

Research on Construction Welding of Apron Pipe Network

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Abstract: With the rapid development of the economy in recent years, economic and trade activities such as foreign exchanges and business exchanges in Shaanxi have become increasingly frequent. As a window and transportation portal of Shaanxi, Xianyang Airport also shows the momentum of rapid growth in the airport's aviation business. At present, the annual passenger throughput and annual flying racks of Xianyang Airport have exceeded the capacity of the design target year. The existing organic apron pipe supply will face the situation of insufficient supply and insufficient supply. According to the actual needs, the expansion of the oil engineering expansion project of Xianyang International Airport has begun to be officially constructed. In the implementation project, the fuel supply project will encounter non-stop construction and oil-with oil. It is the most difficult and most dangerous construction in the construction process of the apron pipeline. During the construction of the mouth, This article discusses the construction technology and standardized construction process for oil welding joints of pipelines during non-stop navigation on the apron.

Keywords: Apron pipeline, Non-stop navigation, Safety management.

1. Introduction

In recent years, the economy of Shaanxi Province has developed rapidly, and economic and trade activities such as foreign exchanges and commercial exchanges have become increasingly frequent. As a window and transportation gateway for Shaanxi's opening-up to the outside world, the aviation business of Xianyang Airport has also shown a rapid growth trend. The third phase expansion project of Xi'an Airport is designed to meet the target of a passenger throughput of 83 million and a cargo and mail throughput of 1 million tons by 2030. The oil supply project is an important supporting project of the airport, which is planned and implemented synchronously with the airport construction. The rapid laying of pipelines within the apron provides strong support for the transportation guarantee of the airport. Faced with issues such as non-stop navigation and oil contact during the construction of oil supply pipelines [1-2]

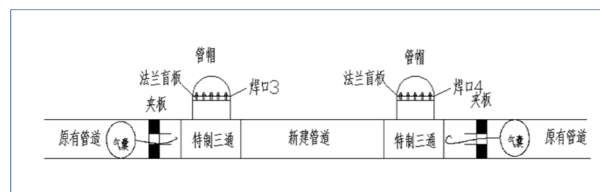
2. Definition of Non-stop Construction

Construction non-stop construction refers to the implementation of engineering construction in the flight area without closing or closing in some time and receiving and release aircraft in accordance with the flight plan. The airport management agency is responsible for the submission of approval by the airport management agency to unify the operation safety of the airport, and is responsible for the operation safety during the airport's non-stop construction period, and is responsible for the construction of the project. Without the approval of the Civil Aviation Administration or the Civil Aviation Regional Administration, it is not allowed to conduct non-stop construction in the airport.

3. There Is a Definition of Oil Welding in The Pipeline

Pipe welding is generally divided into two ways: oil-blocking welding and constantly losing in the state of stopping. Generally, the construction site is used to stop the

pipeline oil and welded new and old pipelines. Low, the disadvantage is that the amount of oil displacement is relatively large. It is suitable for the transformation, maintenance, and touches of the pipelines that can be stopped.



4. Non-stop Construction and Pipeline with Oil Connect to Construction Standard Process

According to the safety management regulations of the Ministry of Transport for airport operations and other relevant regulations of the Civil Aviation Administration of China, combined with the actual situation of the project and design drawings, a construction organization plan for oil filled junctions is prepared. Establish a leadership group for oil pipeline construction, clarify the job responsibilities of each structure, mainly including the construction party, construction party, supervision unit, HSE unit, and oil transportation production guarantee unit.

4.1. Preparation for welding construction of apron pipelines

The construction unit implements the participants with oil-to-mouth operations, and conducts safety, technical quality and emergency measures for participants, and conduct a special convergence of users of equipment and equipment; carefully study the construction method and construction safety requirements in the plan. Complete all approval processes, emergency plan drills, emergency measures to deal with all the construction plan, verify and inspect the preparation of materials and equipment, and issue various materials testing records. Make enough prepare accordingly.

One day before the operation, the machine and equipment were placed in place, and the equipment list was checked to check whether the equipment and appliances were consistent with the specifications of the material list. Essence Among them, the sealing of the airbags is well -tolert to resist the oil pressure resistance. The stroke of the pressure gauge, the accuracy and scale meet the requirements of the use, the maintenance and use of the corresponding equipment and equipment, and do a good job of technical intercourse to ensure how the operator knows how to use it.

