



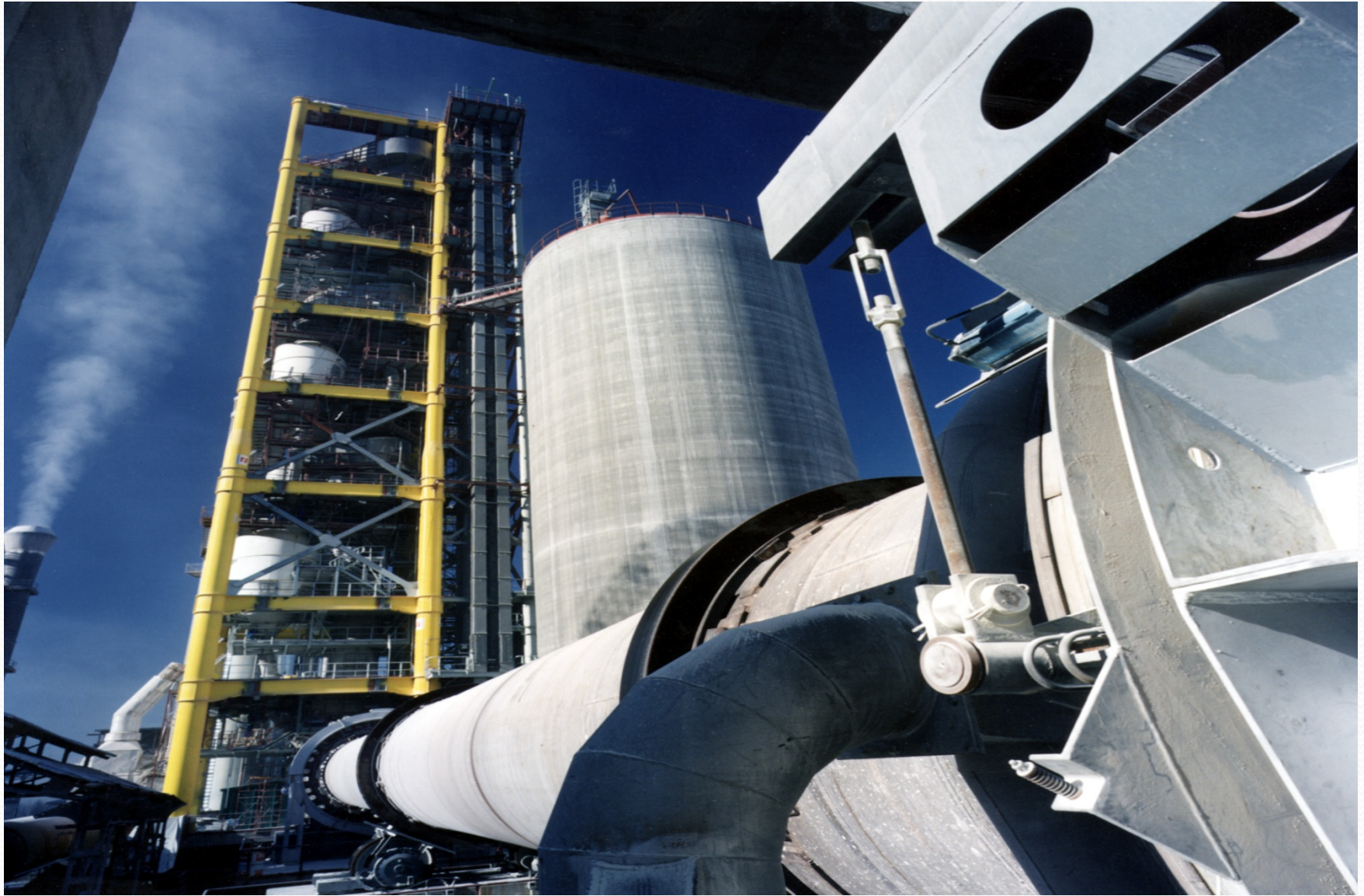
CARVER

WELDING PVT. LTD.

Total Welding Solution Provider

CARVER[®] Organization

CEMENT INDUSTRY



TOTAL WELDING SOLUTIONS PROVIDER

CEMENT INDUSTRY APPLICATIONS

Critical Components in Cement Industry

A. KILN TYRE

Base Metal :- Base Metal is generally made of low alloy steel and is cast in structure

- Problem :-
1. Dents by pittings on the Annular surface of the tyre.
 2. Crack Developed radially / peripheral due to base metal failure.



