



R-C700 Long Life Wear Plates

Chromium Carbide CrC Overlay

- Ideal for sliding abrasion (chutes, cyclones, pipes etc).
- Cost effective. Cuts downtime costs.
- Unique MaxCS™ system for Maximum Carbide Saturation.
- Outlast normal '400' and '500' materials by 8-12 times.
- Withstands heat up to 600°C.
- Can be countersunk and holed, stud-welded, rolled and fabricated.
- Thickness from 6mm (3/3) to 30mm (20mm CrC on the 10mm base).



R-C700 Properties

Rio-Carb Ion-life liners have a combination of abrasion resistant Chromium Carbide (CrC) alloy welded onto a ductile mild steel base plate.

- The R-C700 consists of CrC particles suspended in a hard and stable matrix.
- The Carbide hardness is approximately 1 800 VHN.
- Macro-hardness of 58-62 Rc.
- The relief cracks are desirable and indicate that there is no cracking away of the hard layer from the mild steel base.

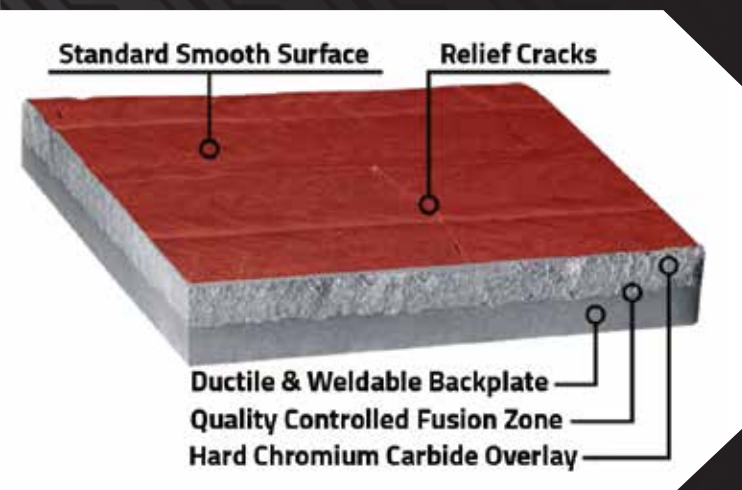


Table of Properties

| | |
|---------------------------------|--|
| Hardness | 58Rc (Outlasts normal '400" and '500' materials by 8-12 times) |
| Co-efficient of friction | μ0.195 Rc (CrC on polished Mild Steel) |
| Wear Rate | 17.3mm ³ (ASTM G-65) ('400" is 162.3mm ³) |
| Chemistry (CrC) | Nominally 24% Chromium : 4% Carbon plus Manganese, Silicon and other elements up to 4% |
| Backing Plate | 350WA Mild Steel |
| Bending Ratio | Radius = 40 x thickness overall |
| Plate Sizes | 1.5m x 3.0m = 4.5m ² usable area |
| Heat Resistance | Up to 600°C |

| OVERALL PLATE THICKNESS mm | DESCRIPTION mm | MASS Kg/m ² | MASS Tonne/m ² |
|----------------------------|----------------|------------------------|---------------------------|
| 8 | 4/4 | 64 | 15.6 |
| 10 | 4/6 | 80 | 12.5 |
| 12 | 6/6 | 96 | 10.4 |
| 16 | 8/8 | 128 | 7.8 |
| 20 | 10/10 | 160 | 6.2 |
| 24 | 12/12 | 192 | 5.2 |
| 30 | 20/10 | 240 | 4.2 |

Details for Draughtsmen and Designers

| DETAILS | SPECIFICATION AND TOLERANCE |
|--------------------------------|---|
| Size Measurement | Plus 1mm, minus 2mm |
| Diagonal Measurement | Plus 1mm, minus 2mm |
| Flatness | Max. 2mm deviation over 500mm |
| Smoothness | Glassy appearance |
| Crack Pattern | Relief cracks run across the weld bead. ±40mm apart |
| Plate Thickness | Plus 0.5mm to minus 0.5mm |
| Positioning of studs and holes | Plus 1mm or minus 1mm max |
| Storage Protection | Painted Red Oxide Alkyd both sides |
| Weld Direction | Not important but adhered to if specified by customer |
| Studs | Positioned within 2.0mm |
| Hard Marking | Plasma Etched |

Welding Consumables

R-C 700 H.F.

**A high CrC compatible hard-facing electrode.
Depositing a medium impact and high abrasion resistant weld metal.**

- R-C700 compatible
- Hardness: 58 to 62Rc (25% Cr 4% Carbon)
- Electrode: + (Positive)
- Tip colour: Green

RIO-CARB H.F.

General purpose rutile-type electrode with a very smooth arc for all positional welding.
CLASSIFICATION: AWS A5 1 E6013
SABS 455 E4313

Rio-Carb 
MATERIALS HANDLING WEAR SOLUTIONS

LOW HYDROGEN (L.H.)

Electrodes

- Quality welding of Mild Steel
- Basic, Low Hydrogen
- All positions
- AWS: E7018
- SABS: 5118 / 2627H
- Tip colour: Red

RIO-CARB (L.H.)

General purpose rutile-type electrode with a very smooth arc for all positional welding.
CLASSIFICATION: AWS A5 1 E6013
SABS 455 E4313

Rio-Carb 
MATERIALS HANDLING WEAR SOLUTIONS

IMPACT MnNi

A Nickel - Manganese electrode for welding and building - up 12-14% impact. Manganese Steel

- Tough, crack free
- Work-hardens
- Classification: AWS:E Fe Mn
- Tip colour: Yellow

RIO-CARB MnNi

General purpose rutile-type electrode with a very smooth arc for all positional welding.
CLASSIFICATION: AWS A5 1 E6013
SABS 455 E4313

Rio-Carb 
MATERIALS HANDLING WEAR SOLUTIONS

R-C 7800 DISSIMILAR

For strength welding of Carbon and Alloyed Steel.