The production and operation unit of the construction party is responsible for coordinating the airport command room to close the apron valve, confirming that the upper and lower end valves at the mouth of the apron are closed, assisting the construction unit to switch the pipeline valve during the touches, and provide oil pumping vehicles for oil products for oil products. Recycle. The oil depot ensures that the oil can be sufficient on the day of oil recycling. The field operation center is responsible for notifying the engineering department with oil fire operations, coordinating the airport to arrange Hong Kong flights at the point of the airport, and coordinate the airport fire to provide a fire truck on the scene on the day of the touch.

4.2. Steps of implementation of on -site operation

The construction unit organized a class meeting on the spot, and once again carried out security technology to check the list of participating construction staff, and conducted on -site command to cut the tube to touch and collect oil. The end of the pipeline valve well at the mouth section is closed. At the lowest point, the pressure is removed. After the pressure is finished, the refueling shaft is removed. Use the explosion -proof oil pump to draw oil until the oil is not available until the amount of oil is drawn. Compare, ensure that oil deposit is cleaned. The tube -breaking operation uses a cold cutting process, and the DN300 manual cutting tube is used for disconnecting operations. The oil and gas concentration of the site is detected, welded after the test passed, and the non -destructive test was performed.

Before welding, pay attention to the nitrogen replacement first, throw dry ice into the pipeline, increase the concentration of inert gas in the pipeline, block the airbags of about 1.0m to 1.2m from the welding site. To prevent the airbags from being inhaled into the pipeline, the pressure of the airbag is inflated according to the requirements of 0.08MP. The blocked splint is placed at 40 to 60cm from the pipe weld. The blocking material in the middle of the splint has a thickness of more than 8cm or more.

After the splint is blocked, immediately use oil -absorbing felt, wipe and clean up the blocking four -pass cavity, clean up the oil stains in the pipeline and the surface of the pipeline surface. After the pipeline team is qualified, a combustible gas inspection is performed. Essence As the last line of defense of the blocked oil, it cannot be constructed. It is necessary to ensure that the welding is efficiently carried out and prevent the oil from the welding area from the sealing materials in the pipeline [3].

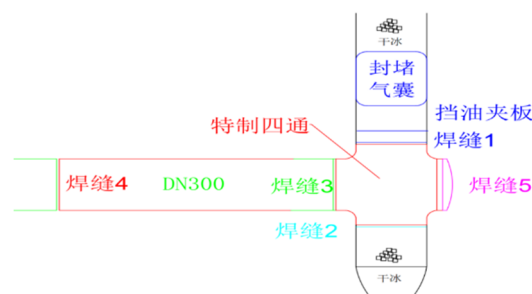
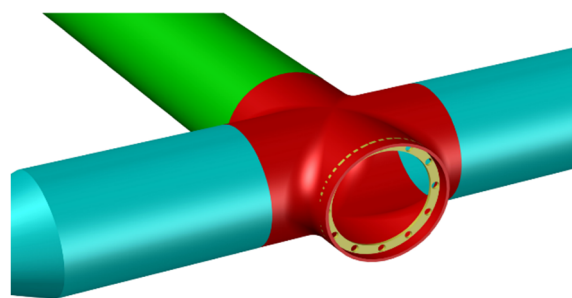


Figure 1. Schematic diagram of pipeline welding connection

5. Construction Quality Assurance Measures Control

Strictly implement the quality control system, and personnel at all levels perform their duties to perform their duties. Construction staff are familiar with relevant regulations on countries and industries. The specific data must be correct, thoroughly understanding the standards of the norms, and the excerpt of the specific requirements in the norms clearly. To do the plan first, before the construction, the person in charge of the project technology should organize various professional engineers to formulate a detailed construction plan and make a bottom.

Strict implementation of Party A's management system, each process in construction must be obtained by Party A's consent to carry out the next process. When prefabricated pipelines, an experienced pipeline is required to calculate the feed. The welding process needs to be carried out by experienced welding workers. After the welding is completed, it must be performed immediately. It is necessary to determine that the welding mouth is qualified once to prevent the repairs. During the process, the protection of semi -finished products should be strengthened. The project's technical person in charge should be formulated. The production manager is responsible for organizing the implementation to ensure that it will cause damage to the finished product of the above process during construction. Quality process inspection is checked by a special person in accordance with the following inspection form.

6. Summary

With the rapid growth of airport aviation business, the business volume of supply protection is also increasing. In this way Construction. Reporting and oil -binding of oil -with oil in the construction process are common and most complicated issues in the apron. This article briefly describes and analyzes and explores the issues related to the non -stop and oil touches. Let us have a good understanding of the construction of the pipeline of the machine.

References

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