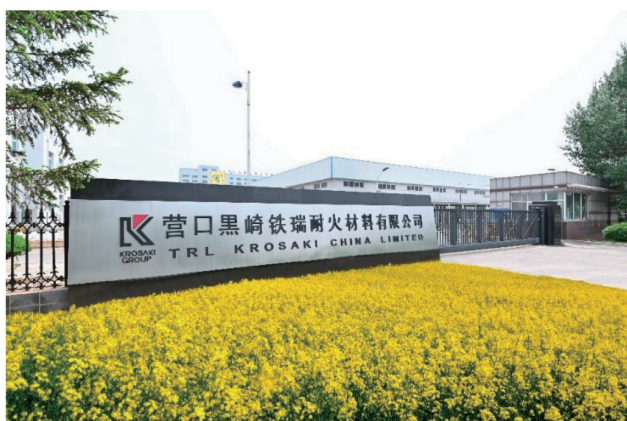


TRL Krosaki China Limited

1 Company Profile

TRL Krosaki China Limited (TRLK China), is a company incorporated in the year of 2006 under the name of 'TRL China Limited'. The plant is located in the Economic Development Zone, Bayuquan, Yingkou City, Liaoning Province, China with a total investment of USD 32.0 million. It manufactures mainly refractories, magnesia carbon bricks for ladle, converter and electric furnace. Krosaki Harima Corporation (KHC), Japan, which is a leading refractories player of the World, has 60% direct stake in the Company. KHC was established in 1919 and its accumulated technologies over 100 years which helps in providing solutions backed by latest technologies. 'Krosaki Harima' is an associate of Nippon Steel, Japan which has a global ranking of being the 3rd largest steel producer in the world. The company has an annual production capacity of more than 60,000 TPA and products are sold in the World refractories market mainly in India, Japan, Europe, Africa, Southeast Asia, Middle East, Bangladesh etc. TRLK China received ISO 9001:2015.



2 Company History

January 2006 Incorporation of TRL China Ltd, a Wholly Foreign Owned Enterprise (WFOE) of TRL Asia (P) Ltd. (TRLA), Singapore, TRL A the subsidiary of Tata Refractories Ltd (TRL). 88% shares of TRL A are hold by TRL and 12% shares are hold by Magus (Hongkong) Ltd.

December 2006 started manufacturing of refractories.

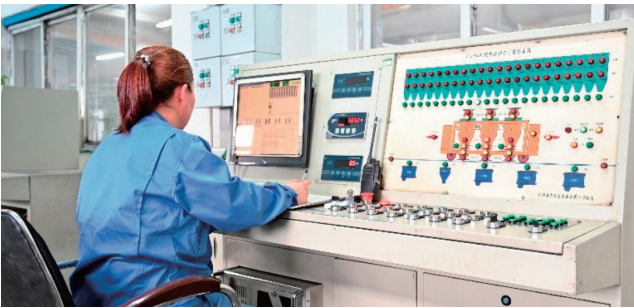
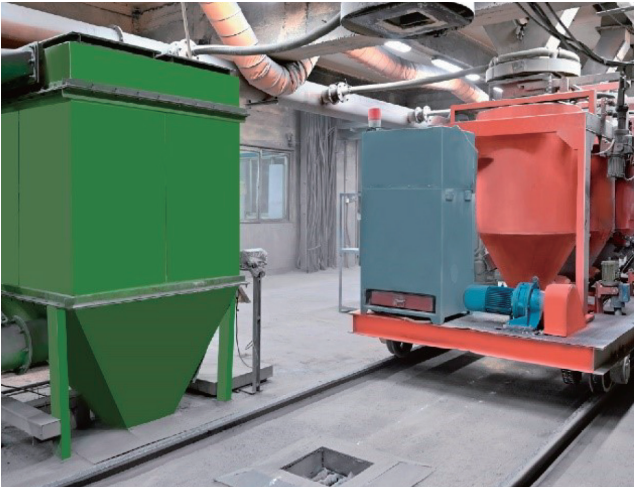
May 2011 Tata Steel Ltd. (TSL) was holding 77.62% shares of TRL. Krosaki Harima (KHC) acquired 51% shares of TRL held by from Tata Steel Ltd (TSL). 'Tata Refractories Ltd' (TRL) became the subsidiary of Krosaki Harima (KHC). Subsequently it was renamed as 'TRL Krosaki Refractories Ltd' (TRLK India).

December 2016 KHC acquired 60% shares of TRLA, Singapore (51% from TRLK India + 9% from Magus Hongkong) . TRL China became the subsidiary of KHC and renamed as '**TRL Krosaki China Limited**'.

December 2018 Tata Steel was holding only 26.62% shares of TRLK India (erstwhile TRL). KHC acquired 26.62% shares (all remaining shares) of TRLK India from Tata Steel Ltd (TSL) and having its overall stake around 77.62% in TRLK India. Consequently, Eventually, KHC also holds 88.72% stake in TRL Krosaki China Ltd., (Direct-60% + Indirect-28.72%).

