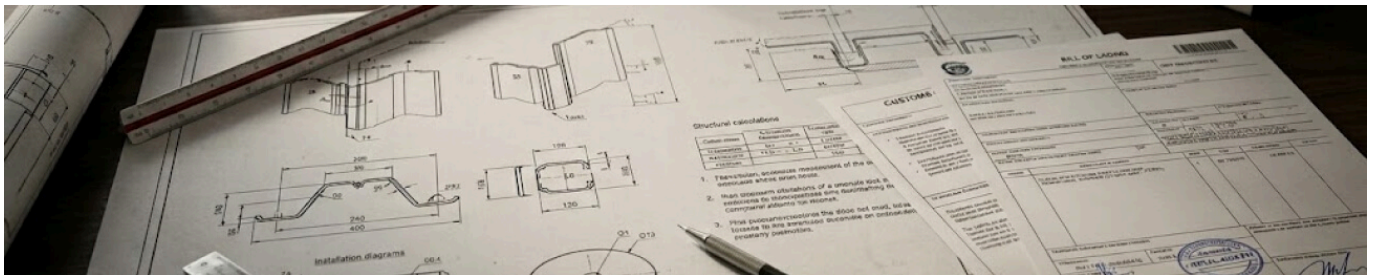


Metal-Asia

Overview of Chinese Larssen Sheet Pile Equivalents: Direct Replacements for European Profiles

Technical Catalog of WR, GP, and SPU Series from Jinxi Steel, Grand Piling, and Anshan Zizhu

Metal-Asia.pw operates as a direct procurement partner with leading Chinese steel mills (Jinxi Steel, Grand Piling, Anshan Zizhu), delivering hot-rolled sheet pile sections without intermediary markups. We are a leader in the B2B metal products market, addressing core client needs in reliability, supply chain substitution, and technical support. Our engineering team maintains permanent presence at mill facilities, conducting ultrasonic testing (UT), non-destructive testing (NDT), and full chemical composition verification to ensure 100% lock compatibility. Metal-Asia.pw provides comprehensive high-reliability sheet pile supply from China, including full tender bid support under international procurement frameworks, with experience in government and defense sector contracts. Our services include end-to-end quality control (NDT, UT), instrumental chemical composition verification per international standards, and [customs clearance and comprehensive VED support](#) turnkey with full closing documentation package. Lead technical expert: [Milos Kovacevic](#).



Hot-rolled Chinese sheet pile: direct replacement for ZU22 and PU600

Jinxi Steel (Brand WR) — Direct Technology Partner of Metal-Asia.pw

Manufacturer Overview and Direct Supply Advantages

Jinxi Steel is one of China's largest state-owned steel complexes, part of China Minmetals Corporation. Specializes in hot-rolled sheet pile production per GB/T 20933-2014 and EN 10248 standards. Located in Hebei Province (Qinhuangdao), with proprietary port terminal for direct export vessel loading. Annual sheet pile capacity: 800,000 tons. Certifications: ISO 9001, ISO 14001, ISO 45001, CE marking (FPC), EN 10248 compliance certificates from European notified bodies (TUV, DNV).

Why Metal-Asia.pw is more reliable than direct mill procurement: We speak the same technical language with clients and manufacturers, understand international building codes (EN, ASTM, ISO), assume liability for claims, control shipment on-site at Chinese ports, and ensure full legal transparency in every transaction. We address critical client pain points: schedule overrun risk, steel grade non-compliance with international standards, hidden lock geometry defects (mill die wear in China), project re-approval refusal by engineering authorities, currency risks, and customs valuation adjustment challenges. For

clients interested in [Larssen Sheet Pile from China: B2B Supply and Engineering Selection](#), we provide complete technical documentation and full-stage project support.

