for production analysis, **QualiMaster SandExpert** enables preventive molding material control.

5

LEVEL 1

LEVEL 2

LEVEL 3

LEVEL 4

LEVEL 5



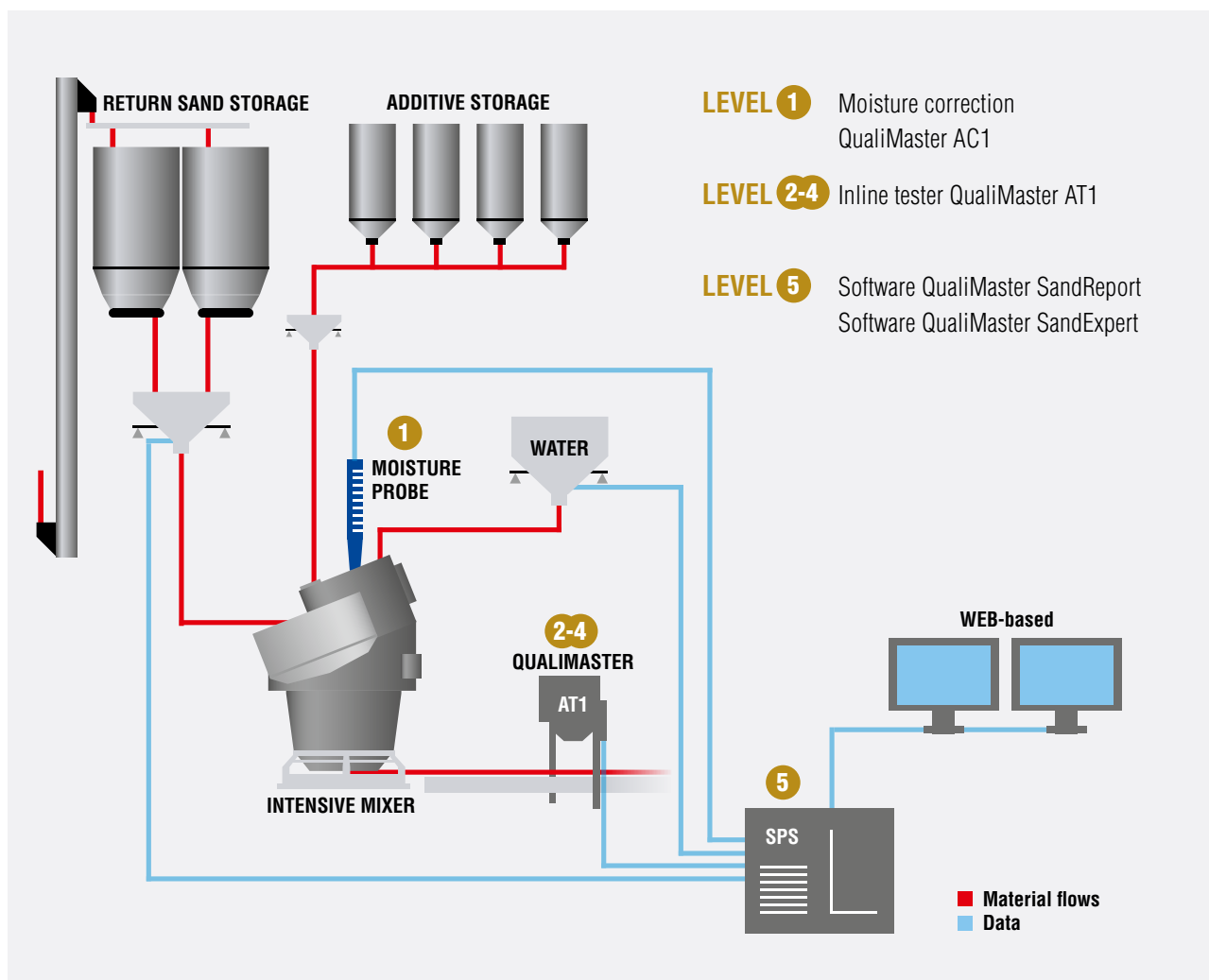
# EIRICH – Systematically achieving the best molding material quality

*Our quality system QualiMaster for the preparation of clay-bonded molding materials is a modular complete package for quality assurance. It includes hardware components such as moisture probes and the inline tester QualiMaster AT1 as well as the software solutions QualiMaster SandReport and QualiMaster SandExpert as modules.*

Essential components are customized control solutions which were particularly developed to meet the tasks of the foundry industry.

