

QARC™ is a range of high chromium, high carbon flux-cored welding wires for hard surfacing new components, rebuilding worn parts and repairing existing weld overlay plate — in the workshop or in the field.

Every QARC™ wire deposits the same chemistry as its matching QAME plate grade, so repairs and rebuilds wear at the same rate as the surrounding overlay. Open-arc operation means no shielding gas, and no preheat is required for general hardfacing work.

MATERIAL & MICROSTRUCTURE

- High-chromium, high-carbon deposits with primary M_7C_3 carbides
- Complex carbide (QARC 80/90) and tungsten (QARC 6000) options
- Deposits comply with AS/NZS 2576:2005 grade requirements

MECHANICAL PROPERTIES

- Deposit hardness >630 HV30 (~57 HRC); QARC 90 to 780 HV30
- Primary M_7C_3 carbides ~1500 HV0.5
- Relief check-cracking of deposits is normal and beneficial

QUALITY & WORKABILITY

- Standard diameters 1.6, 2.0, 2.4, 2.8 and 3.2 mm
- 15 kg spools; bulk drums for automated cladding
- Maximum 2–3 deposit layers recommended; butter heavy rebuilds

Benefits

- Open arc — no shielding gas required
- No preheat for general hardfacing
- Deposits match QAME plate grades exactly
- Positional welding made easy
- Proven performance against Q&T steels

Applications

Applications involving high sliding abrasion and medium impact, such as:

- Wear plate repairs
- Fan blades
- Excavator bucket protection
- Stackers
- Mobile plant
- TLO systems
- Hoppers
- Screen decks
- Spill plates
- GET rebuilds

QAME recommends the following **welding parameters** for QARC™ wire, 1.6 mm shown (open arc). Parameters scale with diameter — 1.6 to 3.2 mm available:

Parameter	Range	Optimum
Diameter	1.6 / 2.0 / 2.4 / 2.8 / 3.2 mm	—
Current	150–350 A	270 A
Voltage	24–28 V	24 V
Wire feed speed	4–8 m/min	—

Parameter	Range	Optimum
Stick-out	25–50 mm	25 mm
Shielding gas	None required (open arc)	—
Preheat / interpass	Not required for general hardfacing	—



Field repair of a dozer liner package with QARC™ wire



Overlay plate produced with QARC™ chemistry

DEPOSIT PROPERTIES BY GRADE

Each wire deposits the chemistry and hardness of its matching QAME plate grade — QARC 60 → QCLAD 60 / FLOW60, QARC 80 → QCLAD 80 / FLOW80, QARC 90 → QCLAD 90 and QARC 6000 → MAXCLAD 6000. Base material can be welded with standard low-hydrogen consumables (avoid contact with the overlay).

DEPOSIT CHEMISTRY & HARDNESS

Grade	C	Si	Mn	Cr	W	Mo+Nb+Ti+V+W	Bal.
FLOW60	3.5–7.0%	0.5–2.5%	0.5–2.5%	23–35%	–	–	Fe
FLOW80	3.5–6.0%	0.5–2.5%	0.5–2.5%	23–35%	–	2.0–4.0%	Fe
FLOW6000	3.5–7.0%	0.5–2.5%	0.5–2.5%	23–35%	3.0–7.0%	–	Fe

Typical all-weld-metal deposit values. Chemistry and hardness vary with dilution and number of layers.

QARC™ wires are proven across mining, cement and power generation — from routine wear plate repairs to full rebuilds of buckets, fans and ground-engaging tools. Supplied on 15 kg spools or bulk drums for automated cladding lines — contact our team to match a wire to your duty.



In service — bucket wheel excavator, high sliding abrasion duty