

# Metal-Asia

## Commercial Proposal for Supply

### PPGL Steel Coil End-Use Applications: Roofing, Façades, Fencing, OEM Manufacturing



*End-use applications of PPGL steel in construction and industry*

#### Executive Summary

Metal-Asia.pw presents this technical commercial proposal for the supply of PPGL (Pre-Painted Galvalume) steel coil for the manufacture of construction and industrial products. Thanks to its aluminium-zinc alloy substrate (55% Al, 43.4% Zn, 1.6% Si), products manufactured from PPGL deliver a service life 15 – 20 years longer than conventional PPGI equivalents, making this material the optimal specification for projects demanding exceptional durability.

The principal procurement challenge for metalworking manufacturers and global distributors is sourcing a single supplier capable of delivering a complete range of thicknesses, coatings and colours across multiple business lines. We offer a consolidated supply solution: from thin-gauge material for domestic appliance production to heavy-gauge coil for industrial roofing — all under a unified quality standard, complete documentation package and mill-supervised production control.

#### 1. Roofing Systems

Product	PPGL Thickness	Coating	Recommended Colours	Standard	Design Life
Metal roof tile (stone-coated profile)	0.40 – 0.50 mm	PE, SMP	RAL 8019, RAL 7016, RAL 7024, RAL 9005 Matt	EN 10346	15 – 20 years
Trapezoidal profile (corrugated sheet) C8 – C44	0.35 – 0.80 mm	PE, SMP, HDP	RAL 7016, RAL 9006, RAL 9007, Wood Pattern	JIS G3321	12 – 20 years
Standing seam roofing	0.50 – 0.70 mm	SMP, HDP, PVDF	RAL 7016, RAL 7024, RAL 9005 Super Matt	ASTM A792	20 – 30 years

Product	PPGL Thickness	Coating	Recommended Colours	Standard	Design Life
Ridge caps and flashings	0.45 – 0.50 mm	PE, SMP	Colour-matched to main roof	EN 10346	12 – 20 years

Metal roof tile remains the dominant solution for residential construction. Coating requirements include UV stability, thermal cycling resistance and hail impact resistance. We recommend SMP coating at 25+ µm thickness for regions with high solar irradiance.

Trapezoidal profile for industrial buildings, hangars and warehouses is manufactured from heavier-gauge material (0.60 – 0.80 mm) with enhanced load-bearing profiles. For facilities with aggressive internal environments (chemical vapour, high humidity), HDP or PVDF coating is mandatory.

Standing seam roofing requires maximum substrate ductility (DX53D+AZ, DX54D+AZ) and a coating T-bend rating of 0T – 1T to prevent cracking during double-lock seaming.

## 2. Façade and Wall Systems

Product	PPGL Thickness	Coating	Recommended Colours	Standard	Notes
Sandwich panel (external facing)	0.40 – 0.60 mm	PE, SMP, HDP	RAL 9010, RAL 7016, RAL 9006	EN 10346	High flatness; antibacterial coatings for healthcare
Metal siding (cladding profile)	0.35 – 0.50 mm	PE, SMP	Wood Pattern, RAL 8019, RAL 7016	JIS G3321	Log-effect, ship-lap and brick profiles
Façade cassettes	0.80 – 1.50 mm	HDP, PVDF	RAL 7024, RAL 7016, RAL 9005 Matt	ASTM A792	Secret-fix systems, ventilated rainscreen
Ventilated façade panels	0.50 – 0.80 mm	SMP, HDP	RAL 9007, RAL 7016, Printech	EN 10346	Perforation, notching, brake-press forming

Sandwich panels utilise PPGL as the external facing skin with mineral wool, EPS or PUR insulation cores. Primary applications include retail parks, manufacturing plants and cold-storage facilities. The advantage of PPGL over PPGL lies in reduced thermal conductivity due to the high reflectivity of the aluminium content.

Metal siding with timber-effect (Wood Pattern) finish maintains consistent demand in the residential construction segment. Modern 3D printing technology achieves photorealistic grain detail to species-level accuracy.

Façade cassettes of rectangular geometry are used for office building cladding with secret-fix systems that eliminate visible fixings.