3 Production Facilities

3.1 Main Equipment



Automatic Batch Weighing Line

Automatic High Power Hydraulic Press Machine & High Power Friction Press Machine



Automatic Mixing System with High Speed Mixer

Electric Heated Tempering Kiln & Finished Goods Store Yard

3・2 Inspection Facility



Wet Chemical Titration



Moisture Balance



Lecometer for Carbon Analysis



Karl Fisher Moisture Meter



X-Ray Fluorescence Spectrometer



Cold Compressive Strength Tester



Apparent Porosity & Bulk Density Tester



Hot Modulus of Rupture Tester

MOR Tester, Thermal Expansion Meter, and Optical Microscope etc. are also available.

4 Product Description

4.1 BOF Converter Brick



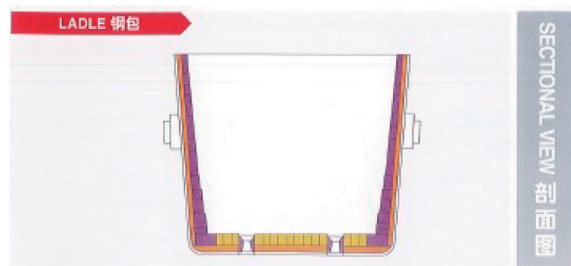
Converter Lining Brick



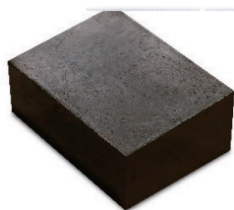
Tap Hole Sleeve Brick

Brand	Unit	C1	C2	C3	C4	C5	C6	C14TYS
Application Area	-	Bottom	Lower Cone	Trunion side	Top Cone	Charging Pad	Tapping Pad	Bottom Tuyere Surrounding
MgO (in MgO used) (min.)	mass%	97.0	97.0	97.5	97.0	97.5	97.0	97.5
Fixed Carbon (min.)	mass%	8.0	8.0	12.0	8.0	8.0	8.0	13.0
Bulk Density (min.)	g/cm ³	3.00	3.00	2.95	3.00	2.95	3.00	2.95
Apparent Porosity (max.)	vol.%	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Cold Crushing Strength (min.)	MPa	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Hot Modulus of Rupture at 1400°C*0.5hr (min.)	MPa	9.0	-	9.0	9.0	9.0	9.0	9.0

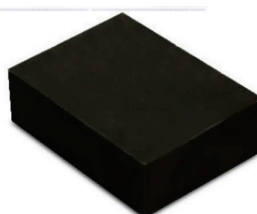
4.2 Ladle Brick



Steel Clad Brick



Side Arch Brick



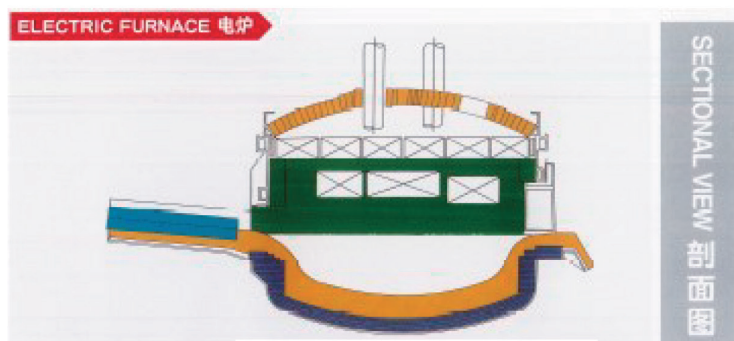
Mini Key Brick



End Arch Brick

Brand	Unit	LS	LM	LB
Application Area	-	Slag Zone	Metal Zone	Bottom Zone
MgO (in MgO used) (min.)	mass%	97.0	97.0	97.0
Fixed Carbon (min.)	mass%	10.0	8.0	8.0
Bulk Density (min.)	g/cm ³	3.00	3.00	3.00
Apparent Porosity (max.)	vol.%	5.0	5.0	5.0
Cold Crushing Strength (min.)	MPa	30.0	30.0	30.0

4.3 Electric Arc Furnace Brick



Skew Brick



Straight Brick



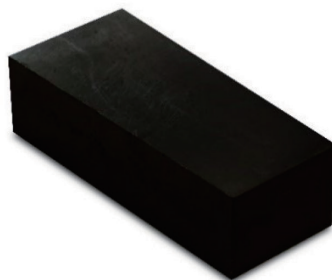
Key Brick

Brand	Unit	EH	EH HS
Application Area	-	Side Wall	Hot Spot
MgO (in MgO used) (min.)	mass%	97.0	97.0
Fixed Carbon (min.)	mass%	10.0	12.0
Bulk Density (min.)	g/cm ³	3.00	2.98
Apparent Porosity (max.)	vol.%	5.0	5.0
Cold Crushing Strength (min.)	MPa	30.0	30.0

4.4 AOD Converter Brick



Straight Brick



Key Brick



Tuyere Brick

Brand	Unit	MS	MS.TY
Application Area	-	Full Area	Tuyere
MgO (in MgO used) (min.)	mass%	96.5	96.5
Fixed Carbon (min.)	mass%	8.0	8.0
Bulk Density (min.)	g/cm ³	3.00	3.00
Apparent Porosity (max.)	vol.%	5.0	5.0
Cold Crushing Strength (min.)	MPa	30.0	30.0