WESAFE
稳图

Euro-norm Engineer

- Rack Safety Inspection
- Structural Design and Test
- Solution Design

Compliance with everyone's benefits

ABOUT WESAFE

We try our best to do the right thing, keep stability and strive for development through unusual ideas. Founded in 2009, WESAFE is made up of structure safety experts, EHS experts, and senior managers in the rack industry. We dedicate to rack safety inspection and relevant comprehensive solutions, with a mission to unify the rack standards in China. In February 2018, WESAFE established a wholly-owned subsidiary named WESAFE Rack Safety Inspection Technology Company.

WESAFE has obtained a CMA qualification certificate for rack inspection issued by China's Market Supervision and Administration and an ISO9001 certificate for rack inspection process. The technical director is a structural engineering doctor with a rack inspection engineer certificate issued by British SEMA(Storage Equipment Manufacturers Association).

- **Concentration inspires professionalism.**
- **Implement authoritative standards.**
- **Face problems honestly.**

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Rack Inspection

Relevant standards and codes should be observed during the full life cycle of rack, i.e. planning, design, manufacture, installation, and operation. The warehousing rack in China has been developing for nearly 50 years with plenty of experience accumulated, and most of the enterprises comply with codes such as EN (FEM), British SEMA, Australian AS4084 and American RMI. Planning faults (safety clearance), design problems (unreasonable structure materials), structure displacement occurring after use (out-of-plumb), damaged parts, loose fasteners, protection failure, etc. Completing a three-level inspection system and performing annual professional inspection are not only important methods to effectively reduce hidden dangers related to safety, but also a fundamental way to avoid huge losses.

Completion Acceptance Inspection

A process that after a rack project is completed, the contractor and the designer, construction unit and equipment suppliers as well as a thirty-party inspection unit, etc. carry out an overall inspection to confirm whether the planning and design requirements and construction and installation qualities are met, and then obtain acceptable information, data and certificates.

Inspection for Reuse

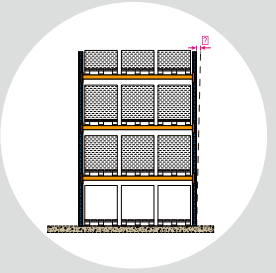
A process that if a rack needs to be dismantled and reinstalled, the contractor and the designer, construction unit, a thirty-party inspection unit, etc. carry out an overall inspection to confirm whether the changed plan is consistent with the planning and design requirements and whether the construction and installation qualities are met, and then obtain acceptable information, data and certificates for the project change.

Use state inspection

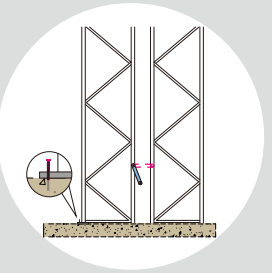
A process that after the rack is put into use, the contractor entrusts a thirty-party inspector subject to laws, regulations, standard specifications and actual needs to perform an overall inspection of the current use state of the rack and to obtain the information, data and certificates related to safe risks.

Ground Floor Subsidence Inspection

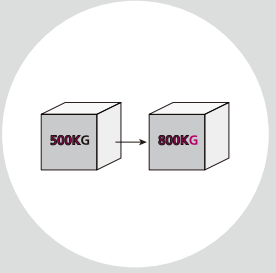
The flatness and straightness of the floor in VNA rack aisle, in which a special forklift drives and of the floor in which a forklift can turn and drive freely are inspected according to the relevant standards before the rack is installed.



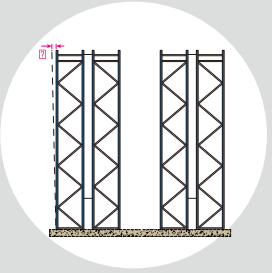
The installation accuracy deviates from the original one and exceeds the range allowed by the installation standard.



Components deform or are damaged and fasteners become loose or come off due to frequent operations.

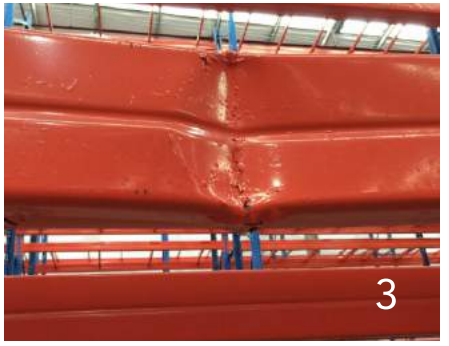


Technical parameters need to be recalculated and updated because of changes in goods specifications and rack structure.



The initial imperfection or subsidence after use of the ground floor cause rack out-of-plumb out of standard.

