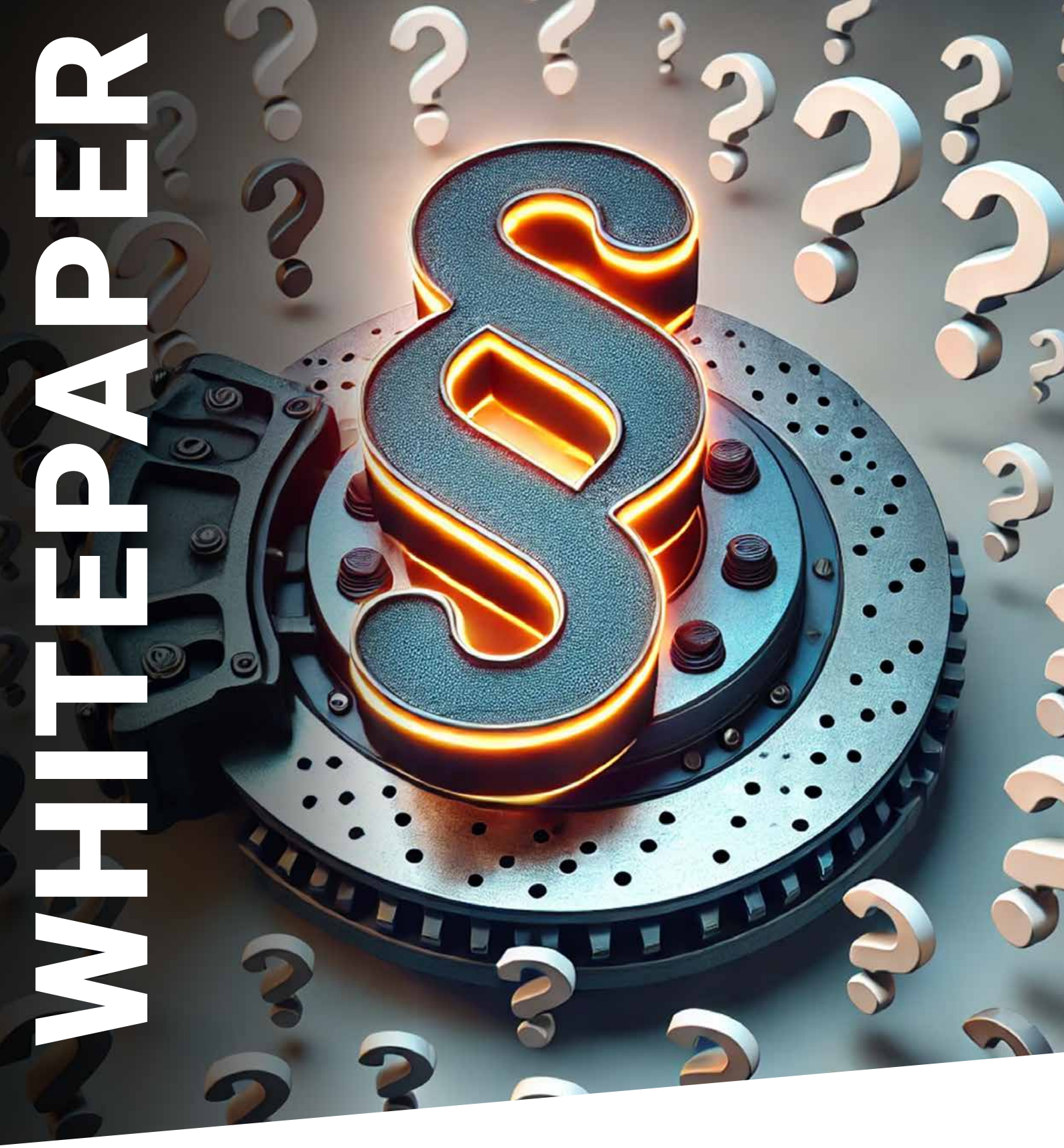
WHITEPAPER



DEADLY NEGLIGENCE?

