

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

Technical product sheets
also available online...

www.welding.com.au

Bulletin No. **WIA_TB0001**
Issue Date **March '07**



T E C H N I C A L B U L L E T I N



austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

CONTENTS

TECHNICAL BULLETIN NO. WIA_TB0001 - AUSTFIL 70C-6M

CONTENTS

	Page
PRODUCT NAME - AUSTFIL 70C-6M.....	2
DEPOSITION RATE PERFORMANCE.....	3
COMPARATIVE WELD COSTS.....	4
COMPARATIVE WELDING FUMES.....	5
PRODUCT DATA SHEET.....	6
CERTIFICATE OF CONFORMANCE.....	7
MATERIAL SAFETY DATA SHEET.....	8
PQR - FILLET WELDING PROCEDURE QUALIFICATION RECORD.....	9
WELDING PROCEDURE SPECIFICATION.....	10
PQR - BUTT WELDING PROCEDURE QUALIFICATION RECORD.....	11
WELDING PROCEDURE SPECIFICATION.....	12
WELDING POSITION DIAGRAMS.....	13

ORDERS AND ENQUIRIES

Phone: 1300 300 884

Facsimile: 1300 301 884

Email: info@welding.com.au

www.welding.com.au <<http://www.welding.com.au/>>

Welding Industries Limited ABN 18 004 547 111

Trading as Welding Industries of Australia.



austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

PRODUCT NAME - AUSTFIL 70C-6M

PRODUCT NAME -
AUSTFIL 70C-6M

GAS SHIELDING METAL/FLUX-CORED TUBULAR WIRES

WELDING POSITIONS



DESCRIPTION

A metal-cored tubular wire designed for high speed fillet and butt welding in the down-hand position using Argon/18-25% CO₂ shielding gas mixtures. Reduced weld cleaning time prior to painting due to weld beads being almost completely slag free.

ADVANTAGES

- Reduced fume levels.
- High deposition rates and efficiencies means production cost savings.
- Weld beads almost completely slag free.
- Reduced effort and clean up time prior to painting.
- Grade 3 Shipping Approvals.
- Single and multiple pass welding in the flat and horizontal positions designed for tensile strength up to 670Mpa.
- Gas shielded, metal cored tubular wire.

APPLICATIONS / INDUSTRY

Suitable for build-up work with no inter-run cleaning / slag removal required between runs.

Agriculture - Good for mild and carbon steel applications, storage tanks, farm machinery frames and assemblies, and general maintenance work.

Mining - Excavator buckets, lips and adaptor teeth, dump truck hubs, fabrication, build and repair. Suitable for stud hole repairs – 30mm diameter and up.

Forestry - Plant construction and steel fabrication, maintenance work.

Metal Fabrication - Bridge construction, conveyor idler rollers, general fabrication beams & girders, & storage tank construction.

Transport Industry - Body building/fabrication work, trailers, roller fabrication, and chassis building.

Earthmoving - Front-end loader build and repair work, bucket lip and adaptor teeth, tipper body build and repair, backhoe and hoist fabrication welding jobs.

CLASSIFICATION

AS/NZS ISO 17632 BT 49 2 T15 O M A U H10 (new)
AWS A5 18 E70C-6M

AS/NZS 2203.1 ETD-GMp-W503A.CM1 H10 (superseded)
Lloyds Grade 3 up to Grade 36 Shipping approval, EH36, EH32, EH27S, E (and any corresponding strength grades of lower toughness) Grading DXVd, BF, 3S, 3YS, NO, NA with 25% CO₂

PACKAGING

Diameter (mm)	Spool (kg)	Pallett (kg)	Product No.
1.2	15	1080	70C6M12S
1.6	15	1080	70C6M16S

DIFFUSABLE HYDROGEN H10

Shielding Gas	Typical Results
Argon+25%CO ₂	6.01

Maximum diffusible hydrogen per 100g of deposited weld metal, 10ml.

MECHANICAL PROPERTIES AS SPECIFIED BY STANDARDS

Standards	Yield Strength Mpa	Tensile Strength Mpa	Elongation %	Charpy V-notch (Joules)
AWS A5.18: E70C-6M	400min	480min	22	27J at -29°C
AS/NZS ISO 17632 BT 49 2 T15 O M A U H10	390	490-670min	18	27J at -20°C
AS/NZS 2203.1 ETD-GMp-W503A.CM1 H10	360min	490-650	22	47J at -20°C

STORAGE AND PACKAGING

Products should be stored in dry conditions in original sealed undamaged packaging as supplied. The integrity of consumable products can be adversely affected by time and storage conditions and that the detail shown on the batch certificate is true at the time of packaging and is only valid for a LIMITED time. After that time the product may need to be reconditioned or checked to ensure it is suitable for the purpose it is intended to be used for*.

* NOTE: Refer to Welding Technology Institute of Australia (WTIA), technical 3. care and conditioning of arc welding consumables.

