

**PRESSURE TEST CERTIFICATE**

Project No. : K70101

Project Name : ASU KOSICE TF

Client :

Subcontractor : VAM
Subcontract No. : 5.6801

VOEST MONTAGE

TEST NUMBER : 016/09/05

SYSTEM :

RISK CATEGORY : III.

PID No.	Line Size	Line No.	Area	Isometric No.	Material Class
010/010		250 O 20007	TF	250O20007	1.4541
010/010		25 O 20009	TF	25O20009	Monel

Test Pressure: 44 barTest Duration: 30 minTest Medium: NManometers No.: 0 - 100 bar, 005991Special requirements / comments: Od ventilov UK20013 a UK 20014 po napojenie do exist. potrubia.

Tlaková skúška bola prevedená za účasti inšpektora Technickej inšpekcie SR v Košiciach ale bez predlo-
ženého osvedčenia o konštrukčnej dokumentácii realizovanej stavby.

WITNESSED AND ACCEPTED ON BEHALF OF	WITNESS	SIGNATURE	DATE
	SUBCONTRACTOR		7.9.2005
	ALE		07/9/05
	CLIENT		
	NOTIFIED BODY		14.11.2005

E-FRM-9-5-8-9

VAM GmbH & Co Anlagentechnik und Montagen A. Bernoláka 10, Ružomberok		PROTOKOL O STAVEBNEJ A TLAKOVÝCH SKÚŠKACH ODOLNOSTI A TESNOSTI POTRUBIA č. 016/09/05			
Miesto stavby:		AIR LIQUIDE - U. S. STEEL s. r. o. Košice ASU No. 9 Košice			
Označenie skúšaného potrubia:		250 O 20007, 25 O 20009			
Prevádzkové podmienky:		Najvyšší pracovný pretlak: 4,0 MPa		Najvyššia pracovná teplota: - 196 ° C	
Parametre rozvodu:		Menovitá svetlosť: DN 250, 25		Materiál: tr. 1.4541, Monel	
Potrubie bolo podrobené stavebnej a tlakovým skúškam podľa STN 130020, NV 576/02 a STN EN 13480					
Stavebná skúška		Skúška odolnosti		Skúška tesnosti	
Dátum skúšky:	07.09.05	Dátum skúšky:	07.09.05	Dátum skúšky:	07.09.05
<ul style="list-style-type: none">- umiestnenie výstroja potrubia- funkcie uzatváracích zariadení- dokončenie a kvalita zvaračských prác- správnosť uloženia a jeho spádovanie- úplnosť dokumentácie		Skúšobný pretlak:	4,4 MPa	Skúšobný pretlak:	4,0 MPa
		Skúšobné médium:	N ₂	Skúšobné médium:	N ₂
		Skúšobná doba:	30 min.	Skúšobná doba:	po dobu prehlíadky
		Použité meracie prístroje: kontrolný deformačný manometer 0 – 10 MPa		Použité meracie prístroje: kontrolný deformačný manometer 0 – 10 MPa	
		Ø 160 mm		Ø 160 mm	
		v. č. 005991		v. č. 005991	

Potrubie vyhovuje daným prevádzkovým podmienkam. Skúška odolnosti a tesnosti bola v zmysle hore uvedených nariadení a noriem úspešná.

Od ventilov UK20013 a UK 20014 po napojenie do exist. Potrubia. Tlaková skúška bola prevedená za účasti inšpektora Technickej inšpekcie SR v Košiciach ale bez predloženého osvedčenia o konštrukčnej dokumentácii realizovanej stavby.

