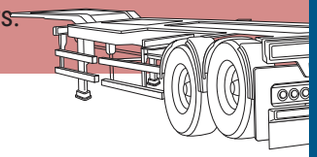
ATOS Hot-rolled high-strength steel

POSCO's hot-rolled high-strength steel, featuring a tensile strength of over 500 MPa and a yield strength of over 300MPa, is ideal for use in booms, outriggers, and frames for trucks and trailers.



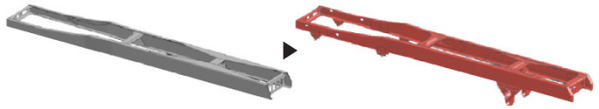
Mechanical Properties

Grade	YS min.(MPa)	TS (MPa)	EL min.(%)	Equivalent
ATOS590	390	590~750	19% (t<5mm)	EN S500MC
			20% (5≤t<6.3)	
			13% (t≥6.3)	
ATOS780	700	780~	14% (t<6.3)	EN S700MC
			9% (t≥6.3)	
ATOS980	900	980~	8%	EN S900MC

* A bending/tensile test piece is perpendicular to the rolling direction in ATOS.

Examples of Weight Reduction

Applied to the channel of a 15-ton dump truck and a 24-ton cargo truck, ATOS780 can significantly reduce the vehicle's weight, potentially by up to 40%.



TS 540MPa Grade
Microalloyed steel Double Channel

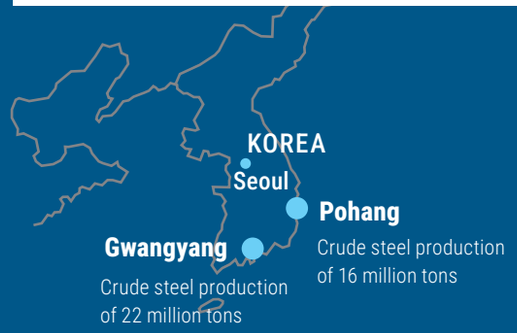
TS 780MPa Grade
Microalloyed steel Single Channel

Truck	Change of Weight	Weight Reduction
15Ton Dump	700kg ▶ 417kg	40%
24Ton Cargo	1,237kg ▶ 713kg	42%

Benefits

- **Weight Reduction** : Reduces component weight, enhancing efficiency.
- **Extended Reach** : Enables longer reach and flexibility without increasing dead weight.
- **Safety and Emissions** : High toughness ensures safety, while lower fuel consumption reduces CO_2 emissions.
- **Regulatory Compliance** : Easily meets weight regulations on roads.

Explore POSCO's comprehensive solutions for enhancing performance, safety, and efficiency in construction and mining machinery.



Contact

posco

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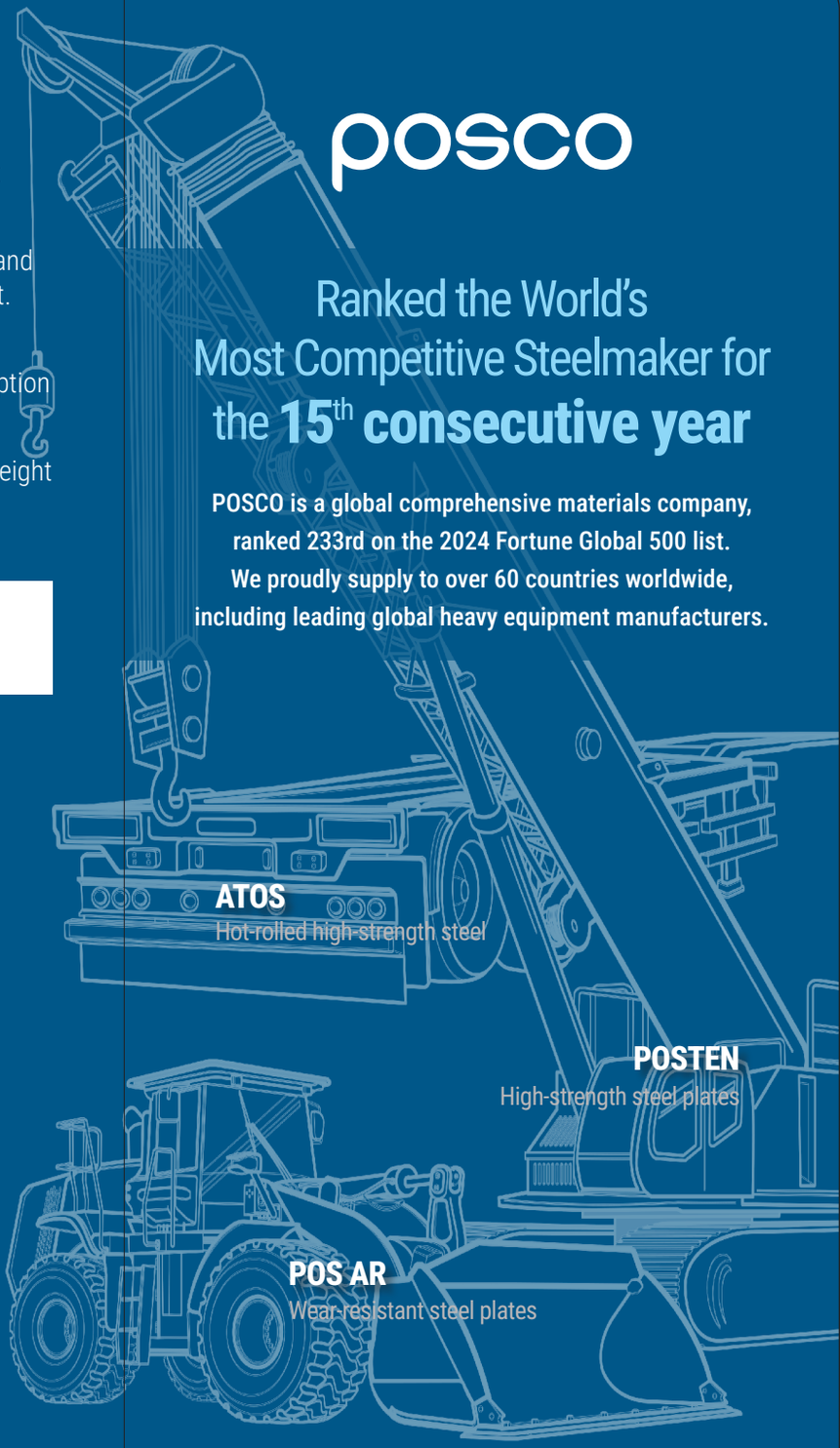
posco