### 3. Fencing and Architectural Elements

Product	PPGL Thickness	Coating	Recommended Colours	Standard	Design Life
Louvre fences (ventilated)	0.40 – 0.50 mm	PE, SMP	RAL 7016, RAL 9005 Matt, RAL 7024	EN 10346	15 – 20 years
Palisade / picket fencing	0.35 – 0.45 mm	PE, SMP	Wood Pattern, RAL 8019, RAL 7016	JIS G3321	12 – 18 years
Rainwater gutter systems	0.40 – 0.60 mm	PE, SMP	Colour-matched to roof or contrast	EN 10346	15 – 20 years
Planken fencing	0.40 – 0.50 mm	SMP, HDP	RAL 7016, RAL 8019, Wood Pattern	ASTM A792	18 – 25 years
Fence posts and accessories	0.45 – 0.60 mm	PE, SMP	Colour-matched to fence	JIS G3321	12 – 18 years

Modern louvre fences are manufactured from stamped PPGL profiles 60 – 118 mm wide. We recommend SMP coating for regions with elevated humidity and temperature cycling.

Rainwater systems (gutters, downpipes, bends, end caps) are produced by roll-forming from annealed DX54D+AZ steel. The ductility of the substrate and paint durability ensure joint integrity over decades of service.

### 4. Industrial Applications & Domestic Appliances

Product	PPGL Thickness	Coating	Requirements	Steel Grade	Standard
Refrigerator cabinets	0.35 – 0.50 mm	PE, PU	Antibacterial properties, abrasion resistance	DX51D+AZ, DX52D+AZ	EN 10346
Freezer cabinets	0.40 – 0.60 mm	PE, PU	Coating cold resistance to -40°C	DX53D+AZ	JIS G3321
Washing machine panels	0.30 – 0.45 mm	PE, PU	Detergent resistance	DX51D+AZ	EN 10346
HVAC ducting	0.50 – 0.80 mm	PE, SMP	Corrosion resistance in aggressive environments	DX51D+AZ, S280GD	ASTM A792
Air conditioner housings	0.30 – 0.50 mm	PE, PU	UV resistance for outdoor installation	DX51D+AZ	JIS G3321
Electrical enclosures, switchboards	0.60 – 1.00 mm	PE, SMP	Electrical insulation, mechanical strength	DX51D+AZ, S350GD	EN 10346

Product	PPGL Thickness	Coating	Requirements	Steel Grade	Standard
Shelving and racking	0.50 – 0.70 mm	PE, PU	Wear resistance, load capacity	DX51D+AZ, S280GD	JIS G3321
Roofing accessories (ridges, drips, sills)	0.40 – 0.60 mm	PE, SMP	Formability, moisture resistance	DX52D+AZ, DX53D+AZ	EN 10346

## 5. Agriculture and Specialised Facilities

Product	PPGL Thickness	Coating	Colour / Texture	Standard	Notes
Agricultural buildings (barns)	0.50 – 0.80 mm	PE, SMP	RAL 9010, RAL 6005	EN 10346	Ammonia resistance, bio-protection
Greenhouses and orangeries	0.30 – 0.40 mm	PE	Clear sections + coloured panels	JIS G3321	High light reflectivity
Feed bunkers, silos	0.60 – 1.20 mm	PE, SMP	RAL 7000	ASTM A792	Abrasion resistance
Grain storage facilities	0.80 – 1.50 mm	SMP, HDP	RAL 9006, RAL 7000	EN 10346	Hermetic sealing, ventilation
Poultry and livestock farms	0.40 – 0.60 mm	PE, Antimicrobial	White, light grey	JIS G3321	Antibacterial coatings

## PPGL vs. PPGI: Application Performance Comparison

Parameter	PPGL (Al-Zn)	PPGI (Zn)	PPGL Advantage
Roofing service life	20 – 30 years	10 – 15 years	+15 years
Corrosion resistance	3 – 6x higher	Standard	3 – 6x higher
Solar reflectance (white)	55%	30%	80% higher
Temperature range	-40°C ... +150°C	-20°C ... +80°C	Wider range
Cost premium	Base + 5 – 10%	Baseline	Offset by longevity
Weight per unit area	Identical	Identical	No difference
Weldability	Requires preparation	Standard	Minor difference

