25 YEARS OF MANUFACTURING EXCELLENCE

GTV Engineering Limited

Individual fabrications upto complete plant






FABRICATION


MACHINING




HARDFACING





WEAR PRODUCTS & SERVICES DIVISION

Fighting wear.....with a difference

Our cladding machines are complemented by heavy fabrication and machining facilities to produce the most complex wear products.

CRANE CAPACITY
Upto 80MT single piece with 12 meters height under hook

CNC CUTTING
Oxyfuel upto 120mm Mild Steel.
HD Plasma upto 80 mm Stainless Steel.

CAPABILITIES SPREAD
over 12 acres premises

ROLLING
Upto 70mm x 3000 Mild Steel Plates

BENDING
Upto 600 Tonnes Hydraulic Press

MACHINING
VTL(s) upto 10 meters swing dia
Floor borers upto X=8m,Y=3m, Z=1.6m

PAINT BOOTH
15m x 7m x 7m End Draft type with Filtered Exhaust

HEAT TREATMENT
Stress Relieving Furnace - 6m x 6m x 6m

Wear Products

- Hardfaced Plates
- Grit Cones
- Louvers
- Mill Liners
- Hoppers
- Chutes
- Fan Blades
- Separators

Our wear products are deployed across the following industries.

CEMENT INDUSTRY
- Fans & Fan Casing
- Fans & Fan Casing
- Cyclones & Seperators
- Clinker Transportation Pipe Lines
- Mixer Linings
- Mill Linings
- Baffle Plates
- De-dusting Plants

MIXER-USING INDUSTRIES
- Foundries
- Concrete Block Industry
- Ready-Mixed Concrete
- Asphalt Industry
- Recycling Industry

MINING INDUSTRY
- Buckets
- Chutes
- Front-End Loaders
- Crusher Linings
- Conveyor Systems
- Channels
- Slides

PULP AND PAPER
- Fans
- Transportation Channels
- Pipelines
- Cyclones
- Barking Drums
- Mixing Equipment

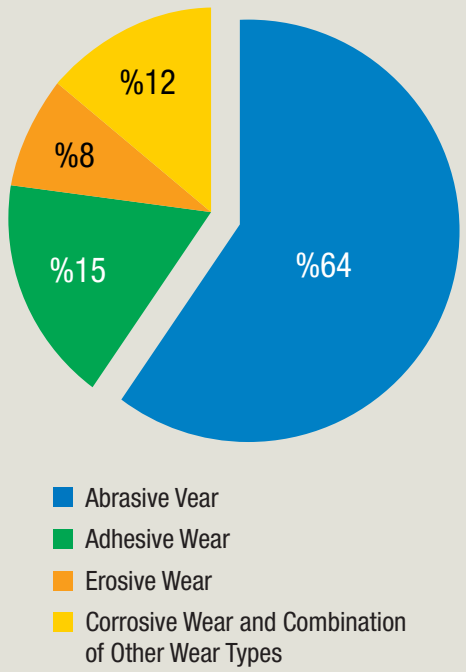
STEEL INDUSTRY
- Chutes
- Channels
- Blast Furnace Gas Systems
- Bunkers
- Broach Rams
- Sintering Systems

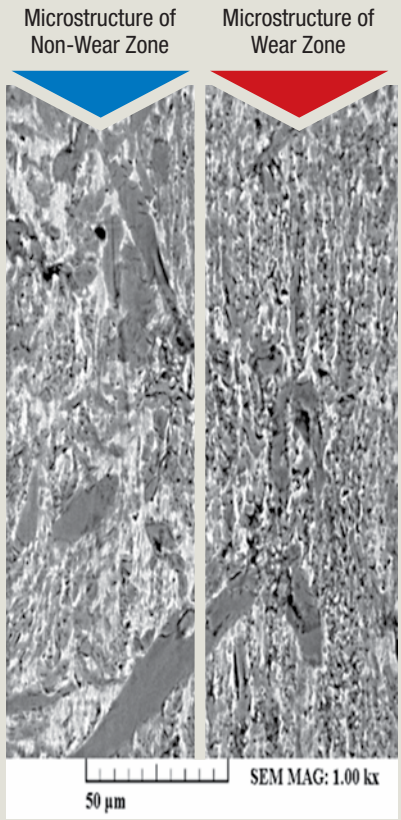
POWER STATIONS
- Coal Bunkers
- Fans
- Pipelines
- Mill Linings
- Slag Removal Systems
- Transfer Chutes
- Chain Conveyors