Kiln Tyre

Critical Components in Cement Industry

A. KILN TYRE

Welding Electrodes :- CARVER 9525 as required for layer
CARVER 9535 for final 4-5 layer
Hardness :- 28-30 HRC for base layer
Hardness :- 30-35 HRC for final layer.

Welding Procedure :- Bake the electrodes in the oven before
Using . Preheat the base metal to 250°C to 350° C. Deposit the
CARVER 9525 Layer as required thickness and for final 4/5 layer
With CARVER 9535 for final layer.

Critical Components in Cement Industry

B. KILN DRIVE /CEMENT/RAW MILL GIRTH GEAR

Base Metal :- The Girth gear is made up of low alloy steel and is cast in structure and the teeth are flame hardened to get 250-350 BHN hardness.

Problem :- 1. The teeth wearing out due to friction and pressure



Critical Components in Cement Industry

C. KILN DRIVE/CEMENT/RAW MILL GIRTH GEAR

Welding Electrodes :- CARVER 9525 as required for layer
CARVER 9535 for final 4-5 layer
Hardness :- 28-30 HRC for base layer
Hardness :- 30-35 HRC for final layer.

Welding Procedure :- Bake the electrodes in the oven before
Using . Preheat the base metal to 250°C to 350° C. Deposit the
CARVER 9525 Layer as required thickness and for final 4/5 layer
With CARVER 9535 for final layer.

Critical Components in Cement Industry

C. HAMMER / IMPACT BAR

Base Metal :- The hammers are made up of 14% Manganese Steel (Hadfield) and or non-magnetic.

Problem :- 1. The hammer gets warnout due to severe impact and abrasion , some times chunks of material peels off.



Critical Components in Cement Industry

C. HAMMER / IMPACT BAR

Welding Electrodes :- CARVER 9225 as required for layer
CARVER 9459 for final 4-5 layer

Hardness :- 200-250 BHN (initial hardness)

Hardness :- 350-450 BHN (work hardness)

Hardness :- 550 BHN for final layer.

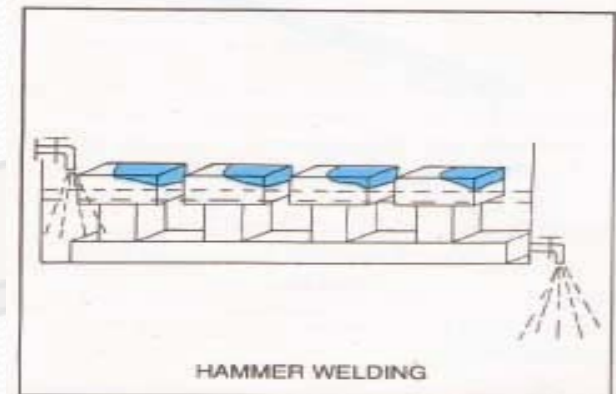
Welding Procedure :- Remove the slag completely

Above cladding should be done intermittently.

i.e. 3 inches length of bead on each hammer

So that the temperature does't rise beyond

200°C on a single hammer.