DISCLAIMER

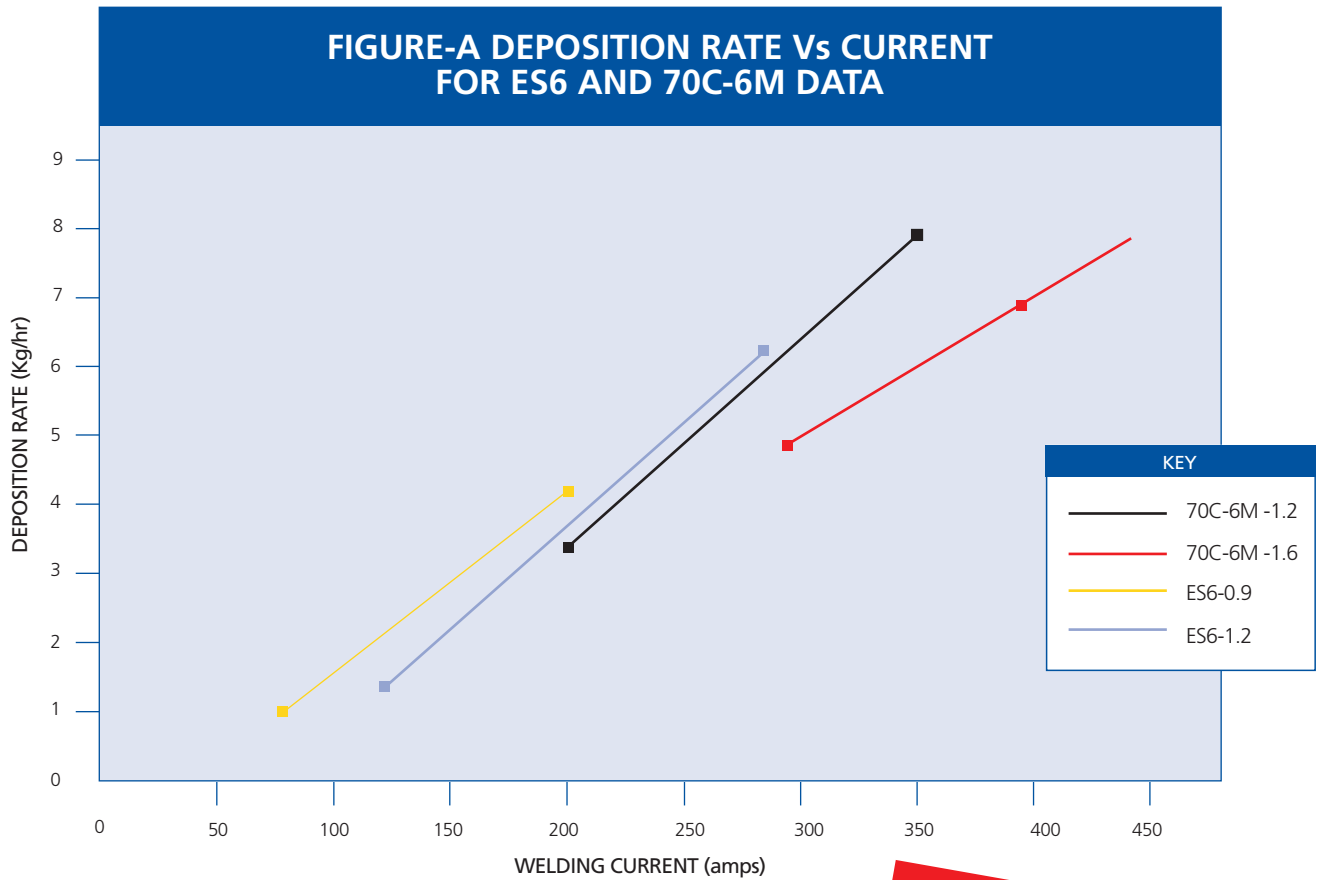
NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this Welding Procedure Specification is offered as a suggested procedure, to be assessed and approved by an appropriate authority for qualification or certification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

DEPOSITION RATE PERFORMANCE

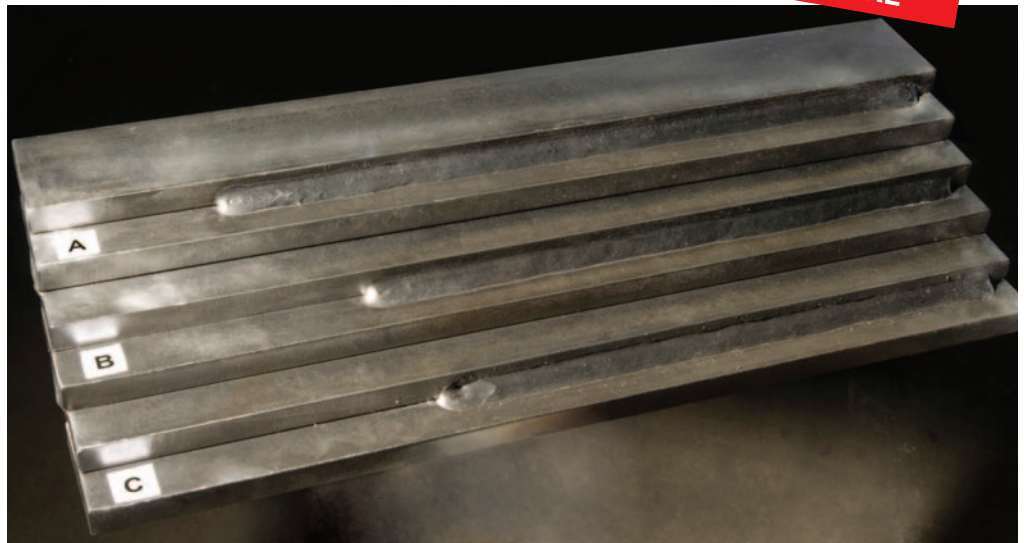
DEPOSITION RATE PERFORMANCE



The metal-cored tubular wire has a higher current density when compared to Solid MIG wire, therefore it has the ability to burn off at a faster rate, increasing its deposition.

