

Research Report on the mode of "work instead of training" for scaffolders of attached lifting scaffold

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Abstract: the attached lifting scaffold is an external scaffold with anti overturning and anti falling devices, which is erected at a certain height and attached to the main structure of the building, and makes the whole scaffold climb or fall layer by layer with the main structure through its own lifting and lowering equipment and safety devices. The attached lifting scaffold is usually composed of frame structure, wall attached support, anti tilt device, anti fall device, lifting mechanism and control device. The scaffolder of the attached lifting scaffold mainly includes two parts: one is to erect or dismantle the scaffold of the attached lifting scaffold, which is mainly carried out at the beginning or end of the construction; The second is the lifting or lowering of the frame during layer by layer construction, including daily maintenance and overhaul.

Key words: scaffold;Construction;Attached lifting scaffold

1 Training status of scaffolders of attached lifting scaffold

According to the survey results of the attached lifting scaffold scaffolders of 42 construction projects in Changsha, the following problems exist in the current situation of the attached lifting scaffold scaffolder training:

1. Normal age structure and low educational level

At present, the employees of the attached lifting scaffold in our city are mainly young and middle-aged people between the ages of 26 and 45, and their education level is low, generally at the junior high school level. The number of people who have received special vocational education (vocational high school, college and technical secondary school) is very small.

2. Single training mode and unsystematic training

Except for a small number of employees trained by manufacturers and vocational schools or training institutions, the vast majority of employees of attached lifting scaffolds are trained by masters and apprentices. Due to the lack of systematic training, the level of practitioners is mixed. Manufacturers and leasing companies generally organize targeted business training, but lack of systematicness, and generally adopt the teaching mode of finding and solving problems. The assessment of training results is also not paid enough attention.

3. Centralized training is difficult

Due to the large mobility and long working time of the employees of the attached lifting scaffold, it is very difficult to carry out centralized training. The training organized by enterprises usually needs to be carried out in multiple batches, and involves the return of foreign employees and on-site management. Generally, the training can be completed once every three months to six months at most. The training content is mainly theoretical knowledge (experience summary), rarely involving the training and improvement of operation skills.

In view of the above situation, the main way to improve the skill level of the scaffolders of the attached lifting scaffold is to gradually cultivate and improve in the work, that is, to gradually meet the requirements of the training objectives through systematic training and training during the internship (apprenticeship).

2 The model of replacing training with work and its training objectives

The mode of replacing training with work is an on-the-job training mode carried out by enterprises in production sites and employees' workplaces. Due to the characteristics of construction projects, the attached lifting scaffold scaffolders are more mobile, and usually a group of four people are responsible for 2 to 3 buildings or even more. In order to standardize the training methods and unify the training quality,

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The historical investigation and practical enlightenment of the reform of "contract to household" in rural areas of North China□
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the training objectives of replacing training with work should be established

1 Knowledge objectives

According to the national vocational skills standard - scaffolder (occupation Code: 6-29-01-05), the theoretical knowledge about scaffolder occupation should be mastered is as follows: 1 Professional ethics: including the basic knowledge of professional ethics and professional codes. 2. basic knowledge: building map reading and building structure knowledge; Basic knowledge of building mechanics; Identification of scaffolding and erection tools, machines, tools and equipment; Knowledge of common scaffold structure; Safety technical knowledge; Knowledge of relevant laws and regulations.

2. Skill objectives

According to the national vocational skills standard - scaffolder (occupation Code: 6-29-01-05), the operation skills of tool scaffold (attached lifting scaffold) that scaffolders should master are as follows: 1 Preparation: ① be able to identify the code and indication of accessories at various parts of the tool scaffold. ② It can stack components according to varieties and specifications. ③ It can be classified according to the accessories of the tool scaffold. 2. erection of tool scaffold: ① it can install rods to meet the requirements of safe use. ② Cross diagonal bracing can be installed according to the erection requirements. ③ Able to install the process according to the erection requirements. ④ Inclined ladders can be installed according to the needs of the construction site. 3. removal of tool scaffold: be able to remove members and master the removal construction process of tool scaffold members.