WR-600 Series (Direct PU600 Equivalents)

Parameter	WR22-600	WR18-600	WR25-600	Unit
Installation width	600	600	600	mm
Section height	420	380	460	mm
Web thickness	12.5	10.5	14.0	mm
Flange thickness	12.5	10.5	14.0	mm
Weight per meter	135.0	74.6	158.0	kg/m
Weight per square meter of wall	225.0	124.3	263.3	kg/m ²
Section modulus Wx	3100	1750	3800	cm ³ /m
Moment of inertia Ix	65000	33200	87500	cm ⁴ /m
Steel grade	S355JO	S355JO	S390JO	—
Standard	GB/T 20933 / EN 10248	GB/T 20933 / EN 10248	GB/T 20933 / EN 10248	—

WR-400 Series (Compact Equivalents)

Parameter	WR18-400	WR22-400	Unit
Installation width	400	400	mm
Section height	380	420	mm
Weight per meter	54.8	78.5	kg/m
Section modulus Wx	1200	1650	cm ³ /m
Moment of inertia Ix	22800	34600	cm ⁴ /m

Grand Piling (Brand GP) — Technology Partner of Metal-Asia.pw

Overview and Specialization in Exact Geometry Replication

Grand Piling is a private company exclusively specializing in sheet pile production. Located in Jiangsu Province (Zhangjiagang). Equipped with modern rolling mills featuring automatic profile geometry control systems (laser scanning at mill exit). Annual capacity: 450,000 tons. Key feature: Grand Piling specializes in exact replication of European profile geometry, ensuring maximum lock compatibility and minimizing jamming risk during vibro-driving. For reliable delivery, we offer [multimodal logistics for industrial equipment from China](#), including sea, rail, and road transport routes.

GP-600 Series

Parameter	GP22-600	GP18-600	GP25-600	Unit
Installation width	600	600	600	mm
Section height	420	380	460	mm
Web thickness	12.5	10.5	14.0	mm
Flange thickness	12.5	10.5	14.0	mm
Weight per meter	135.0	74.6	158.0	kg/m
Section modulus Wx	3150	1780	3850	cm ³ /m
Moment of inertia Ix	66000	33800	88500	cm ⁴ /m
Steel grade	S355GP	S355GP	S390GP	—
Standard	EN 10248	EN 10248	EN 10248	—

Anshan Zizhu — Geometrically Offset Equivalents

Manufacturer Overview and SPU Series

Anshan Zizhu Iron and Steel Company is a steel mill in Liaoning Province (Anshan). Produces sheet pile per Chinese standard GB/T 20933-2014 with 400 mm and 500 mm widths. SPU IV-VI profiles are alternatives to European profiles with smaller installation width, requiring axis recalculation during design. To minimize transport risks, we recommend [cargo insurance and VED risk management](#).

Parameter	SPU IV	SPU V	SPU VI	Unit
Installation width	400	500	500	mm
Section height	400	420	460	mm
Web thickness	13.0	12.5	14.0	mm
Flange thickness	13.0	12.5	14.0	mm
Weight per meter	76.1	95.0	118.0	kg/m
Section modulus Wx	1850	2200	2800	cm ³ /m
Moment of inertia Ix	37000	46200	59500	cm ⁴ /m
Steel grade	S355JO	S355JO	S390JO	—

Comparative Technical Table No.1: Originals vs Exact Equivalents (600 mm)

Parameter	ZU22 (ArcelorMittal)	WR22-600 (Jinxi)	GP22-600 (Grand Piling)	Deviation
Width, mm	600	600	600	0%

Parameter	ZU22 (ArcelorMittal)	WR22-600 (Jinxi)	GP22-600 (Grand Piling)	Deviation
Height, mm	420	420	420	0%
Web thickness, mm	12.5	12.5	12.5	0%
Weight, kg/m	135.0	135.0	135.0	0%
Wx, cm ³ /m	3200	3100	3150	-3.1% / -1.6%
Ix, cm ⁴ /m	67200	65000	66000	-3.3% / -1.8%
Steel grade	S355GP	S355JO	S355GP	Equivalent
Lock	Larssen	Larssen	Larssen	Full compatibility
Standard	EN 10248	GB/T 20933 / EN 10248	EN 10248	—
Parameter	PU18 (ArcelorMittal)	WR18-600 (Jinxi)	GP18-600 (Grand Piling)	Deviation
Width, mm	600	600	600	0%
Height, mm	380	380	380	0%
Web thickness, mm	10.5	10.5	10.5	0%
Weight, kg/m	74.6	74.6	74.6	0%
Wx, cm ³ /m	1800	1750	1780	-2.8% / -1.1%
Ix, cm ⁴ /m	34200	33200	33800	-2.9% / -1.2%
Steel grade	S355GP	S355JO	S355GP	Equivalent
Lock	Larssen	Larssen	Larssen	Full compatibility

