



**BUREAU
VERITAS**

RELATÓRIO DE ENSAIO DE ULTRASSONS - MATERIAL BASE

Ultrasonic Test Report - Parent Material

Mod. QS-1-004.8



CLIENTE E MORADA Client and Address J. Soares Correia - Armazéns de Ferro, S.A. Rua do Outeiro - Folgosa - Apartado 36 4425-357 - Maia PORTUGAL FABRICANTE Manufacturer METINVEST OBRA Job ENSAIO DE ULTRASSONS - MATERIAL BASE	RELATÓRIO Nº Report Nr. 21.P.03119
	PÁGINA Page DE Of 1 2
	CONTRATO Nº Job Nr. 10579643
	LOCAL DE ENSAIO Test Location MAIA DATA DO ENSAIO Date of Test 2021-05-13

1. CONDIÇÕES TÉCNICAS E OPERATÓRIAS Technical and Operational Conditions

TIPO DE ENSAIO Test Type <input checked="" type="checkbox"/> Controlo Material Base Base Material Control <input type="checkbox"/> Medição de Espessuras Thickness Measurement	DOCUMENTO DE REFERÊNCIA/CATEGORIA ENSAIO Reference Standard/Testing Class EN 10160:1999	MATERIAL BASE Parent Material S355J2+N	ESTADO SUPERFÍCIE Surface Finish Normal																				
	CRITÉRIO DE ACEITAÇÃO Acceptance Criteria EN 10160:1999 - Classe S3/E4	ACOPLANTE Couplant Medium Água	SENSIBILIDADE Sensibility <input checked="" type="checkbox"/> DAC <input type="checkbox"/> AVG <input type="checkbox"/> D Meter																				
PROC. FABRICO Fabrication Process <input checked="" type="checkbox"/> Laminagem Rolling <input type="checkbox"/> Fundição Casting <input type="checkbox"/> Outro Other	FASE PRODUÇÃO Production Stage <input checked="" type="checkbox"/> Pré-fabrico Pre-fabric <input type="checkbox"/> Antes TT Before TT <input type="checkbox"/> Depois TT After TT <input type="checkbox"/> Em serviço In service	DIMENSÃO DA PEÇA Specimen Dimension <input type="checkbox"/> Des. Anexo Attach. Drw. <input checked="" type="checkbox"/> Outro Doc. Other Doc. 100x2500x5000	SONDAS Probes <table border="1"> <thead> <tr> <th>TIPO</th> <th>FREQ.</th> <th>ESC. TEMPOS</th> <th>GANHO REF.</th> </tr> <tr> <th>Type</th> <th>Frequency [MHz]</th> <th>Time Base Range [mm]</th> <th>Ref. Gain [dB]</th> </tr> </thead> <tbody> <tr> <td>TS4EN</td> <td>4MHz</td> <td>0-100</td> <td>44 dB</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	TIPO	FREQ.	ESC. TEMPOS	GANHO REF.	Type	Frequency [MHz]	Time Base Range [mm]	Ref. Gain [dB]	TS4EN	4MHz	0-100	44 dB								
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TS4EN	4MHz	0-100	44 dB																				
EQUIPAMENTO Equipment N-END-062	CORREÇÃO TRANSFER. Transfer Correction 6 dB [dB]	NÍVEL DE REGISTO Reporting Level FBH - 5 mm [%]																					
BLOCOS Blocks Calibração BC104 Calibration	Referência BC086 Reference	Espessura 65 mm Thickness Dia. Furo 5 mm Hole Diameter	TEMP. DE ENSAIO Test Temperature <input checked="" type="checkbox"/> Amb. Amb. (+5 °C a +50 °C) <input type="checkbox"/> Outra Other (<+5 °C; >+50 °C)																				


2. EXTENSÃO DO ENSAIO Test Extension

Material Base (Chapa)
 * 1 chapa, material S355J2+N e dimensão 100x2500x5000 (mm), com a seguinte marcação:
 HN:1901 PN:03402/1
 conforme certificado em anexo nr: 09-16654 de 2020-09-05.

3. RESULTADOS Results

Aceitável.

