



中国认可  
国际互认  
检测  
TESTING  
CNAS L0493

No 23110192

## Inspection Report

# 检 验 报 告

Product Name: Covered Electrode J421

产品名称: J421 焊条

Entrustment Organization:XXXXXXXXXXXXXX Co.,Ltd

委托单位:XXXXXXXXXXXXXXXXXXXXXX

Test Type: Entrustment Inspection

检验类别: 委托检验

Harbin Welding Institute Limited Company of China Academy of  
Machinery Science and Technology Group  
National Welding Consumables Quality Inspection and Testing Center  
Quality Inspection Center of Harbin Welding Institute Limited Company of  
China Academy of Machinery Science and Technology Group  
中国机械总院集团哈尔滨焊接研究所有限公司  
国家焊接材料质量检验检测中心  
中国机械总院集团哈尔滨焊接研究所有限公司质检中心

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Inspection Report

检验报告

No23110192

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|                                  |                                                                                                                                                                                        |                             |                                                            |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------|
| Product Name<br>产品名称             | Covered Electrode J421<br>焊条                                                                                                                                                           | Classification<br>型号        | E6013                                                      |
|                                  |                                                                                                                                                                                        | Size<br>规格                  | Φ3.2mm                                                     |
| Entrustment Organization<br>委托单位 | XXXXXXXXXXXXXXXXX Co.,Ltd<br>XXXXX                                                                                                                                                     | Test Type<br>检验类别           | Entrustment Inspection<br>委托检验                             |
| Manufacturer<br>生产单位             | XXXXXXXXXXXXXXXXXXXXXXCo.,Ltd<br>XXXX                                                                                                                                                  | Lot No.<br>批号               | TQ20230305                                                 |
|                                  |                                                                                                                                                                                        | Date of Production<br>生产日期  | March 05,2023<br>2023-03-05                                |
| Amount of Sample<br>样品数量         | 5kg                                                                                                                                                                                    | Sample Arrival Date<br>到样日期 | March 20,2023<br>2023-03-20                                |
| Test Reference<br>检验依据           | AWS A5.1/A5.1M:2012<br>Technical Requirement of<br>Entrustment Organization<br>委托单位技术要求                                                                                                | Test Items<br>检验项目          | Chemical Composition<br>化学成分<br>Mechanics Property<br>力学性能 |
| Test Result<br>检验结论              | The result(s) of the determination is shown Page 2~3.<br>检验结果见第 2~3 页检验报告。<br><br>Inspection and Testing Special Seal<br>检验检测专用章<br>Date of Issue: March 30,2023 签发日期: 2023 年 3 月 30 日 |                             |                                                            |
| Remarks<br>备注                    | —                                                                                                                                                                                      |                             |                                                            |

Approved by 批准:

Reviewed by 审核:

Compiled by 编写:

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Chemical Analysis Report

化学分析检验报告

№23110192

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|                           |                                                   |                       |                                                               |                  |        |
|---------------------------|---------------------------------------------------|-----------------------|---------------------------------------------------------------|------------------|--------|
| Product Name<br>产品名称      | Covered Electrode<br>J421<br>焊条                   | Classification<br>型 号 | E6013                                                         | Size<br>规 格      | Φ3.2mm |
| Analysis Elements<br>分析元素 | Analysis Result 分析结果<br>Mass Fraction 质量分数<br>(%) |                       | Specified Value of Standard 标准规定<br>Mass Fraction 质量分数<br>(%) |                  |        |
| C                         | 0.07                                              |                       | ≤0.20                                                         |                  |        |
| Si                        | 0.10                                              |                       | ≤1.00                                                         |                  |        |
| Mn                        | 0.26                                              |                       | ≤1.20                                                         |                  |        |
| S                         | 0.033                                             |                       | —                                                             |                  |        |
| P                         | 0.031                                             |                       | —                                                             |                  |        |
| Cr                        | 0.05                                              |                       | ≤0.20                                                         |                  |        |
| Ni                        | 0.002                                             |                       | ≤0.30                                                         |                  |        |
| Mo                        | <0.001                                            |                       | ≤0.30                                                         |                  |        |
| V                         | 0.01                                              |                       | ≤0.08                                                         |                  |        |
| Test<br>Equipment<br>检验仪器 | Name 名称                                           |                       | Model 型号                                                      | Manufacturer 制造商 |        |
|                           | ICP atomic Emission Spectrometer<br>ICP 原子发射光谱仪√  |                       | iCAP6300                                                      | USA. 美国          |        |
|                           | Carbon-Sulfur Determinator<br>碳硫测定仪√              |                       | CS230                                                         | USA. 美国          |        |
|                           | Spectrophotometer<br>光电分光光度计                      |                       | 721E                                                          | China 中国         |        |
|                           | Analytical Balance<br>分析天平√                       |                       | BSA124S                                                       | China 中国         |        |
| Remarks<br>备 注            | —                                                 |                       |                                                               |                  |        |

