



ARMOUR CORPORATION



**YOUR TRUSTED WEAR
SOLUTION PARTNER**

ABOUT OUR COMPANY

- Armour corporation is a firm dedicated to eliminate wear related criticalities. We provide specialized wear resistant technologies for enhanced application health.
- Metallurgically backed solutions with a complete design, fabrication and a R&D supported system.
- We provide end to end support.

OUR SOLUTION

- Armour corporation provides a range of specialized products to solve your wear, abrasion, erosion, impact and corrosion related criticalities.
- Ready to fit customized solutions as per user requirement.
- Our product range helps in increasing the life of the equipment, reduces downtime and unplanned breakdowns.



OUR TEAM

- We have a dedicated design team to develop, modify and improvise customer drawings.
- Our fabrication team make ready-to-fit solutions which are easy to install.
- We have a dedicated technical team with experience in mining, cement mills, steel mills and bulk material handling.
- Our team understands customer applications and their criticalities and provide the most suitable suitable solutions for optimizing production efficiency.

OUR PROCESS

- Armour corporation's technical team gather a complete study of the application and its criticalities.
- Our technical team thoroughly examine the collected data and propose a customized solution.
- We work in a collaborative manner with our end users to understand their concerns and provide ease of installment and a complete end to end support.
- Our solutions are 100% metallurgically backed with proprietary manufacturing processes and chemical compositions that are tried and tested successfully for superior life enhancement solutions.

INSTALLATIONS & SUPPORT

- A dedicated engineer to supervise and assist with installation of components and equipment in the application.
- We provide welding rods with matching chemistry for welding between the components to prevent channel erosion.
- Post installation, our engineers carry out frequent inspections and provide detailed performance reports.





- QT-PLUS® wear steel , combines a specific chemistry with a unique heat-treatment process which manufactures uniform characteristics EVERY TIME . Whereas commodity AR grade steels, with inconsistent heat treating practices and wide variation in chemistries create “hard” and “soft” spots which reduce workability and performance.
- QT-PLUS® wear steel is a premium-quality grade of alloy steel unmatched in the industry, with up to 3-5 times the wear life of other Quenched and Tempered AR steel.
- Parts made from QT-PLUS® not only provide outstanding resistance to abrasion and wear, but they remain amazingly ductile due to their rich chemistry.

3-5 TIMES

WEAR LIFE OF AR 500

Consistent test results as advertised Hardness maintained through plate thickness Alloy rich Nickel and Molybdenum Tightly controlled Carbon and Hydrogen Level Heat Identity on Every Plate



- ARMOUR stocks these plates in Thicknesses ranging from 6mm to 125mm to meet your requirements.
- QT-PLUS® wear steel chemical composition produces a material that retains hardness throughout the entire plate thickness. Commodity grade steels possess a lean chemistry and that does not allow for through-hardness resulting in excessive wear.
- QT-PLUS® wear steel is manufactured under the strictest quality standards always. With commodity AR grade steels, lack of consistent quality control results in plates that can have characteristics such as warping or waviness, making installations difficult and costly. QT-PLUS® wear steel is produced and processed with ISO 9001:2015 certified standards to ensure the best quality.

TYPICAL CHEMISTRY %									
C	Mn	P	S	Si	Ni	Mo	Cr	B	H
0.24 - 0.26 max.	1.0 max.	0.035 max.	0.005 max.	0.55 max.	1.0 - 2.0	0.50	0.65 max.	0.03 max.	< 4 ppm





CHROMEWELD™ 600 is a premium grade overlay plate manufactured using a proprietary chemistry under a tightly controlled manufacturing process, that produces a microstructure of a fully austenitic matrix filled with primary carbides designed to withstand extreme abrasion wear with continuous moderate impact.

GENERAL OVERLAY CHEMISTRY

- Hardness ranges from 58-62 HRC, based on weld deposit thickness.
- Remains abrasion resistant at temperature's up to 600°C.
- Backing Plate can be customised as per the user requirement to Stainless Steel, Other Carbon Steels.
- CHROMEWELD™ 600 is highly formable due to its Manufacturing Process.
- CHROMEWELD™ 600 exhibits a Consistent Deposition of High Density Carbides across the overlay thickness exhibiting High Performance.
- Available Thicknesses range from 6mm (3mm + 3mm) to 37mm (12mm + 25mm).
- CHROMEWELD™ 600 is also available in Smooth Finish with Anti-Hang Up Properties enabling greater flowability.