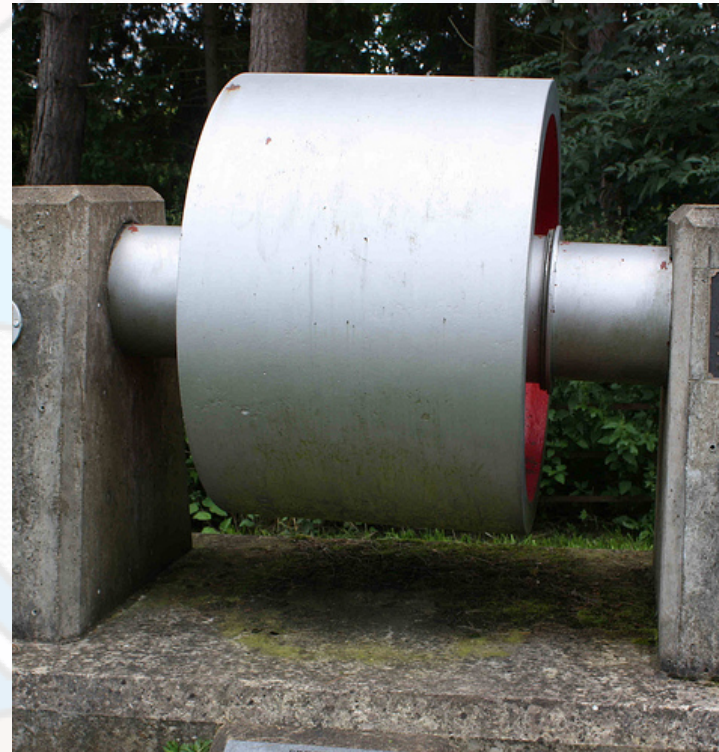


Critical Components in Cement Industry

D. KILN SUPPORT ROLLER

Base Metal :- Base Metal is generally made of low alloy steel and is cast in structure

- Problem :-
1. Pittings and Peeling off chunks of material due to friction/abrasion/wear, thereby causing pits on the surface.
 2. Wear on the periphery of Kiln Support Roller.



Critical Components in Cement Industry

D. KILN SUPPORT ROLLER

Welding Electrodes :- CARVER 9525

Deposit Thickness :- As Required

Tensile Strength :- upto 186,000 psi

Elongation :- upto 12%

Welding Procedure :- Preheat the affected area by 150°-200°C
Grind and remove the sharp corners, edges, weak and fatigue material, maintain the interpass temperature same as preheat temperature.



