

JB

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JB/T 4730.4-2005

Replace part of JB 4730-1994

Nondestructive Testing of Pressure Equipments -

Part 4: Magnetic Particle Testing

承压设备无损检测 第4部分：磁粉检测

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Foreword

JB/T 4730.1~4730.6-2005 "Nondestructive Testing of Pressure Equipments" comprises six parts:

- Part 1: General Requirements;
- Part 2: Radiographic Testing;
- Part 3: Ultrasonic Testing;
- Part 4: Magnetic Particle Testing;
- Part 5: Penetrant Testing;
- Part 6: Eddy Current Testing.

This part is the Part 4: Magnetic Particle Testing of JB/T 4730.1~4730.6-2005. This part was revised mainly according to the domestic research findings and application experiences over the years by making reference to Volume V of ASME "Boiler and Pressure Vessel Code", ASTM and JIS standards and codes as well as the feedback opinions of the industry. There have been some significant changes in this part over JB 4730-1994:

1. In the magnetization methods, the contents of composite magnetization were added (including crossed yoke method and crossed coil method); contents on that the high strength steel and crack-sensitive material shall be tested by adopting with MPI fluorescent magnetic particles were specified.
2. The property requirements of the low viscosity oil base bearer, the requirements on value of residual magnetism after demagnetization and on kinematic viscosity of magnetic suspension liquid, and the light intensity of the visible light in magnetic particle testing were added; in the part of the magnetization code, the current upper limits of the DC and AC continuous method in the axial galvanization method and central conductor method were amended.
3. Contents on fillet weld detection with parallel cable method were deleted.
4. Contents on the periodic inspections of equipments, instruments and materials used in magnetic particle testing as well as the requirements on the overall performance test of testing system were added.
5. The related contents (Table 2) on the type, configuration and diagram of the standard test piece, the relevant regulations [Annex A (Informative)] on the waveform of various magnetizing current, indication of ammeter and conversion relationship, and the contents [Annex B (Informative)] on the typical magnetization method of welded joints were added.
6. Testing with coil method was amended by making reference to the relevant regulations specified in ASME and ASTM, meanwhile, the requirements on the testing parameters with intermediate filling coil as well as the specifications for the effective diameter of hollow workpiece were added.
7. Contents on magnetic particle testing with pressure equipments were added.

Annex A and Annex B in this part are informative.

This part was proposed by Standardization Committee on Boilers and Pressure Vessels (SAC/TC 262).

This part is under the jurisdiction of Standardization Committee on Boilers and Pressure

Vessels (SAC/TC 262).

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Nondestructive Testing of Pressure Equipments-

Part 4: Magnetic Particle Testing

承压设备无损检测

第 4 部分：磁粉检测

1 Scope

This part in JB/T 4730 specifies the magnetic particle testing methods and quality classification requirements of pressure equipments.

This part is applicable to the testing of the raw materials, spare parts and welded joint surfaces and near surface defects of those pressure equipments manufactured from ferromagnetic materials but is not applicable to the testing of the austenitic stainless steel and other non-ferromagnetic materials.

The support parts and structural member related to pressure equipments also may be carried out with magnetic particle testing by making reference to this part as required.

2 Normative References

The following normative documents contain provisions which, through reference in this part of JB/T 4730, constitute provisions of this part. For dated reference, subsequent amendments to, or revisions of, any of these publications do not apply. However, all parties coming to an agreement according to this part are encouraged to study whether the latest editions of these documents are applicable. For undated references, the latest edition of the normative document referred to applies.

GB 11533-1989 "Standard Logarithmic Visual Acuity Charts"

GB/T 16673-1996 "Measurement of UV-A Radiation (Black Light) Used in Non-destructive Testing"

JB/T 4730.1 "Nondestructive Testing of Pressure Equipments-Part 1: General Requirements"

JB/T 6063-1992 "Specifications of Magnetic Particle for Magnetic Particle Detection"

JB/T 6065-2004 "Non-destructive Testing-Shims for Magnetic Particle Testing"

JB/T 6066-2004 "Non-destructive Testing-Rings for Magnetic Particle Testing"

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