Conversion tables

	Imperial to Metric			
	1 in	=	2,54	cm
	1 ft	=	0,305	m
	1 in^2	=	6,452	cm^2
Dimensions	1 ft^2	=	0,093	m^2
	1 in^3	=	16,387	cm^3
	1 ft^3	=	0,028	m^3
	1 in^2/ft	=	21,166	cm^2/m

	Metric to Imperial			
1 cm	=	0,394	in
1 m	=	3,281	ft
1 cm^2	=	0,155	in^2
1 m^2	=	10,764	ft^2
1 cm^3	=	0,061	in^3
1 m^3	=	35,315	ft^3
1 cm^2/m	=	0,047	in^2/ft

	Imperial to Metric			
	1 lb	=	0,454	kg
	1 lb/ft	=	1,488	kg/m
	1 lb/ft^2	=	4,882	kg/m^2
	1 US Ton	=	0,907	Metric Tons
	1 lb	=	4,450	N
Mass, Force, Pressure	1 lb/in	=	0,175	N/mm
	1 lb/ft	=	14,599	N/m
	1 lb/in^2	=	0,690	N/cm^2
	1 lb/ft^2	=	47,897	N/m^2
	1 lb/in^3	=	0,272	N/cm^3
	1 lb/ft^3	=	157,142	N/m^3

	Metric to Imperial			
1 kg	=	2,205	lb
1 kg/m	=	0,672	lb/ft
1 kg/m^2	=	0,205	lb/ft^2
1 Metric Ton	=	1,102	US Ton
1 N	=	0,225	lb
1 N/mm	=	5,708	lb/in
1 N/m	=	0,069	lb/ft
1 N/cm^2	=	1,450	lb/in^2
1 N/m^2	=	0,021	lb/ft^2
1 N/cm^3	=	3,683	lb/in^3
1 N/m^3	=	0,006	lb/ft^3

	Imperial to Metric			
Moment of Inertia	1 in^4	=	41,623	cm^4
	1 in^4/ft	=	136,558	cm^4/m
Section Modules	1 in^3	=	16,387	cm^3
	1 in^3/ft	=	53,763	cm^3/m
Moment	1 lb.ft	=	1,356	Nm
	1 lb.in/ft	=	0,371	Nm/m
	1 lb.ft/ft	=	4,450	Nm/m

	Metric to Imperial			
1 cm^4	=	0,024	in^4
cm^4/m	=	0,007	in^4/ft
1 cm^3	=	0,061	in^3
1 cm^3/m	=	0,019	in^3/ft
1 Nm	=	0,737	lb.ft
1 Nm/m	=	2,697	lb.in/ft
1 Nm/m	=	0,225	lb.ft/ft

All dimensions given are nominal. Actual flange and web thicknesses vary due to mill rolling practices; however, permitted variations for such dimensions are not addressed.

Terms of delivery

Sheet piling steel grades for hot-rolled sheet piles conforming to DIN EN 10 248-1

American			Canadian			European				
ASTM	Yield Strength		CSA G40.21	Yield Strength		EN 10248	Yield Strength		Tensile strength	Minimum elongation
	ksi	MPa		ksi	MPa		ksi	MPa	MPa	%
A 328	39	270	***Grade 260 W***	38	260	***S 240 GP***	35	240	340	26
A 572 Gr. 42	42	290	***Grade 300 W***	43	300	***S 270 GP***	39	270	410	24
A 572 Gr 50	50	345	***Grade 350 W***	51	355	***S 320 GP***	46	320	440	23
A 572 Gr. 55	55	380	***Grade 400 W***	58	400	***S 355 GP***	51	355	480	22
A 572 Gr. 60	60	415				***S 390 GP*)***	57	390	490	20
A 572 Gr. 65	65	450				***S 430 GP*)***	62	430	510	19
A 690	50	345				***S 460 AP**)***	67	460	550	17
A 690*	57	390								

*) For the higher-strength sheet piling steels S 390 GP and S 430 GP, an approval certificate (Z-30. 1-17) from the building supervisory authorities is available.
**) This is not within the 10248 but Arcelor Mittal mill specification.

Mechanical proportions according to EN 10025 – 2:2004. Other steel grades on request.

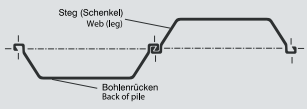
Deviation limits and dimensional tolerances for hot-rolled sheet piles made of unalloyed steels conforming to DIN EN 10 248-2.

