

AI-1541

Specifications

DIN EN 14700

DIN 8555 T Fe20 MF 21-65-GZ

Description and Applications

AI-1541 is an open arc tubular wire filled with 40% fused tungsten carbide (FTC) and up to 10% of special refractory carbides for semiautomatic application, where extreme abrasive wear is encountered. On low alloyed steels that have a maximum of 0.45% carbon, the overlay is crack-free or low crack. A higher carbon content may lead to a small degree of relief checking.

For hard-facing and repairing tool joints and other drilling and mining parts exposed to extreme wear. A high-performance, yet economical alternative to **AI-1779**.

Applications include: Tunnelling shields, road construction, drilling, geothermal well exploration, excavation, brick making.

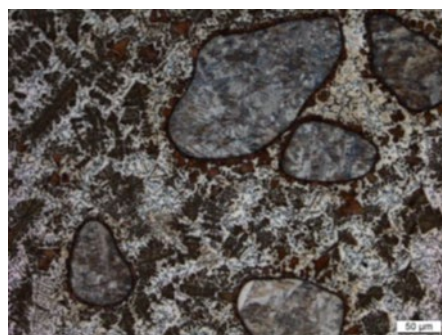
Typical Weldmetal Analysis

Matrix: Fe-C-W with ~10% of special refractory carbides

Granules: ~40% free W₂C (2400 HVO.2)

Mechanical Properties of Weldmetal

	As Welded
Hardness	60-62 HRc (1st Layer)
	62-66 HRc (2nd Layer)
	Approx. 2400 HVO.2 (FTC)



Photomicrograph of deposit; Note larger grains of Tungsten Carbide set in a matrix of complex carbides and blocky refractory carbides.

Welding Instructions

The area to be hard-faced should be free of rust, scale, grease or other dirt. Depending on the base metal's alloy and the size of the area to be hard-faced the advisable preheating temperature should be between 100-250°C. It is highly recommended that the voltage and welding current are kept on the lowest settings possible to preserve the integrity of the tungsten carbide granules. During welding, the arc should be activated such that the weld metal is deposited in coarse droplets rather than running as a smooth flow (indicating parameters are set too high).

Post weld controlled cooling is highly beneficial. The deposit is non-machinable. Grind to desired finish.



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Welding Parameters

Diameter (mm)	Coil Size	Current type	Voltage	Amps	Stick-out (mm)
1.2	15Kg	DC +ve	17-21	140-160	30-35
1.6	15Kg	DC +ve	19-22	170-190	30-35
2.0	15Kg	DC +ve	20-24	180-200	30-35
2.4	25Kg	DC +ve	22-25	200-230	30-35
2.8	25Kg	DC +ve	25-28	220-260	30-35

Welding Positions

(1G, 1F) Downhand/flat position, (2F) Horizontal position.

Welding positions depend on wire diameter as in most cases anything other than 1.2mm (and sometimes 1.6mm) cannot be welded in anything other than the down hand position.

Disclaimer

All figures in this datasheet should be considered indicative only. No guarantee is made as to their accuracy.

All figures subject to change without notice. Batch analysis is available for all products sold. Should you require any further information, please contact us at sales@alloysint.com.au