Critical Components in Cement Industry

E. CEMENT MILL / RAW MILL TRUNION

Base Metal :- Trunion made of cast steel of C-0.40 – 0.50% with little amount of Cr ,Ni, V ,Mo, P, S, Mn & Si forming low alloy steels with thickness ranging from 100 mm – 140 mm.

Problem :- 1. Trunion cracks circumferentially connecting many bolt holes.



Critical Components in Cement Industry

E. RAW MILL TRUNION

Welding Electrodes :- CARVER 9525

Deposit Thickness :- As Required

Tensile Strength :- upto 186,000 psi

Elongation :- upto 12%

Welding Procedure :- Preheat the affected area by 150°-200°C

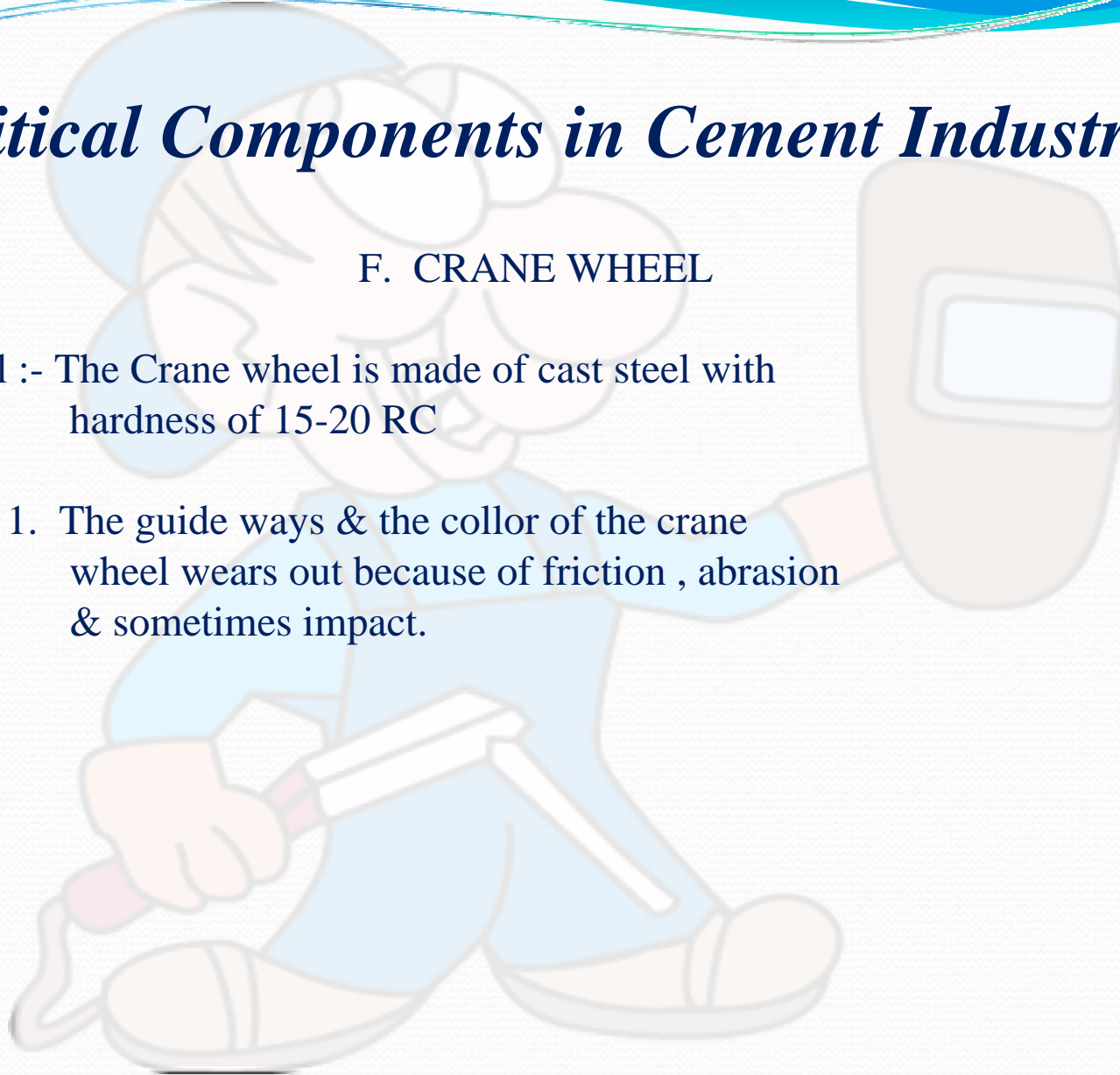
Grind and remove the sharp corners, edges, weak and fatigue material, maintain the interpass temperature same as preheat temperature.

