

# Coregas line of shielding gases selection chart

	Coregas 5/2	Coregas 07	Coregas 18	Coregas 16/3	Coregas 10	Coregas 25	Coregas He30
Steels, mild and alloy	1	1	1	1	1	1	1
High deposition rates	1	1	1	1	1	1	1
All positions	1	2	2	2	1	2	2
Penetration	2	1	1	2	1	1	1
Rapid solidification	1	1	2	2	1	2	2
Hot arc	2	1	1	1	2	1	1
Flux cored wires	2	2	1	2	2	1	2
X-ray quality	1	1	1	1	1	2	1
Low spatter	1	1	2	2	1	2	1
Thin guage material	1	2	2	2	1	2	2
Rust/scale tolerance	2	1	1	1	2	1	1
Zinc coated steel	2	1	1	2	2	1	1
Galvanised coated steel	2	1	1	2	2	1	1
Stainless steels/duplex	2b						

Preference rating:  
 1 = first  
 2 = second  
 Note:  
 a critical applications  
 b non critical applications

## Safety in welding

### Ventilation

- Ensure adequate ventilation in welding area.
- Use exhaust fans where necessary.
- Provide clean, dry air supply in confined spaces.

### Helmets

- To be of approved types.
- To be fitted with filter lens of suitable shade.
- Space gasket to be fitted between front clear lens and filter lens.

### Personnel protection

- Dark coloured clothing advised.
- Woollen materials preferable to synthetics or cotton.
- Cover body completely.
- Gloves are essential and must be dry.
- Wear robust footwear, not thongs, sandals etc.
- Screen the work to protect others from the arc flash.

### Electrical

- Only licenced electricians to attend to electrical repairs.
- Ensure all cables are sound and free from defects.
- Ensure all electrical connections are efficient and tight.

### Cleaning

- Do not use carbon tetrachloride or trichloroethylene (toxic). Use white spirit or acetone.

### Location

- Ensure welding area is dry.
- Do not weld in wet locations.
- Ensure area is free of combustibles and flammable materials.



Coregas – part of Wesfarmers Industrial and Safety

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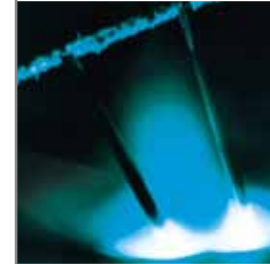
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Shieldpro

and Coregas

shielding gases

troubleshooting

guide



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industrial gases

### SIX- AND TWELVE-PACKS

Cylinder packs, complete with pipeline systems, offer substantial savings for the larger user.

Ask your Coregas representative for details.

WELD FAULT	CAUSE	SOLUTION
<b>CRACKS</b>	Weld bead too small	Decrease travel speed
	Poor fit up	Control joint tolerance
	Lack of pre/post heat on alloy steels	Apply heat as advised by material supplier
	High joint restraint	Modify design and/or application technique
	Removal of torch before weld crater has solidified	Keep torch in position over molten crater until gas flow stops
	Presence of grease, paint, foreign matter on work	Clean workpieces/ surfaces prior to welding
	Excessive voltage	Reduce voltage so a faint 'crackle' can be heard in the arc
Welding over SMA tack welds	Completely remove all SMA slag and grind tacks	
<b>POROSITY</b>	Insufficient gas coverage	Increase flow rate to afford effective shielding
	Excessive flow rates	Reduce to max. 15 litres/min (spray transfer) 12 litres/min (short arc) If helium mixtures are being used, check and apply correction factors to flow rates
	Spatter in nozzle	Clean gas nozzle
	Ineffective gas shielding through draughts, winds etc.	Erect screens to protect weld area
	Excessive stick-out distance	Maintain recommended torch-work distances
	Inefficient gas hoses and/or connections	Check, replace and tighten as required
	Excessive current and/or voltage	Adjust for optimum conditions

WELD FAULT	CAUSE	SOLUTION
	Contaminated or wet shielding gas	Use high purity Coregas and Shieldpro shielding gas mixture
	Contaminated wire	Ensure wire is free from excessive drawing lubricant
	Wrong wire analysis	Select to suit workpiece
	Rust, oil, grease, paint or contaminants on work	Clean work prior to welding
	Acute torch to work angle	Hold torch at 10° from vertical for downhand welding
<b>SLAG INCLUSIONS</b>	Excessive travel speeds where heavy oxides are present	Reduce travel speeds
	Contaminants on work surface	Clean prior to welding
	Lack of interpass cleaning	Remove slag deposits between passes
	Weaving too wide	Reduce weave width. Use stringer passes.
	<b>INCOMPLETE FUSION</b>	Voltage too low
Weld pool too large		Increase travel speed. Reduce weave width.
Excessive wire protrusion		Maintain at 15–20mm (spray transfer) 7–10mm (short arc)
Misdirected wire		Direct wire carefully
Cold deposits		Increase voltage. Adjust inductance value (short arc).
<b>INCOMPLETE PENETRATION</b>	Poor joint design	Provide access to bottom of weld preparation
	Inadequate butt joint root gap	Ensure adequate root gap
	Weld pool too large	Increase travel speed.
	Preparation too small	Increase preparation angle

WELD FAULT	CAUSE	SOLUTION	
	Incorrect torch angle	Maintain torch at 10° maximum to vertical	
	Excessive wire (protrusion)	Limit to 15–20mm range (spray transfer), 7–10mm range (short arc)	
	Excessive root face	Reduce root face	
	Current too low	Increase current (wire feed speed)	
	Poor current pick up	Check contact tip bore	
	Inefficient work return clamp	Attach efficiently. Clean workpiece before attaching	
	<b>UNDERCUTTING</b>	Torch angle too low	Raise torch angle
		Travel speed too slow	Increase travel speed
		Voltage too high	Lower voltage
		Travel speed too fast	Reduce travel speed
Excessive current		Reduce current	
<b>EXCESSIVE PENETRATION</b>	Excessive heat input	Reduce current and voltage. Increase travel speed.	
	Incorrect joint preparation	Reduce root gap. Increase root face.	
<b>SPATTER</b>	Current too low	Increase current	
	Voltage too high	Decrease voltage	
	Acute torch to work angle	Maintain at 10° maximum to vertical	
	Incorrect inductance setting	Set at correct value	
	Work return clamp inefficient	Ensure clamp and cable are efficient	

The above is guide only. Contact your Coregas representative for further advice.