Problem Cases in Use



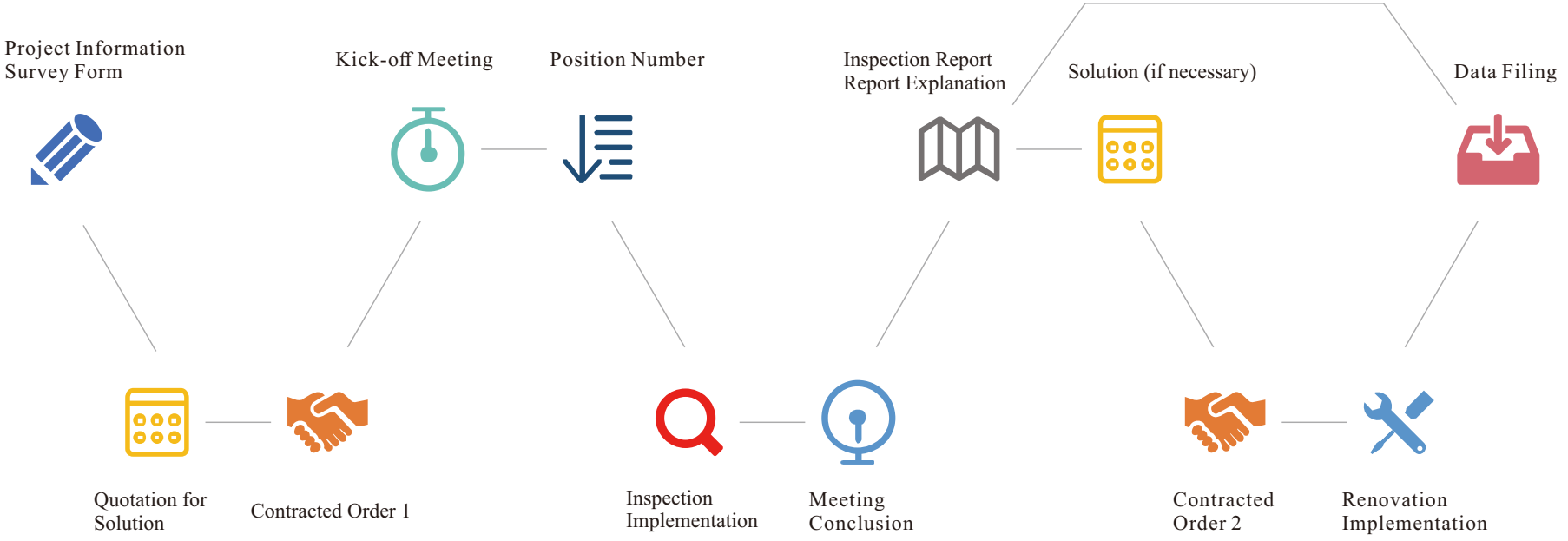
1. Structural displacement is out of standard (out-of-plumb)
2. Safety pin loss
3. Beams damage or deformation due to impact
4. Excessive pallet deflection
5. Incorrect pallet placement
6. Safety pin becomes loose or comes off
7. Fasteners become loose or come off
8. Upright damage or deformation due to impact
9. Brace damage or deformation due to impact

(Heinrich's Law)

300 : 29 : 1

When an enterprise has 300 hidden dangers or violations, 29 minor injuries or failures and a serious injury or death accident are likely to happen.

Business process



The process of warehousing safety inspection and solutions should be so strict that even a screw should be clearly marked, and the problems found should be effectively analyzed to prevent possible risks.

Details of Implementation

Inspection of Upright
Out-of-plumb

Inspection of Beam Deflection

Measurement of Local
Deformation

Visual Measurement of Damage
to Structural Members

Inspection of Torque Values
of Fasteners

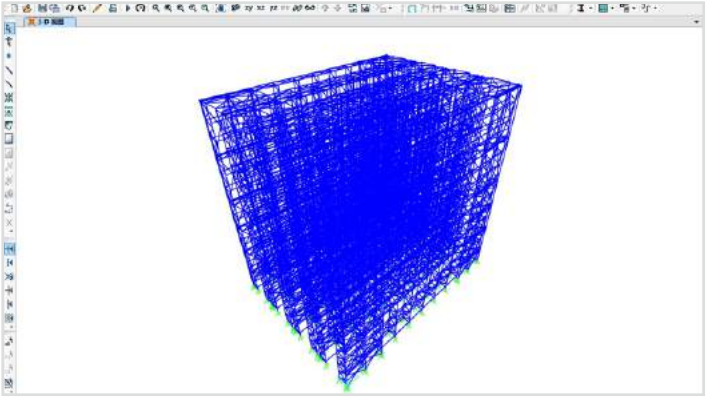
Inspection of Ground Floor
Subsidence

Structural Design and Test

Being with finite element analysis technology and structure test equipment and familiar with the standards and codes for the structural design and test of rack, we can perform the structural design and safety analysis of rack and test the physical performance. The structural design and test is a process during which we analyze the internal force and displacement of rack under various kinds of working conditions and the action of combined loads, check the load-carrying capacity of components and connections, and do checking calculation of the structure and components as per relevant design codes for rack to ensure that the structure meets the requirements both at the ultimate limit state and service limit state.