Critical Components in Cement Industry

F. CRANE WHEEL

Base Metal :- The Crane wheel is made of cast steel with hardness of 15-20 RC

Problem :- 1. The guide ways & the collar of the crane wheel wears out because of friction , abrasion & sometimes impact.

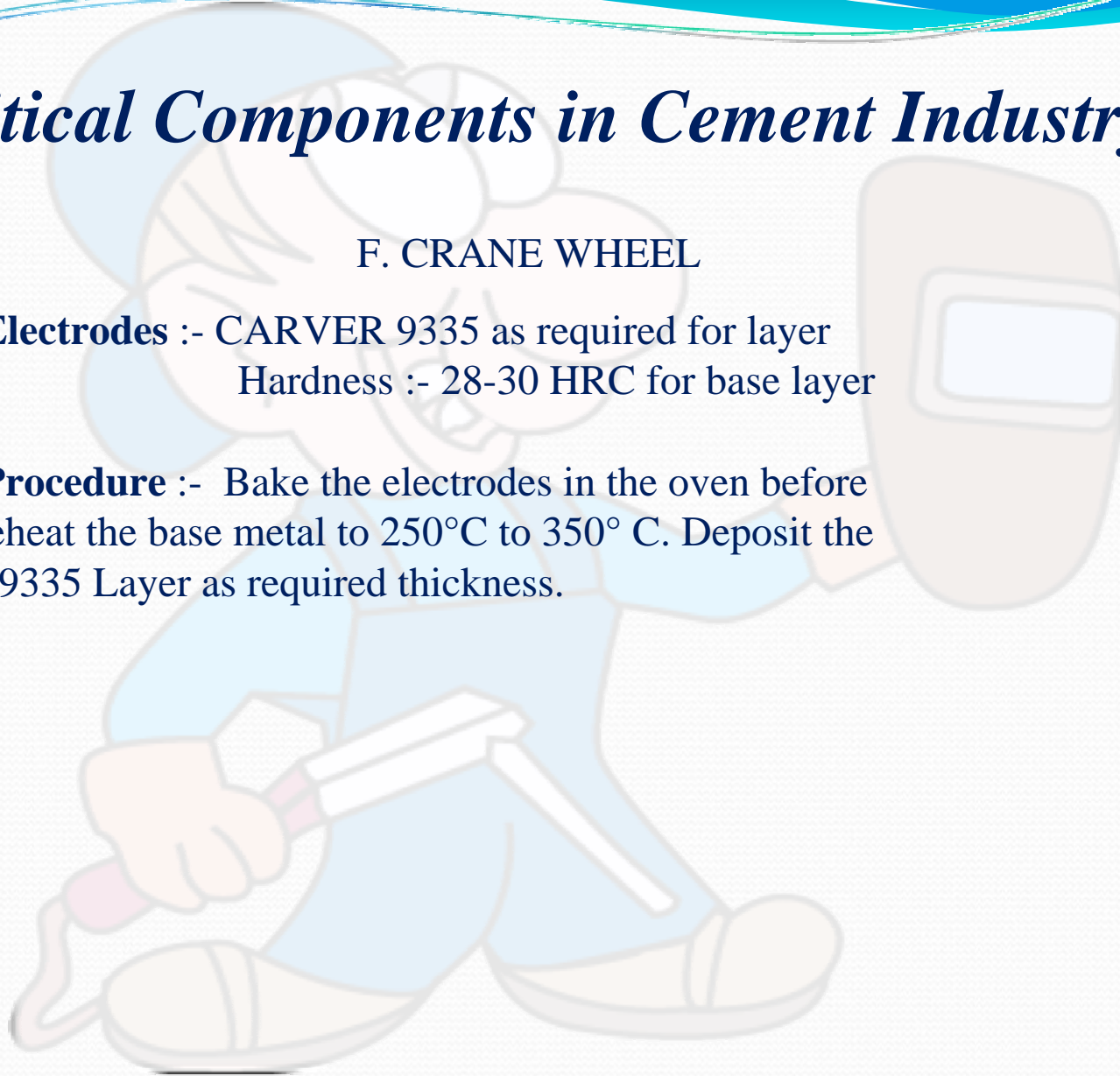


Critical Components in Cement Industry

F. CRANE WHEEL

Welding Electrodes :- CARVER 9335 as required for layer
Hardness :- 28-30 HRC for base layer

Welding Procedure :- Bake the electrodes in the oven before
Using . Preheat the base metal to 250°C to 350° C. Deposit the
CARVER 9335 Layer as required thickness.



Critical Components in Cement Industry

G. BLOW BAR

Base Metal :- Blow bars are made up of Mn steel having surface hardness of 450-500 BHN.

Problem :-
1. Blow bars are constantly exposed to impact and abrasion resulting in loss of working edge.



Critical Components in Cement Industry

G. BLOW BAR

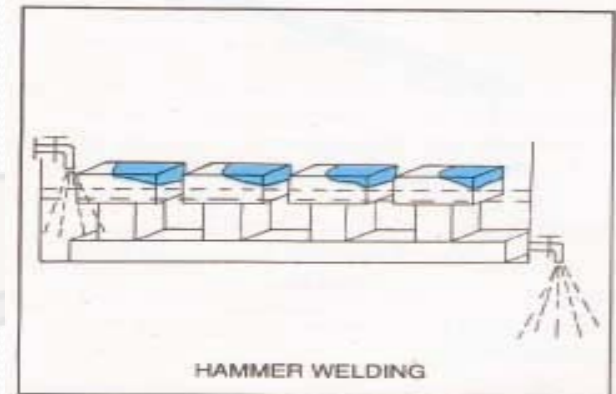
Welding Electrodes :- CARVER 9225 as required for layer
CARVER 9459 for final 4-5 layer

Hardness :- 200-250 BHN (initial hardness)

Hardness :- 350-450 BHN (work hardness)

Hardness :- 550 BHN for final layer.

Welding Procedure :- Remove the slag completely
Above cladding should be done intermittently.
i.e. 3 inches length of bead on each hammer
So that the temperature does't rise beyond
200°C on a single hammer.