**SAVE UP TO 20%
OF WELD TIME
OVER SOLID WIRE**

- A Austfil 70C-6M**
Diameter - 1.2 mm
Current - 280 Amps
Volts - 31
Weld length - 315 mm
- B Austfil 71T-1M**
Diameter - 1.2 mm
Current - 265 Amps
Volts - 29
Weld length - 270 mm
- C Austfil ES6**
Diameter - 1.2 mm
Current - 270 Amps
Volts - 27
Weld length - 250mm



Austfil 70C-6M gas shielded metal cored tubular wires cuts the cost of welding time and labour by at least 20% due to its superior current density for higher deposition on the job when compared to solid wires.

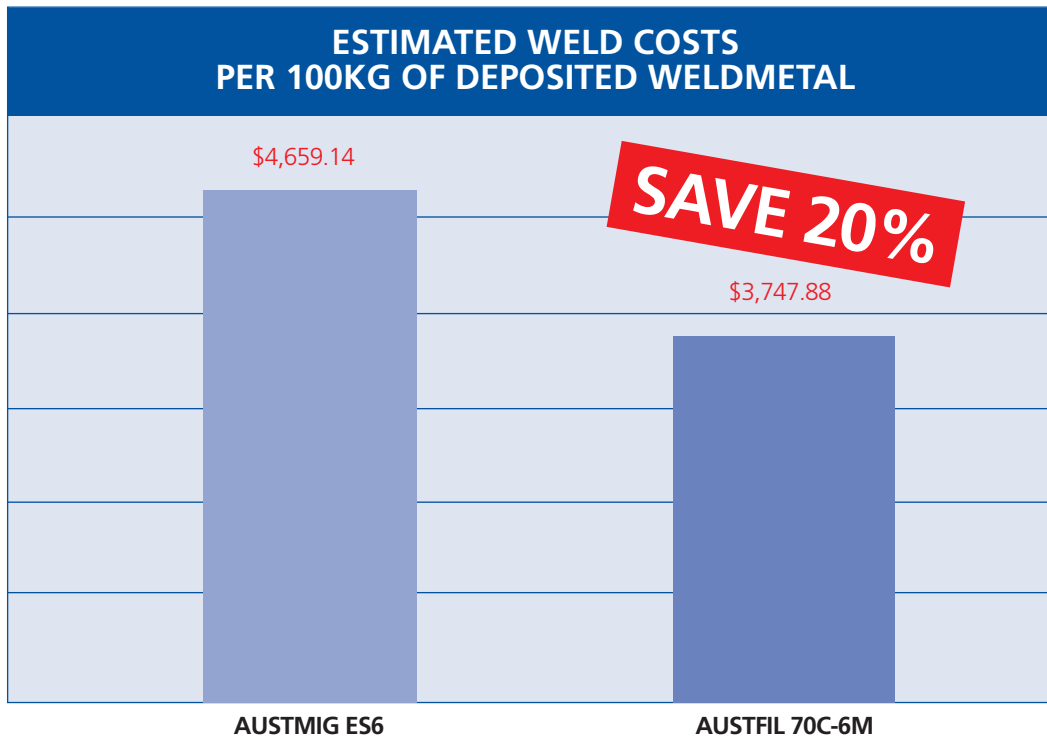
DISCLAIMER

NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this Welding Procedure Specification is offered as a suggested procedure, to be assessed and approved by an appropriate authority for qualification or certification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

COMPARATIVE WELD COSTS



COMPARATIVE
WELD COSTS

	CURRENT FILLER	PROPOSED FILLER
Filler Metal Brand	AUSTMIG ES6	AUSTFIL 70C-6M
Filler Metal Classification	ER70S-6	ER70C-6M
Filler Diameter	1.2	1.2
Welding Current (amp)	240 amps	280 amps
Welding Voltage (Volts)	28 volts	31 volts
Deposition Rate (kg per Arc/hour)	4.5kg/Arc-hr	6.0kg/Arc-hr
Deposition Factor (% arc hour per man hour)	30%	30%
Labour & Overhead cost per hour (\$)	\$60.00	\$60.00
Filler cost per kg (\$)	\$2.00	\$4.00
Filler Deposition Efficiency %	97%	98%
Type of Shielding Gas	ARG/CO2	ARG/CO2
Arg/CO2 Shielding Gas Cost per Ltr	\$0.0064	\$0.0064
Shielding Gas Consumption (Ltr/min)	18 Ltr/min	18Ltr/min
Deposition Factor (kg weldmetal per hr)	1.35kg/hr	1.80kg/hr
Time required to deposit 100kg of weldmetal	74.07 hr	55.65 hr
Labour cost to deposit 100kg of weldmetal	\$4,444.44	\$3,333.33
Labour cost per 100kg of weldmetal	\$44.44	\$33.33
Kg of filler to deposit 100kg weldmetal	103.09kg	102.04kg
Filler cost per 100kg of weldmetal	\$206.19	\$408.16
Shielding Gas required to deposit 100kg of weldmetal	1333.33 Ltr	1000.00 Ltr
Cost of shielding gas per 100kg weldmetal deposited	\$8.51	\$6.38
Cost of Filler and Gas per 100kg	\$214.70	\$414.55
Cost of Filler and Gas per kg	\$2.15	\$4.15
Total Cost of Filler, Shielding Gas & Labour per 100kg deposited	\$4,659.14	\$3,747.88
Savings in Labour per 100kg of weldmetal		\$1,111.11
Savings in Filler & Shielding Gas per 100kg of weldmetal deposited		-\$199.85
Overall savings per 100kg of weldmetal deposited		\$911.26 (20%)

NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this document is offered as a suggested cost, to be assessed and approved by an appropriate authority for qualification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

COMPARATIVE WELDING FUMES

COMPARATIVE TEST REPORT OF WELDING FUMES

Date of measurement	18/06/2005	Temperature °C / Humidity %	27°C/60%			
Sampler Capacity (m ³ / min)	799	Collected time/ Welding time	5 min/30sec			
Machine settings	250A/32V	Shielding gas	Arg + 20 % CO ₂			
Consumable/size	Austfil 70C-6M (1.2mm)			Competitor product (1.2mm)		
Samples	1	2	3	1	2	3
Total amount of weld fume (mg/min/unit time)	793	744	683	964	808	820
Average (mean value)	740			864		

**14.4%
LESS FUMES
THAN THE
COMPETITOR PRODUCTS**

For health and safety in welding refer to
Welding Technology Institute of Australia (WTIA)
technical note -7

FUME ANALYSIS TEST PROCEDURE



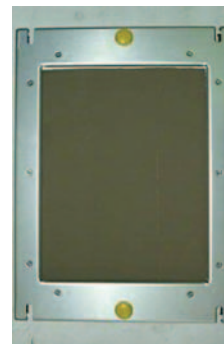
Filter paper inserted



Filter & Equipment Attached



30 sec arc on time with
5 minute continuous
fume collection



Filter paper after welding
fume analysis

STORAGE AND PACKAGING

Products should be stored in dry conditions in original sealed undamaged packaging as supplied. The integrity of consumable products can be adversely affected by time and storage conditions and that the detail shown on the batch certificate is true at the time of packaging and is only valid for a LIMITED time. After that time the product may need to be reconditioned or checked to ensure it is suitable for the purpose it is intended to be used for*.

* NOTE: Refer to Welding Technology Institute of Australia (WTIA), technical 3. care and conditioning of arc welding consumables.

DISCLAIMER

NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this Welding Procedure Specification is offered as a suggested procedure, to be assessed and approved by an appropriate authority for qualification or certification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

PRODUCT DATA SHEET

WELDING POSITIONS



- Gas Shielded, Metal-Cored Wire
- Slag-Free Weld Bead
- Higher Deposition Rates
- Smooth Appearance

SHIPPING APPROVALS

LRS 3S, 3YS

TYPICAL ALL WELD METAL CHEMICAL ANALYSIS

C	Mn	Si	S	P	Cr	Ni	Mo	V	Cu
0.038	1.46	0.68	0.009	0.012	0.01	0.02	0.00	0.01	0.02

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES

Gas Type	Ar+25% CO ₂
Yield Stress	587 Mpa
Tensile Strength	628 Mpa
Elongation	29%
CVN Impact Values	51J @ -29°C
Diffusible Hydrogen	H10 - 6.0ml avg/100g of deposited weld metal

CLASSIFICATIONS

AS/NZS ISO 17632 BT 49 2 T15 O M A U H10 (new)
AS/NZS 2203.1 ETD*-GMp_W503A.CM1 H10 (superseded)
AWS A5.18 E70C-6M

*1.2mm can be used in some positional applications

DESCRIPTION AND APPLICATIONS

Austfil 70C-6M is a metal-cored wire designed for high speed fillet and butt welding in the downhand position using Argon + 18-25% CO₂ shielding gas mixture. Weld beads are almost completely slag free with only minimal silicon islands, reducing the time and effort spent between runs and on cleanup prior to surface finishing.

Austfil 70C-6M is recommended for single and multi pass welding in both flat and horizontal positions for mild steel, carbon and manganese carbon steels with minimum clean up and where high deposition rates and efficiencies are required in high productivity, semi automatic and fully automatic welding installations.

OPERATIONAL DATA

PACK SIZE AND TYPE	PART NUMBER
15 kg	70C6M12S
15 kg	70C6M16S

OPERATIONAL DATA

WIRE SIZE	WELDING CURRENT RANGE (amps)	ARC VOLTAGE RANGE (volts)*
1.2	200-350	29-35
1.6	300-450	27-34

*Voltage is determined by current and wire arc length. Welding currents and voltage shown are operational guides only.

STORAGE INFORMATION

Products should be stored in dry conditions in original sealed undamaged packaging as supplied. The integrity of consumable products can be adversely affected by time and storage conditions and that the detail shown on the batch certificate is true at the time of packaging and is only valid for a LIMITED time. After that time the product may need to be reconditioned or checked to ensure it is suitable for the purpose it is intended to be used for*.
 * NOTE: Refer to Welding Technology Institute of Australia (WTIA), technical 3. care and conditioning of arc welding consumables.

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

CERTIFICATE OF CONFORMANCE

Commodity			AUSTFIL 70C-6M		Size x Length		1.2	
Mfg. date			08/02/05		Lot No.		50802212	
Certificate No.			081105-02		Specification		ETD-GMp-W503A-C1H 10	
Amps DCEP	Volts	WFS	Shielding Gas	Electrode Stick-Out	Temperature		Travel Speed	
					Preheat	Interpass		
250	32		AR+25%CO2	1 In. 25mm	RT F±25 RT C±14	300 F±25 149 C±14	12±1	lpm

Chemical Analysis	Element (%)	C	Mn	Si	P	S	Ni
	Specification	MAX 0.20	MAX 1.75	MAX 0.90	MAX 0.04	MAX 0.03	MAX 0.50
	Filler Metal	-	-	-	-	-	-
	Deposited Metal	0.024	1.71	0.065	0.013	0.006	0.04
	Element (%)	Cr	Mo	V	Cu	Al	
	Specification	MAX 0.20	MAX 0.30	MAX 0.08	-	MAX 1.8	
	Filler Metal	-	-	-	-	-	
	Deposited Metal	0.01	0.00	0.01	-	0.02	

Mechanical Properties	Sample's Diameter in	Tensile Strength 490-650 MPa	Yielding Point 360 Mpa	Elongation % 22 min	Impact Value 27J at -29°C	
	NR	582	543	31	51	
	Hardness Test (HRC)	Bending Test		Fillet Weld Test	Soundness Test	Moisture %
		Face	Root			
NR	NR	NR	OK	Acceptable	NR	

Remark

We hereby certify that this report is correct and that all test results are in compliance with the specification described herein.