Wear Plates

The definition of abrasive wear is, the type of wear that occurs due to the hard particles flow along a solid surface. Abrasion is the most common form of wear. It is caused by non-metallic materials such as sand, oxides or small sized particles moving over a metal part. The worn surface can be recognized by its polished appearance or very fine scratches in the flow direction of particles. Hardness, shape, size and velocity of abrasive particle, service temperature, applied force and type of abraded material determines the severity and intensity of abrasive wear. The effect of abrasive wear may be seen most particularly in the cement, mining, mineral processing and earthmoving industries and also in the environment with sand, rock, minerals etc., our wear plates are especially designed against abrasive wear. Service life of critical components such as chute liners, front-end bucket loader liners, excavators, trucks and separator blades, will be much longer with our wear plate. Microstructure comparison of deformed region according to ASTM G65 abrasion test and undeformed regions is shown in the below picture. As it is seen, hexagonal shaped chromium carbide structures act as barrier and prevent the wear.

Distribution chart of wear types faced in industries





Products	Hard Materials (1)	Alloying Elements (1)	Wear Resistance (2)	Hardness Single Layer (3)	Hardness Second Layer (3)	Impact Resistence (4)	Service Temperature Max.°C (4)	Corrosion Resistance (4)
GT-STANDARD	Chromium Carbide	—	++++	55-60	57-62	Moderate	350-400	Good
GT-PLUS	Chromium Carbide	Mo, B	+++++	55-60	57-62	Moderate	500-550	Good
GT-FLEX	Chromium Carbide	B, Mn	+++	50-55	52-57	Good	350-400	Good
GT-PRESTIGE	Niobium Carbide + Chromium Carbide	Nb, B, Mo	++++++	60-65	62-67	Moderate	550-600	Excellent

1) Chemical composition, hardness and microstructure properties of **GT Series (Standard**, **Plus** and **Flex)** wear plates are associated with Fe14 from EN 14700 standard. (Classification of welding electrodes for hard-surfacing), while **GT-Prestige** is associated with Fe15.
2) Abrasion Resistance Tests are made by our expert engineers in NABL accredited laboratories in accordance with ASTM G65 procedure-A standard.
3) Hardness Measurements are made in our Quality Laboratories according to EN ISO 6508-1 (HRC: Rockwell-C Hardness Test Standard)
4) The specified values refer to standard applications; in case of special conditions the product can be tailor-made as per your requirements.

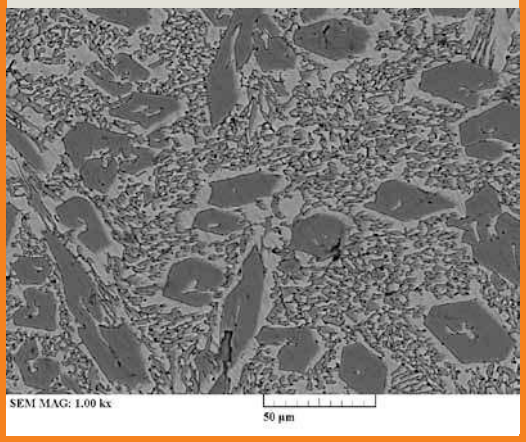
Wear Plates

GT-STANDARD

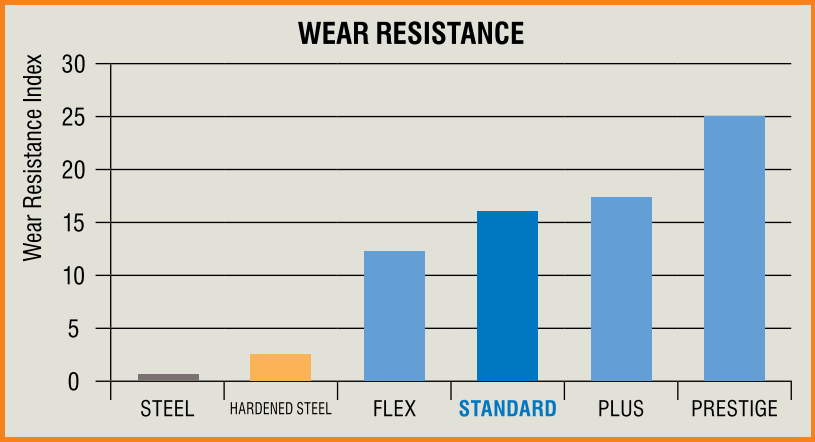
Standard wear plate with chromium carbide structure which provides high abrasive wear resistance and moderate impact resistance. The resistance to abrasion and erosion is obtained by the high chromium carbide concentration, grain size of the carbides and in addition to that toughness and hardness of the matrix.