They feature consistent data integration and support networked production and planning processes.

The systems provide vital information on the process, the product and quality performance at any time and anywhere. All in all, this enables optimum control of the molding material quality.





## QualiMaster AT1 – Eco, Profi or ProfiPlus?

The QualiMaster AT1 is the centerpiece of quality assurance in molding material preparation. With the different equipment features of the new generation, we are now offering you exactly the solution that will take you forward.

Take advantage of the opportunities offered by the inline tester QualiMaster AT1:

- **Modular design**, equipment expandable at any time
- **Web interface with integrated process data visualization ProView** to be visualized on mobile devices
- **New measuring options** (springback, temperature, gas permeability, deformability)
- **Platform-independent communication** via OPC UA
- **Robust design** for demanding conditions
- **Reduced measuring time** for stable process control

*The QualiMaster AT1 is available as version Eco, Profi or ProfiPlus*

<b>Equipment</b>	<b>Eco</b>	<b>Profi</b>	<b>ProfiPlus</b>
Compactibility	■	■	■
Temperature			■
Springback			■
Gas permeability			■
Shear strength		■	■
Formability		■	■
Sample shredder	optional	■	■
SPS with Web-Interface	■	■	■
QualiMaster ProView	■	■	■
OPC UA	■	■	■

# QualiMaster AC1

## Moisture correction system

*In a molding material preparation plant, moisture and temperature measurement is the basis for reliable quality assurance.*

**Our moisture correction system QualiMaster AC1 comprises:**

- a moisture/temperature probe in the mixer,
- a dosing system (flow meter or spirit level),
- the software solution moisture correction with an integrated computer for parameter input and process monitoring.

*Moisture probe for measuring the water content and the temperature of the molding material*



*Moisture probe in the EVACTHERM® mixer*

### Moisture and temperature recorded directly in the mixer

EIRICH records the moisture value of the homogenized molding material mix directly in the mixer. The value is considered in the calculation of the water demand. In addition, the temperature of the material is measured in the mixer, so that the expected evaporation is taken into account as a correction factor.

### You haven't recorded moisture or temperature yet?

- Simply retrofit the EIRICH moisture/temperature probe in the EIRICH intensive mixer
- We can also equip mixers from other manufacturers with a moisture and temperature detector for you. The data will be evaluated according to the EIRICH logic.
- Our QualiMaster moisture correction system AC1 is not only eminently suitable for new plants but also for retrofitting existing plants.

**Just ask us. We also have the right solution for you.**







## QualiMaster AT1 *Eco*

*The EIRICH QualiMaster AT1 Eco quality system is equipped with a compactibility measuring unit. Up to three samples are taken per batch. As each batch is sampled, influence can be taken quickly – either manually or automatically directly for the next batch.*



### **AT1 *Eco* as a stand-alone unit**

The new AT1 *Eco* inline tester is equipped with web interface and the innovative process data visualization system ProView.

The measured data is saved as CSV file and can be made available for download throughout the company network. The AT1 *Eco* can be expanded at any time with the software package SandReport for the evaluation of the measured data, the input of laboratory data as well as for graphic and statistical evaluation. Optionally, it is possible to view the data at any time via web interface on mobile devices.

*The QualiMaster AT1 can also be used as a stand-alone device.*





*The QualiMaster AT1 inline tester takes the samples directly behind the mixer above the belt. An optional sample shredder can be integrated into the basic version AT1 Eco.*

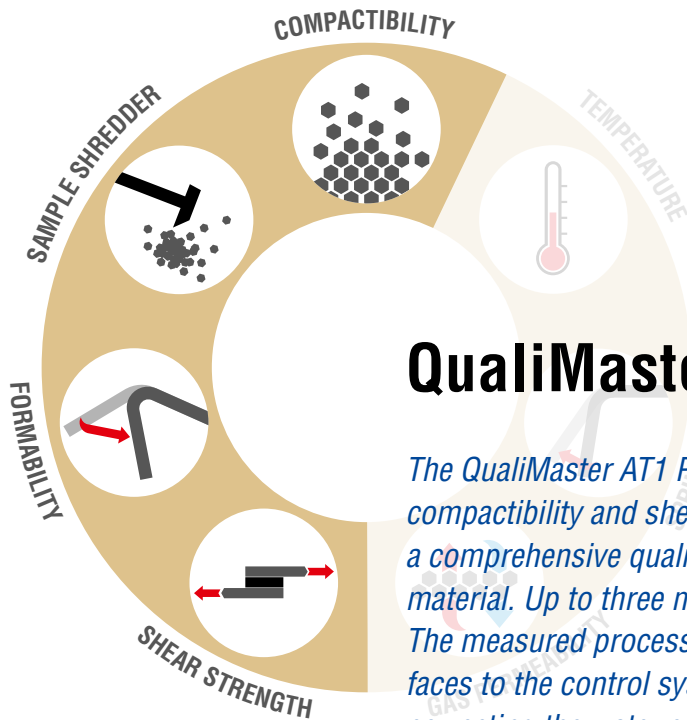
The modular design of the quality system QualiMaster AT1 opens up new possibilities for you to advance the quality assurance of your molding material preparation step by step. The measured process values are transmitted over the appropriate interfaces to the control system where they are used to make automatic corrections of compactibility.

