

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 gauge 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.

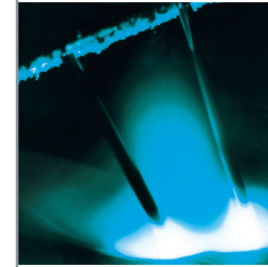
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Wesfarmers Energy
Coregas is part of Wesfarmers Energy

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Shieldpro

and Coregas

shielding gases

troubleshooting

guide


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industrial gases

| WELD FAULT | CAUSE | SOLUTION |
|-----------------|--|---|
| CRACKS | 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 |
| POROSITY | 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 |
| SLAG INCLUSIONS | 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. |
| INCOMPLETE FUSION | Voltage too low | Increase voltage |
| | 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 |
| INCOMPLETE PENETRATION | Cold deposits | Increase voltage. Adjust inductance value (short arc). |
| | 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 |
| | UNDERCUTTING | Torch angle too low |
| Travel speed too slow | | Increase travel speed |
| Voltage too high | | Lower voltage |
| Travel speed too fast | | Reduce travel speed |
| EXCESSIVE PENETRATION | Excessive current | Reduce current |
| | Excessive heat input | Reduce current and voltage. Increase travel speed. |
| SPATTER | Incorrect joint preparation | Reduce root gap. Increase root face. |
| | 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.