Structure Design Report

For a rack project, the calculation of the load-carrying capacity of a rack is performed and a written report is issued as per the rack structure design standard and technical agreement stipulated beforehand and through finite element method software analysis and test data; and the report can be endorsed by a design institute with first-class qualifications. Through these jobs, a safe structural design basis can be provided for the entire rack project.



Performance Test of Product Parts

The performance test of a rack member is conducted as per relevant rack design codes and a standard method to obtain corresponding product performance parameters.

Design Tool Development

Easy and quick design tools tools are developed for rack manufacturers and sales companies. Data are obtained via the test of multiple combined data of designing objects (main components such as upright , beam, etc.) to form a database; a development software tool is made based on the relevant structural design standard; the use training of such tool is completed, and after-sales technical support is provided.

Warehousing Safety Training and Consultation

In order to improve the safety of a workplace, rack should be properly used and reasonably maintained to keep them in a good state; and their safety inspection should be done to avoid accidents. We provide information for users through training courses to ensure effective use of rack, follow proper safety standards and make users know how to safely operate, perform checks and inspections and maintain storage equipment. These not only involve rack but also pallet quality and types and the proper use of mechanical handling equipment to store and take goods. We provide relevant suggestions and guidance for trainees to make them able to perform basic inspection of rack as per relevant standards and be familiar with the duties of the user and supplier, the categories and frequency of inspection, the recording of inspection results, damage level, risk evaluation, response solution, etc.

Training courses: Knowledge on Warehousing Rack Use and Maintenance Safety (We can provide customized training business, online or offline).

Applicable to: The managers, supervisors, operators, departmental leaders, safety representatives, suppliers, relevant safety experts, etc. of warehousing rack end-users.

About SEMA

The full name of SEMA is Storage Equipment Manufacturers Association, which is founded in order to develop the logistics equipment industry in the United Kingdom (UK). SEMA complies with the technical standards both in the UK and European Union (EU) and is an important organization for the establishment of relevant standards in the EU; at the same time, it delivers the inspection engineers seriously trained to all the places around the world, provide technical support to the safe operation of warehousing equipment; the qualifications of SEMA's experts are accepted by local legislations. SEMA is the only organization in the world that carries out the certification of experts.

About CMA

CMA is the shortened form of China Metrology Accreditation (CMA). It is an overall certification and evaluation of the inspection capacity and reliability of inspection organizations performed by the metrology administrative department of the people's government above the provincial level. Inspection reports with the mark of CMA can be used for product quality evaluation, achievement appraisal and expert testimony, and have legal effect.

检验检测机构
资质认定证书
副本

许可使用标志
CMA
191908341751

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联系电话	021-67157048	证书编号	191908341751
发证日期	2019-09-02	有效期	2025-09-01
批准日期	2019-09-02		
检测产品/类别	检测项目/参数	检测标准（方法）名称及编号	限制范围或说明
钢结构/通用机械与设备	厚度	《钢结构工程施工质量验收规范》/GB 50205-2001（4.2.3条）	无
钢结构/通用机械与设备	尺寸与偏差	《建筑结构检测技术标准》/GB/T 50344-2004（6.4.1条）	无
钢结构/通用机械与设备	整体垂直度	《钢结构现场检测技术标准》/GB/T 50621-2010（9.3.2条、9.3.4条、9.3.5条）	无
钢结构/通用机械与设备	整体平面弯曲(挠度)	《钢结构现场检测技术标准》/GB/T 50621-2010（9.3.2条、9.3.3条）	无
普通螺栓/通用机械与设备	扭矩检验	《钢结构现场检测技术标准》/GB/T 50621-2010（8.3.1~8.3.3条）	无
普通螺栓/通用机械与设备	螺栓紧固	《钢结构工程施工质量验收规范》/GB 50205-2001（6.2.3条）	不单独出具检测报告
焊缝/通用机械与设备	缺陷(外观)	《钢结构工程施工质量验收规范》/GB 50205-2001（5.2.1条）	不单独出具检测报告
涂层/通用机械与设备	涂层厚度	《钢结构现场检测技术标准》/GB/T 50621-2010（12.3.1~12.3.4条）	无
涂层/通用机械与设备	涂层硬度	《色漆和清漆 铅笔法测定漆膜硬度》/GB/T 6739-2006（3.1~9.0条）	只做：H-6H，HB-6B
涂层/通用机械与设备	涂层附着力	《色漆和清漆 漆膜划格试验》/GB/T 9286-1998（7.1条、7.2条）	无
钢结构立柱/通用机械与设备	抗冲击性	(Steel static storage systems - Application and maintenance of storage equipment)《钢货架合理系统使用与维护标准》/BS EN 15635:2008（9.5条）	无
钢结构立柱/通用机械与设备	抗冲击性	(Steel Storage Racking)《钢货架标准》/AS 4084-2012（8.3.2条）	无
钢结构立柱/通用机械与设备	轴压承载力	《冷弯薄壁型钢结构技术规范》/CECS 102:2002（2002）（6.2.4条）	不做：带锁-销形连接

