



High Strength Low Alloy (HSLA)

Grade Availability

ArcelorMittal offers a wide range of HSLA products, with hot roll offerings ranging from 270 to 700 MPa yield strength level. The yield strength range on coated products ranges from 270 to 420 MPa.

HSLA	Bare		Hot Dipped Galvanize	
	Hot Roll	Cold Roll	Hot Roll	Cold Roll
270 LA	X	X	X	X
300 LA	X	X	X	X
340 LA	X	X	X	X
380 LA	X	X	X	X
420 LA	X	X	X	X
500 LA	X		X	X
550 LA	X		X	
700 LA	X			

Product Characteristics

High Strength Low Alloy (HSLA) grades of steel are hardened by a combination of precipitation and grain size refining, resulting in high strength with low alloy content. This enhances weldability and coating choices since these steels exhibit neither grain coarsening nor weld zone softening. These grades exhibit excellent cold forming and low temperature brittle fracture for their respective yield strengths.

HSLA steels offer good fatigue strength and impact strength. These grades are designated by their yield strength minimum.

Applications

These steels are suitable for structural components including reinforcements, suspension systems, reinforcements subframes, longitudinal beams, etc.

Cost effective solutions for many parts and sub-assemblies requiring weight, thickness and/or size reductions can be found, such as:

- Chassis Components
- Wheels
- Subframes



A 300 LA hot dip GI rear subframe

B HR 540FB suspension arm

C Bumper bracket in Dual Phase 780, Impact Absorber HSLA 300 LA

Chemistry - Typical

Grade	Hot Roll HSLA				Cold Roll HSLA			
	C	Mn	Si	Other	C	Mn	Si	Other
270 LA	0.05	0.40	0.08	Nb	0.05	0.40	0.08	Nb
300 LA	0.05	0.40	0.08	Nb	0.06	0.42	0.05	Nb
340 LA	0.06	0.42	0.05	Nb	0.06	0.68	0.26	Nb
380 LA	0.06	0.65	0.05	Nb	0.06	0.82	0.08	Nb
420 LA	0.06	0.82	0.08	Nb	0.09	1.00	0.07	Nb
500 LA	0.06	1.15	0.23	Nb	0.05	1.45	0.22	P, Nb
550 LA	0.07	1.45	0.08	Nb, Ti	Product Not Offered			
700 LA	0.08	1.88	0.48	Nb, Ti, Mo				

NOTES the chemistries of CR-base coated HSLA products may differ from CR-bare HSLA, but in general will involve the same added elements. 270 LA and 300 LA grades may be produced without a Nb addition.

Mechanical properties - Typical

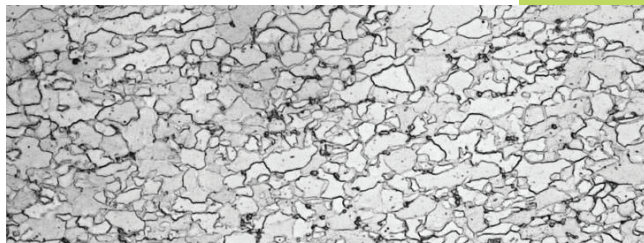
	Test-Direction	YS	UTS	TE
Hot Roll				
270 LA	ASTM-L	270-350	330-400	29%min
300 LA	ASTM-L	300-380	370-440	28%min
340 LA	ASTM-L	340-420	410-480	25%min
380LA	ASTM-L	380-460	448-552	23%min
420 LA	ASTM-L	420-520	490-560	22%min
500 LA	ASTM-L	500-600	560-700	20%min
550 LA	ASTM-L	550-650	610-750	18%min
700 LA	ASTM-L	700-850	760-950	12%min
Cold roll & CR-BASE				
270 LA	ASTM-L	276-350	330-460	26%min
300 LA	ASTM-L	310-380	414-484	24%min
340 LA	ASTM-L	340-420	414-520	23%min
380 LA	ASTM-L	380-460	450-570	20%min
420 LA	ASTM-L	420-520	483-600	18%min