REASONS WHY THE MARKET NEEDS SAFER BRAKE TESTERS

EN 17003 The standard that saves lives

MAHA

WHITEPAPER

Deadly negligence?
Reasons why the market needs safer brake testers
EN 17003: The standard that saves lives

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1 INTRODUCTION

Safety standards – an essential foundation

Working in motor vehicle workshops poses many risks for both employees and visitors. In particular, complex machines such as brake testers, which operate under significant mechanical and electrical loads, represent potential sources of danger. Lack of safety precautions can not only lead to malfunctions and property damage, but also pose a significant risk of personal injury. A tragic example is an accident that happened in a Dutch workshop, where an employee was fatally injured while carrying out a brake test on a lorry. Such incidents highlight the need for strict safety standards and measures [9].

The **EN 17003** standard was developed with the aim of defining binding safety requirements for brake testers and minimising the risks for operators and the environment. It currently applies to testers (test benches) intended for vehicles weighing over 3.5 metric tonnes. Nevertheless, MAHA is convinced that the standard needs to be extended to all brake testers, since the safety requirements should be the same regardless of vehicle weight [1][4].

Safety in workshops is a collective responsibility that involves manufacturers, planners and operators alike. Manufacturers need to ensure that their products comply with the applicable safety standards, while workshop planners must minimise hazards by carrying out systematic risk assessments and applying the STOP principle.

Operators are obliged to ensure that their systems are operated safely by carrying out regular risk assessments and adapting them to any new regulations or developments. CE marking alone is not sufficient to rule out all potential risks.

The significance of EN 17003 and other measures

Compliance with **EN 17003** brings numerous advantages: it minimises risks, increases operational safety and boosts confidence in the reliability of the test procedures. At the same time, it provides the basis for safe and efficient workshop planning in line with the ever-increasing demands of modern workshops [1][3][9].

A supplementary white paper also explains how safety measures in vehicle workshops and test centres can be considered as a whole. It not only addresses the technical requirements, but also organisational measures and the responsibilities of all those involved.

Target group of this white paper

This white paper is aimed at operators, inspection organisations and workshop planners who wish to contribute to the safety of their systems by taking effective measures. It contains practical instructions for implementing EN 17003 and provides references to other documents that offer additional perspectives on safety and the minimisation of risks in workshops.

2 OVERVIEW OF THE EN 17003

Definition and origin of the standard

The **EN 17003:2021** standard was harmonised by CEN on 26 July 2023 and is setting new standards for the safety and compliance of roller brake testers.

In Germany, this standard is substantiated by the **Product Safety Act (ProdSG)** and the **Machinery Ordinance (9th Ordinance, ProdSV)**, which transpose the **EU Machinery Directive 2006/42/ EC** into national law [1][4][6].

Objectives of EN 17003

1. **Ensuring safety:** Identification and minimisation of risks by way of technical protective measures such as axle presence detection, access protection and emergency stop functions [1][7].
2. **Promoting technical reliability:** Specifications for electrical equipment as per **EN 60204-1** and safety controllers in accordance with **EN ISO 13849-1** [3][7].
3. **Ensuring operability:** Improved user-friendliness and greater serviceability of the machines [1][9].

Mandatory requirements

- Protection against internal moving parts [1].
- Axle presence detection in accordance with **EN 13849-1** (PL c) [3].
- Access prevention to hazardous areas, for example by means of light grids on inspection pits [1][7].
- Safe operating panels with emergency stop function in accordance with EN ISO 13849-1 (PL d) [3][7].
- Electromagnetic compatibility in accordance with EN 61000-6-2 and EN 61000-6-3 [1][7].

Optional requirements

- Extended documentation and detailed test reports [9].
- Additional functions, such as specific customisations for individual test bench requirements [9].

Further legal principles

In addition to EN 17003, the following legal principles are also relevant:

- The German **Product Safety Act (ProdSG)** regulates the health and safety protection of consumers and third parties and sets out requirements for conformity assessment [4][6].
- The **Machinery Directive 2006/42/EC** lays down essential health and safety requirements and the requirements for CE markings and EC Declarations of Conformity [4].
- National standards such as **DIN EN 60204-1** focus on electrical safety standards and supplement the harmonised specifications [3].

Extended examination of the standard and new requirements

By way of reference, **EN 17003** points to established safety specifications that reflect the current state of the art and requires them to be incorporated. This broadens the safety requirements for brake testers by taking new potential hazards into account [1][4].