Za objednávateľa

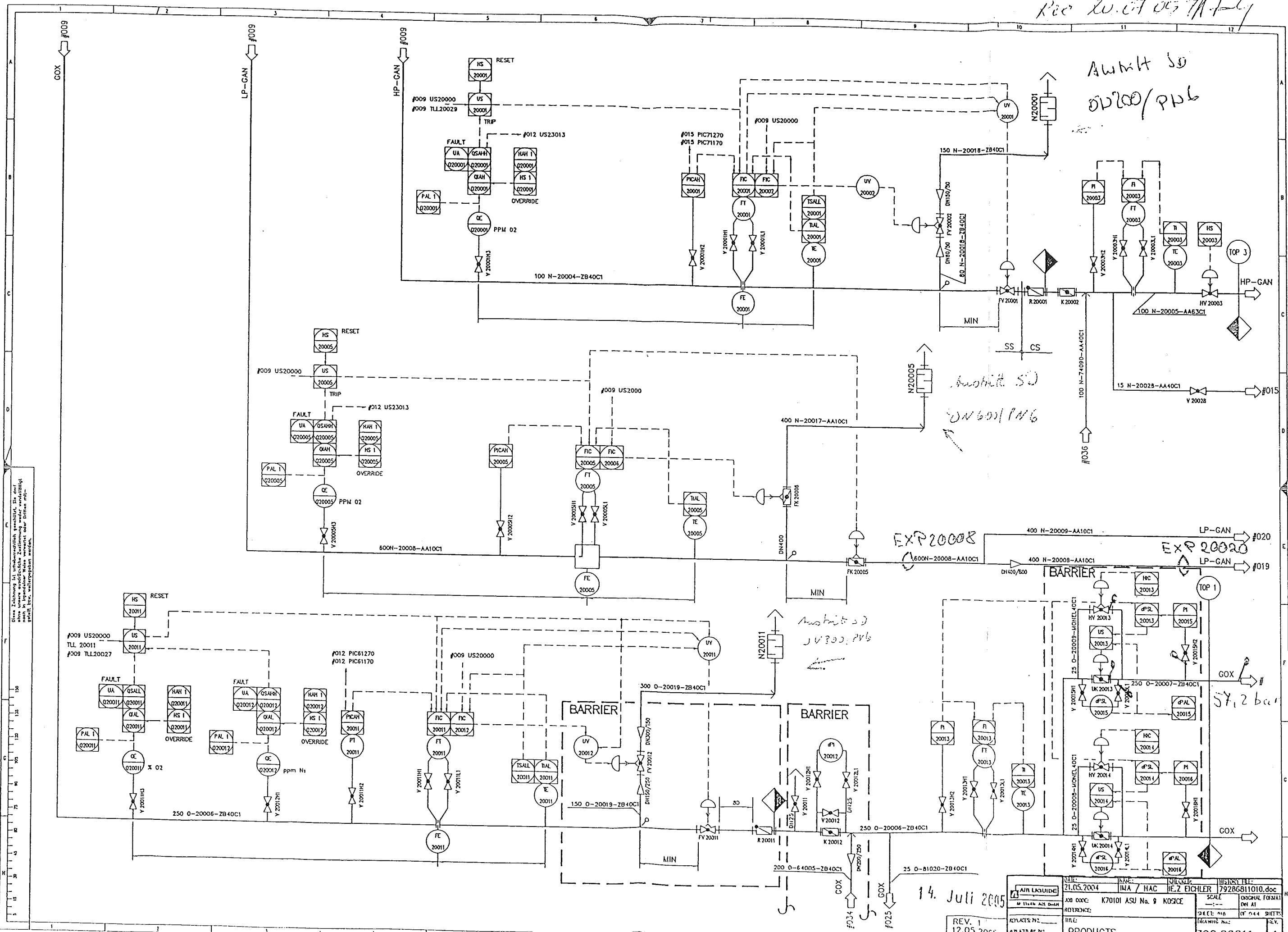


Za zhotoviteľa

V Košiciach dňa 7.9.2005

Rev. 12.05.2005

Auswert SD
00200/PH6



Diese Zeichnung ist urheberrechtlich geschützt. Sie darf ohne unsere schriftliche Zustimmung weder vervielfältigt noch in irgendeiner Weise weitergegeben werden.