Critical Components in Cement Industry

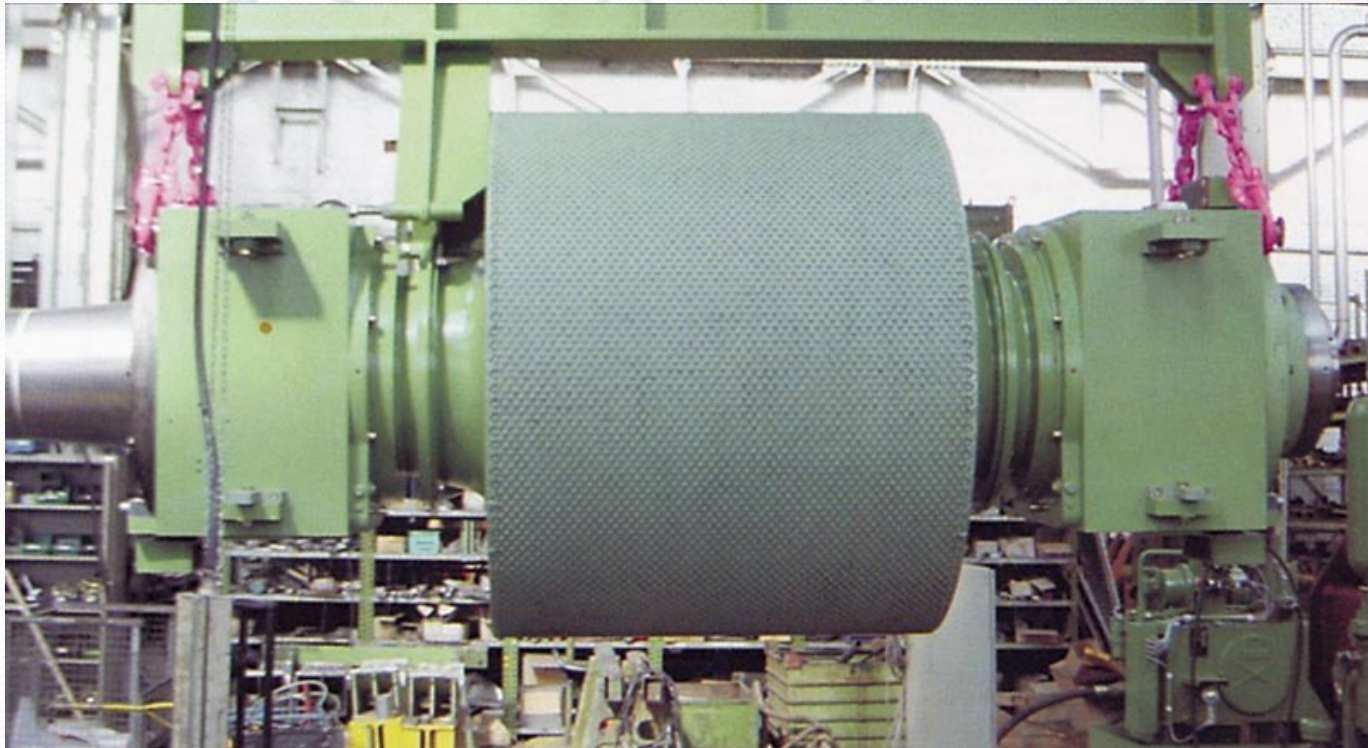
H. ROLLER PRESS ROLLER

Base Metal :- It is made up of cast alloys steel and hardfaced at the OEM stage to give a hardness of around 45-55 RC for a thickness of 40-50 mm on radius by continuous welding process.

Problem :- 1. The roller is subjected to severe impact and abrasion , resulting in wear (loss of material)and sometimes chunks of materials peels off from the roller leaving 30-40 mm deep pits. This requires re-building with reliable weld deposits.

Critical Components in Cement Industry

H. ROLLER PRESS ROLLER



Critical Components in Cement Industry

H. ROLLER PRESS ROLLER

Welding Electrodes :- CARVER 9225
Deposit Thickness :- As Required
Tensile Strength :- upto 186,000 psi
Elongation :- upto 12%

Welding Procedure :- Preheat the affected area by 150°-200°C
Grind and remove the sharp corners, edges, weak and fatigue material, maintain the interpass temperature same as preheat temperature.



