



ACTING GLOBAL
WELDING LOCAL

Rotary Kiln Repair

WA Integra solutions for the repair
of rotary kilns in the cement industry

Substantial Experience...

purpose built welding equipment rollers tyres customised repair kiln shells

...Superior Solutions



Our Expertise

Welding Alloys' Integra team has gained substantial experience in the repair of rotary kilns.

With the combination of our teams' expertise, specially developed flux cored wire and purpose built welding equipment, we can offer **superior solutions** and **customised repair** for many critical parts, from kiln shells to rollers, tyres and other large cast parts. We will guarantee:

- Rapid response time - typically within 24 hours
- Optimisation and short intervention time - within days not weeks
- On-site experience and welding expertise - in over 35 countries
- High quality, long lasting repair solution - proven time after time
- On site machining and QA inspection

Our Product

The Welding Alloys GAMMA flux cored wire was developed to combine high elongation and good mechanical strength resulting in low residual stresses in the base material. The main characteristics of WA GAMMA 182 are:

- Resistant to hot cracking
- Clean welds, self releasing slag, easy to use
- Greater weld ductility compared to Ni based stick electrodes
- Corrosion resistant

Criteria	GAMMA 182 Flux Cored Wire	High Efficiency Stick Electrodes
Deposition Rate	1.5-6.5 kg/h	0.5 - 1.5 kg/h
Efficiency	92%	69%
Repair Time	Fast	Slow

The Features - Your Benefits:

The combination of our expertise and the specially developed GAMMA 182 flux cored wire and our equipment enables you to have:

- High deposition rate (up to 6.5 kg/h)
- Excellent mechanical properties
- Latest generation basic slag guarantees optimum metallurgical quality and welder appeal
- Automated welding process, reducing possible weld defects and imperfections
- 10-30% savings in material consumption (compared to stick electrodes)
- Reduced total weight of weld metal due to a narrow weld preparation
- **Minimum of 50% reduction of equipment downtime (compared to stick electrode's solution)**

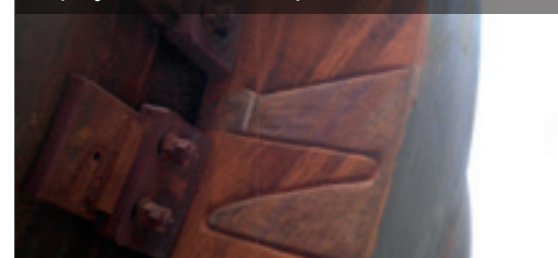
WA INTEGRA SOLUTIONS

Equipment: Kiln | Parts: Tyre - Support Rollers

CASE STUDIES



1 | Tyre Crack Repair



Work carried out by: **WA Integra team**

Consumable: **GAMMA 182**

Total material deposited: **995kg**

Welding Process: **Automatic - semi-automatic**

Total stoppage time: **18 days**

Total time saved: **40 days compared to stick electrodes**

2 | Roller Repair



Work carried out by: **WA Integra team**

Consumable: **GAMMA 182 - GAMMA 625**

Total material deposited: **390kg**

Welding Process: **Automatic - semi-automatic**

Total stoppage time: **4 days**

Total time saved: **12 days compared to stick electrodes**

Equipment: Kiln | Parts: Shell - Satellite Cooler

CASE STUDIES



3 | Shell Repair



Work carried out by: **WA Integra team**

Consumable: **GAMMA 182**

Total material deposited: **12kg**

Welding Process: **Semi-automatic**

Total stoppage time: **5 days**

Total time saved: **1 day compared to stick electrodes**

4 | Satellite Cooler Shell Repair



Work carried out by: **WA Integra team**

Consumable: **GAMMA 182**

Total material deposited: **38kg**

Welding Process: **Semi-automatic**

Total stoppage time: **14 hours**

Total time saved: **62 hours compared to stick electrodes**

customised repair kiln shells ent ...**Superior Solutions**

Technical Datasheet Cored Welding Wire: **GAMMA 182**



Description

- Special flux cored nickel base wire for gas shielded arc welding
- Latest generation basic slag quality guarantees optimum metallurgical quality and welder appeal for ease of use
- Together with enhanced productivity, GAMMA 182 offers many other advantages compared to solid wires: enhanced wetting properties, increased resistance to cracking, better bead aspect and shape, use of classical M21 gas mixtures
- Maximum performances in the horizontal and downhand positions



Applications

- It is a first choice consumable for heterogeneous weldments between creep-resisting ferritic steels and austenitic steels for use at high temperatures. If necessary, stress relief may be carried out
- It is also used for dissimilar welding of most nickel-based alloys to each other, to alloyed steels, or to stainless steels
- GAMMA 182 is suitable for welding and cladding nickel-based alloys such as alloy 600 or similar materials
- Repair welding on "hard-to-weld" steels

Welding Positions:

EN ISO 6947: PA, PB

ASME IX: 1G, 1F, 2F

Mechanical properties	Base Metal (of typical kiln tyre)	GAMMA 182
Rm [MPa]	>620	>620
Rp 0.2% [MPa]	370	>380
A5 [%]	13	45
KV [J]	35	>80

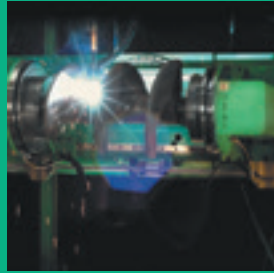
Welding products and techniques evolve constantly. All descriptions, illustrations and properties given in this data sheet are subject to change without notice and can only be considered as suitable for general guidance. This document is intended to help the user make the correct choice of product. It is his responsibility to assess its suitability for his intended application.

A perfectly controlled technology



WA Cored Wires™

Design and manufacture
of all types of cored
welding wires



WA MultiSurfacer™

Design and manufacture
of automated welding
equipment for hardfacing
and rebuilding applications



WA Integra™ Services

Innovative hardfacing
and rebuilding solutions
by welding

A worldwide presence

United Kingdom (Head office)

Welding Alloys Ltd

Argentina

Welding Alloys Argentina S.A.

Australia (Trading Partner)

Specialised Welding Products Pty Ltd

Brazil

Welding Alloys Brasil Ltda

China

Welding Alloys China Ltd

Egypt

Welding Alloys Egypt

Finland

Welding Alloys Finland Oy

France

Welding Alloys France SAS

Germany

Welding Alloys
Deutschland GmbH

Greece

Welding Alloys Hellas EPE

India

Welding Alloys
South Asia Pvt Ltd

Italy

Welding Alloys Italiana s.r.l.

Japan

Welding Alloys Japan

Malaysia

Welding Alloys (Far East) Sdn. Bhd.

Mexico

Welding Alloys
Panamericana S.A. de C.V.

Morocco

Welding Alloys Maroc Sàrl

Poland

Welding Alloys Polska Sp. z o.o.

Russia

ZAO Welding Alloys

South Africa

WASA (PTY) Ltd

South Korea

Welding Alloys Korea Ltd

Spain

Welding Alloys España

Sweden

Welding Alloys Sweden

Taiwan

Welding Alloys Taiwan Co.

Thailand

Welding Alloys (Thailand) Co. Ltd

Turkey

Welding Alloys Limited Şirketi

Ukraine

Welding Alloys Ukraine

United Arab Emirates

Welding Alloys Middle East FZC

USA

Welding Alloys (USA) Inc.

Vietnam

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