

diamondspark GUARD 420 RC

Seamless Low Manganese Fume Emission flux-cored wire



All positional flux-cored wire in Argon-CO₂ shielding gas for structural steel constructions up to 420 MPa yield.

Product Features	Product benefits	User benefits
<ul style="list-style-type: none"> » Low Mn Fume emission » Low FER diamondspark FCW 	<ul style="list-style-type: none"> » Lower Mn emission in welding fume » Reduction of hazardous particles at source 	<ul style="list-style-type: none"> » Provide highest level of protection in combination with existing safety tools » Supporting to achieve the most stringent safety limits in term of Mn emission
<ul style="list-style-type: none"> » Designed chemistry 	<ul style="list-style-type: none"> » Good CVN impact toughness down to -30°C » High travel speed in vertical up 	<ul style="list-style-type: none"> » Good margin to cover both strength and impact requirements » Productive positional welding » Reduced harmful elements
<ul style="list-style-type: none"> » Stable arc 	<ul style="list-style-type: none"> » Welder-friendly » Smooth wetting » Low spatter 	<ul style="list-style-type: none"> » Low defect rate » Good fatigue resistance » Less post weld cleaning
<ul style="list-style-type: none"> » Excellent feedability 	<ul style="list-style-type: none"> » Dependable feedability » Low contact tip wear 	<ul style="list-style-type: none"> » No starting defects » Less down-time for maintenance
<ul style="list-style-type: none"> » Seamless design 	<ul style="list-style-type: none"> » Copper-coated seamless cored wire » Low-hydrogen weld metal » Resistance against moisture pick-up 	<ul style="list-style-type: none"> » High rust surface resistance » Low risk of HAC » No porosity observed

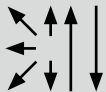
diamondspark GUARD 420 RC reduces operator exposure to airborne Mn and will assist in meeting recently revised exposure limits. diamondspark GUARD 420 RC is the latest technology in seamless flux-cored wires developed by Böhler Welding and due its innovative chemistry, produces 70% lower manganese content in the welding fumes (mg/s) when compared to traditional folded flux-cored wires. diamondspark GUARD 420 RC is uniquely designed to deliver the same level of welding productivity and welding performance as conventional diamondspark flux-cored wires with a substantial reduction of Mn present in the welding fume. Please note that whilst the diamondspark GUARD 420 RC has reduced Mn emissions, it is recommended to use the correct fume extraction systems and PPE to manage fume exposure.



Typical applications

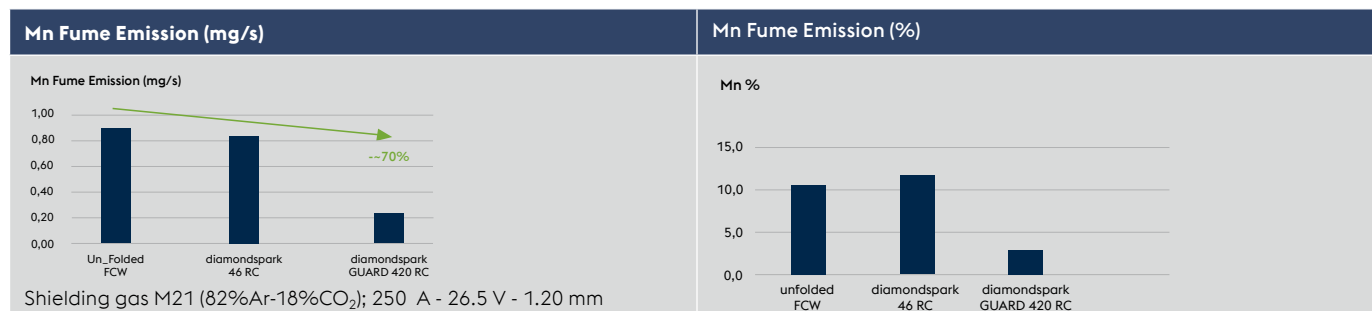
- » General Steel constructions
- » Shipbuilding

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Classifications			Operating data	Allows welding with standard power sources.	
EN ISO 17632-A	EN ISO 17632-B	AWS A5.20/SFA-5.20	Welding positions	Polarity	Shielding gas
T42 3 P M21 1 H5	T493T1-1M21A-UH5	E71T-1M/T-9M/T-12M H4		DC+	EN ISO 14175: M21,M20 (Ar + 15 - 25% CO ₂)



Typical chemical composition, all weld metal, wt. %				
Shielding gas	C	Si	Mn	Ni
M21 - M20 (Ar + 15 - 25% CO ₂)	0.06	0.4	0.3	0.4

Mechanical properties, all weld metal (single values typical)						
Shielding gas	Condition	Yield strength R _{p0.2%} MPa	Tensile strength R _m MPa	Elongation A ₅ %	CVN Impact toughness ISO-V KV J -20 °C	
M21 - M20 (Ar + 15 - 25% CO ₂)	as welded	440 (≥ 420)	510 (500 - 640)	24 (≥ 22)	100	80 (≥ 47)



The fume emission data were generated under laboratory conditions as described in EN ISO 15011. The reported fume emission data may vary from in workspace exposure measurements because of a variety of different parameters and conditions.

Approvals
TÜV; ABS, BV; DNV; LR, CWB, CE

Overview spool types					
Plastic Spool S200			Wire basket spool BS300		
	Precision layer wound Dimensions: Ø external: 200 mm Ø internal: 52 mm Width: 47 mm	Available spool Weight: 5 kg Available diameters: 1.2 mm		Precision layer wound Dimensions: Ø external: 300 mm Ø internal: 52 mm Width: 100 mm	Available spool Weight: 16 kg Available diameters: 1.0 mm 1.2 mm 1.4 mm 1.6 mm

Welding Machines	
<p>For the best welding performance with our diamondspark flux-cored wires, we recommend our BÖHLER Arc synergic programs on voestalpine Böhler welding machines: URANOS NX PME; URANOS NX GSM; TERRA NX PME</p> 	<p>Disclaimer: Any and all information provided in these documents serve for general basic welding information and demonstration purpose only. By no means, no claims of completeness, accuracy or correctness can be raised regarding of such information as provided herein. The author reserves its right to alter, amend or change the content of the information portfolio upon its sole discretion.</p>