Diffusible Hydrogen: 6.01 ml/100g
CONFORMS TO AWS SPEC. A5.18

Quality Control Section



Kevin Yu

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

MATERIAL SAFETY DATA SHEET

INGREDIENTS	CAS No.	%	TWA
Ozone	10028-15-6		0.1PPM
Maganese	7439-96-5	<6	1mg/m ³
Nitrogen Oxides	Mixture		
Fluoride Fume	16984-48-8		

PROPERTIES

Does not mix with water.
Does not burn.

HEALTH HAZARD INFORMATION



ACUTE HEALTH EFFECTS

Inhalation may produce health damage*.
May produce discomfort of the respiratory system*.
* (limited evidence)



CHRONIC HEALTH EFFECTS

Exposure may produce irreversible effects*.
Cumulative effects may result following exposure*.
*(limited evidence)



PRECAUTIONS FOR USE



ENGINEERING CONTROLS

Local exhaust ventilation recommended.
Mechanical exhaust recommended.



GLASSES

Welding mask/goggles/handshield.



GLOVES

Welding.



RESPIRATOR

Type- P2 filter or sufficient capacity.



STORAGE & TRANSPORT

Keep container in a well ventilated place.
Store in cool, dry, protected area.



EMERGENCY



FIRST AID

SWALLOWED

Rinse mouth with water.



EYE

Wash eye with running water.



SKIN

Wash with water and soap.

INHALED

Fresh air. Rest, keep warm. If breathing shallow, give oxygen. Medical attention.

ADVICE TO DOCTOR

Treat symptomatically.

FIRE FIGHTING

Keep surrounding area cool. Water spray/fog.

SPILLS & DISPOSALS

Sweep/shovel to safe place.

Take off immediately all contaminated clothing.

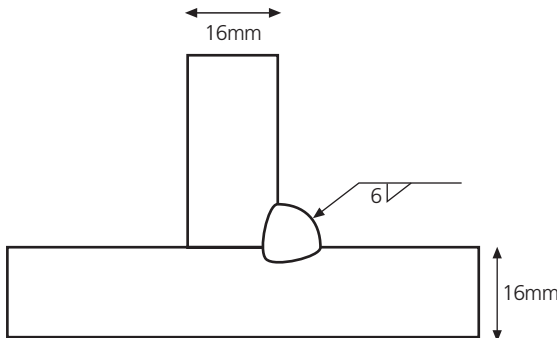
**NOT REGULATED FOR
TRANSPORT OF DANGEROUS GOODS**

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

PQR - FILLET WELDING PROCEDURE QUALIFICATION RECORD

PROCEDURE No:		W.P.S. No 70C-6M-00		REVISION:		SHEET 1 OF 1	
PQR No:		M-948					
Welding Code		AS/NZS 1554.1 SP					
Material Grade		AS 3678 - 350					
Material Certificate No.							
Test Plate Thickness		16mm					
Welding Process		FCAW					
Joint Type Qualified		FILLET					
Position		2F					
Progression		FLAT/PUSH					
Filler Type & Batch No		METAL CORED WIRE N° 50802212					
Trade Name		AUSTFIL 70C-6M		Root Gap		NA	
Flux Type & Batch No		NA		Root Face		NA	
Gas Type & Flowrate		ARG/18% CO ₂ 18L/min		Bevel Angle		NA	
Technique		5° PUSH		Preheat Temp		25°C	
Electrode Stickout		20-25mm		P.W.H.T.		Nil	
Interpass Cleaning		NA		Polarity		DCEP	



RUN REPLACEMENT SKETCH

Run No.:	SIDE	WELD POS	GAS/FLUX		AMP		VOLTS		TRAVEL RATE			INTER PASS °C	HEAT INPUT Kj / mm	
			SIZE	CLASS	TYPE	DC/PO	AC	DC/POL	AC	SEC	mm			mm/min
1	1	2F	1.2	70C-6M	AR/18% CO ₂	304	—	34	—	23	200	522	25°C	1.19
2														
3														
4														
5														

WELDER'S NAME & MARK: S. Dutch

PREPARED BY: WIA

DATE: 2006

APPROVED BY: N. Cornish

DATE: 2006

DISCLAIMER

NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this Welding Procedure Specification is offered as a suggested procedure, to be assessed and approved by an appropriate authority for qualification or certification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