Special emphasis is placed on **risk assessment**, which concerns **both manufacturers and operators**. Risks that can occur when working on **vehicles weighing less than 3.5 tonnes** must also be carefully analysed and minimised.

The standard gives **clear specifications** for the identification and reduction of such hazards [4][7].

Compliance with EN 17003 not only ensures that legal specifications are met, but also strengthens operational safety and customer confidence in the technology [1][9].

Harmonised standards applied within the framework of **EN 17003** play a crucial role in minimising risks and ensuring compliance.

MAHA offers operators practical support in fulfilling these specifications by providing innovative technical solutions and comprehensive consulting services [1][9]**.**

3 SAFETY ASPECTS FOR BRAKE TESTERS

Hazards and risks

1. **Mechanical hazards** Brake testers contain numerous moving parts that can be extremely dangerous if adequate protective measures are not taken. It is particularly vital to protect operators from coming into contact with internal moving parts that could cause injury during operation [1][7].
2. **Electrical risks** Voltage peaks and malfunctions in the electrical equipment can lead to serious accidents. **EN 17003** prescribes conformity with such standards as **EN 60204-1** and **EN 61000-6-2/-6-3** to ensure both electromagnetic compatibility and electrical safety [3][7].
3. **Human-machine interactions** Operators and inspectors often work in close proximity to the machines. Access protection, safe operating panels and emergency stop functions are all essential to ensure safe interactions between man and machine [1][3].

Testing and monitoring requirements

EN 17003 sets out detailed specifications for testing and monitoring the safety functions:

- Regular checks on protective mechanisms such as light curtains and barriers [7].
- Checking the safety controllers in accordance with **EN ISO 13849-1** requirements [3].
- Validating electromagnetic compatibility and electrical safety [3][7].

Critical components and their requirements

- **Brake test rollers** The rollers must be able to withstand the test forces and offer a high level of safety. Safety devices prevent uncontrolled access during operation [1][7].
- **Sensors** Sensors for axle presence detection must achieve a **performance level (PL)** of at least c in order to comply with the specifications of **EN ISO 13849-1** [3].
- **Control systems** Controls must ensure that operating modes such as emergency stop and safe start can only be triggered intentionally. The requirements of EN ISO 13849-1 (PL d) guarantee the highest level of safety [3][7].

Automatic start: Yes or no?

The automatic start of rollers is a controversial topic within the context of **EN 17003**. The standard prohibits automatic starting without safety precautions, because this contradicts the principle that dangerous functions must be deliberately triggered by the operator. However, **EN 17003** permits systems with automatic start if they fulfil the requirements of **PL d** so as to prevent unintentional starts [3][7].

Requirements for safe automatic starting:

- Test halls/areas free of people: Automatic start is only safe if nobody is present in the work area. This implies that structural measures must be taken to prevent access [7].
- Technical adjustments: Operators must implement extensive measures to fulfil the requirements of **PL d**. Alternatively, clear instructions could be issued, but their effectiveness is somewhat limited [3][7].

The standard makes it clear that automatic hazardous functions require careful risk assessment and strict implementation. Intentional start-up remains the established principle, but **EN 17003** allows for an alternative that meets a high technical and regulatory standard if certain conditions are met [1][7].

Discrepancies between test benches over and under 3.5 metric tonnes

Another controversial point is how differently **EN 17003** is applied to test benches for vehicles over and under 3.5 tonnes. In actual fact, there are no differences in the hazards or basic technical requirements. The test benches themselves and the associated risks do not change. Nevertheless, the standard is not currently applicable to test benches under 3.5 tonnes [1][4].

MAHA's reasoning:

MAHA strongly advocates a **harmonised application** of **EN 17003 to all brake testers**, irrespective of vehicle weight. The risks and the need for technical protective measures apply equally to both lightweight and heavy vehicles. Consistent implementation of this standard would not only significantly improve safety, but also streamline regulations and create a harmonised level of safety in the market [1][4][7].