Hardness : 55-60 HRC (1 pass)
Hardness : 57-62 HRC (2 pass)
Working Temperature : 350-400°C

Microstructure



Primary chromium carbides can be seen clearly in every region of the hardfacing structure of **GT-STANDARD** wear plate.



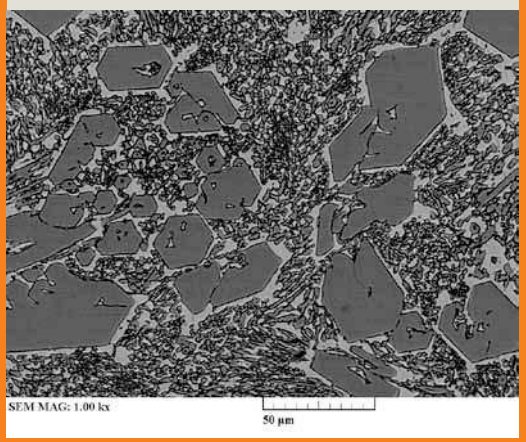
Product	C	Si	Mn	Cr	Fe
STANDARD	3,5 - 4,5	1,0	0,5	25 - 30	Rest

GT-PLUS

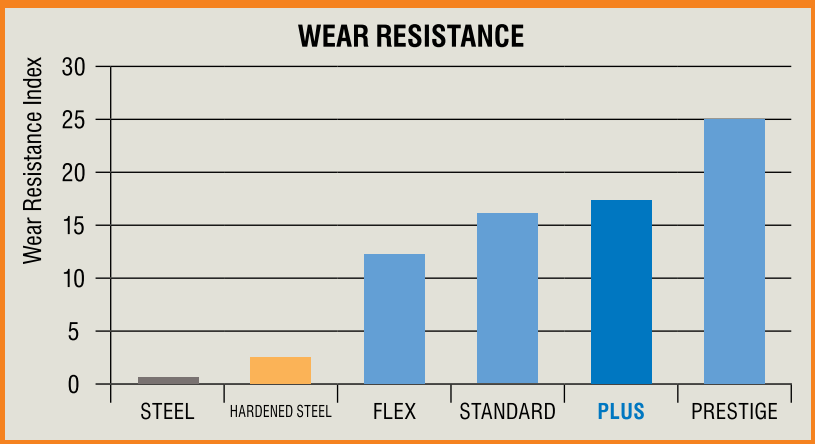
GT-Plus wear plate alloyed with Molybdenum (Mo) provides high resistance to severe abrasion and moderate impact. The addition of Molybdenum (Mo) increases the matrix strength of chromium carbide structure. Especially advised for the working environments where high temperature and severe abrasion occur. **GT-PLUS** wear plate increases the lifetime and decreases the operating costs.

Hardness : 55-60 HRC (1 pass)
Hardness : 57-62 HRC (2 pass)
Working Temperature : 500-550°C

Microstructure



Higher chromium carbide density in all regions and more resistant matrix can be seen from the analysis of the microstructure obtained by **GT-PLUS** wear plate.



