



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

GB/T 37707-2019

**Thermal spraying - Components with thermally sprayed
coatings - Technical supply conditions**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	6
4 Requirements...	6
5 Quality tests...	8
Bibliography...	12

Foreword

This Standard was drafted in accordance with the rules given in GB/T1.1-2009.

This standard uses the redrafting method to modify ISO 12670:2011 "Thermal spraying - Components with thermally sprayed coatings - Technical supply conditions".

Compared with ISO 12670:2011, the main technical differences and their causes are as follows:

- With regard to the normative references, this Standard has been adjusted with technical differences to adapt to the technical conditions of China. The adjustments are concentrated in Clause 2 "Normative references". The specific adjustments are as follows:

* Replace ISO 6507-1 with GB/T 4340.1 which modifies the international standard (see Table 2);

* Replace ISO 14916 with GB/T 8642 which modifies the international standard (see Table 2);

* Replace EN 473 with GB/T 9445 (see 4.1.2);

* Replace ISO 2063 with GB/T 9793 which is equivalent to the international standard (see 4.2.3);

* Replace ISO 4288 with GB/T 10610 which is equivalent to the

international standard (see Table 1);

* Replace ISO 14919 with GB/T 12608 which modifies the international standard (see 4.2.1);

* Replace EN 657 with GB/T 18719 (see 3);

* Replace ISO 14232 with GB/T 19356 which modifies the international standard (see 4.2.1);

* Replace ISO 14918 with GB/T 19824 which modifies the international standard (see 4.1.2);

* Replace EN 1395-1 with GB/T 20019 (see 4.1.2);

* Replace ISO 14923 with GB/T 37421 which modifies the international standard (see 5.3).

This Standard has also made the following editorial changes:

Thermal spraying - Components with thermally
sprayed coatings - Technical supply conditions

1 Scope

This Standard specifies technical supply conditions for parts with thermally sprayed coatings for the manufacturing or repair of components.

This Standard applies to applications where quality requirements according to GB/T 19352.2 (comprehensive requirements) or GB/T 19352.3 (standard requirements) are required.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 4340.1 Thermal spraying - Quality requirements of thermally sprayed structures - Part 3: Standard quality requirements (GB/T 4340.1-2009, ISO 6507-1:2005, MOD)

GB/T 8642 Thermal sprayed coatings - Determination of adhesion strength
(GB/T 8642-2002, ISO 14916:1999, MOD)

GB/T 9445 Non-destructive testing - Qualification and certification of NDT
personnel (GB/T 9445-2015, ISO 9712:2012, IDT)

GB/T 9793 Thermal spraying - Metallic and other inorganic coatings - Zinc,
aluminium and their alloys (GB/T 9793-2012, ISO 2063:2005, IDT)

GB/T 10610 Geometrical product specifications (GPS) - Surface texture:
Profile method - Rules and procedures for the assessment of surface texture
(GB/T 10610-2009, ISO 4288:1996, IDT)

GB/T 12608 Thermal spraying - Wires, rods and cords for flame and arc
spraying - Classification and technical supply condition (GB/T 12608-2003,
ISO 14919:2000, MOD)

GB/T 18719 Thermal spraying - Terminology, classification (GB/T 18719-
b) thermal sprayer shall comply with the requirements of GB/T 19824 or be
qualified by appropriate skill and knowledge;
c) non-destructive testing personnel shall comply with the requirements of
GB/T 9445;
d) spraying equipment shall comply with the inspection requirements of the
relevant part of GB/T 20019; or be qualified by the unobjectionable and
unchanged function of the spraying equipment documented by test
reports/coating results.

4.1.3 Preparing the instructions for thermal spraying (spray procedure specification)

The manufacturer is responsible for preparing the spray procedure specification
in written form.

The spray procedure specification shall refer to the coating specification and
the manufacturing instructions, such as the list of parts, instructions of substrate
and spraying material, drawings and tests. If required, the spray procedure

specification can be qualified by a component-related spray procedure qualification according to EN 15648.

4.2.1 Spraying materials

Only spraying materials which are required in the coating specification and indicated in the spray procedure specification shall be applied.

The spraying material shall comply with the technical supply conditions indicated in GB/T 19356 (spraying powders) and GB/T 12608 (spraying wires, rods and cords).

The conformity of the delivered with the required spraying material shall be safeguarded, for example by comparing the composition indicated on the test certificate with the required one. All spraying materials shall be stored in suitable packages.

The processing instructions of the manufacturer/supplier of the spraying material shall be considered.

4.2.2 Spray procedure specification

The spray procedure specification shall contain all parameters, including, for the relative motion between the gun and the part or the identification number of the motion programme, those which are necessary for the spraying process of

X: Usually, the test is applied as a shop test only. Tests can be required, if reference samples

are agreed between the contracting parties.

-: The test is senseless or not practicable.

a The determination shall be carried out according to GB/T 8642. In the test report, in addition

to results, it shall document the adhesive used and the bonding procedure.

b The preparation method for the test specimen shall be agreed upon between contracting parties. This method can also be used to measure the coating thickness.

c If the test on the part is not acceptable, the hardness test shall be carried out according to