Critical Components in Cement Industry

I. RAW MILL I.D FAN

Base Metal :- It is made up of mild steel

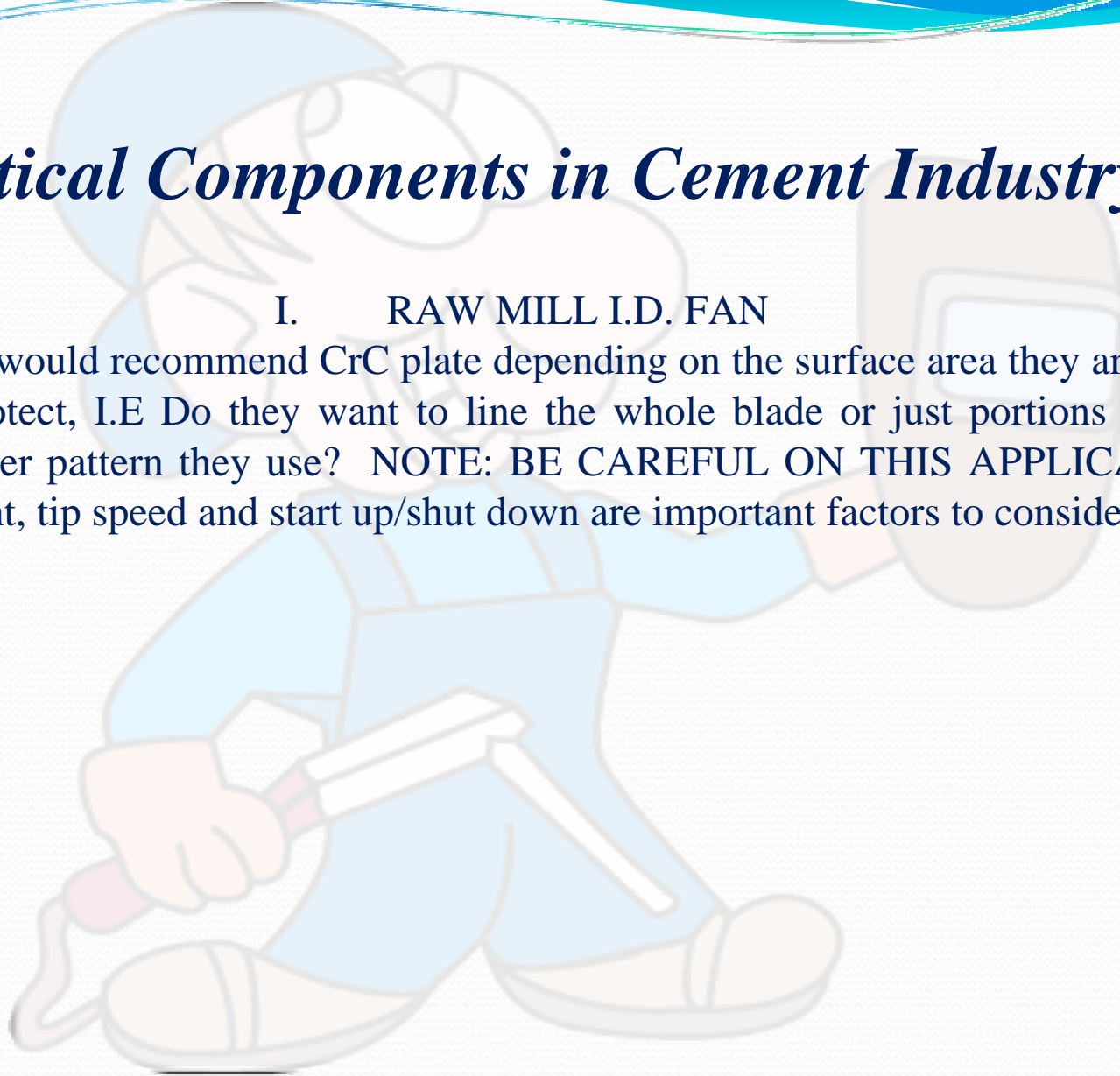
Problem :- 1. Blade wear out.



Critical Components in Cement Industry

I. RAW MILL I.D. FAN

ID fans We would recommend CrC plate depending on the surface area they are trying to protect, I.E Do they want to line the whole blade or just portions like the checker pattern they use? NOTE: BE CAREFUL ON THIS APPLICATION. weight, tip speed and start up/shut down are important factors to consider.



Critical Components in Cement Industry

J. BUCKET

Base Metal :- It is made up of mild steel

Problem :- 1. Teeth Wear Out.