150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

14. Juli 2005

REV. 1
12.05.2005

DATE:	21.05.2004	NAME:	HA / HAC	DESIGNER:	HE. Z. EICHLER	PROJECT:	79286811010.doc
APP. CODE:	K70101 ASU No. 9 K03CE	SCALE:	ORIGINAL FORMAT	DATE:	01.04.2004	SHEET:	1
REFERENCE:		REVISION:		REVISION:		REVISION:	
PRODUCTS:							

KCC: 14005 H 17

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authorization and it is strictly prohibited
to disclose it to any third parties.

Welding No.	DN	Ø	Welder No.	Protoc No.
001	25	33.7		
002	25	33.7		
003	25	33.7		
004	25	33.7		

Remarks:

Responsibility of the assembling company:

- Situation of mounting seams
- Situation of pass-lengths
- Check of measure details and pipe courses on the construction site
- Situation of the spindle at valve

Accompanying drawings:

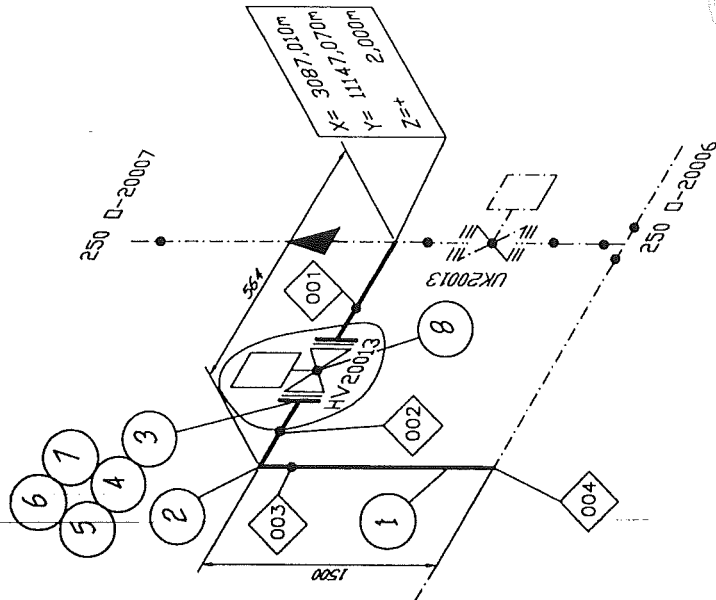
- 250 O-20007
- 250 O-20006

Accompanying lists:

- Parts list:
25 O-20009

Pipe Standard:

- AL Standard No.:
50006 / MONEL 40C1



AS BUILT



Air Liquide AS GmbH

Replaces: 79
Replaced by: 79

Date: 03.03.2005
Name: WIP/Rad.

Job code: K70101
Reference: ASU Kosice

Title: 25 O-20009

Checked: -

History file: 79287106.doc

Scale: ---:---
Original format: DIN A3

Sheet: 001 of 001 Sheets

Drawing No.: 792.87106

Rev. B

Rev.	Revisions	Date	Name	proved
B	diverse	06.06.05	WIP/Rad.	
A		13.04.05	WIP/Rad.	

Made by : Ing. Supak
Date : 11.10.2005
revision : 0

VAM **Anlagentechnik und Montagen**
01 - 5 - 6801 - 01 KOSICE AIR LIQUIDE TANKFARM - AS BUILT
Line Number : 25 O-20009 MONEL ZB40C1

	Weight (kg)
pipe mat.:	9,32
valves:	20,00
supports:	-
summe:	29,32

AS BUILT

Stückliste 01 25 O-20009 MONEL ZB40C1 Revision: B

Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
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FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden

ELBOW14	25	2	Elbow 90°, type 3 Monel 33,7x2	0,09 kg	1,00				
FLANGE7	25	0	Welding neck flange 1.4541 DIN EN 1092-1	1,00 kg	2,00				
FLANGE8	25	0	Welding neck flange Monel	1,00 kg	2,00				
GASKET7	25	2	Gasket Graphite w. CrNi-Inlay DIN EN 1514-1 70x2x35x		3,00				
NUT5	12	0	Hexagon nut A4-70 DIN EN ISO 4032	0,02 kg	12,00				
PIPE3A	25	2	PIPE, WELDED Monel 33,7x2,77	1,58 kg	2,00				
PIPE4	25	2	Pipe, welded 1.4541 DIN EN ISO 1127 33,7x2	1,58 kg	0,40				
SCREW6C	12	0	Hexagon head screw A2-70 DIN EN ISO 4014 55	0,10 kg	12,00				
WASH7	13	0	WASHER B A4-70		8,00				
Summe: 01 25 O-20009 MONEL ZB40C1				9,32 kg					

Liefersumme:
Montagesumme:
Gesamtsumme:
Gesamt-Stunden:

Stückliste 01 25 O-20009 MONEL ZB40C1										Revision: B		
Teilenummer	NW1	NW2	Teilebezeichnung				Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden												
Gesamtgewicht: 9,32 kg												
** Ende der Ausgabe												

ASB

Stückliste 01 25 O-20009 CON VAL BY AL Revision: B											
Teilenummer		NW1	NW2	Teilebezeichnung		Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.

FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokis verwenden

CHV20013	25	0	CONTROL VALVE HV20013 by AL-AGS	20,00 kg	1,00				
Summe: 01 25 O-20009 CON VAL BY AL				20,00 kg					

Liefersumme:	
Montagesumme:	
Gesamtsumme:	
Gesamt-Stunden:	
Gesamtgewicht:	20,00 kg
** Ende der Ausgabe	

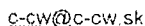
ASBUILT

VAM

VOEST MONTAGE

25 O -20009				
Welding	DN	Q	Welder No	Protoc.No
1	25	33,7	97	3294-2005
2	25	33,7	97	3294-2005
3	25	33,7	97	3294-2005
4	25	33,7	-----	-----

1	25	33,7	96	3313-2005
2	25	33,7	96	3313-2005
3	25	33,7	96	3313-2005
4	25	33,7	96	3313-2005
5	25	33,7	96	3313-2005



List č./Sheet No. 1/1

Výrobca/Producer VAM GmbH

Objednávateľ/Customer **US Steel Košice**

Popis zvaru/Description of weld	USS / VAM GmbH
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Císlo výkresu / Drawing No.: 25-0-20009

Aktivita žiariča / Intensity 45 Ci

Skúška vykonaná podľa/Examination acc. to: STN EN 444, STN EN 14 35

Hodnotenie podľa/Valuation of imperf.acc to:	STN EN 12 517, STN EN 13 480.5
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Velkosť ohniska/Focal spot size 3x1,8 Ohnisková
vzdialenosť/Focal distance 300

Druh filmu/Film type

AGFA D5; Druh fólii /

Screen type:0,027

Mierka/IQI: 10FEEN

Expozičný čas / Exposure time

56sec

Vzdialenosť povrch-film

Distance surface-film

0-1 mm

[illegible]

Signature and stamp

Vysvetlivky / Notes: V : Zvar vyhovel / WELD ACCEPTED
N : Zvar nevyhovel / WELD NOT ACCEPTED
R : Opravovaný zvar / REPAIRED WELD

Dlhé Pole 323, 013 32 ŽILINA
IČO:33857920 DIČ: 6902178437/691

Terraspan Pipe Fittings Ltd

The Nickel Alloy Specialists

Manor

135 MANOR FARM ROAD, GREET
BIRMINGHAM B11 2HT
ENGLAND

Telephone UK :0121-707 9921
FACSIMILE UK :0121-708 1752
FACSIMILE INTL :() 44 121 708 1752
E-MAIL: pipes@terraspan.co.uk
Website: www.terraspan.co.uk

CERTIFICATE OF CONFORMITY / TEST ACCORDING TO BS EN 10204 3.1

Order details

Customer:	Philip Cornes & Co Ltd
Order Number:	B32504870
Date:	21 July 2005
TPF Ref:	105938
Invoice No:	37449
Item Number:	1

