



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

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Code for Welding of Steel Structures

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Foreword

1 General Provisions

2 Terms and Symbols

3 Basic Requirement

1 Welding technicians shall receive specific welding technology training and have

3 Welding inspection personnel shall have received specific technical training and have

5 Welders shall take technical qualification examination according to the requirements

3 Non-destructive testing personnel shall conduct flaw detection on the tested positions

4 Welders shall weld according to the requirements of welding procedure document;

4 Materials

5 Design of Welding Connections

2 The arrangement of welds should be symmetrical with the neutral axis of component

4 Nodal point form of smaller stiffness should be adopted and intensive and two-way

6 Groove form and size shall be selected according to different welding procedure

3 As for weld quality grade, where non-destructive testing is required, non-destructive

4 Member segment positions and splicing nodal points shall be determined according

2 Where the clearance $1.5 < b \leq 5$

2 When butting the plates with different width, the thermal cutting, machining or wheel

2 The symmetrical groove or groove bias toward side plate [Figure 5.5.1-1 (b)] should

3 The double groove symmetry welding should be adopted to replace the single groove

1 Where the joint strength requirements are met, the welding materials with good

2 The low-hydrogen or ultra-low hydrogen welding materials and welding method

4 Reasonable welding sequence shall be adopted to reduce the welding restrain stress

7 For the vertically connecting weld of welding combination of H-beam and column

4 The following connecting nodal point types shall be adopted for the rigid connection

1 As for members bearing dynamic load need not to undergo fatigue assessment, where

5 As for joint bearing dynamic load that shall undergo fatigue assessment, where

3 As for truss bearing dynamic load that shall undergo fatigue assessment, weld all

3 Where web thickness is greater than 40mm, the preheating temperature for weld

4 Surfacing welding shall not be adopted for blocking weld access hole.

6 Welding Procedure Qualification

3 Within the same type of steels, the welding procedure qualification results of rolled

4 The welding procedure qualification results of domestic and abroad steels cannot

1 As for pipe material with outside diameter less than 600mm, the diameter coverage

8 The changes of current value and voltage value actually adopted for welding exceed

6 During solid wire gas-shielded arc welding, droplet transfer and short circuit transfer

5 The change of current value and welding speed actually adopted for welding exceed

6 Welding current polarity changes.

- 2 The change of consumable nozzle section area is greater than 30%; consumable
- 5 The condition that current voltage characteristic of welding source being constant
- 6 The change of current value, voltage value, wire feed speed and steep-lifting speed
- 9 Change of flux charge weight exceeds 30%.
- 7 Transformation between forming water cooling sliding block and baffle.
- 5 During penetrate welding, the plate thickness and coating amount of penetrated
- 8 Preheat temperature reduces 20℃ compared with that of acceptable welding process
- 10 Where arc welding is adopted, welding consumable changes.
- 2 The base metal, welding consumables, groove type, size and welding of test piece
- 1 The category and quantity of inspection sample shall meet the requirements of Table
- 2 The appearance inspection for stud welding joint shall meet the requirements of Table
- 3 The impact test shall meet the requirements of the current national standard "Impact
- 4 The macro acid etching test shall meet the requirements of the current national
- 2 The prequalified base metal and weld metal composition shall meet the requirements
- 6 The structure type of various prequalified welding nodal point welding nodal points
- 7 The characteristic of prequalified structural load shall be static load.
- 9 Where the variation range of welding procedure parameters exceeds the requirements
- 7 Welding Procedures
- 4 The repair welding shall meet those specified in Section 7.11 of this code.
- 1 The flux shall be backed at the temperature recommended by the manufacturer before
- 3 The welding conditions are not consistent with relevant requirements of the current

2 The heating and temperature measurement method for hydrogen relief heat treatment

3 The steel backing shall be provided with liberal thickness to prevent burning through.

4 It shall be ensured that the steel backing and weld metal is well-fused.

8 Welding procedure parameters, including welding current, welding voltage, welding

11 Other necessary requirements.

3 The dent, crater, insufficient weld dimension, undercut, incomplete fusion, weld

8 Inspection

2 Supervision inspection refers to the inspection carried out by an independent third

2 The welding inspection shall include the following contents at least: 1)

2 The butt weld and fillet weld reinforcement and misalignment permissible deviation

3 The Grade III weld shall be tested according to design requirements.

3 Where the tested plate thickness is 3.5~8mm, the technical parameters of ultrasonic

7 Under either of the following conditions, the ultrasonic testing should be carried out

8 The ultrasonic testing equipment and procedure requirement shall meet the relevant

2 The surface defects of ferromagnetic material shall be tested by magnetic particle.

1 The ultrasonic testing equipment and procedure requirement shall meet the relevant

2 The testing scope and inspection grade shall meet the requirements specified in Table

9 Weld Strengthening and Reinforcement

2 The construction technique file data and weldability data of existing structures (if

4 The actual load data of structures to be reinforced.

2 Strengthening or reinforcement under load or partial unload condition: carry out

2 Reasonable welding procedure.