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

GB/T 15970.3-1995

**Corrosion of metals and alloys. Stress corrosion testing. Part 3:
Preparation and use of U--bend specimens**

金属和合金的腐蚀 应力腐蚀试验 第3部分:U型弯曲试样的制备和应用

(English Translation)

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Foreword

This Standard equivalently adopts international standard of ISO 7539-3:1989 Corrosion of Metals and Alloys - Stress Corrosion Testing - Part 3. Preparation and Use of U-Bend Specimens.

GB/T 15970 includes the following parts under the general title of "Corrosion of Metals and Alloys - Stress Corrosion Testing".

- Part 1. (GB/T 15970.1-1995) General Guidance on Testing Procedures;
- Part 2. Preparation and Use of Bent-Beam Specimens;
- Part 3. (GB/T 15970.3-1995) Preparation and Use of U-Bend Specimens;
- Part 4. Preparation and Use of Uniaxially Loaded Tension Specimens;
- Part 5. Preparation and Use of C-Ring Specimens;
- Part 6. Preparation and Use of Pre-Cracked Specimens;
- Part 7. Slow Strain Rate Testing;
- Part 8. Preparation and Use of Specimens to Evaluate Weldments.

Parts 2, 4, 5, 6, 7, 8 will be formulated later.

1 Scope

1.1

This Part of GB/T 15970.3 covers procedures for designing, preparing and using U-bend test specimens for investigating the susceptibility of a metal to stress corrosion. The term "metal" as used in this Part includes alloys.

1.2

U-bend specimens may be used to test a variety of product forms. They are used principally for sheet, plate or flat extruded material, which conveniently provides flat specimens of rectangular cross-section, but may also be employed for wire or rod, or for machined specimens of circular cross-section. They can also be used for parts joined by welding.

1.3

The U-bend test is frequently used to establish whether a metal is susceptible to stress corrosion cracking in a given environment. It is used in laboratories to screen materials for susceptibility for specific applications and in use environments to assess the risk of failure.

1.4

The principal advantages of the test are its simplicity and its consequent adaptability for use in plant. A disadvantage is that stresses cannot be quantified with accuracy and if this is desired an alternative method of stressing should be used.

2 Normative References

The following standards contain provisions which, through reference in this Standard, constitute provisions of this Part of GB/T 15970.3. At the time of publication, the editions indicated are valid. All standards are subject to revision. Basing on GB/T 15970.3, the parties who are using this Standard shall explore the possibility of using the latest version of the following standards.

GB/T 15970.1-1995 Corrosion of Metals and Alloys - Stress Corrosion Testing - Part 1: General Guidance on Testing Procedures (idt ISO 7539-1:1987)