# 力学性能检验报告

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|                                                              |                                                |    |                                                          |    |                                  |                                                                      |                                            |  |
|--------------------------------------------------------------|------------------------------------------------|----|----------------------------------------------------------|----|----------------------------------|----------------------------------------------------------------------|--------------------------------------------|--|
| Product Name<br>产品名称                                         | Covered Electrode<br>J421 焊条                   |    | Classification<br>型 号                                    |    | E6013                            | Size<br>规 格                                                          | Φ3.2mm                                     |  |
| Tensile Properties<br>拉伸性能                                   | Tensile Strength<br>抗拉强度<br>(MPa)              |    | Yield Strength at 0.2% Offset<br>屈服强度（0.2%残余应变）<br>(MPa) |    |                                  | Elongation Percentage in 4x<br>Diameter Length<br>断后伸长率(标距为4倍直径) (%) |                                            |  |
| Results<br>测定值                                               | 505                                            |    | 437                                                      |    |                                  | 23                                                                   |                                            |  |
| Specified Value of<br>Standard<br>标准规定值                      | ≥430                                           |    | ≥330                                                     |    |                                  | ≥17                                                                  |                                            |  |
| Impact Properties<br>冲击性能                                    | 1                                              | 2  | 3                                                        | 4  | 5                                | Average<br>Value<br>平均值                                              | Technical<br>Requirement<br>Value<br>技术要求值 |  |
| Charpy V-Notch<br>Impact<br>夏比 V 型缺口冲击<br>冲击吸收能量<br>(0℃) (J) | 64                                             | 64 | 55                                                       | 66 | 54                               | 61                                                                   | ≥27                                        |  |
| Welding Condition<br>焊接条件                                    | Power Supply<br>电流类型                           |    | AC<br>交流                                                 |    | Parent Metal<br>母 材              |                                                                      | Q355B                                      |  |
|                                                              | Welding Current<br>焊接电流(A)                     |    | 130                                                      |    | Arc Voltage<br>电弧电压(V)           |                                                                      | 24                                         |  |
|                                                              | Hydrogen relief<br>Treatment<br>去氢处理（℃×h）      |    | —                                                        |    | Welding Speed<br>焊接速度（mm/s）      |                                                                      | ~2.5                                       |  |
|                                                              | Number of Layers/Passes<br>焊接层数/道数             |    | 6/12                                                     |    | Interpass Temperature<br>道间温度（℃） |                                                                      | 140~160                                    |  |
| Test Equipment<br>检验仪器                                       | Name 名称                                        |    |                                                          |    | Model 型号                         |                                                                      | Manufacturer 制造商                           |  |
|                                                              | Electronic Tensile Testing Machine<br>电子拉力试验机√ |    |                                                          |    | AG-X plus, 100KN                 |                                                                      | Japan 日本                                   |  |
|                                                              | Pendulum Impact Testing Machine<br>摆锤式冲击试验机√   |    |                                                          |    | ZBC2302-C                        |                                                                      | China 中国                                   |  |
| Remarks<br>备 注                                               | —                                              |    |                                                          |    |                                  |                                                                      |                                            |  |