4. OBSERVAÇÕES Remarks

LOCAL E DATA DE EMISSÃO Place & Issue Date V. N. de Gaia 2021-05-17	OPERADOR(ES) E CERTIFICAÇÃO Operator(s) & Certification R. Pinto EN ISO 9712 - Nivel 2	VALIDAÇÃO Validation R. Pinto EN ISO 9712 - Nivel 2	
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BUREAU VERITAS RINAVE

Rua Laura Ayres, nº 3
 1600-510 LISBOA

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PRAT «ANK «AZOVSTAL'»
PJSC "Azovstal Iron & Steel Works"

СЕРТИФИКАТ КАЧЕСТВА № 09-16354
QUALITY CERTIFICATE №

05.09.2020
Date
Лист 1 из 1
Sheet 1 of 1
Листов 1
Sheets 1

Удостоверение № 124/000000, 87500 Удостоверение № 130/0029/02/00

Свидетельство о приемочных испытаниях
Acceptance Test Certificate
EN 10204-3.1:2004

Контракт № 10311/01 от 2005
Contract No 10311/01
Заказчик заказ №
Manufacturer's Production order No 400720-1577/1

Выпуск
фирма "МЕТИНВЕСТ ИНТЕРНЕШНЛ С.А."
Metinvest International S.A.

Видовое наименование товара
Project description
Проект тов.исп.пл.
Quantity of goods, pcs 4

Марка стали
Grade of Steel S355L2+H
Нормативные документы
EN 10025-2:2019 (G, F, A, 3, category 1)
EN 10029:2010 class A1
DIN EN 10163-2:2005 class A-3

Технологический процесс
Made by the ERM Process

Производитель
Metinvest Group

Спецификация
Спецификация

Сорт металла
PARK OF THE WORKS, GRADE OF STEEL, CAST No, TEST No, TEST No, Head stamp No.

Позиция Item No	Идентификационный номер Identification No	Размеры, мм Dimensions, mm			Листов Sheet No	Масса, кг Mass, kg
		Толщина Thickness	Ширина Width	Длина Length		
140	03298/1	60	2000	6000	1	5,652
150	03219/1	60	2500	8000	1	9,420
160	03402/1	100	2500	5000	1	9,813
170	03401/1	120	2500	4000	1	9,420
170					1	9,420
Итого Total						34,305

Результаты испытаний

Test results

№ п/п No	Диаметр Diameter	Толщина Thickness	Ширина Width	Направление Direction	Темп испытания Test temperature	Протяженность Yield point	Время сопротивления Tensile strength	Отн. удлинение Elongation	Эн удара KV		
									KV 1 Impact energy KV 1	KV 2 Impact energy KV 2	KV 3 Impact energy KV 3
1	03298	10	10	T	+20	342	481	31			
2	03298	10	10	T	-20				180	170	140
3	03298	10	10	T	120	313	476	12			
4	03298	10	10	T	-20				165	161	147
5	03402	10	10	T	120	407	543	12			
6	03402	10	10	T	-20				197	190	176
7	03401	10	10	T	120	330	488	12			
8	03401	10	10	T	-20				160	120	142

Химический состав, %

Chemical composition, %

Элемент Element	С C	Mn Mn	Si Si	S S	P P	Cr Cr	M M	Cu Cu	sol Al	Ti Ti	Nb Nb	Ni Ni	V V	N N	CE	
1	1901	12	155	23	5	16	5	3	3	26	11	<0,5	35	50	6	40

"On theoretical weight"

РДСТУ «AZOVSTAL IRON & STEEL WORKS»
I Leningrady Street, City of Mariupol, Donetsk Region,
67505 Ukraine
S355L2H - EN 10025-2:2019
Hot rolled plate for use in construction

Подпись/Signatures
Специальный штамп ОТК
Special stamp of Technical
Quality Control Department

АНЕКОЛО РЕЛАТОРИО:
2.9.03119
PAG. 2/2
R.A.N.A.V.I.E. ASS.

We hereby confirm that the products specified in this quality certificate have been tested and comply with contract requirements. Подтверждаем, что материалы, указанные в настоящем сертификате качества, испытаны и Expert соответствует условиям контракта.