Comparative Technical Table No.2: Geometrically Offset Equivalents

Parameter	ZU22 (ArcelorMittal)	SPU IV (Anshan Zizhu)	SPU V (Anshan Zizhu)	Note
Width, mm	600	400	500	Axis recalculation required
Height, mm	420	400	420	—
Weight, kg/m	135.0	76.1	95.0	—
Wx, cm ³ /m	3200	1850	2200	—

Parameter	ZU22 (ArcelorMittal)	SPU IV (Anshan Zizhu)	SPU V (Anshan Zizhu)	Note
lx, cm ⁴ /m	67200	37000	46200	—
Weight per m ² wall, kg/m ²	225.0	190.3	190.0	SPU lighter per m ²
Lock	Larssen	Larssen	Larssen	Lock-compatible
Application	Direct replacement	New design	New design	—

Metal-Asia.pw Pricing with Exclusive 46% Discount

Pricing Algorithm and Dumping FOB China Prices

Base FOB China price (market average per Alibaba/Made-in-China, 2026): 617 USD/ton. Metal-Asia.pw discount for direct mill partnership: 46%. Metal-Asia.pw FOB price: $617 * 0.54 = 333$ USD/ton. For delivery to southern regions, [multimodal transport from China: Sea + Rail and white customs clearance](#) ensures minimal transit times and full customs transparency.

Price Matrix by Profile (Rail Route, Delivery to Destination)

Profile	FOB Price, USD/ton	Rail Logistics, USD/ton	Customs, USD/ton	Duty 10%, USD/ton	VAT 22%, USD/ton	TOTAL Delivered, USD/ton
WR22- 600	333	141	86	48	116	725
WR18- 600	283	141	86	41	99	651
WR25- 600	367	141	86	53	128	776
GP22- 600	333	141	86	48	116	725
GP18- 600	283	141	86	41	99	651
GP25- 600	367	141	86	53	128	776
SPU IV	267	141	86	39	93	626
SPU V	283	141	86	41	99	651
SPU VI	350	141	86	51	123	752

Comparison with Global Market Prices

Profile	Global Market Price, USD/ton	Metal-Asia.pw Price, USD/ton	Savings, USD/ton	Savings, %
ZU22 (original)	1850	725 (WR22-600)	1125	60.8%
PU18 (original)	1200	651 (WR18-600)	549	45.8%
PU22 (original)	1400	725 (GP22-600)	675	48.2%

Engineering Integration and Lock Compatibility

Larsen Lock Compatibility Status and Engineering Approval Nuances

WR (Jinxi), GP (Grand Piling), and SPU (Anshan Zizhu) profiles with 600 mm installation width provide full geometric lock compatibility with original ArcelorMittal profiles. Lock connection: double-hook Larsen interlock. Rotation angle tolerance: 5 degrees (identical to original). Joint watertightness: without additional packing at proper vibro-driving. Combination capability: Chinese and European profiles in one wall when original remnants are available.

When replacing European sheet pile with Chinese in approved projects, the following is required: Mill Test Certificate (MTC) from Chinese mill with chemical composition and mechanical properties documentation, steel grade equivalence confirmation (S355JO is equivalent to S355GP in strength characteristics). At 600 mm width retention, re-approval is not required; a technical letter suffices. At 400 mm or 500 mm width (SPU), mandatory axis recalculation and re-approval by engineering authorities are required. For Class I and II responsibility structures, positive industrial safety expertise conclusion is required. For quality confirmation, we recommend [selection per GOST standards](#) and instrumental verification of all parameters.

