



## ***Ferromaxx<sup>®</sup> 15***

### ***For faster, cleaner welding of steel***

Purpose-designed for MAG welding of carbon, carbon manganese and low-alloy steels, the Ferromaxx<sup>®</sup> gases give superb weld quality and excellent penetration, together with minimal spatter and low fume levels.

### ***The reliable all-rounder***

Ferromaxx<sup>®</sup> 15 is a ternary mixture (of argon, CO<sub>2</sub> and oxygen) used to weld carbon steels of all thicknesses. The action of oxygen on the transfer of metal allows for greater arc stability.

- Improves weld quality and reduces spatter, excellent penetration characteristics.
- Excellent weld control.
- Protects the work environment, minimal ozone generation.



## Approved welding procedure Ferromaxx® 15

|                       |  |
|-----------------------|--|
| Manufacturer:         | Air Products PLC<br>Air Products Ireland Ltd |
| Welding process:      | MAG 135                                      |
| Root welding process: | MAG 135                                      |
| Joint type:           | Butt   |

## Joint design

|                                    |   |
|------------------------------------|---|
| Preparation of parts               | Machined preparations<br>Sandblasting and solvent cleaning                                      |
| Parent material and specifications | BS 970 : Part 3<br>Grade 080A15   |
| Composition                        | C - 0.13 / 0.18%<br>Si - 0.10 / 0.40%<br>Mn - 0.60 / 1.0%<br>P - 0.050% max.<br>S - 0.050% max. |
| Material thickness                 | 12 mm   |
| Outside diameter                   | n/a   |
| Welding position                   | Flat (PA)   |

## Welding details

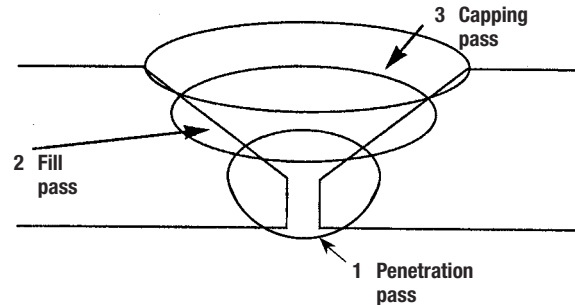
| Run | Process | Diameter of filler metal (mm) | Current (A) | Voltage (V) | Type of Wire feed Current & Polarity | Wire feed Speed (m/min) | Travel Speed (mm/min) | Heat Input (KJ) |
|-----|---------|-------------------------------|-------------|-------------|--------------------------------------|-------------------------|-----------------------|-----------------|
| 1   | MAG     | 1.0                           | 194         | 26          | DC+                                  | 9                       | 266                   | 1.1             |
| 2   | MAG     | 1.2                           | 256         | 27          | DC+                                  | 8.8                     | 314                   | 1.3             |
| 3   | MAG     | 1.2                           | 270         | 28.5        | DC+                                  | 8.6                     | 400                   | 1.1             |
| 4   |         |                               |             |             |                                      |                         |                       |                 |
| 5   |         |                               |             |             |                                      |                         |                       |                 |
| 6   |         |                               |             |             |                                      |                         |                       |                 |

|                                 |  |
|---------------------------------|--|
| Filler metal and specification  | AWS-A5.18 ER 70S-6 (SG3Si)   |
| Filler metal composition        | C - 0.12% max. - Si - 0.70 / 1.2%<br>Mn - 0.9 / 1.6% - P - 0.040% max.<br>S - 0.040% max. - Cu - 0.040% max. |
| Shielding gas                   | Ferromaxx® 15  |
| Classification of shielding gas | EN 439 - M24   |
| Gas flow rate                   |  |
| - Shield gas                    | 15 l/min   |
| - Purge gas                     | n/a  |
| TIG electrode type              | n/a  |
| Underside protection            | n/a  |
| Preheat temperature             | Ambient  |
| Interpass temperature           | n/a  |
| Heat treatment                  | n/a  |
| Stand off distance              | 15 mm  |

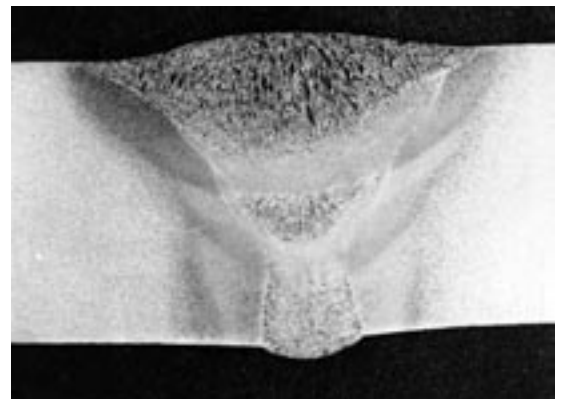
|                      |                                 |
|----------------------|---------------------------------|
| Torch angle          | 15° in the direction of welding |
| Nozzle bore diameter | 18 mm                           |

\*n/a: not applicable

## Welding sequence



## Macrography



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