With increasing quality requirements, you simply retrofit your QualiMaster AT1 Eco and equip it with additional testing units for temperature, springback, gas permeability, shear strength and deformability.

## Measuring compactibility. Our solution for beginners.

Our QualiMaster AT1 Eco is supplied with a **web interface** and the innovative **ProView process data visualization**. Even if the moisture in your preparation process is not recorded: Our entry-level model measures and logs up to three values per batch for the compactibility of the molding material. This gives you the opportunity to quickly identify trends in the development of compactibility. The moisture is controlled manually.

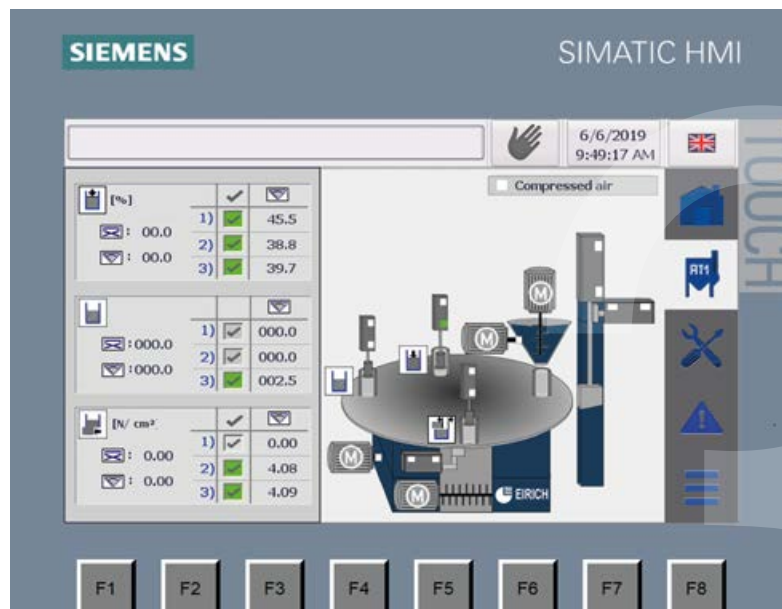
**Rent the QualiMaster AT1 as a stand-alone unit?  
No problem – we make it possible.**



## QualiMaster AT1 *Profi*

The QualiMaster AT1 Profi offers you the measuring options compactibility and shear strength, the key performance features for a comprehensive quality assurance when preparing your molding material. Up to three measurements are determined per batch. The measured process values are transmitted via appropriate interfaces to the control system where they are used for automatically correcting the water content and thus the compactibility as well as the bentonite content, which has a direct influence on the strength of the mold.

Thanks to the advantageous control technology that EIRICH offers you, all processes in the molding material cycle are optimally coordinated with each other.



HMI Touch Panel at the AT1



*QualiMaster AT1 Profi is the EIRICH standard for new systems*

+ SHEAR STRENGTH MEASUREMENT, DEFORMABILITY DETERMINATION

LEVEL 3

### Your plus: Modular design

With the QualiMaster AT1 *Profi* you already achieve a high level of quality assurance in your molding material preparation. Comparable to the predecessor model, the new AT1 *Profi* offers an essential advantage by the possibility of extending the testing unit by further measuring stations.

The AT1 *Profi* simply changes to AT1 *ProfiPlus*.

You additionally measure temperature, springback and gas permeability. Thanks to web interface, you can now view your process values at any time and from any mobile device.