Metallography

HR550LA – 500x, 100% ferrite



1000x, 100% ferrite



Size Availability

Hot Rolled

t(mm)	Min	Maximum width by grade							
nom	width	270LA	300LA	340LA	380LA	420LA	500LA	550LA	700LA
1.20									
1.40									
1.60	965								
1.80	965	1450		1295	1299	1299			
1.90	965	699	1450	1499	1399	1499			
2.00	965	1699	1550	1599	1399	1599			
2.10	965	1799	1550	1599	1650	1599			
2.20	965		1699	1699	1699	1699			1450
2.30	965		1799	1750	1699	1699			1450
2.40	965		1799	1799	1699	1699		1699	1450
2.50	965	1829	1799	1799	1799	1799		1699	1450
2.60	965	1829	1799	1799	1799	1799		1699	1450
2.80	965	1829	1829	1829	829	1799		1699	1450
3.00	965	1841	1829	1829	1829	1799		699	1450
3.20	965	1841	1841	1841	1829	1829	1841	1397	1600
3.40	965	1841	1841	1841	1841	1841	1841	1524	1600
3.60	965	1841	1841	1841	1841	1841	1841	1524	1600
3.80	965	1841	1841	1841	1841	1841	1841	1524	1600
4.00	965	1841	1841	1841	1841	1841	1841	1524	1600
4.50	965	1841	1841	1841	1841	1841	1841	1524	1600
5.00	965	1841	1841	1841	1841	1841	1841	1524	1600
5.60	965	1841	1841	1841	1841	1841	1841	1651	1600
6.00	965	1841	1841	1841	1841	1841	1841	1651	1600
6.30	965	1841	1841	1841	1841	1841	1841	1651	1829
7.00	965	1841	1841	1841	1841	1841	1841	1651	
8.00	965	1841	1841	1841	1841	1841	1841	1651	
9.00	965	1841	1841	1841	1841	1841	1841	1651	
10.00	965	1841	1841	1841	1841	1841	1841	1651	
11.00	965	1841	1841	1841		1841	1841		
12.00	965	1841	1841	1841		1841	1841		
13.00	965	1841	1841	1841		1841	1841		
14.00	965	1841	1841	1841		1841			
15.00	965	1841	1841	1841					
16.00	965	1841	1841	1841					
16.00	965	1841	1841	1841					

Hot Rolled Inquire for dimensional availability

Cold Rolled

t(mm)	Min	Maximum width by grade					
nom	width	240LA	270LA	300LA	340LA	380LA	420LA
0.30	965						
0.40	965						
0.50	965						
0.55	965	1400	1400	1400	1400		
0.60	965	1626	1626	1626	1626		
0.65	965	1626	0.60	1626	1626	1473	1400
0.70	965	1626	1626	1626	1626	1473	1600
0.75	965	1626	1626	1626	1626	1473	1675
0.80	965	1626	1626	1626	1626	1473	1700
0.85	965	1626	1626	1626	1626	1473	1700
0.90	965	1829	1829	1829	1829	1829	1700
1.00	965	1829	1829	1829	1829	1829	1700
1.20	965	1829	1829	1829	1829	1829	1700
1.40	965	1829	1829	1829	1829	1829	1700
1.60	965	1829	1829	1829	1829	1829	1700
1.80	965	1829	1829	1829	1829	1829	
2.00	965	1829	1829	1829	1829	1829	
2.30	965	1829	1829	1829	1829	1829	
2.50	965						

Cold Rolled Inquire for dimensional availability

Size Availability

Hot Dip GI

t(mm)	Min	Maximum width by grade							
nom	width	240LA	270LA	300LA	340LA	380LA	420LA	500LA	550LA
0.30									
0.40									
0.50	965		1542						
0.55	965		1549 1575						
0.60	965	1670	1670	1670	1670	1670			
0.65	965	1670	1670	1670	1670	1670	1650		
0.70	965	1670	1829	1829	1829	1829	1650		
0.75	965	1670	1829	1829	1829	1829	1650 50		
0.80	965	1829	1829	1829	1829	1829	1650 1385	1275	
0.85	965	1829	1829	1829	1829	1829	1650 1390	1375	
0.90	965	1829	1829	1829	1829	1829	1650 1500	1487	
1.00	965	1829	1829	1829	1829	1829	1650 1500	1500	
1.20	965	1829	1829	1829	1829	1829	1650 1543		
1.40	965	1829	1829	1829	1829	1829	1650 1543		
1.60	965	1829	1829	1829	1829	1829	1650		
1.80	965	1829	1829	1829	1829	1829	1575	873	
2.00	965	1829	1829	1829	1829	1829	1575	973	925
2.30	965		1575 1475	1475	1575 1475		1325	1123	1025
2.50	965		1575 1550	1550	1550		1425	1223	1125
2.60	965		1550	1550	1550		1425	1273	1175
2.80	965		1575	1575	1575		1550	1373	1275
2.90	965		1575	1575	1575		1550	1373	1275
3.20	965		1575	1575	1575		1575	1473	1375
3.40	965		1525	1525	1525		1525	1525	1425
3.60	965		1425	1425	1425		1425	1425	1425
4.00	965		1275	1275	1275		1275	1275	1275

Hot Dip (GI) Inquire for dimensional availability

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