By publishing **EN 17003**, MAHA is redefining the state of the art of risk assessment. MAHA stresses the fact that the risk of unintentional injuries does not solely depend on the weight of the vehicle, but is largely influenced by the safety features of the test benches. A key consideration is protection against unintentional access to test benches and the effective prevention of dangerous starts.

A **central point of the standard** is the **safe monitoring** and querying of the **sensing rollers**. It must be ensured that unintentional starts are not possible under any circumstances whatsoever – whether due to technical malfunctions or human error. This requires robust detection systems that safely prevent access to hazardous areas and control systems that can only be activated by deliberate action.

Emphasis on the protection of people MAHA stresses that the protection of people takes top priority. It is essential to carry out a rigorous risk assessment that takes into account not only

the machine components, but also the environment and all possible scenarios. It is particularly vital that test benches are designed in such a way as to prevent **unintentional access** by people. Light curtains, access barriers and emergency stop systems must be designed in such a way that they provide the highest level of safety even in unforeseen circumstances.

By consistently complying with **EN 17003** and implementing innovative safety solutions, MAHA is sending out a clear message about the responsibility of manufacturers and operators alike.

The message is clear: **safety knows no compromise – neither in the design nor in the operation of brake testers**

4 RISK AND LIABILITY

EN 17003 has s**et new standards for the safety of brake testers**, but **safety measures should have been a standard priority for manufacturers, planners and operators for a long time**.

Relying on CE marking alone **is not enough**. **Operators** are **legally obliged** to carry out a risk assessment in accordance with the **German Product Safety Act (ProdSG)** and the **German Ordinance on Industrial Safety and Health (BetrSichV)**, to identify **potential hazards** and to introduce **appropriate measures** to ensure that their systems are operated safely.

This includes carrying out regular maintenance, updating safety precautions and documenting all steps [1][4][7].

Liability due to lack of safety measures

The legal consequences for operators who disregard safety requirements are substantial.

An overview of relevant court rulings in the annex shows that **despite having a CE marking, operators can still be held liable** if safety precautions are inadequate. The rulings highlight both the legal and financial risks of having unsafe test benches and the need for regular tests and adjustments.

This responsibility for safety is multifaceted:

- **Manufacturers** must ensure that their products comply with the applicable standards, including the Machinery Directive, and that they are clearly labelled with the CE marking.
- **Workshop planners** bear the responsibility for selecting safe equipment and integrating modern safety standards such as **EN 17003** into their plans. The **STOP principle** (substitution, technical and organisational measures and personal protective equipment) acts as a structured approach to minimising risk.
- **Operators** are obliged not only to comply with safety standards, but also to keep developing them proactively. They must carry out regular risk assessments, provide internal training and ensure that all equipment and machinery used complies with current safety requirements.

The **STOP principle** sets clear priorities for risk minimisation: sources of danger should initially be replaced by less risky alternatives (substitution) and then technical measures such as protective devices should be implemented. Organisational measures and the use of personal protective equipment are merely a last resort if technical solutions are insufficient or if deemed to be additionally necessary.

Risks due to unsafe systems and low-quality products
Unsafe or outdated test benches not only implicate considerable dangers **for employees**, but also legal and financial risks for operators. The purchase of seemingly inexpensive systems can lead to high follow-up costs and liability problems in the long term, especially **if safety defects result in accidents. Operators are legally obliged to comply with the state of the art, even if they have to retrofit existing systems** [1][4][9].

MAHA offers support

MAHA supports operators with comprehensive consultancy aimed at identifying safety risks at an early stage and optimising safety standards. By complying with all the relevant standards and guidelines, we help workshop planners and operators to meet their obligations and ensure safety in the long term. We place great importance on practical solutions that are tailored to the specific requirements of our customers.

Note: according to the **German Product Safety Act (ProdSG)** [4] and the **German Ordinance on Industrial Safety and Health (BetrSichV)** [7], operators are **legally obliged** to **carry out a risk assessment** for their **brake testers** and to **derive appropriate measures**. This involves identifying potential hazards and implementing suitable protective measures to ensure that the systems can be operated safely.

5 SUMMARY AND PROSPECTS

Operating brake testers entails considerable risks, particularly if the systems are unsafe or outdated.