### You want to stay flexible? Our solution for new construction or modernization: QualiMaster AT1 *Profi*

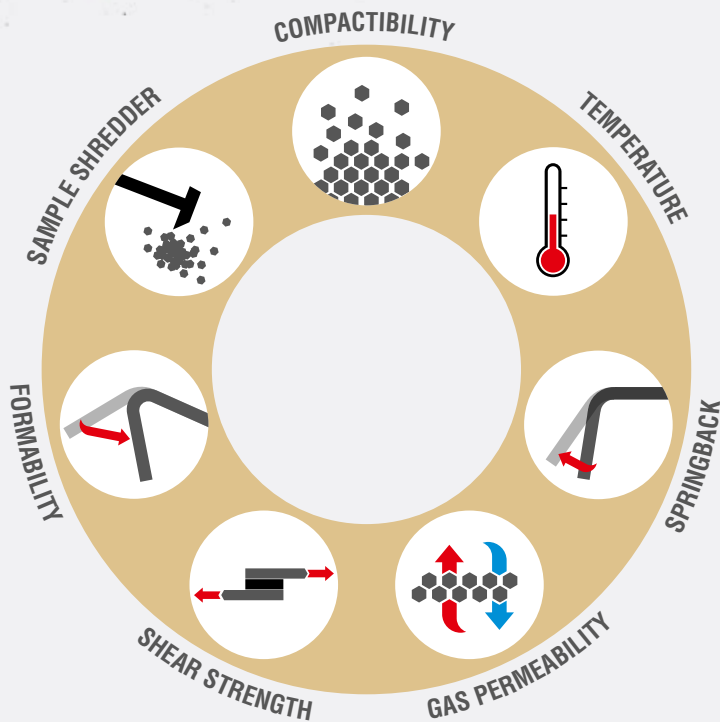
Regardless whether you are interested in a new EIRICH molding material preparation system with QualiMaster quality system or want to replace your inline tester: We recommend you equipment which measures not only compactibility but also at least the shear strength.

Would you like to add further measuring options? **Just take the next step with us.**

LEVEL 4

LEVEL 5





## QualiMaster AT1 *ProfiPlus*

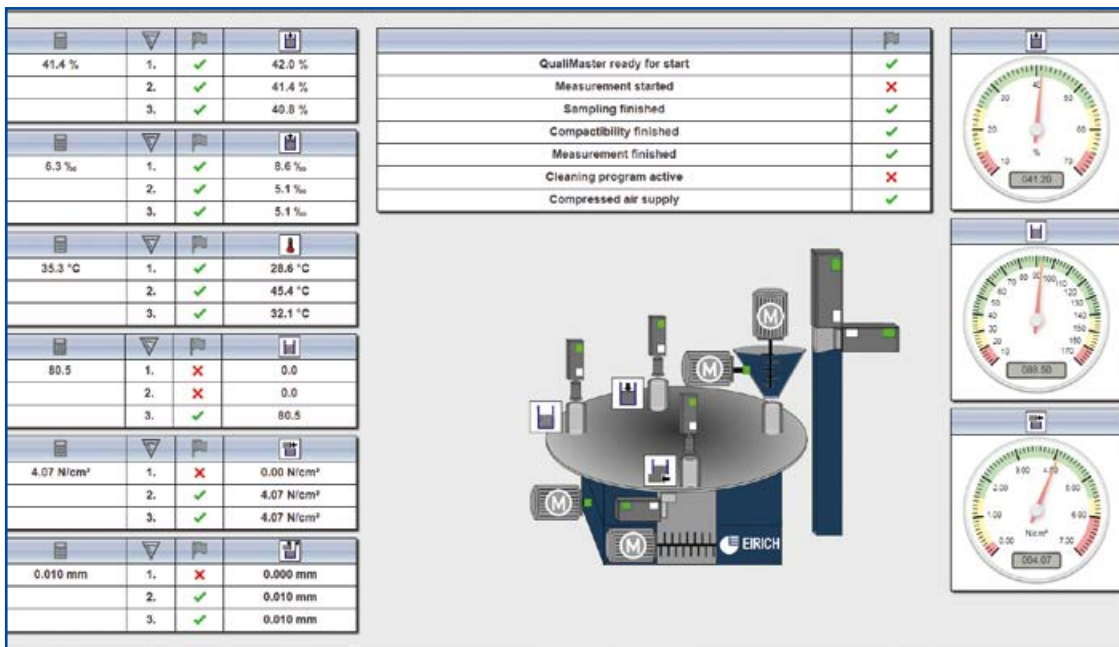
*In the full version as QualiMaster AT1 ProfiPlus, the quality system offers new possibilities in addition to the measurement and control of compactibility and shear strength. More reliability regarding the correction factor for evaporation is achieved by a second temperature measurement in the inline tester. In addition, the springback effect is measured in per mil (‰). The measured value informs on the springback effect during the molding process. The AT1 ProfiPlus also measures gas permeability as a reference value.*

- **Your benefits: less rejects, reproducible quality, stable processes, dimensionally stable castings, less refinishing and a uniform production.**

Of course, you can also operate our QualiMaster AT1 *ProfiPlus* quality system as a stand-alone unit.