钢结构立柱/通用机械与设备	轴压承载力	(Steel static storage systems- Adjustable pallet racking systems-Principles for structural design)《钢货架合理系统结构设计标准》/BS EN 15512:2009（A.2.1条、A.2.2条）	无
钢结构立柱/通用机械与设备	弯曲承载力	(Steel static storage systems- Adjustable pallet racking systems-Principles for structural design)《钢货架合理系统结构设计标准》/BS EN 15512:2009（A.2.9条）	无
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钢结构螺栓/销钉/通用机械与设备	抗冲击性	(Steel static storage systems - Application and maintenance of storage equipment)《钢货架合理系统使用与维护标准》/BS EN 15635:2008（9.5条）	无
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钢结构梁端连接件/通用机械与设备	弯曲刚度	(Steel static storage systems- Adjustable pallet racking systems-Principles for structural design)《钢货架合理系统结构设计标准》/BS EN 15512:2009（A.2.4条）	无
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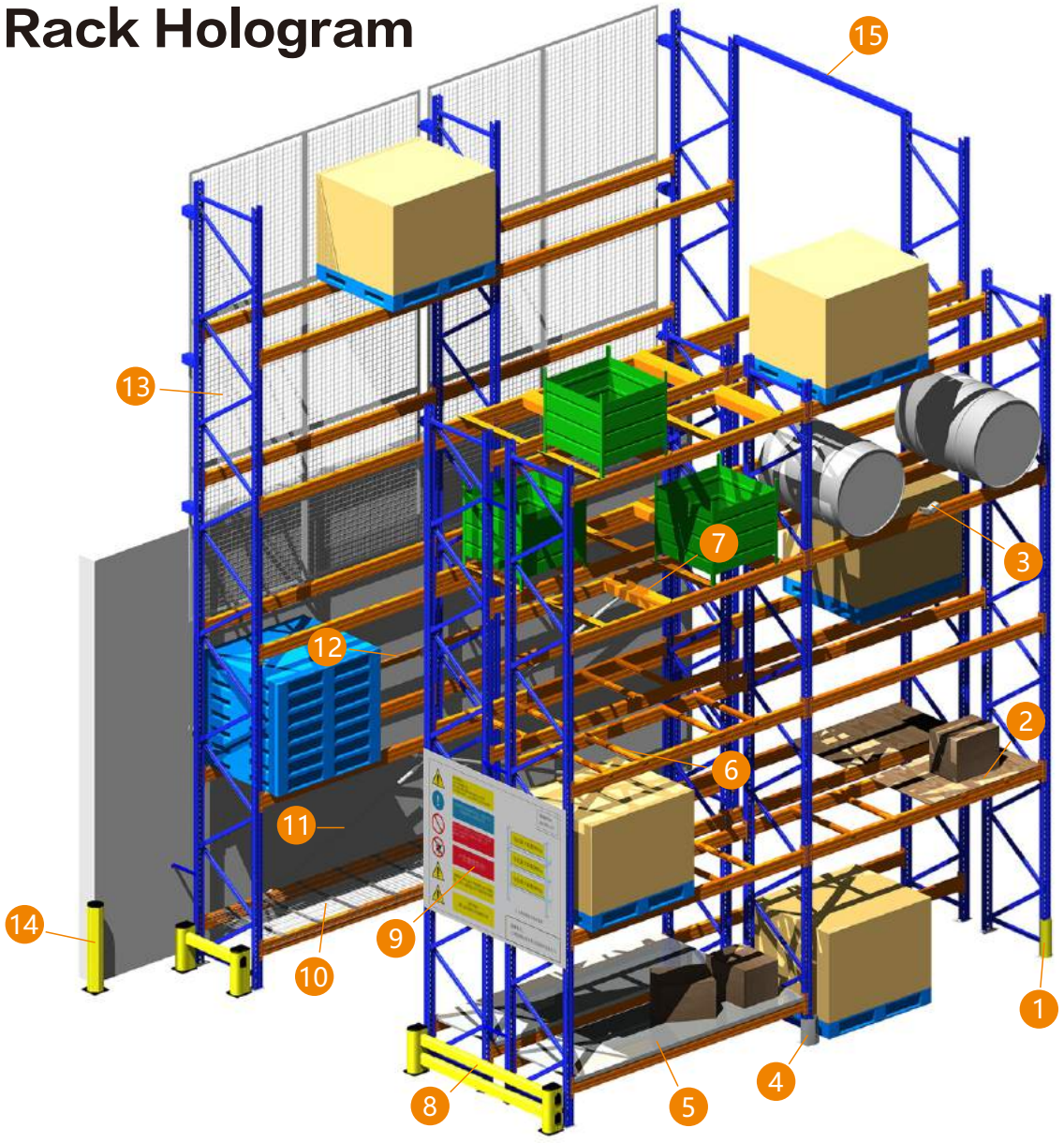
钢结构梁端连接件/通用机械与设备	弯曲承载力	(Steel Storage Racking)《钢货架标准》/AS 4084-2012（7.5.1条）	无