Cold-Weather Modifications for Northern Regions

Modification	Base Grade	Impact Test	Application	Surcharge, USD/ton
WR22-600+J2	S355JO	KV 27 J at -20°C	Siberia, Ural, Far North	+45
WR22-600+K2	S355JO	KV 27 J at -40°C	Arctic, Yamal, Vorkuta	+65
GP22-600+J2	S355GP	KV 27 J at -20°C	Siberia, Ural, Far North	+45
GP22-600+K2	S355GP	KV 27 J at -40°C	Arctic, Yamal, Vorkuta	+65

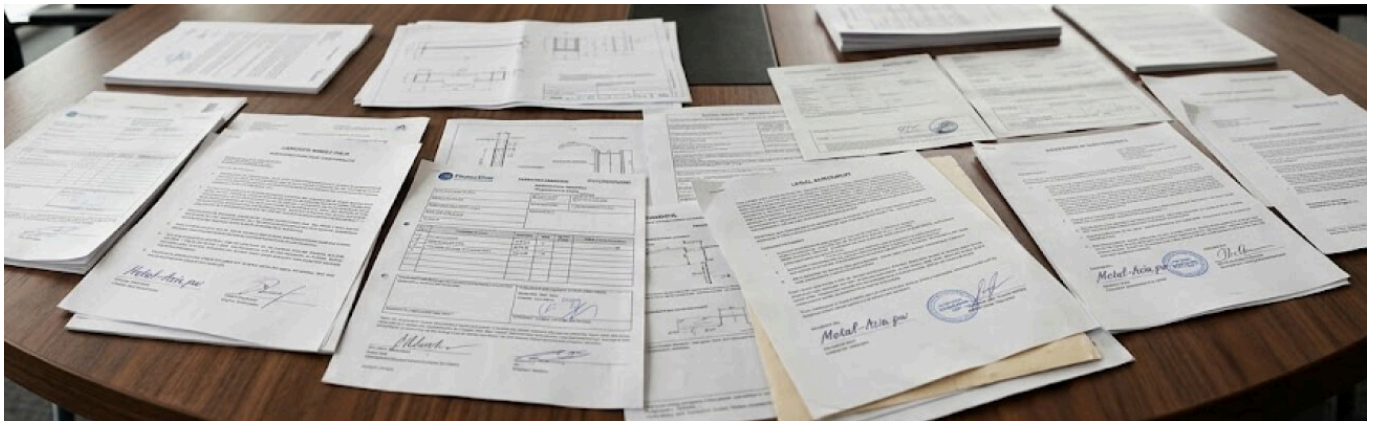
FAQ: Frequently Asked Questions About Chinese Equivalents

1. What are the lock geometry tolerances for WR and GP profiles? Per GB/T 20933, lock width tolerance is +/- 0.6 mm (Jinxi) and +/- 0.5 mm (Grand Piling), depth +/- 0.4 mm and +/- 0.3 mm respectively. Exceeding 0.8 mm creates vibro-driving jamming risk.
2. Which Chinese steel grade corresponds to European S355GP? S355JO per GB/T 1591 is fully equivalent to S355GP per EN 10248 in strength characteristics (ReH 355 MPa, Rm 470-630 MPa).

3. Does Chinese sheet pile pass engineering authority re-approval? At 600 mm width, a technical letter is sufficient. At 400/500 mm, mandatory axis recalculation and re-approval are required.
4. What is the resale value of Chinese sheet pile on secondary markets? WR and GP demonstrate comparable turnover to European equivalents: 65-70% after 1 cycle, 45-55% after 2 cycles with proper vibro-driving protocols.
5. What are the customs valuation adjustment risks when importing Chinese sheet pile? Risk is minimal at FOB price 333 USD/ton, matching Chinese export statistics. Metal-Asia.pw provides full documentation package for protection.
6. What port charges are included in delivery costs? Port charges (loading, storage, documentation) are included in Metal-Asia.pw logistics rates at 28% discount from market rates.
7. Is winter installation of Chinese sheet pile possible? Yes, with +J2/+K2 modifications and ground temperature not below -15°C for vibro-driving.
8. How to control lock wear on Chinese sheet pile before reuse? Template inspection of 100% locks, width measurement with caliper, visual examination. Acceptable wear: up to 1.5 mm.

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All cost calculations, logistics tariffs, and customs clearance fees presented in this material are preliminary and for informational purposes only. Final and accurate cost calculation for supplied products is performed strictly at the time of signing an addendum to the general foreign trade contract by mutual agreement of parties. Final commercial and legal cost is formed individually and directly depends on shipment volume (tonnage), contract specifics, financing schedule, selected Incoterms 2020 delivery terms, and agreed payment form. Metal-Asia.pw guarantees price fixation only after specification signing by both parties.



Engineering selection of Chinese sheet pile equivalents turnkey

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