OUR USP

Uniform Carbide Deposition Across Total Overlay

CONSISTENCY

UNIFORMITY

Proprietary Chemistry

Highly Formable

100% Traceability

Minimal Dilution

Unique Manufacturing Process

Consistent Microstructure

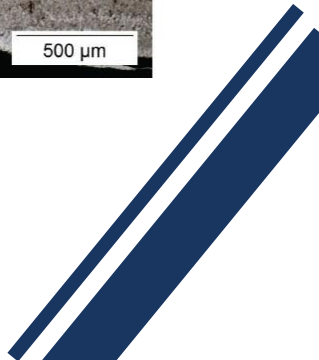
TYPICAL CHEMISTRY %

C	Cr	Mn	Si	Fe
4.5 - 6	25- 30	0-2	0- 2	Balance

Casted Overlay



JADCO Fusion Overlay







CHROME WELD™ Nb-Plus is a Niobium (Nb) carbide overlay plate optimized for fine particle and extreme abrasion. CHROME WELD™ Nb-Plus weld deposit consists of primary Chromium carbides with added Niobium carbides in an austenitic matrix. CHROME WELD™ Nb-Plus increases wear life significantly due to the enriched, fine particle abrasion resistant deposit. CHROME WELD™ Nb-Plus also increases wear resistance at elevated temperatures due to its enhanced chemistry.

GENERAL INFORMATION

- Hardness ranges from 63-68 HRC, based on weld deposit thickness.
- Remains abrasion resistant at temperatures up to 650°C.
- Displays excellent fine particle abrasion resistance and will withstand continuous moderate impact. Overlay is a composite of Chromium and Niobium in a Chromium austenitic matrix.
- Standard Thickness Ranges from 3mm on 3mm through 12mm on 12mm.
- Backing Plate can be customised as per the user requirement to Stainless Steel, Other Carbon Steels.
- CHROME WELD™ Nb-Plus is also available in Smooth Finish with Anti-Hang Up Properties enabling greater flowability.



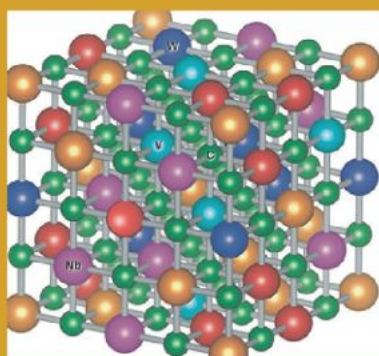
TYPICAL CHEMISTRY %					
C	Cr	Mn	Si	Fe	Nb
4 - 6	20- 26	0-1	0 - 2	Balance	6-8



CHROME WELD™ Complex is a composite of small primary Chromium iron carbides with added Niobium, Vanadium, and Tungsten carbides in an austenitic matrix overlay plate optimized for abrasion resistance and toughness over traditional Chromium carbide plates.

GENERAL OVERLAY CHEMISTRY

- Hardness ranges from 65-70 HRC, based on weld deposit thickness. Remains abrasion resistant at temperatures up to 800°C.
- Backing Plate can be customised as per the user requirement to Stainless Steel, Other Carbon Steels.
- CHROME WELD™ Complex is also available in Smooth Finish with Anti-Hang Up Properties enabling greater flowability.

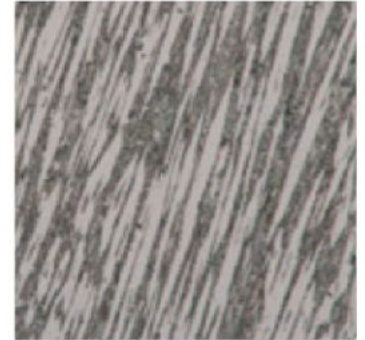


TYPICAL CHEMISTRY %							
C	Cr	Mn	Si	Fe	W	Nb	V
4 - 6	18-22	0-2	0-2	balance	1-3	5-7	1-2



CHROME WELD™ Ti is a unique material that is ideal for surfaces requiring high levels of abrasion resistance, along with impact protection. It is a premium grade of overlay wear plate.

