

BRIEF DISCUSSION ABOUT THE APPLICATION OF GREEN FABRICATED STEEL STRUCTURE BUILDING SYSTEM

Meiyu Shaoa National Aviation University, Kyiv

Shilin Yanga National Aviation University, Kyiv

Hongjuan Zhaob Kyiv National University of Construction and Architecture, Kyiv

Abstract Under the development of modern building construction technology, the prefabricated steel structure construction technology has received wide attention. Under this condition, because concrete pouring and other constructions are not required on site, it has higher environmental and convenience, and the performance of the fabricated steel structure has been proven to be reliable in practice, so its application value is higher. This article introduces the operation process of the fabricated steel structure building system, and explains the matters needing attention in the application process.

Keywords: Fabricated steel structure; prefabricated structure; green building

Introduction The application of the prefabricated steel structure building process system needs to pay attention to many matters. In order to ensure the proper application of the process, it is necessary to conduct an analysis.

Results From the overall perspective of the fabricated steel structure building system, the process flow can be divided into five steps: drawing design, prefabricated steel structure production, component transportation, assembly, testing and anti-seepage. The specific content of each step is shown below.

1. Drawing design. Steel structure assembly drawings must list all the components of the entire structure, and also the connection nodes and pipeline planning requirements between the structures. It is necessary to ensure that the connection points of each component are complete and correspond to each other. Otherwise, the assembly

will encounter obstacles.

2. Prefabricated steel structure production. In the production of prefabricated steel structures, the production must be carried out in strict accordance with the design requirements of the drawings. After the production, it is necessary to conduct a preliminary inspection of the components. If the components are found to have dimensional deviations, structural defects, etc., it means that the quality of the structure is poor and needs to be reproduced. It is worth noting that because the production process of prefabricated steel structures involves labor, and the instability and error factors inherent in labor can easily lead to large errors in the structure and design drawings, so in order to minimize the error and reduce the error For the probability of occurrence, it is recommended to configure a template with a larger size than the design drawing before production, and then draw lines on the template, so that the manual operation can be more clearly directed. In addition, maintenance and storage work should be paid attention to after production, otherwise negative effects may be produced in subsequent transportation, that is, steel structural members need to be placed at least 1m away from the ground, otherwise they are easy to rust.

3. Component transportation. Generally, there are two factors that cause early component damage during transportation, namely collision with surrounding objects during loading and unloading, and collision between components due to shaking during transportation. It is recommended to use straw ropes and other buffering objects to wrap the components before transportation; the transportation must be equipped with a component fixing structure to reduce the shaking of the component during transportation.

4. Assembly. After all the steel structure assembly components are unloaded to the transportation site, it can be carried out assembly and fixing construction. The assembly sequence of components is to build the foundation first, and then assemble the superstructure. After each assembly stage is completed, the construction needs to be fixed. In addition, it is recommended that after the assembly of the entire structure is completed, a preliminary test of the whole is carried out to confirm the stability of the structure.

5. Testing and anti-seepage. In addition to the preliminary test during assembly and fixing, it is necessary to conduct another test before the hardcover. The test requirements are also for stability, and when problems are found, the same methods should be used to manage them. When the overall stability of the structure is confirmed through testing and all aspects meet the requirements of the design drawings, protection can be carried out. That is, after the assembly structure is assembled, there are still gaps in each connection part, and water seepage problems may occur in the long run. At one point, it is necessary to use epoxy resin and other materials with good sealing properties to seal the gaps, but after sealing, attention should be paid to the maintenance of the sealing materials to ensure that they are correctly formed. In addition, it is necessary to conduct a waterproof test after the anti-seepage is completed. If there is still water leakage, it needs to be sealed again.

Recognition and implementation of research results This article is a summary and analysis of some detailed operations in the construction process of prefabricated steel structure building systems, and has a prompt and guiding role for other projects.

Conclusion In summary, the application of the fabricated steel structure building system needs to be implemented in 5 steps, and there is a close logical relationship among the steps. Therefore, the follow-up requirements need to be considered during the application to carry out the work. In order to ensure the proper application of fabricated steel structures, this article puts forward relevant precautions for reference.