

Description of grid design and construction

Project Overview:
1. Network frame type: pulling the four-angle cone ball rod network frame;
2. Main size of the network frame (long x width): see the plan for details;
3. Supporting conditions: pier-pull support;
4. Design service life of the network frame: 20 years;
5. Steel plate thickness: 3.0mm, 3.5mm, 4.0mm, 5.0mm, 6.0mm, 8.0mm, 10.0mm, 12.0mm;
6. Design Standard for Steel Structure GB 50017-2017;
7. Technical Specification for Space Grid Structure JG/T 10-2009;
8. Ball node: 2009 JG / T 10;
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10. Code for Acceptance of Construction Quality of Building Steel Structure JGJ 1 / 251-2011;
11. Code for Design of Cold Form Thin Wall Steel Structure GB 50181-2002;
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Water selection:
1. Between Q235B or 45 # steel and Q235B using E43 series, the weld performance shall meet provisions of Carbon Steel JGJ 182-2003;
2. Between Q235B and No.45 steel: E50 series;
3. When carbon dioxide gas protection is adopted, the welding wire shall comply with the provisions of GB8110-2008 of Carbon Steel for Gas Protection Alloy Steel and the alloy steel;
4. The material shall have quality certificate and acceptance report, the steel ball shall be given work number, its mesh shall be equipped with welder work number, and the quality of all products shall comply with the Steel Grid Bolt Ball node JG / T 10-2009;
5. Design technical parameters (all load are standard value):
I. Quiet load of the network frame:
Upper string layer: 1.50kN / m2
Lower string layer: 0.25kN / m2
II. Live load of the network frame:
Upper string layer: 0.25kN / m2
Lower string layer: 0.25kN / m2
III. Basic wind pressure: 0.80kN / m2
IV. 50-year return period, ground roughness class B;
V. Basic snow pressure: 0.00kN / m2
VI. Temperature difference: + 20° - 20°
VII. Seismic fortification: the basic seismic intensity in the area is 7 degrees (0.10g), and the design group is the second group;
VIII. Structural importance factor: according to the dead weight of the network frame;
IX. The load must act on the node, and the rod ends do not bear the lateral load;
X. This length ratio limit of steel pipe pull (pressure) rod, enter < 200
XI. The following design software is adopted for the project:
1. The 'X' of the general plan is the support position, the force unit is kN based on single engineering design value, and the project coordinate system is the space right angle coordinate system. In the layout plan, the positive direction is as follows:
The X direction is the graph from left to right;
The Y direction is the graph from bottom-up;
2. The Z direction is positive perpendicular to the graph elevation;
3. The coordinate system in the figure is m, system, except for elevation meters;
4. In the material table, the selected specifications shall not be repeated arbitrarily, if the preparation is difficult, the size of the grid shall be theoretical size and the construction unit shall be used together with relevant drawings and notify the design unit if it is different;
5. Pointing:
Rust removal: rust blasting (or sand blasting) is required, and the quality grade reaches Sa2.5 in GB8923-88 of Steel surface before coating;
Primer: epoxy zinc-rich primer is 80 μm, each brush thickness is not less than 40 μm;
Finish coat: polyurethane paint 50 μm, total thickness of paint film not less than 220 μm, paint color determined by the architect;
Fire protection: fire protection coating applied on the steel mesh shall meet the requirements of the relevant limit time of 1.0h. The paint varies and brush, fire point on the middle point, primer, middle point requirements defined anti-corrosion coating;
X. Deviation between steel structure acceptance standards and allowable dimensions
The processing and installation accuracy of steel structure shall meet the following specifications, procedures and standards:
Code for Acceptance of Construction Quality of Steel Construction Engineering GB50205-2001
Steel Structure Engineering GB50211-2001
Code for Construction of Steel Structure GB50755-2012
Code for Welding of Steel Structure GB50461-2011
Technical Specification for High strength bolt connection of Steel Structure JGJ82-2011
Standard for Quality Inspection and Acceptance of Grid structure engineering JG/T8-1991
Steel and Welding Allowance JG/T 111-2009
Inspection and Acceptance Standards JG12-1999
Method and Results of Steel Welds GB1345-1993
XI. Instructions for on-site installation and acceptance:
1. The installation of the network frame shall be carried out after the lower structure axis and the acceptance has passed the acceptance, and the requirements for the lower structure difference of the support supports (distance L2), the area value between the highest and lowest support height difference of the same elevation: 20mm;

