



# 瑞安市天裕机械有限公司

Ruian Tianyu Machinery Co., Ltd.

|                                   |                |   |                 |   |               |
|-----------------------------------|----------------|---|-----------------|---|---------------|
| 客户名称<br>Purchaser:                | 何塞阀门制造(上海)有限公司 | <b>材质证明书</b><br><b>Test Certificate (EN 10204 3.1.)</b> | <b>Material</b> | DIN 50049 - EN 10204 - 3.1<br>MAT. CERT. N°.20251112-07<br>DATE :2025.11.12 |               |
| 材料名称<br>Name of Material:         | F316/F316L     |   |                 | 交货状态<br>delivery state  | 已加工 Processed |
| 执行标准<br>Specification             | ASTM A182-21   |   |                 | 产品类别<br>Product Catagory  | 棒料 Bar Stock  |
| IATF16949/ approved<br>CLIENT: JC |                |   |                 |   |               |

| 炉号<br>Furnace number | 冶炼方式<br>Smelt Method | 化学成分 Chemical Composition (%) |      |      |       |        |           |           |         |      |   |    |       |  |
|----------------------|----------------------|-------------------------------|------|------|-------|--------|-----------|-----------|---------|------|---|----|-------|--|
|                      |                      | C                             | Mn   | Si   | S     | P      | Cr        | Ni        | Mo      | Cu   | V | Nb | N     |  |
|                      | 标准值S.D               | ≤0.03                         | ≤2.0 | ≤1.0 | ≤0.03 | ≤0.045 | 16.0-18.0 | 10.0-14.0 | 2.0-3.0 | /    | / | /  | ≤0.10 |  |
| 24N10                | VODC                 | 试验值P.A                        | 0.02 | 1.21 | 0.53  | 0.005  | 0.027     | 16.2      | 10.03   | 2.04 |   |    | 0.04  |  |

### 试验或检验数据 Test Result

| 拉伸试验Tensile Test (依据标准Standard ASTM A370) |       |              |                     |                          |                     |                      |                | 冲击试验Impact Test(依据标准Standard ASTM A370) |                        |                       |                    | 外观及尺寸<br>Visual & Dim Inspection |                 |
|---|-------|--------------|---------------------|--------------------------|---------------------|----------------------|----------------|---|------------------------|-----------------------|--------------------|----------------------------------|-----------------|
| 试样规格<br>Size of Sample                    |       | 试验温度<br>Temp | 抗拉 $\sigma_b$<br>TS | 屈服 $\sigma_{s0.2}$<br>YS | 延伸率 $\delta$<br>E.L | 收缩率 $\varphi$<br>R.A | 硬度<br>Hardness | 试验温度<br>Temp                            | 试样规格<br>Size of Sample | 缺口形式<br>Type of Notch | 冲击功<br>AKV<br>≥60J |                                  |                 |
| D(mm)                                     | L(mm) | R.T          | 标准值S.D              | (MPa)                    | (MPa)               | (%)                  | (%)            | HB                                      | -50℃                   | 10*10*55              | V                  | 61/70/65                         | 合格<br>qualified |
| Φ12.5                                     | 50    |              | ≥515                | ≥205                     | ≥30                 | ≥50                  | ≤237           |   |                        |                       |                    |                                  |                 |
|   |       |              | 试验值P.A              | 521                      | 222                 | 52                   | 60             | 156/147/151                             |                        |                       |                    |                                  |                 |

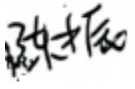
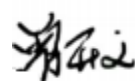


### 产品内容 Product

| 订单号<br>Order No | 炉号<br>Furnace | 零件描述<br>Part Description | 图号<br>Drawing number | 规格<br>Spec | 数量<br>QTY |
|-----------------|---------------|--------------------------|----------------------|------------|-----------|
| 4844-10         | 24N10         | 阀杆                       | 0800-32-04           | DN32       | 150       |
| 4875-2          | 24N10         | 阀杆                       | E40115TJ             | DN15       | 100       |

### 热处理工艺Heat Treatment Process

|                   |            |
|-------------------|------------|
| 热处理炉号 Heat NO.    |            |
| 热处理日期 Date        |            |
| 热处理要求 Requirement | 固溶Solution |
| 升温Warming         | 1050℃      |
| 时间Time            | 4h         |
| 保温Holding         | 4h         |
| 时间Time            | 4h         |
| 冷却Cooling         | water      |

REMARKS:  
According the material meets customer requirements or specification PS04/I1 Rev.9. According material meets material standard. According material meets requirements of NACE MRO175/103. Some other special requirement.

|   |   |  |  |
|---|---|--|--|
| 检验员<br>Authorised Inspector<br>CHEN ZHEN<br> | 质量工程师<br>Engineer Q.A<br>ZENG KAI YI<br> | 负责人 Laboratory<br>Incharge<br>HE SHI YI<br> | 制造单位盖章<br>Supplier Stamp:<br> |
|---|---|--|--|