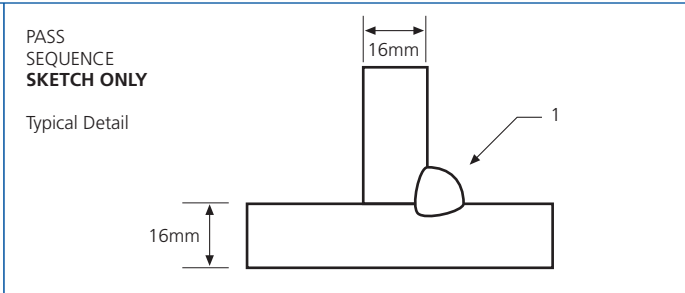
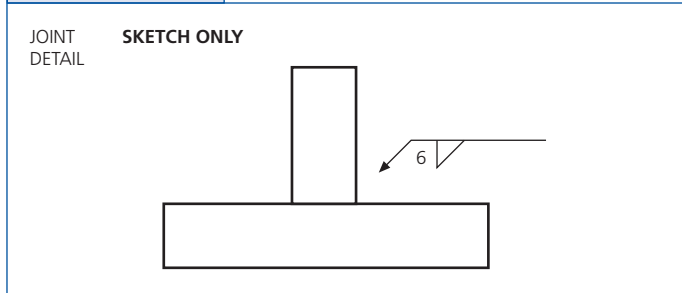
austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

WELDING PROCEDURE SPECIFICATION

PROJECT:	Metal-Cored Tubular Wire	REVISION:	A
WPS No:	70C-6M-00	PQR No:	M-945

WELDING CODE	AS/NZS 1554.1 SP 2005	PROGRESSION: FLAT
WELDING PROCESS	FCAW	
EDGE PREPARATION	SQUARE	
JOINT TYPE	SINGLE PASS FILLET WELD	
POSITION	2F	
WELDING M/C TYPE	WELDMATIC FABRICATOR	



JOINT TOLERANCE		MATERIAL SPECIFICATION			THERMAL TREATMENT		
ROOT OPENING	0 -1 mm	SPECIFICATION GROUP No. THICKNESS	AS3678-350	RANGE	≤ 50mm 't'	MINIMUM PREHEAT	10°C
ROOT FACE	NA		4		MAX. INTERPASS TEMP.	150°C	
GROOVE ANGLE	NA		16mm		P.W.H.T.	Nil	

TECHNIQUE				CONSUMABLES			
STRING OR WEAVE	STRING	FILLER TYPE	AS/NZS ISO 17632 BT 49 2 T15 O M A U H10 (new) AS/NZS2203.1 ETD-GMp-503A.CM1 H10 (superseded) Batch No 50802212				
CLEANING: INITIAL	WIRE BRUSH						
INTERPASS	NA						
BACKGOUGE METHOD	NA						
STICK-OUT	20 -25mm						
TRAVEL SPEED RANGE	AS DETAILED BELOW						
MAX WEAVE WIDTH	NA						
TUNGSTEN SIZE/TYPE	NA						
ELECTRODE ANGLE	5° PUSH						
BRAND NAME	AUSTFIL 70C-6M						
GAS TYPE	Arg / 18% CO ₂						
GAS FLOW	18Ltr/min						

WELD PASS DETAILS			ELECTRODE DESCRIPTION			FLUX/GAS TYPE	WELDING PARAMETERS**			TRAVEL SPEED	INTERPASS	HEAT INPUT
PASS	SIDE	POSITION	TYPE	SIZE	SPEC		AMPS	VOLTS	POLARITY	mm/min	°C Max	Kj/mm
1	1	2F	70C-6M	1.2	AS/NZS-2203.1	Ar+18%CO ₂	304	34	DCEP	522	150°C	1.19

PREPARED BY DATE	WIA	APPROVED BY	N. Cornish	WELDER	S. Dutch
-------------------------	-----	--------------------	------------	---------------	----------

CUSTOMER	
NAME	
SIGN	
DATE	
COMMENTS.	
1. ELECTRODES TO BE STORED FOR USE AS RECOMMENDED BY THE MANUFACTURER.	
2. BALANCE WELD SEQUENCE TO MINIMISE DISTORTION.	
Macro required in accordance with AS/NZS1554.1SP to qualify the WPS.	
(Machine used: WIA - Weldmatic, Fabricator, Settings - Coarse; C, Fine: 3, Wire Feed: 4)	
W.P.S STATUS	
SIGN:	WIA
DATE:	2006