Product	C	Si	Mn	Cr	Mo	Fe	B
PLUS	3,5 - 4,5	0,8	0,5	27 - 32	1,0	Rest	< 0,4

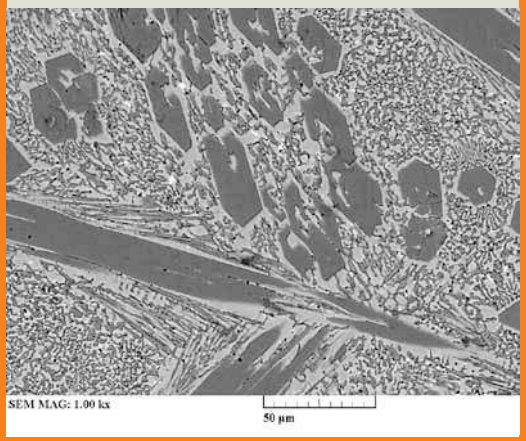
Wear Plates

GT-FLEX

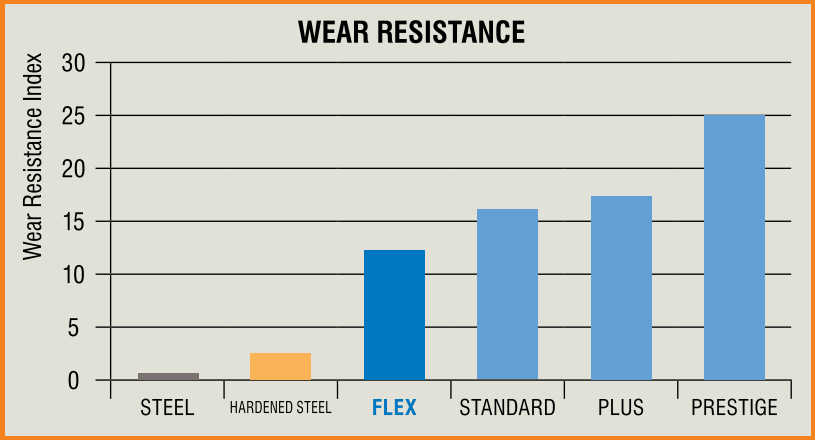
Together with the abrasive wear resistance **GT-FLEX** wear plate is especially suitable for forming and bending applications down to minimum 150 mm diameter. Highly advised for pipes, pipe elbows and fan blades where severe impact and moderate wear resistance are needed.

Hardness : 50-55 HRC (1 pass)
Hardness : 52-57 HRC (2 pass)
Working Temperature : 350-400°C

Microstructure



Microstructure of **GT-FLEX** wear plate is suitable for special application which required bending operation.



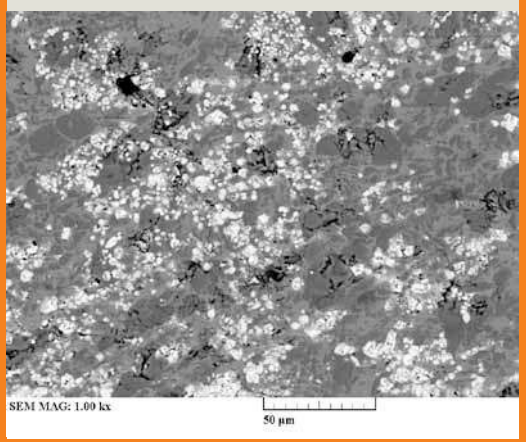
Product	C	Si	Mn	Cr	B	Fe
FLEX	3,5 - 4,5	1,2	1,2 - 2,4	24 - 28	< 0,4	Rest

GT-PRESTIGE

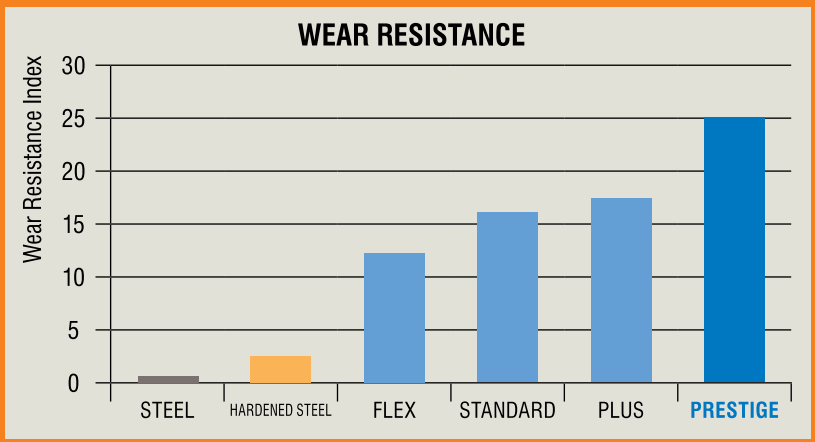
GT-PRESTIGE wear plate has complex carbides to provide the highest abrasion resistance. Most qualified solution which can be used safely where severe abrasion and erosion occurs. It is suitable for working temperatures up to 600°C due to the high carbide consantration occurred by Niobium Carbide (NbC) and Molybdenum (Mo).