Safe Rack Hologram



1. Elastic Upright protector

Used to protect the upright of a rack vulnerable to bump from being scratched or bumped at the front and lateral sides by a forklift or other transports.

2. Wood Deck

Applicable to place small articles without a pallet.

3. Drum Bracket

A functional structural member used to store drum-like goods.

4. Galvanized protector

Used to protect the bottom of upright of a rack to avoid the bump.

5. Steel Deck

Applicable to place small articles without a pallet.

6. Cross Beam

A structural member used to support a place where a pallet is placed to avoid hidden safety dangers due to the excessive deflection of the pallet.

7. L-shaped Cross Beam

A loading-carrying member with a guide at the front end, suitable to place large containers with feet only but without a pallet lower tracks.

8. Elastic Frame Barrior

Used to protect the ends of a rack vulnerable to bump from being scratched or bumped by a forklift or other transports.

9. Load Notice

A rack safety warning mark used to make each new employee or temporary employee fully understand the contents thereon.

10. Steel Meshing Deck

Used to place small articles and the pallets made up of scattered or irregular goods to avoid dangers caused by goods falling.

11. Back-crossed Bracing

Used to enhance the stability of rack.

12. Pallet Back Stop

Used to help a forklift to find the place to put a pallet.

13. Back Mesh

Used to avoid the dangers caused by goods falling.

14. Elastic Anti-collision Post

An elastic energy absorption column which can be used to effectively protect the safety of a forklift at a place where a bump occurs

15. Aisle top beam

Used to stabilize rack arranged in a single row.

Solution Design

Inspection is used to find problems and solving problems are the final purpose of customers; therefore, it is critical whether solutions can be implemented and are easy to be implemented. WESAFE provides free explanation of inspection reports (online or offline) and targeted solutions.Customers can carry out their work based on the solutions provided by us, and we are responsible for the reasonableness and reliability of our solutions.

Out-of-plumb adjustment

Part Maintenance and Replacement

Elastic protection system

Safety mark visualization


BASF
The Chemical Company

SINOPEC

CLARIANT

AVERY
DENNISON

AkzoNobel

L'ORÉAL
PROFESSIONNEL

FRESENIUS
KABI
费卡华瑞
FRESENIUS KABI SSPC

NUTRICIA
纽 迪 希 亚

SINOPHARM
中国医药集团

Colorcon

durex

SPH
上海医药
SHANGHAI PHARMA

Continental
The Future in Motion

MAGNA

FOTON
福田康明斯

CATERPILLAR®

ZF


雀巢
Nestlé

Heineken

雅培

FERRERO
ROCHER

PERFETTI
van Melle

光明乳业

科勒 KOHLER

Atlas Copco

EMERSON
Process Management

GROZ-BECKERT®

ITT

Fellowes

HAVI

SINOTRANS&CSC
中国外运长航
SINOTRANS&CSC

SWIRE

Keppel

C&D

ANNTO
全网直配·放心托付

WESAFE
稳图
Euro-norm Engineer

Make efforts to unify China’s rack standards!

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