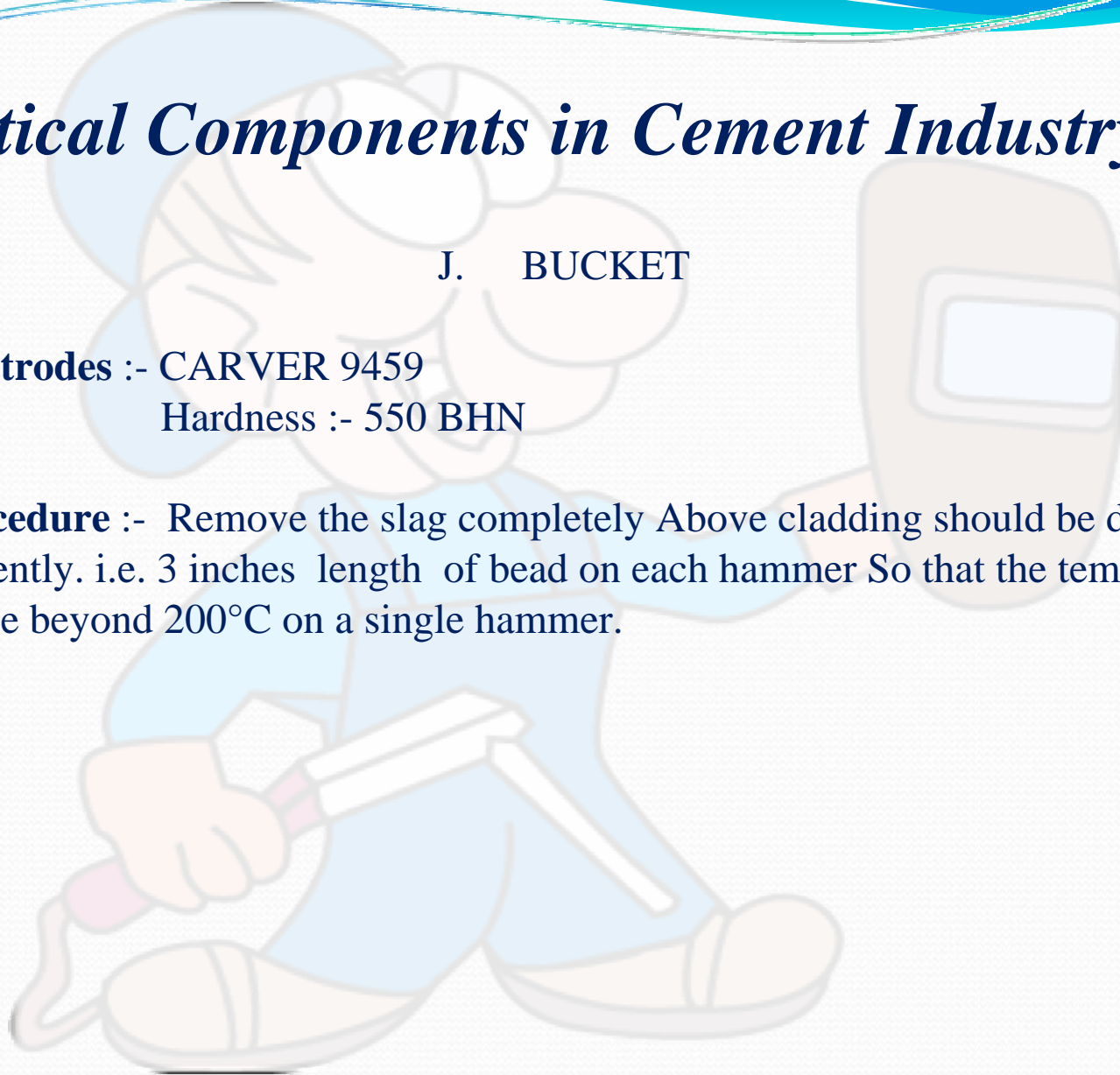


Critical Components in Cement Industry

J. BUCKET

Welding Electrodes :- CARVER 9459
Hardness :- 550 BHN

Welding Procedure :- Remove the slag completely Above cladding should be done intermittently. i.e. 3 inches length of bead on each hammer So that the temperature does't rise beyond 200°C on a single hammer.



Critical Components in Cement Industry

K. DRAG LINK

Base Metal :- It is made up of alloy steel

Problem :- 1. Wear Out.



Critical Components in Cement Industry

K. BLOW BAR

Welding Electrodes :- CARVER 9225 as required for layer
CARVER 9459 for final 4-5 layer
Hardness :- 200-250 BHN (initial hardness)
Hardness :- 350-450 BHN (work hardness)
Hardness :- 550 BHN for final layer.

Welding Procedure :- Remove the slag completely
Above cladding should be done intermittently.
i.e. 3 inches length of bead on each hammer
So that the temperature does't rise beyond
200°C on a single hammer.