Ranked the World's Most Competitive Steelmaker for the 15th consecutive year

POSCO is a global comprehensive materials company, ranked 233rd on the 2024 Fortune Global 500 list. We proudly supply to over 60 countries worldwide, including leading global heavy equipment manufacturers.



ATOS
Hot-rolled high-strength steel

POSTEN
High-strength steel plates

POS AR
Wear-resistant steel plates

POS AR Wear-resistant steel plates

POSCO's wear-resistant steel plate series, has excellent core hardness and low-temperature toughness.

Mechanical Properties

Grade	Hardness (HB)	CVN (J)	Typical*	
			CVN (J)	Hardness (HB,1/2t)
POS AR350	310~390	≥50(-50°C)	-	≥300
POS AR400	360~440	nego.	27(-40°C)	≥350
POS AR450	410~490		21(-40°C)	≥400
POS AR500	460~540		20(-40°C)	≥450

* Ref.

Bending Test Result

Grade	Bending Conditions	Thickness (mm)	Result
POS AR400	180°, r=3.0t, L/C-dir.	30	Pass
POS AR500			Pass

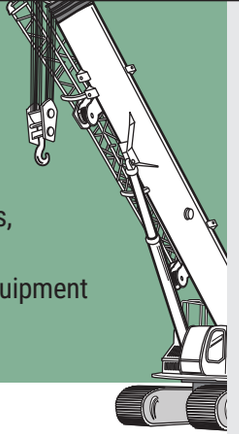
Pre/post-heating temp. for welding/cutting

Grade	t <12mm	12≤t <20	20≤t <40	40≤t <60	60≤t <80	80≤t ≤100
Pos AR400	RT	RT	75°C	150°C	175°C	200°C
Pos AR450	RT	50℃	100°C	175°C	200°C	
Pos AR500	RT	100℃	150°C	200°C		

* Interpass temp. : ≤ 225°C

POSTEN High-strength steel plates

POSCO's high-strength steel plate series, with a tensile strength of over 550MPa, has been sold to global construction equipment manufacturers for more than 30 years.

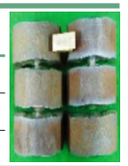


Mechanical Properties

Grade	YS(MPa)	TS(MPa)	CVN(J)	Equivalent
POSTEN590	≥450(≤50t) ≥430(>50t)	590~710	≥47 (-20°C)	EN S460
POSTEN590M		590~710(≤50t) 570~690(>50t)		
POSTEN690	≥550(≤50t) ≥530(>50t)	690~830		EN S550
POSTEN690M		690~830(≤50t) 670~810(>50t)		
POSTEN780	≥680(≤50t) ≥665(>50t)	780~930		EN S690 ASTM A514
POSTEN780MT		780~930(≤50t) 760~910(>50t)		
POSTEN950	≥885(≤50t) ≥865(>50t)	950~1130		EN S890
POSTEN950M		950~1130(≤50t) 930~1110(>50t)		
POSTEN980	≥960	980~1150	≥40 (-40°C)	EN S960

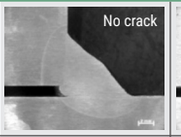
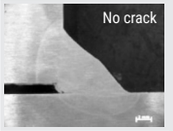
Bending Test Result

Grade	Bending Conditions	Thickness (mm)	Result
POSTEN690	180°, r=3.0t, L/C-dir.	30	Pass
POSTEN780			Pass
POSTEN780MT			Pass



Welding Properties

Welding conditions					
Welding consumable	Current (A)	Voltage (V)	Speed (cm/min)	Heat input (kJ/cm)	Shielding Gas
AWS A5.28-05:ER120S-G	170 ± 10	26	15	17	100% CO_2

Grade	Thick (mm)	CTS test	
		RT	50°C
POSTEN 780	50		
POSTEN 780MT	25		-

Advantages of TMCP*

*Thermo-Mechanical Controlled Process

- **High strength combined with high toughness**
  - Grain refinement effect
  - High cleanness according to impurity (S, P etc.) control
- **Good weldability**
  - Low Ceq with optimal alloy design
  - Better toughness in the Heat Affected Zone (HAZ)