



中国认可
检测
TESTING
CNAS L3840

衡阳华菱钢管有限公司检验检测中心
Test Center of Hengyang Valin Steel Tube Co., Ltd.

TEST REPORT

检测报告

Test No (编号): 151225101

Contract No (合同号): 2131000362-2

Grade of Steel (钢级): L360NS PSL2

Sample Size (规格): $\Phi 168.3 \times 11\text{mm}$

Type of Pipe (钢管类型): Seamless

Test Method (检测方法): HIC Susceptibility

地址: 湖南衡阳市大栗新村 10 号
Address: No.10, Dalixincun, Hengyang, Hunan, China

传真: 0734-8875123
Fax

电话: 0734-8875123
Telephone

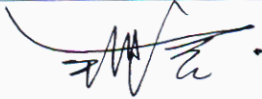
邮编: 421001
Post code

HIC Test Report

HIC 检测报告

No: 151225101

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Original of Specimen 送检单位	180 Branch	Contract No. 合同号	2131000362-2
Address 单位地址	No. 10 Dalixincun, Hengyang, Hunan P.R. CHINA 421001		
Grade of steel 钢级	L360NS	Product specification lever 产品规范等级	PSL2
Lot No. 批号	6EX213041	Heat No. 炉号	1535630V
Quantity 数量	1 set (3pcs)	Specimen State 样品状态	As Standard Requirement
Test Properties 检测项目	Hydrogen Induced Cracking (HIC)	Method of test for degreasing 脱脂测试方法	Wipe
Test Standard 检测标准	NACE TM 0284-2011		
Test Conclusion 检测结论	According to NACE TM 0284-2011, the crack sensitivity ratio (CSR), crack length ratio (CLR) and crack thickness ratio (CTR) are all zero after 96 hours testing. The test result is acceptable.		
Special Stamp for Test Report 检测专用章	Collected by 汇总	王 鸿	
	Certified by 批准		
	Issue Date 签发日期	2015.12.25	

HIC Test Report (Annex)

HIC 检测报告 (附件)

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Grade of steel 钢级	L360NS PSL2	Size 规格	Φ 168.3 × 11mm	
Lot No. 批号	6EX213041	Heat No. 炉号	1535630V	
Test Properties 检测项目	Hydrogen Induced Cracking (HIC)	Specimen No. 试样编号	1102-1, 1102-2, 1102-3	
Test Standard 检测标准	NACE TM 0284-2011			
Dimension of Specimens 试样尺寸	Fig.1 shows the dimensions of test specimens. The test specimen thickness is at least 80% WT of the pipe, and a maximum of 1 mm may be removed from each of surfaces.			
Test Conditions 检测条件	Temperature 温度	24℃-26℃	Deaerated Gas 除氧气体	High-purity N ₂
	Test Time 试验时间	96 hours	Test Gas 试验气体	H ₂ S
	H ₂ S saturated concentration H ₂ S 饱和浓度	≥2300ppm	H ₂ S partial pressure H ₂ S 分压	100kpa
	Degreased 脱脂	Prior to testing, the test specimens shall be degreased with ethanol and rinsed with acetone. The adequacy of the degreasing by the atomizer test in accordance with ASTM Standard F 21.		
	Test Solution 试验溶液	0.5wt% CH ₃ COOH and 5wt% NaCl in distilled water saturated with H ₂ S (NACE TM 0284-2011 solution A)		
	pH	Before introducing H ₂ S (H ₂ S 通入前)	2.72	
		After test (试验结束后)	3.67	
Test Equipment 检测设备	HIC test assembly			
Test Analysis 检测分析	After 96 hours testing, cleaning the specimens, no hydrogen blistering can be seen on the specimen surfaces, as shown in Fig.2. After testing, each specimen was sectioned to be four parts as shown in NACE TM0284-2011 standard. Each section shall be polished metallographically and etched for about 2 seconds. All faces to be examined were magnified to 100 times magnification. There are no cracks within 1.0mm of the internal or external surface of the test specimen.			

Test Result	Crack sensitivity ratio (CSR) , crack length ratio (CLR) and crack
检测结论	thickness ratio (CTR) are all zero.

Test by (检测人): 刘俊伟

Reviewed by (审核人): 郑淑艳

Test Date (检测日期): Nov.16, 2015~ Nov.20, 2015

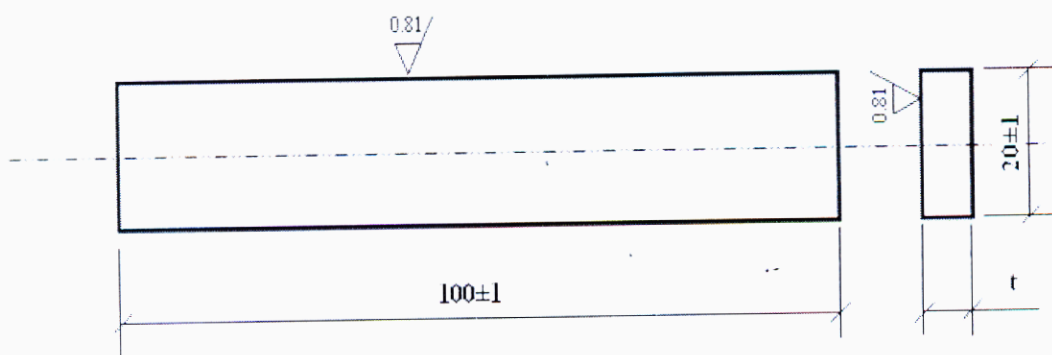


Fig.1 HIC test specimen dimension

图 1 HIC 试样尺寸

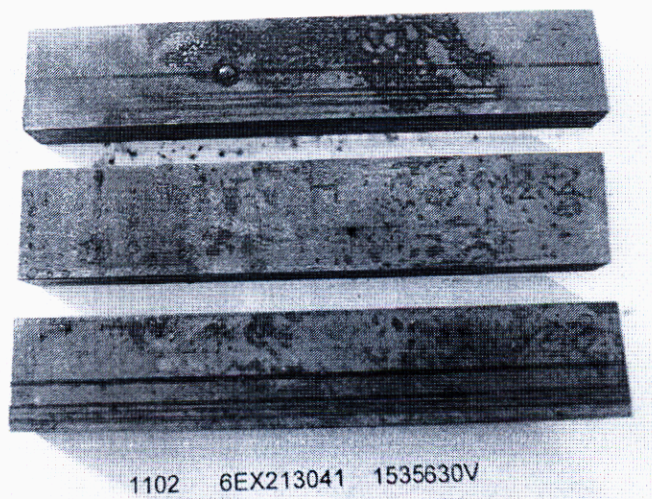


Fig.2 Morphology of the specimen surface

图 2 试样表面形貌图