The full range of EIRICH control modules allows optimal control of molding material quality and provides appropriate process documentation. The result is maximum productivity of your plant and a significantly increased casting quality.

*View into a  
QualiMaster AT1 ProfiPlus*



*Visualization of the measuring results of the QualiMaster AT1 ProfiPlus*

**Everything in view at all times:  
Everything is possible with us.**

If you place a particularly high priority on quality, the QualiMaster AT1 *ProfiPlus* system offers you a high-end solution with which you are excellently prepared for new challenges. Perfect your processes. Be ready for autonomous molding material preparation.

**Ask us.**

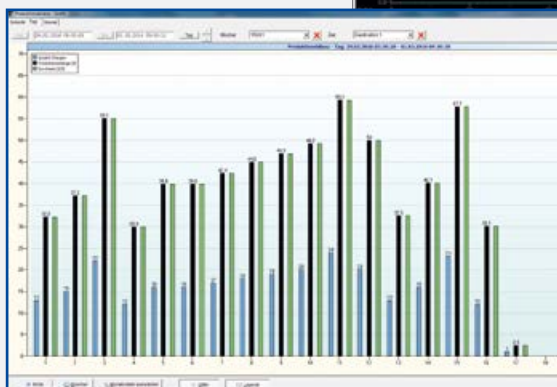
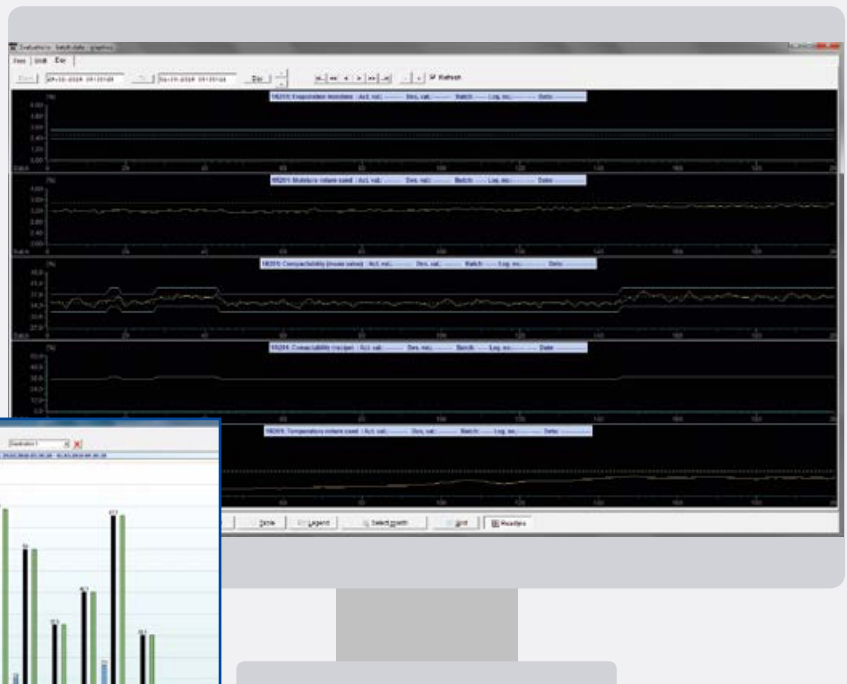
# QualiMaster SandReport

*The software SandReport is your tool for the production analysis of the entire molding material preparation process.*

The process data visualization ProView allows insight into current and past measured values. The software SandReport takes you one step further. It adopts all relevant batch data such as feeding data and molding material parameters from the molding material system, the moisture correction system AC1 and the inline tester AT1.

The representation of the batch data with the functions measured data acquisition, laboratory data input, graphic and statistical evaluation allows a comprehensive production analysis and ensures optimal traceability. Thus SandReport offers support in quality assurance.