- Specially Formulated Coating
- 312 type alloy
- Crack Free. Use "Stringer Bead" Welds
- Tip colour: Blue

RIO-CARB DISSIMILLAR

General purpose rutile-type electrode with a very smooth arc for all positional welding.
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R-C GOUGING

Metal Removing.

- For Gouging and Cutting (Burning)
- For all steel alloys
- Use a "sawing" motion at high amperage
- Tip colour: White

RIO-CARB GOUGING

General purpose rutile-type electrode with a very smooth arc for all positional welding.
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SABS 455 E4313



R-C TUNGSTEN CARBIDE

Very Hard Building-Up

- Extremely Hard Deposit
- Use "Stringer-Bead" action
- Medium Impact and Excellent sliding abrasion
- Tip colour: Black

RIO-CARB TUNGSTEN CARBIDE

General purpose rutile-type electrode with a very smooth arc for all positional welding.
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SABS 455 E4313



CrC WELDING WIRE

For rebuilding, reinforcing and bull-nosing R-C 700 Liners

- Hardness: 58-62 Rc on a 3 layer deposit
- Shielding gas is not required ("open-arc")
- Diameter: 2.8mm
- Polarity: Wire to Positive +
- Specifications: AWS
- Chemistry: 25% Chromium 4% Carbon 3% Other alloys, after 2 passes
- Hardness: 58-62 Rc

RIO-CARB WELDING WIRE

General purpose rutile-type electrode with a very smooth arc for all positional welding.
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SABS 455 E4313





Rio-Carb Pipes

- Chromium Carbide (R-C700) Inside
- From 6" (150mm) upwards
- Slurry Plants
- Ash handling
- Abrasive ducting
- Air cleaning systems
- Elbows, bends and T-pieces
- Up to 6m lengths
- Inside hardness 58-62 Rc Cladding
- Easily weldable on the outside
- Flanges fitted or loose
- Accurate jigging and templates used for fitting flanges
- 5 Axis C.A.D. cutting done "in house" at Rio-Carb



Liner Plate Fitting and Mounts

Rio-Carb Rapid Removal System

- One man operation
- Hard-faced and galvanized bolt
- Supplied free with liners
- No burning
- No welding
- No grinding
- No replating

Stud Welding

- Better flow
- Smooth on the inside
- Stainless studs
- Fitted to AWS Specifications





Fully Modular Chutes and Bins

- Rapid Maintenance
- Uses Rio-Carb Chromium Carbide R-C 700 wear panels
- Assembled on site
- No bulky transport required
- Can be maintained from outside only
- Rapid maintenance of higher wear areas
- Patented



Liners for Skips

- Increase payload. Thinner plates can be used.
- No "carry back" excellent sliding properties
- Widely used on aluminium skips
- Corners rolled to fit parent frame
- Also for skip doors
- Impact area identified and protected with 14% Manganese liners



Dredging

- R-C 700 liners
- Ideal for salt water
- Impact suitable
- Long-life
- Supplied as kits with fasteners
- Can be welded on site





Impact Liners

For Impact Areas

- High impact areas eg: backs of loading bin and crash decks
- Grizzly high-impact areas
- Ideally suited for crushing and earth-moving equipment
- Properties are ideal for platinum, gold and diamond mining
- Used in a hybrid capacity where sliding abrasion runs alongside impact abrasion

Technical

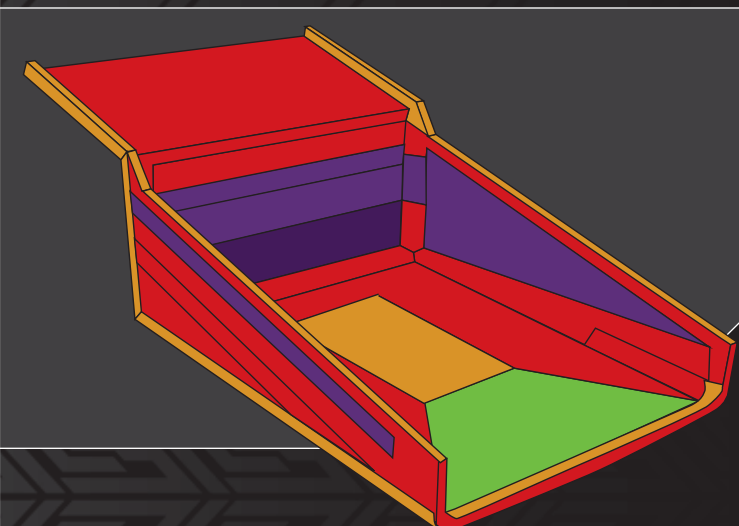
- 14% Manganese steel
- 20mm thick
- Countersunk holes or Stainless Steel studs
- Non-magnetic
- Same mass as mild steel @ 7.9:1



Haul Truck Bodies

Hybrid Liner Package

- Lower Total Cost of ownership
- Total liner package wears down at the same rate
- Less maintenance intensive
- More production up time



- Purple** Light Impact: "400" material
- Red** Medium Impact: "400" or "500" material
- Orange** Impact: High Manganese Liners
- Green** Sliding: Rio-Carb R-C700 CrC



Cement Milling

- R-C 700 is recommended for the fine-particle sizes in cement milling
- Saves valuable downtime
- Bull-nosed on exposed edges
- Accurately manufactured on state-of-the-art equipment
- Controlled balancing of high-speed components



Complete Manufactured Components

Large Cyclones



Pipe Liners



Cement Milling



Chutes and Bins