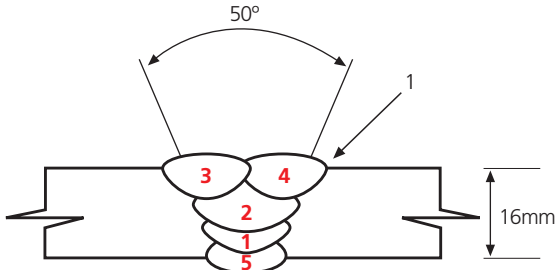


WELDING PROCEDURE SPECIFICATION

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

PQR - BUTT WELDING PROCEDURE QUALIFICATION RECORD

PROCEDURE No:		W.P.S. No 70C-6M-01		REVISION:		0		SHEET 1 OF 1				
PQR No:		M-947										
Welding Code		AS/NZS 1554.1 SP		 <p style="text-align: center;">RUN REPLACEMENT SKETCH</p>								
Material Grade		AS 3678 - 350										
Material Certificate No.												
Test Plate Thickness		16mm										
Welding Process		FCAW										
Joint Type Qualified		BUTT										
Position		1G										
Progression		FLAT										
Filler Type & Batch No		METAL CORED WIRE No 50802212										
Trade Name		AUSTFIL 70C-6M										
Flux Type & Batch No		NA		Root Face		2-3mm						
Gas Type & Flowrate		ARG/18% CO ₂ 18-20 L/min		Bevel Angle		50°						
Technique		DRAG		Preheat Temp		25°C						
Electrode Stickout		20-25mm		P.W.H.T.		Nil						
Interpass Cleaning		GRINDER / WIRE BRUSH		Polarity		DCEP						
Run No.:	SIDE	WELD POS			GAS/FLUX TYPE	AMP DC/PO	VOLTS DC/POL	TRAVEL RATE			INTER PASS °C	HEAT INPUT Kj / mm
			SIZE	CLASS				SEC	mm	mm/min		
1	1	1G	1.2	70C-6M	AR/18% CO ₂	302	33.5	47	300	383	25°C	1.58
2	1	1G	1.2	70C-6M	AR/18% CO ₂	288	34	43	300	419	110°C	1.40
3	1	1G	1.2	70C-6M	AR/18% CO ₂	280	34.5	53	300	340	100°C	1.70
4	1	1G	1.2	70C-6M	AR/18% CO ₂	294	34	60	300	300	115°C	2.00
5	2	1G	1.2	70C-6M	AR/18% CO ₂	284	34	71	300	254	90°C	2.28

WELDER'S NAME & MARK: S. Dutch

DATE: 2006

PREPARED BY: WIA

DATE: 2006

APPROVED BY: N. Cornish

DATE: 2006

DISCLAIMER

NOTE: WIA is a manufacturer and supplier of welding products, and does not operate as a provider of consultancy or other technical services or advice related to welding. The information provided in this Welding Procedure Specification is offered as a suggested procedure, to be assessed and approved by an appropriate authority for qualification or certification. No warranties are expressed, nor may be implied, as to the efficacy of this suggested procedure.

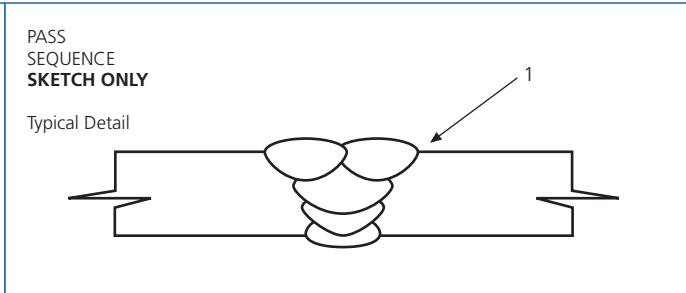
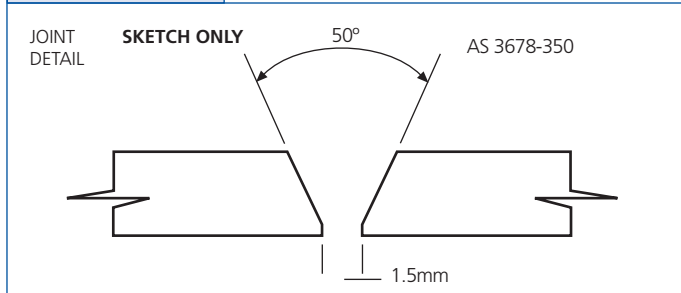
austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

WELDING PROCEDURE SPECIFICATION

PROJECT:	Metal-Cored Tubular Wire	REVISION:	A
WPS No:	70C-6M-01	PQR No:	M-947

WELDING CODE	AS/NSZ 1554.1 SP	PROGRESSION: FLAT
WELDING PROCESS	FCAW	
EDGE PREPARATION	SINGLE BEVEL	
JOINT TYPE	DOUBLE WELDED SINGLE VEE	
POSITION	1G	
WELDING M/C TYPE	WELDMATIC FABRICATOR	



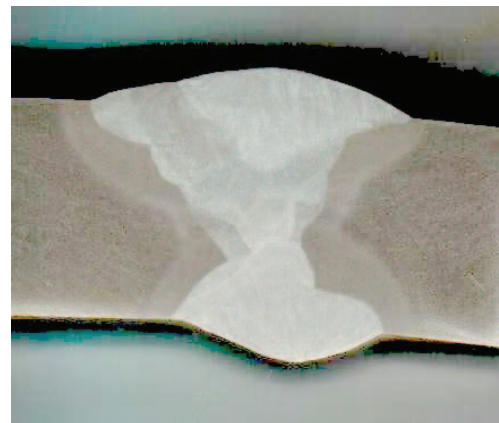
JOINT TOLERANCE		MATERIAL SPECIFICATION				THERMAL TREATMENT	
ROOT OPENING	1-3mm	SPECIFICATION	AS3678-350	RANGE	12-24mm	MINIMUM PREHEAT	10°C
ROOT FACE	3mm	THICKNESS	16mm			MAX. INTERPASS TEMP.	150°C
GROOVE ANGLE	50°					P.W.H.T.	NA

TECHNIQUE				CONSUMABLES			
STRING OR WEAVE	STRING	FILLER TYPE	AS/NZS ISO 17632 BT 49 2 T15 O M A U H10 (new)				
CLEANING: INITIAL	GRIND		AS/NZS2203.1 ETD-GMp-503A.CM1 H10 (superseded)				
INTERPASS	WIRE BRUSH		Batch No 50802212				
BACKGOUGE METHOD	GRIND		BRAND NAME	AUSTFIL 70C-6M			
STICK-OUT	20 -25mm	GAS TYPE	Arg / 18% CO2				
TRAVEL SPEED RANGE	AS DETAILED BELOW	GAS FLOW	18 Ltr/min				
MAX WEAVE WIDTH	NA						
TUNGSTEN SIZE/TYPE	NA						
ELECTRODE ANGLE	10° DRAG						