2. Determine the installation process of the network grid according to the force and structural characteristics of the network frame and the actual construction conditions on site;
3. After the installation of the network frame, it shall be detected:
The allowable value of horizontal edge length deviation is 1 / 2000 of the length and shall not be greater than 30mm;
The deviation value of the vertical offset shall be 1 / 400 of the adjacent supports and shall not be greater than 30mm;
The maximum value of the vertical offset shall be 1 / 3000 of the frame span, and shall not be more than 10mm, and the highest and lowest supports shall not be any more than 50mm; the height deviation shall be 1 / 600 of the adjacent supports and shall not be more than 20mm;
4. If there is a local welding ball, the welding ball and rod parts shall be slope-welded, and the weld grade shall not be lower than Grade II;
5. After the installation of the network frame, the surface of the nodes and rods shall be clean without scars and dirt. The bolt ball joints shall be filled and excess holes with greasy seeds;
6. Comprehensive anticorrosion maintenance shall be carried out every 4-5 years during the network frame use;
7. Matters need attention:
I. During the construction, we should cooperate closely with the construction, HVAC, water supply and drainage, electrical, telecommunications and other types of work to prevent work leakage;
2. The elevation in this figure is in m (m) and other dimensions in mm (mm);
3. The component and node drawings in the drawings shall be subject to the dimensions indicated on the drawings and shall not be measured directly measured from the drawings;
4. Where the main structure is involved, it shall not arbitrarily change the structural practice without the permission of the designer, and the load other than the design shall not be added to the structure;
5. The construction shall be conducted after checking with relevant professional drawings, samples and original equipment; if the equipment arrives, the design shall be approved by the factory or the supplier;
6. Professional pipelines and equipment are shown in the relevant drawings, in addition, the content of the structural designer is required to add the load on the structural components;
7. All additional loads of pipelines, equipment, horse roads, lighting and other specialties can only act on the grid ball node, and shall not be directly act on the rod parts;
8. Steel replacement will affect the seismic capacity and normal use of the structure, therefore, the construction is generally not allowed to be replaced at will when replacement is required, the prior written consent of the structural designer shall be obtained;
9. In addition to this description, the current relevant construction and acceptance codes shall be followed;
10. During the steel structure welding, effective measures shall be taken to reduce the welding residual stress and deformation, and layer tears shall not occur;
11. If this description is in contradiction with the description or details in the drawings, the figure shall prevail;
12. Enough safety preventive measures must be taken for the project construction and steel structure processing to ensure the construction safety;
13. Matters not covered shall be conducted in accordance with the current relevant national norms and standards;

网架设计与施工说明

- 1. 工程概况
1.1 网架形式: 四角锥球节点网架
1.2 网架主要尺寸: 见总平面图
1.3 网架主要材料: Q235B, 45#
1.4 网架主要规格: 见材料表
1.5 网架主要节点: 球节点
1.6 网架主要连接: 球节点
1.7 网架主要防腐: 环氧富锌底漆, 聚氨酯面漆
1.8 网架主要防火: 防火涂料
1.9 网架主要涂装: 环氧富锌底漆, 聚氨酯面漆
1.10 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.11 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.12 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.13 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.14 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.15 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
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1.18 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.19 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆
1.20 网架主要油漆: 环氧富锌底漆, 聚氨酯面漆

Table with columns for 'Project Name', 'Date', and 'Version'. Contains multiple entries for project details.

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