Hardness : 60-65 HRC (1 pass)
Hardness : 62-67 HRC (2 pass)
Working Temperature : 550-600°C

Microstructure

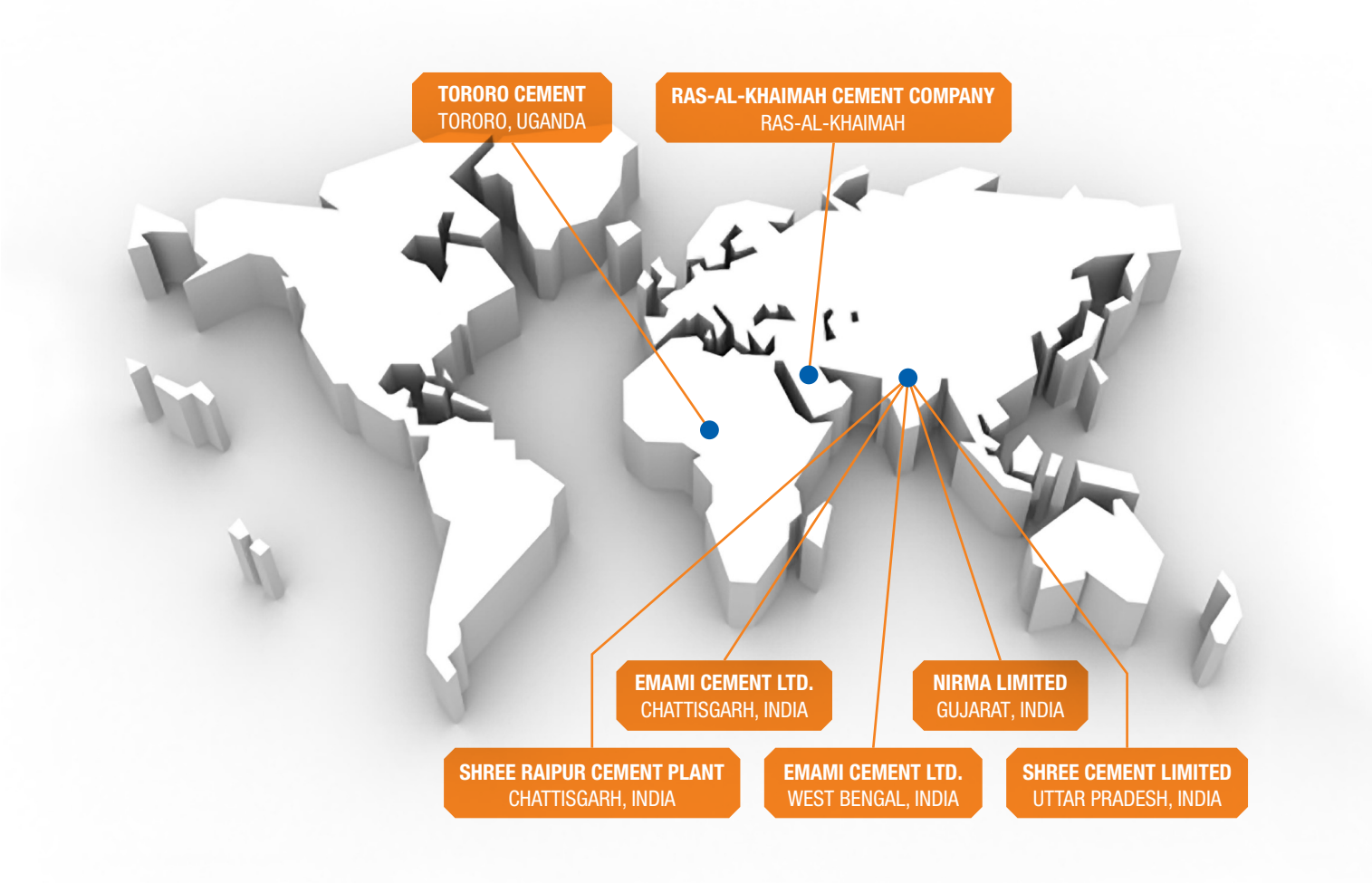


GT-PRESTIGE wear plate contains highest primary carbide concentration, in all regions of the microstructure. Complex carbides increase the abrasive wear resistance dramatically by the existance of Niobium Carbides.



Product	C	Si	Mn	Cr	Mo	Nb	B	Fe
PRESTIGE	4,0 - 5,0	0,8	0,5	25 - 30	1,2	1 - 2	< 0,6	Rest

Worldwide installation of our wear products



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