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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 7692-2012

Replacing GB 7692-1999

**Safety code for painting - Safety, ventilation and air clean-up for
pretreatment process of painting**

涂装作业安全规程 涂漆前处理工艺安全及其通风净化

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Note Note on the printed English title

The English title on the cover of the document is printed as Safety code for painting-Safety, ventilation and air clean-up for pretreatment process of painting, but the separator between the first two words of the subtitle is set with the Chinese enumeration comma rather than an ordinary comma. The wording has not been altered; only that separator has been rendered as a comma so that the title can be reproduced in Latin typography.

Foreword Foreword

The foreword states that, with the exception of 6.2.3, 6.2.5, 6.3.3, 6.3.4.3 and 6.3.5, all the

technical content of the standard is mandatory, and that the standard was drafted according to the rules of GB/T 1.1-2009.

The standard is one of the Safety code for painting series of national standards, of which twelve had been issued: GB 6514-2008, Safety of the painting process and its ventilation and air clean-up; GB 7691-2003, General rules for safety management; GB 7692-2012, Safety of the pretreatment process of painting and its ventilation and air clean-up; GB 12367-2006, Safety of the electrostatic spray painting process; GB 12942-2006, Technical requirements for safety of work in confined spaces; GB/T 14441-2008, Terminology; GB 14443-2007, Technical requirements for the safety of coating drying rooms; GB 14444-2006, Technical requirements for the safety of spray painting booths; GB 14773-2007, Technical conditions for the safety of electrostatic spray guns and their auxiliary devices; GB 15607-2008, Safety of the powder electrostatic coating process; GB 17750-2012, Safety of the dip coating process; GB 20101-2006, Technical requirements for the safety of organic waste gas clean-up installations.

The main technical changes with respect to GB 7692-1999 are listed as: references to national standards added, removed and updated; the definition of the pretreatment process of painting improved; the definition of confined space and the content of table 1 of the former standard deleted; 5.2.8 and 5.2.9 of the former standard merged; clause 9 on the steel pretreatment line deleted, together with 9.4, 9.5 and 9.6, with editorial changes to the retained content; a provision added requiring operators to wear eye protection and to keep an adequate safety distance from one another; the way the range of values for the volume of the shot blasting room in table 3 of the former standard is presented improved; some provisions of the former standard revised and consolidated; the structure of the whole standard adjusted.

The standard was proposed by the State Administration of Work Safety and is under the administration of the Subcommittee on Painting of the National Technical Committee on Work Safety Standardization (SAC/TC 288/SC 6).

Relationship to previous standards

The cover carries the indication that this standard replaces GB 7692-1999.

The foreword adds that the previous editions of the standards replaced by this document were issued as GB 7693-1987 and as GB 7692-1987 and GB 7692-1999.

1 Scope

This standard lays down the general safety and technical requirements for the pretreatment process of painting and for its ventilation and air clean-up.

This standard applies to the design, the installation, the acceptance and the use of the pretreatment process of painting and of its ventilation and air clean-up systems.

2 Normative references

The documents listed below are indispensable for the application of this document. For dated references, only the edition cited applies; for undated references, the latest edition, including all amendments, applies.

GB/T 2493 Test method for rotation of grinding wheels; GB 2494 Bonded abrasives - Safety requirements; GB 2894 Safety signs and guideline for the use; GB/T 3608 Classification of work at height; GB/T 3805 Extra-low voltage (ELV) - Limit values; GB 3883.1 Safety of hand-held motor-operated electric tools - Part 1: General requirements; GB 4053.3 Safety requirements for fixed steel ladders and platforms - Part 3: Industrial guard-rails and steel platforms; GB 6514-2008 Safety code for painting - Safety, ventilation and air clean-up for painting process; GB 8978 Integrated wastewater discharge standard; GB/T 11651 Code of practice for selection of personal protective equipment; GB 12942 Safety code for painting - Technical requirements for safety of work in confined spaces; GB/T 14441-2008 Safety code for painting - Terminology; GB 14443 Safety code for painting - Technical requirements for the safety of coating drying rooms; GB 14444 Safety code for painting - Technical requirements for the safety of spray painting booths; GB 16297 Integrated emission standard of air pollutants; GB 20101 Safety code for painting - Technical requirements for the safety of organic waste gas clean-up installations; GB 50016 Code for fire protection design of buildings; GB 50058 Code for design of electrical installations in explosive and fire hazardous environments; GB 50140 Code for design of extinguisher distribution in buildings; JB/T 7992 Bonded abrasives - Test methods for appearance, dimensional and form tolerances.

In the printed list, GB 3883.1 is cited with the part number written out in Chinese characters, while the neighbouring citation of GB 4053.3 uses a numeral for the same purpose. The inconsistency belongs to the original document.

3 Terms and definitions

The terms and definitions given in GB/T 14441-2008 and the following apply to this document.

3.1 Pretreatment process of painting. The whole sequence of operations carried out in a painting operation before the coating material is applied, comprising rust removal, degreasing, chemical pretreatment, dust removal and removal of old paint. It can be divided into mechanical pretreatment, by spraying, shot blasting or abrasive grinding with pneumatic tools, and chemical pretreatment and organic solvent treatment, by degreasing, pickling, neutralising, surface conditioning, phosphating, passivating, anodising, silane treatment, rinsing and similar operations.

3.2 Location of pretreatment operation. The site set aside for pretreatment work and the

specific space around it.

3.3 Pretreatment area. The area where, because of the pretreatment work, hazardous quantities of flammable and combustible vapours, mists of various chemical substances, dust, or accumulated combustible or corrosive residues are present.

4 Extent of the pretreatment area

4.1 The pretreatment area for painting shall in general include the following: the inside of the body of mechanical spraying and shot blasting rooms and the shot collecting, lifting and dust removal systems connected to them; the process tanks of chemical pretreatment, the closed inner space of the combined washing machines on the flow line and the exhaust systems connected to them; organic solvent washing tanks, high-pressure washing, ultrasonic washing tanks, vapour washing installations, electrostatic dust removal installations and the exhaust systems connected to them.

4.2 Besides the areas of 4.1, the areas where hazardous quantities of flammable and combustible vapours or of corrosive liquids and gases are still present in the pretreatment work shall also be counted within the extent of the pretreatment area.

5.1 Safety of the pretreatment process - General requirements

5.1.1 Pretreatment work shall be carried out at the location of pretreatment operation or inside the marked pretreatment area.

5.1.2 Except for very large components, the location of pretreatment operation should not in general be set in the open air; where it has to be, it shall comply with the provisions of this standard.

5.1.3 The location of pretreatment operation shall be sited on the upwind side of the direction of the least frequent wind of the year for the plant area, and shall be separated from the machining, welding, assembly and other operations connected with the production process.

5.1.4 The location of pretreatment operation shall be laid out on the side of a single-storey or multi-storey building close to an outer wall.

5.1.5 Locations of pretreatment operation with organic solvent degreasing or removal of old paint belong respectively to fire hazard production categories A and B. The fire protection of the location shall comply with the relevant provisions of GB 50016.

5.1.6 Locations with organic solvent degreasing or removal of old paint shall be well ventilated; smoking and the introduction of sources of ignition are prohibited; battery vehicles, motor vehicles and metal-wheeled trolleys shall not enter during the work; the operators shall wear antistatic working clothes and antistatic working shoes.