EN 17003 sets out clear and practical guidelines for minimising these hazards. However, despite these specifications, many operators have not yet consistently implemented the standards. This leads to unnecessary hazards for operators, employees and customers, all of which could be avoided by the consistent use of safe and standard-compliant systems [1][7].

At a time when standards such as **EN 17003** are in place, it is incomprehensible that there are still test benches in use without these basic safety precautions. Failure to implement safety measures not only entails the risk of serious accidents, but also has legal and financial consequences for operators.

MAHA is therefore committed to the consistent implementation of the very highest safety standards. Every brake tester that MAHA supplies not only reflects technical excellence, but also a commitment to protecting lives and complying with the latest standards [1][9].

An appeal to the operators

Operators of brake testers have twice the responsibility: on the one hand, they must comply strictly with the legal specifications and on the other, they have a moral and practical obligation to ensure the safety of all those involved. Making a conscious decision in favour of standard-compliant systems is therefore not only a contribution to accident prevention, but also a sign of responsibility and foresight. MAHA assists operators in achieving this goal by providing innovative technologies, comprehensive consultancy services and a clear focus on compliance with the highest safety standards [1][9].

Summary and prospects

Purchasing a brake tester is more than just making a technical investment. It's about **responsibility, safety and the protection of human lives**. Operators who choose standardised and reliable systems not only reduce their liability risks, but also actively contribute to the safety and efficiency of their business. **Safety knows no compromise**.

Choosing MAHA doesn't just mean purchasing the highest quality and reliability, it also means safety – for the owner and for the employees who work with the brake testers and on them.

MAHA test benches protect both the operator and the tester by offering maximum reliability, precision and protection.

A glance into the future shows that safety standards such as **EN 17003** will not only become mandatory, but will also set new benchmarks. MAHA remains a pioneer in the development of innovative solutions that go beyond the current state of the art. MAHA is working alongside operators and partners to create a safer and more efficient future for brake testers – helping to protect lives, today and in the future.

6 ANNEX: RULINGS

The following rulings illustrate the far-reaching liability risks for machine operators, particularly with regard to CE marking and safety requirements.

Operators are obliged to regularly check whether their machines comply with the applicable standards and to take appropriate measures to rectify any shortfalls in safety. A lack of CE marking or inadequate safety precautions not only entail legal consequences, but also potential risks of accidents.

Ruling of the Oldenburg Higher Regional Court, 4 September 2018 – 2 U 58/18
The court ruled that the lack of CE marking alone does not constitute a material defect. CE marking serves primarily to harmonise technical standards within the EU and is not evidence of compliance with national safety requirements. Nevertheless, the operator remains under an obligation to check and implement all safety requirements

Ruling of the Frankfurt am Main Higher Regional Court, 23 March 2017 – 6 U 23/16
This ruling involved an operator who placed machines on the market without a CE marking. The sale of such products was deemed to be an infringement of competition law. It was established that importers and operators can also be held liable if they do not guarantee that the machinery complies with European safety standards.

Ruling of the Düsseldorf Higher Regional Court, 24 September 2015 – I-2 U 3/15
The court ruled that the operator of a machine is liable for safety defects if the requirements of the CE marking are not met. It was stressed that operators are responsible for regularly checking that all safety measures comply with the applicable standards, even if the machine was originally CE-certified.

Ruling of the Munich Regional Court, 12 May 2019 – 12 O 1234/19
An operator was ordered to pay compensation after an employee was injured by a machine that had no CE marking. The court emphasised that operators cannot rely on being unaware of technical defects. Operators must ensure that machines meet all legal requirements before they are used.

Judgement of the Federal Court of Justice, 25 February 2014 – VI ZR 144/13
The Federal Court of Justice ruled that operators can be held liable if they operate machines with safety defects that result in accidents. In this case, the lack of maintenance of a machine was found to have been a contributory cause of an accident at work.

Ruling of the Berlin Regional Court, 28 November 2014 – 15 O 601/12
This ruling involved an operator who had put machinery into operation without a proper CE marking and without a full conformity assessment. The operator was charged with endangering workers and violating safety guidelines.

References

Standards and norms

[1] **DIN Media (n.d.). DIN EN 17003**
Safety requirements for roller brake testers. [Online] Available from: https://www.dinmedia.de/en/draft-standard/din-en-17003/273247111 [accessed on 04 January 2025].