3. Safety objectives

As the "work instead of training" needs to be operated at the construction project site, there are certain potential safety hazards. Before starting the operation training, the master should demonstrate and guide. The training process does not pursue work efficiency, effectively ensure the production safety of trainees and ensure "zero accidents".

3 Attached lifting scaffold basic links of the mode of replacing training with work

1. Scheme planning and decision-making

When an enterprise carries out or entrusts a training institution to carry out the training project of "work instead of training" for attached lifting scaffold scaffolders, it shall do a good job in project planning and research, so as to lay a good foundation for correct decision-making.

2. Agreement signing link

There is no need to sign an entrustment agreement for enterprises that organize work on behalf of training on their own. For enterprises that cannot organize on their own or have a large cost of organizing on their own, when entrusting training institutions to organize "work on behalf of training", they should sign a training agreement in advance. Compared with other training agreements, the training agreement of "replacing training with work" should specify the source of the project, the composition of training teachers, the selection of training courses, the boundary of operation scope and other related contents.

3. Theoretical knowledge training

According to the theoretical knowledge requirements of the national vocational skills standard for scaffolders, theoretical knowledge training courses are set, which are generally arranged in the afternoon. At the beginning of the training, the proportion of theoretical knowledge training hours is relatively high. With the greater improvement of skill operation proficiency and safety, the proportion of theoretical knowledge hours can be gradually reduced.

4. Cognition of components, materials and tools

At the beginning of the training, because the trainees are not familiar with the working environment, they cannot carry out the operation training, so the transition stage of cognition of components, materials and tools should be arranged first. It mainly includes the frame structure, lifting principle, use method of tools and instruments, and can also properly complete some auxiliary tasks.

5. Rack installation training

(1) safety technical disclosure: before the installation operation, the group leader shall conduct safety technical disclosure to the members of the group. After the installation of the frame is completed, and the assessor comments and scores, the group leader shall conduct safety technical disclosure to the members before the demolition work.

(2) setting up warning lines: warning lines shall be set up for the installation and removal of frames. Four warning cones and disc warning lines shall be provided on site. Candidates shall set up warning lines in place according to requirements. The pulling area shall not only have enough work scope for on-site installation and removal operations, but also not affect the on-site moving line. During installation and removal, all tools, materials and components shall not be placed outside the warning line.

(3) preparation of materials and tools: before the installation operation, the trainees should carefully check and verify the number of tools, materials and components provided on site. If they are inconsistent with the drawings or cannot be used normally, they should report to the examiner in time.

(4) check the installation platform: the trainees should carefully check the installation platform provided on site, and eliminate any potential safety hazards in time. If the flatness of the installation platform cannot meet the installation requirements, it shall be reported to the assessor in time, and the installation work shall not be continued.

(5) scaffold installation training: install the scaffold as required and complete the scaffold installation training according to the installation sequence.

(6) scaffold lifting and lowering training: the team leader shall conduct safety technical disclosure to the team members, including

but not limited to the safety operation points of lifting (lowering) construction, potential safety hazards, safety details that should be paid attention to, etc.

4 Practice on the mode of workers replacing training for attached lifting scaffold

1. Attached lifting scaffold training hours in the mode of work instead of training

According to the training situation of the "work instead of training" mode of the attached lifting scaffold, it takes at least 6 weeks of training time from novices with little operation experience to proficient hands who basically meet the production needs. The training hours are arranged as follows (Table 1):