Product details

Quantity:	4
Description:	1" NB sch10 90DEG LR elbow
Fitting material specification:	ASTM B366 WPNC UNS No 4400
Cast No:	BYE7531
Batch No:	TBN1531

Mechanical results taken from mill certificate

Base material specification:	ASTM B165 UNS No 4400
Yield:	245
Tensile:	610
Units of stress:	MPa
Elongation %:	77.3
Reduction of area %:	
Hardness:	
Heat treatment:	900DEG C annealed

Chemical analysis taken from mill certificate (%)

Nickel [Ni]:	63.7	Sulphur [S]:	<0.001
Copper [Cu]:	32.4	Molybdenum [Mo]:	
Chromium [Cr]:		Carbon [C]:	0.13
Iron [Fe]:	2.46	Cobalt [Co]:	
Phosphorus [P]:		Aluminium [Al]:	
Manganese [Mn]:	1.0	Magnesium [Mg]:	
Silicon [Si]:	0.27	Titanium [Ti]:	



Certificate Nr: 961983

Signed

M. Phillips

M. D. Phillips
Terraspan Pipe Fittings Ltd
Quality Control



SPECIAL METALS WIGGIN LIMITED

Holmer Road, Hereford, England HR4 9SL
Tel: +44 (0)1432 382200 Fax: +44 (0)1432 264030
Reg. in England No. 36721

INSPECTION CERTIFICATE

Quality System Compliance :-
EN 10204/DIN 50 049 - 3.1.B
ISO 9002 - AFAQ
ISO/TS 16949 (by agreement) - AFAQ
CAA (B2, B4) Approval No. A12388/47
TUV Approval to AD - Markkatt WO/TRD 100
NR9000:SABRe Approval No. 1508
For tests performed by Incofast :-
ISO/IEC 17025 - UKAS, CAA 1547



Certificate No. 1228741

Dated 31/05/2002

Page No 1 of 1

CONSIGNEE WITH GOODS

Product Description & Dimensions
MONEL alloy 400, Cold Drawn Pipe, Cold Drawn, Annealed
1.0 NB SCH 40 X 197 / 276 IN NOMINAL

Our Reference No.	Quantity	Weight or Length	MW Batch No.	Cast No.	Incoming Certificate No	Advice Note
FAC2212/01	32	185.2M	FAC2212/01	BYE7531		A19818

Specifications:
ASTM B 165 ISS 93 UNS N04400

Chemical Composition	Weight % (except where stated ppm)					
	C	Si	Mn	S	Cu	Fe
	0.13	0.27	1.0	<0.001	32.4	2.46
						63.7
Max	0.3	0.5	2.0	0.024	34.0	2.5
Min					28.0	63.0

Test Report No.
705644A

Mechanical Tests

Test Report No.	Temp. °C	0.2% PS MPa	Ten. Str. MPa	%Elong. on 50mm
705644A	20	245	610	77.3

Heat treatment

Batch & test piece: Annealed 900 C continuous furnace

Other tests - remarks

Induction air melted. Powdered slag (uphill) cast.
Castcode NDM.
Visual and dimensional examination satisfactory.

* Ni determined by difference.
Hydrostatic test satisfactory to 8 MPa
Positive material identification test satisfactory.

End of certificate



LIST NO. 2000/0000

05072R+3/1 02

Certified that, unless otherwise stated above, the whole of the above-mentioned materials have been manufactured, tested and inspected in accordance with the terms of the contract/order applicable thereto and conform fully to the standards/specification quoted hereon and the requirements of:

BS EN ISO 9002.

Signed

for and on behalf of SPECIAL METALS WIGGIN LIMITED
Authorised Signatory

C.L. Pockett

Date 31/05/2002

BRIGHTRAY, CORRONEL, FERRY, INCOCLAD, INCOLOY, INCONEL, INCOTHERM, INCO-WELD, KOTHERM,
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