WELD PASS DETAILS			ELECTRODE DESCRIPTION			FLUX/GAS TYPE	WELDING PARAMETERS**			TRAVEL SPEED	INTERPASS	HEAT INPUT
PASS	SIDE	POSITION	TYPE	SIZE	SPEC		AMPS	VOLTS	POLARITY	mm/min	°C Max	Kj/mm
1	1	1G	70C-6M	1.2	AS/NZS-1554.1	Arg+18%CO2	280 - 300	34	DCEP	260 - 420	150°C	1.58
2	1	1G	70C-6M	1.2	AS/NZS-1554.1	Arg+18%CO2	280 - 300	34	DCEP	260 - 420	150°C	1.40
3	1	1G	70C-6M	1.2	AS/NZS-1554.1	Arg+18%CO2	280 - 300	34	DCEP	260 - 420	150°C	1.70
4	1	1G	70C-6M	1.2	AS/NZS-1554.1	Arg+18%CO2	280 - 300	34	DCEP	260 - 420	150°C	2.00
5	2	1G	70C-6M	1.2	AS/NZS-1554.1	Arg+18%CO2	280 - 300	34	DCEP	260 - 420	150°C	2.28

PREPARED BY	WIA	APPROVED BY	N. Cornish	WELDER	S. Dutch
DATE					

CUSTOMER
NAME
SIGN
DATE
COMMENTS.
1. ELECTRODES TO BE STORED FOR USE AS RECOMMENDED BY THE MANUFACTURER.
2. BALANCE WELD SEQUENCE TO MINIMISE DISTORTION.
Macro required in accordance with AS/NZS1554.1 SP to qualify the WPS.
(Machine used: WIA - Weldmatic, Fabricator, Settings - Coarse; C, Fine: 3, Wire Feed: 4)
W.P.S QA/QC STATUS
SIGN: WIA
DATE: 2006



WELDING PROCEDURE SPECIFICATION

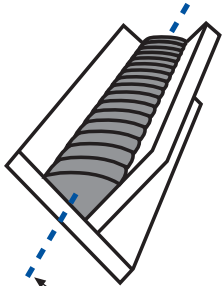
austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

WELDING POSITION DIAGRAMS

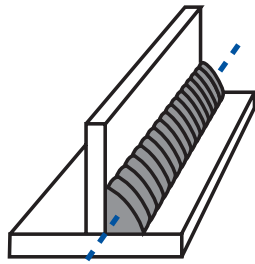
FILLET WELDS

FLAT POSITION
1F



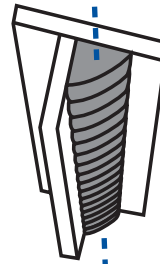
Axis of Weld
Horizontal

HORIZONTAL POSITION
2F



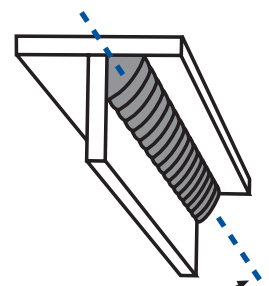
Axis of Weld
Horizontal

VERTICAL POSITION
3F



Axis of Weld
Vertical

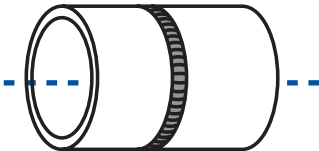
OVERHEAD POSITION
4F



Axis of Weld
Horizontal

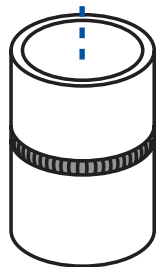
PIPE BUTT WELDS

FLAT
1G



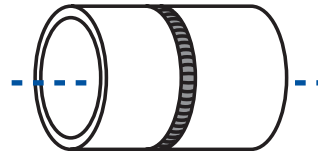
Pipe shall be turned or
rolled while welding,
Axis of Pipe Horizontal

HORIZONTAL
2G



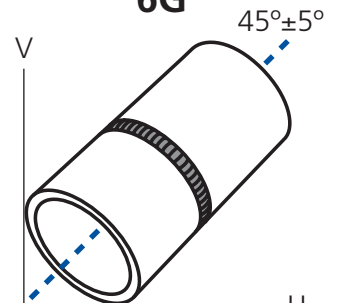
Axis of Pipe
Vertical

POSITION
5G



Pipe shall NOT be turned
or rolled while welding,
Axis of Pipe Horizontal

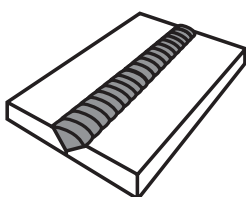
POSITION
6G



Inclined Axis with
Pipe Stationery

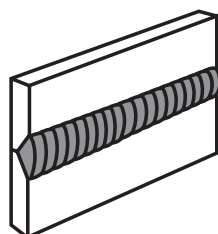
BUTT WELDS

FLAT POSITION
1G



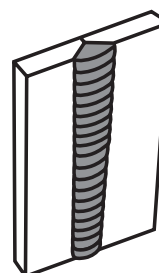
Plates Horizontal

HORIZONTAL POSITION
2G



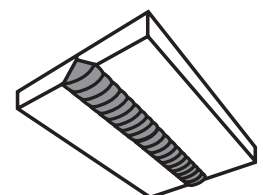
Plates Vertical

VERTICAL POSITION
3G



Plates Vertical

OVERHEAD POSITION
4G



Plates Horizontal

austfil 70C-6M

GAS SHIELDED METAL-CORED TUBULAR WIRE AWS A5.18:E70C-6M

NOTES



www.welding.com.au

1300 300 884