Table 1 class hour arrangement of replacing training with work

Weeks	Training module	primary coverage	Length of theoretical class	Long practice class
Week 1	Internship, tool use exercise	Frame structure, lifting principle, use method of tools and instruments, and complete auxiliary work tasks	15 class hours	20 class hours
Week 2	Auxiliary lifting, inspection and Obstacle Elimination exercises	Under the direction of the assessor, each person is responsible for the inspection and obstacle removal of a stand or floor, mastering the common obstacles and removal methods in the process of lifting, and further familiar with the composition and structure of the frame	15 class hours	20 class hours
Week 3	Basic component erection exercise	Complete the erection and quality inspection of the basic components of the simple frame under the command of the assessor and the safety officer	9 class hours	26 class hours
Week 4	Climbing system and safety device installation practice	Complete the installation and quality inspection of the climbing system and safety device of the attached lifting scaffold under the command of the assessor and the safety officer	9 class hours	26 class hours
Week 5	Practice of frame removal	Under the command of the assessor and the safety officer, the attached lifting scaffold that has been lowered to the first floor shall be dismantled, and the dismantled materials shall be placed and recycled by category. At the same time, cooperate with electricians to install or remove electrical systems and lines	6 class hours	29 class hours
Week 6	Whole process exercise	Complete the whole process of installation, lifting, lowering and removal of a set of attached lifting scaffold under normal working environment	3 credit hours	32 class hours

2. The degree to which the attached lifting scaffold scaffolders' professional skills have been improved through the mode of work instead of training

According to the evaluation of the trainees in the mode of "work instead of training" of the attached lifting scaffold, it is found that after 6 weeks of training, the operation skills of all the trainees have been greatly improved, reaching the skill level requirements above the primary level. Among them, 0% were below 70 (unqualified), 18.06% were between 70 and 80, 73.61% were between 80 and 90, and 8.33% were between 90 and 100.

5 Feasibility of popularizing the mode of attaching type lifting scaffold scaffolder replacing training with work

It is basically feasible to popularize the mode of "work instead of training" for scaffolders of attached lifting scaffold. According to the results of this research, it is mainly reflected in the following aspects:

1. Connect with the current talent training mode of the industry

At present, the training of scaffolders of attached lifting scaffold is mainly carried out through the mode of master with apprentice. The main training tasks are also completed in the work, which can quickly change the mode of replacing training with work. It is just that the selection of masters has changed from personal behavior to the responsibility of the company. The training organization is organized, and there is a scientific training mode with process, specification, theory and practice. During the "work instead of training" period, the trainees, as reserve employees, were able to receive the salary during the probation period, which solved the problem that some trainees could not be trained for a long time due to living difficulties, and also alleviated the problem that the production of enterprises was affected by insufficient manpower during the training period.

2. Reduced safety risks during training

Due to the step-by-step training method, the training content was broken down, and some of the more dangerous contents were

completed by skilled hands. At the same time, the safety technical disclosure was strengthened, which greatly reduced the risk of safety accidents during the training. At the same time, there are several theoretical courses at each stage to solve the problem of students' lack of theoretical knowledge, combine theory with practice, work and rest, and maximize the learning effect.

3. Straighten out the ways to improve the skills of scaffolders of attached lifting scaffold

Skilled workers in the construction industry usually do not have a good way to improve their skills and skills identification channels, and there are certain cases of proficient without certificates and novices with certificates. Through the training mode of "replacing training with work" and accompanied by the skill appraisal of evaluators, the professional level of skilled personnel can be more accurately reflected. For students who can meet the vocational standards above the primary level, it is recommended to participate in the assessment of the operation qualification certificate of special construction workers in Changsha, and only after passing the examination can they work with a certificate. For the students who have obtained the certificate, they can improve their skills through the "work instead of training" mode, and can participate in the intermediate and advanced vocational skill appraisal. This rationalizes the way to improve the skills of the scaffolders of the attached lifting scaffold, and provides nationwide skill training and identification services from preparatory workers to senior workers.

4. It is conducive to standardizing the management of construction workers' real name system

Through the training mode of "replacing training with work", the training organization will uniformly archive the training files and put them on record in the competent department of the industry, which is an important supplement to the real name system management of construction workers. A complete construction worker training file can not only record the process of improving the skill level of construction workers, but also reflect the salary that construction workers should obtain. For the situation that the skill level is seriously inconsistent with the salary income, it can provide clues and references for the relevant investigation and law enforcement to protect the basic rights and interests of migrant workers. By standardizing the management of construction workers, we can reflect the skill level of the whole industry from a more macro perspective, which can also help the tilt adjustment of policies and the organization of skills competition.

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