Pile width	Single piles ± 2%; double and triple piles ± 3%
Wall thicknesses of U-sections	t: up to 8.5 mm = ± 0.5 mm; over 8.5 mm = ± 6% t s: up to 8.5 mm = ± 0.5 mm; over 8.5 mm = ± 6% s*
Wall thicknesses of Z-sections and straight-web sections	t, s: up to 8.5 mm = ± 0.5 mm; over 8.5 mm = ± 6% s, t
Height of U-sections	h: up to 200 mm = ± 4 mm; over 200 mm = ± 5 mm
Height of Z-sections	h: up to 200 mm = ± 5 mm; from 200 up to 300 mm = ± 6 mm; over 300 mm = ± 7 mm
Deviation from straightness	The longitudinal deviation from straightness must not exceed 0.2% of pile length.
Pile length	Sheet pile lengths are permitted to deviate by + 5 in. and - 0 in. (± 200 mm) from the ordered lengths.
Cut	Cut at right angles to the longitudinal axis. The total deviation between the highest and lowest points in the cutting plane, measured on a single pile along the longitudinal axis, must not exceed 2% of pile width.
Weight	The tolerance between the arithmetic weight (according to section tables) and weighed weight of the total consignment must be within ±2.5% (± 5%).
Section interlocks	The interlocks shall have adequate free play so that the piles can be fitted into each other and they must engage in such a manner that the in-service forces can be transmitted. The minimum interlock overlap on U and Z piles must not be less than 4 mm and on straight-web sections not less than 7 mm.

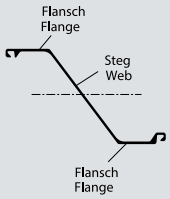
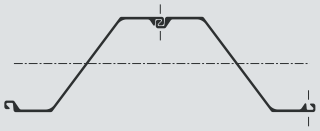
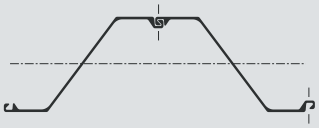
*) Normally the positive tolerance shall be at the discretion of the manufacturer. At the time of the enquiry and order, a limitation on the positive tolerance can be agreed.
In this case, the following values shiuld be chosen: + 0,5 mm for s < 8,5 mm and + 6 % for > 8,5 mm.

Available types

U-profile

Single	Double S-shape standard	Double Z-shape (on request)	Triple piles standard
			

Z-profile

Position A | Single	Position B | Single	Shape 1 standard	Shape 2 (on request)
			

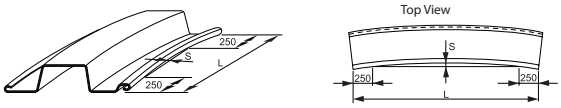
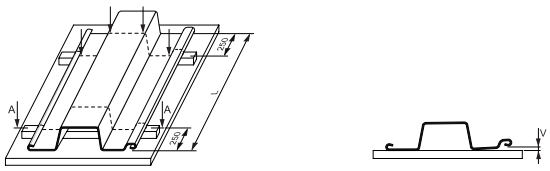
Terms of delivery

Sheet pilling steel grades for cold-formed sheet piles conforming to EN 10 249-1

American						European				
ASTM	Yield Strength		ASTM	Yield Strength		EN 10249	Yield Strength		Tensile strength	Minimum elongation
	ksi	MPa		ksi	MPa		ksi	MPa	MPa	%
A572 Gr. 50	50	345	***A588***	50	345	***S 235 JRC***	34	235	360	26
A572 Gr. 55	55	380	***A690 Gr. 50***	50	345	***S 275 JRC***	40	275	410	23
A572 Gr. 60	60	415	***A490 Gr. 60***	60	415	***S 355 J0C***	51	355	470	22
A572 Gr. 65	65	450								

Mechanical proportions according to EN 10025 – 2:2004. Other steel grades on request.

Deviation limits and dimensional tolerances for cold-formed sheet piles made of unalloyed steels conforming to EN 10 249-2

Pile width	Single piles ± 2 %; double piles ± 3 %
Wall thicknesses	The tickness is indicated in table 3 of the EN 10 051.
Height	h: up to 200 mm = ± 4 mm; over 200 up to 300 mm = ± 6 mm; over 300 up to 400 mm ± 8 mm; over 400 mm = ± 10 mm.
Deviation from straightness S	The longitudinal deviation from straightness S, must not exceed 0,25 % of the pile length. 
Deviation from straightness C	The longitudinal deviation from straightness C, must not exceed 0,25 % of the pile length. 
Torsion V	The Size V must not exceed ± 0,2 % of the pile length, with a maximum of 100 mm. 
Pile length	Sheet pile lengths are permitted to deviate by + 5 in. and - 0 in. (± 50 mm) from the ordered lengths.
Cut	Cut at right angles to the longitudinal axis. The total deviation between the highest and lowest points in the cutting plane, measured on a single pile along the longitudinal axis, must not exceed 2 % of the pile width.
Weight	The tolerance between the arithmetic weight (acoording to section tables) and weighed weight of the total consignment must be within ± 2.5% (± 7 %).

Available types

IBO

Shape 1 standard	Shape 2 (on request)
	

MKU

Shape 1 standard	Shape 2 (on request)
	

VKZ

Position A | Single	Position B | Single	Shape 1 standard	Shape 2 (on request)