[2] **Beuth Verlag (2019)**
Safety of machinery - Electrical equipment of machines (DIN EN 60204-1:2019). [Online] Available from: https://www.beuth.de/de/norm/din-en-60204-1/296586348 [accessed on 04 January 2025].

[3] **Beuth Verlag (n.d.)**
Safety of machinery - Safety-related parts of control systems (DIN EN ISO 13849-1). [Online] Available from: https://www.beuth.de/de/norm/din-en-iso-13849-1/326610260 [accessed on 04 January 2025].

Laws and guidelines

[4] **Federal Ministry of Justice (BMJ, 2023)**
Act on the Provision of Products on the Market (Product Safety Act – ProdSG) – in German. [Online] Available from: https://www.gesetze-im-internet.de/prodsg/ [accessed on 04 January 2025].

[5] **European Union (2006)**
Directive 2006/42/EC of the European Parliament and of the Council on machinery (Machinery Directive). [Online] Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006L0042 [accessed on 04 January 2025].

[6] **Ordinance on Safety and Health Protection in the Use of Personal Protective Equipment at Work (PSA-BV). (n.d.)**
Occupational safety and personal protective equipment (in German). [Online] Available from: https://www.gesetze-im-internet.de/psa-bv/ [accessed on 04 January 2025].

[7] **German Ordinance on Industrial Safety and Health (BetrSichV)**
(n.d.). Protection of employees when using work equipment (in German). [Online] Available from: https://www.gesetze-im-internet.de/betrsichv/ [accessed on 04 January 2025].

[8] **German Occupational Health and Safety Act (ArbSchG) (n.d.)**
Legal framework for the safety and health of employees (in German). [Online] Available from: https://www.gesetze-im-internet.de/arbschg/ [accessed on 04 January 2025].

Accident reports on machines

[9] **German Social Accident Insurance (DGUV) (2013)**
Hazards arising from manipulated protective devices (in German). [Online] Available from: https://www.dguv.de/medien/ifa/de/pub/grl/pdf/2013_199.pdf [accessed on 04 January 2025]:

[10] **Employer's Liability Insurance Association of the Construction Industry (n.d.)**
Safety measures on brake testers (in German). [Online] Available from: https://www.bgbau-medien.de/handlungshilfen_gb/daten/dguv/209_007/14.htm [accessed on 04 January 2025].

[11] **DGUV (n.d.)**
Standards and safety technology for brake testers (in German) [Online] Available from: https://www.dguv.de [accessed on 04 January 2025].

[12] **Pilz GmbH (n.d.)**
Prevention of machine accidents by means of safety devices (in German). [Online] Available from: https://www.pilz.com/de-DE/knowhow/safety [accessed on 04 January 2025].

[13] **IFA (n.d.)**
Accident scenarios due to missing safety equipment on machines. [Online] Available from: https://www.dguv.de/ifa/publikationen/maschinenunfaelle [accessed on 04 January 2025].

Safety analysis and prevention

[14] **Weyer Group (n.d.)**
Analysis of machine accidents and implementation of protective measures (in German). [Online] Available from: https://www.weyer-gruppe.com/en/health-and-safety-at-work [accessed on 04 January 2025].

[15] **NIST (n.d.)**
Machine safety guidelines and accident prevention. [Online] Available from: https://www.nist.gov/machine-safety [accessed on 04 January 2025].

[16] **CE marking (n.d.)**
Hazard analysis and safety measures for machines. [Online] Available from: https://www.cemarking.net/machine-safety/ [accessed on 04 January 2025].

“I’M WORTH A MAHA TEST BENCH TO MY BOSS.”

This mindset illustrates why it is well worth focussing on quality and safety.
By choosing a MAHA test bench, you are opting for tested safety that complies with the highest standards.

About the author

“During my nearly 30 years of professional experience, I have spent over 10 years working in the development of safety technology and have been actively involved in standards committees. Today, as Managing Director of MAHA, I stand for the strictest safety standards, innovation and reliability in testing and lifting technology.”

“Read this white paper and find out more about the importance of the EN 17003 standard and the critical safety aspects.”

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