CHROME WELD™ Ti was developed with an ultra-tough matrix and finely dispersed abrasion and impact resistant, Titanium carbides. The addition of Titanium provides the ability to withstand heavier impact levels, while not succumbing to brittle tendencies of harder plates.



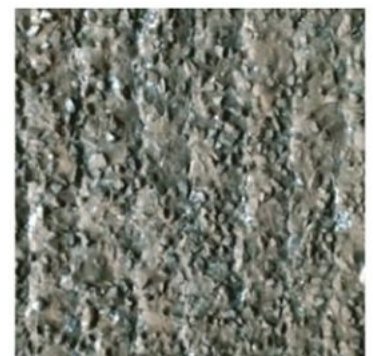
GENERAL INFORMATION

- Hardness ranges from 56-60 HRC, based on weld deposit thickness.
- Remains abrasion resistant at temperatures up to 650°C.
- Displays excellent abrasion resistance and will withstand HEAVY impact.
- Overlay is a composite of Titanium carbides in a high Chromium martensitic matrix. Standard Thickness Ranges from 3mm on 3mm through 12mm on 12mm.
- Backing Plate can be customised as per the user requirement to Stainless Steel, Other Carbon Steels.
- CHROME WELD™ Ti is also available in Smooth Finish with Anti-Hang Up Properties enabling greater flowability.

TYPICAL CHEMISTRY %						
C	Cr	Mn	Si	Ti	M	V
1-2	5-10	1-2	1-2	6-10	1-2	1



CHROME WELD™ W is a material designed to withstand your most severe abrasion applications. This overlay plate combines the benefits of our premium CHROME WELD™ chemistry along with the addition of Tungsten carbide deposited throughout the matrix. Our manufacturing process produces a plate that has Tungsten carbide dispersed throughout the entire matrix.



GENERAL INFORMATION

- Hardness ranges from 70-75 HRC, based on weld deposit thickness.
- Wear deposit consists of Chrome & Tungsten suspended in a cast iron like Tungsten alloyed matrix. Remains abrasion resistant at temperature's up to 600°C.

TYPICAL CHEMISTRY %					
C	Cr	Mn	Si	Fe	W
4.5 - 6	20-30	0 - 2	0 - 2	Balance	30 - 40 %



Products Available in the Glide Finish

1. Chromeweld™ 600
2. Chromeweld™ Nb Plus
3. Chromeweld™ Complex
4. Chromeweld™ Ti

Glide is for ultra smooth finish for material flowability and jamming related criticalities. Surface roughness is as smooth as 0.25μ





CHROME WELD™ Flow is a unique piping system that is ideal for material movement with high levels of abrasion resistance. Our process produces a microstructure consisting of fully austenitic matrix filled with primary carbides. This structure provides outstanding abrasion resistance in the most challenging applications.

GENERAL INFORMATION

- We can provide a minimum Pipe Diameter of 127mm.
- The Hardness ranges from 52-56 HRC.
- Abrasion resistant up to 600°C.



Chromeweld™ Flow "Straight" Pipe



FLEXWEAR™ is a cloth-like cladding that encases and covers hard-to-protect complex-shaped parts. It is comprised of fine tungsten carbide particles suspended in a nickel matrix that is adhered to high wear components of nearly any geometry. Our proprietary “infiltration brazing” process creates a metallurgical bond between the tungsten carbide and the substrate to deliver the ultimate level of wear resistance.

The tungsten carbide-filled cladding offers the utmost resistance to abrasion, corrosion and erosion due to the small particles used in the cloth.

GENERAL INFORMATION

- The typical hardness of FLEXWEAR™ is up to 72 HRC and the strongest bond is >70,000 psi.
- The tungsten carbide is uniformly bonded and distributed throughout the nickel alloy matrix with a resulting coating which has a smooth surface with little to no porosity.
- The braze process is done at 1093°C.
- Coating thicknesses range between 0.8mm to 3mm.

COMMON APPLICATION

- Light weight Superior abrasion resistance than Chromium carbide overlay.
- Superior corrosion and erosion resistance than stainless steel.
- Higher temperature resistance than 304 stain- less steel

BENEFITS

- Longer Life
- Less Downtime
- Increased Production
- Reduced Maintenance Costs
- Increased Profitability





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