*Display of the graphic evaluation*



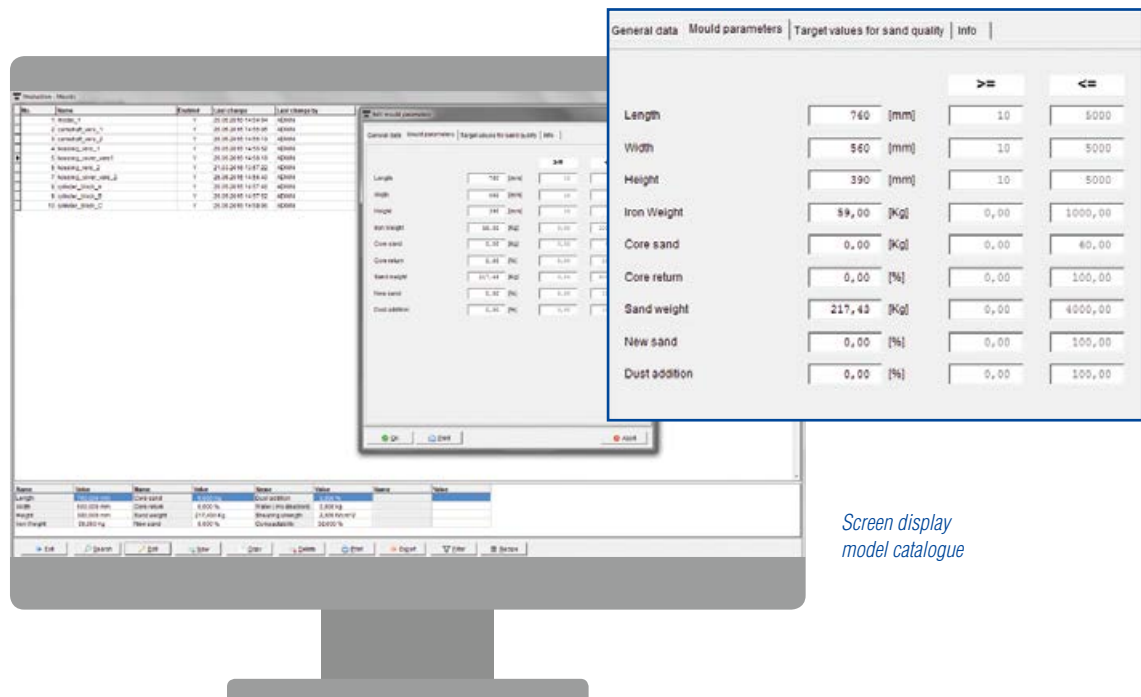
*Display of a production balance*

5



# QualiMaster SandExpert

*The software SandExpert is your tool for preventive molding material control.*



Screen display  
model catalogue

► **Your benefits: stable processes, lower consumption of energy and resources.**

## Aim: homogeneous return sand

On the basis of a standard formula, the software calculates the perfect ratio of return sand, new sand, bentonite and additives. Compactibility and shear strength are stored as target values for each model group. The basis for calculating the formula of the next batch is the expected return sand quality. The molding material is therefore controlled by the loss that arises in the production cycle.

## Consistently networked processes

For the perfect quality of the molding material and thus an optimal casting result, the inline tester QualiMaster AT1 Profi or ProfiPlus transmits the measured values to your

control system via an appropriate interface. The data can thus be used for the automatic optimization of subsequent batches.

## Ideal for frequent pattern plate changes

Running the molding material preparation plant on an autonomous basis pays off. Pattern plate changes/Mold changes can be implemented quickly and easily thanks to the online connection of the molding line. The composition of the molding material is automatically predicted with the aid of the software SandExpert. This ensures that the molding material required for the model is available to your molding line at all times. This preserves resources and guarantees stable processes.

## Industrial Mixing and Fine Grinding Technology

### Tradition and innovation since 1863

EIRICH stands worldwide for a comprehensive range of products and services in the field of preparation technology. Its particular focus is on mixing and fine grinding technology, with know-how developed over 150 years of close cooperation with industrial users, universities and research institutions.

Pursuing a corporate philosophy of operating internationally and thereby ensuring close proximity to every customer, the EIRICH Group has secured its place in all the key economic regions of the world.

The focus is on innovative technology for machinery and systems engineering designed to offer solutions for high-standard preparation tasks from a single source.

Applications and process technology with own test centers, a high vertical range of production and comprehensive after-sales service provide the ideal basis for the development of modern and economical processes for a multitude of industries.

**Building materials – Ceramics – Glass – Carbon paste – Battery paste  
Friction linings – Metallurgy – Foundries – Environmental protection**

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