## Procurement Challenges and Solutions

<b>Challenge</b>	<b>Consequence</b>	<b>Metal-Asia.pw Solution</b>
Substrate thickness mismatch for specific product	Rejection at forming, cracking, blow-through	Engineering selection: minimum thickness calculation by profile and bend radius
Incorrect coating type for operating environment	Fading, delamination within 2 – 3 years	Technical site audit, PE/SMP/HDP/PVDF recommendation by climate zone
Unavailable project-specific colours	Construction schedule delay	Mill stock programmes, expedited production scheduling
Inconsistent quality in deep-draw applications	Line rejection, production downtime	T-bend verification; supply of DX53D+AZ / DX54D+AZ with certified forming data
Fragmented supply (roof, façade, accessories from different sources)	Logistic cost overrun, colour mismatch risk	Single contract for roof, façade, accessories and rainwater from one production batch

## Services Provided by Metal-Asia.pw

Metal-Asia.pw delivers integrated procurement solutions from China, including tender application support under public procurement legislation (44-FZ and 223-FZ) and government defence contracts (GOZ). Our full-service offering encompasses:

- [NDT Quality Control](#) — ultrasonic testing, radiographic inspection, magnetic particle and penetrant testing.
- [Comprehensive Metals Analysis](#) — spectrometry, chemical composition determination, mechanical testing.
- [Integrated Engineering Systems](#) — material selection for specific projects, engineering calculations and technical consultations.
- [Coating and Alloy Verification](#) — dry-film thickness measurement, adhesion testing, hardness and corrosion resistance assessment.

## Why Metal-Asia.pw vs. Direct Mill Procurement

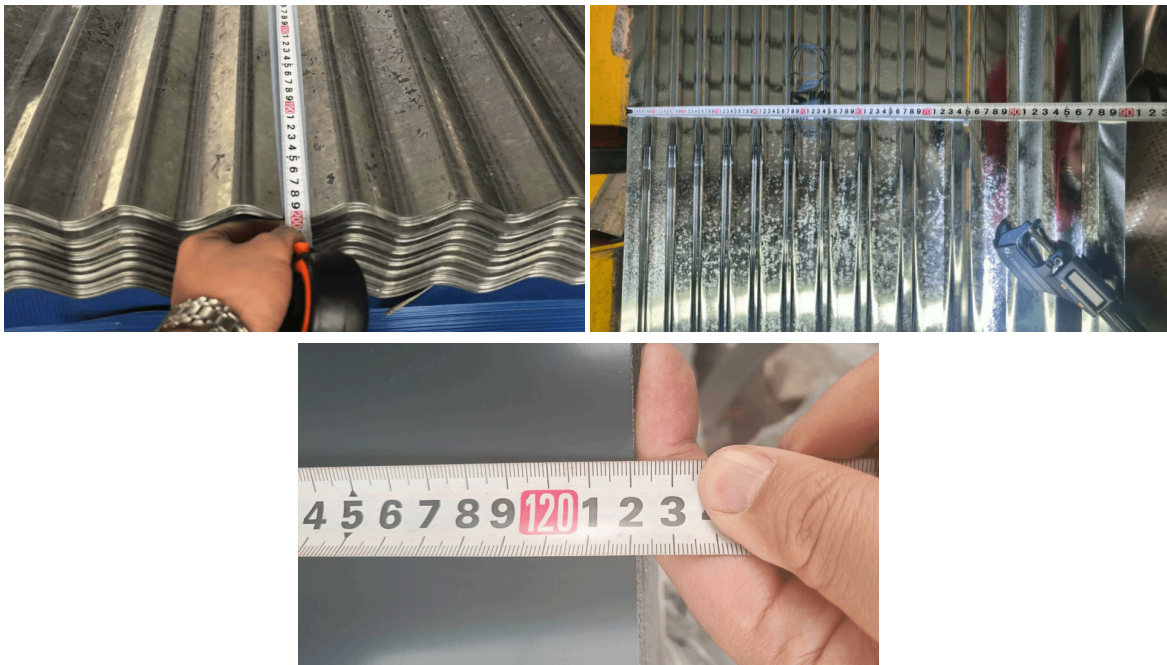
<b>Criterion</b>	<b>Direct Mill Purchase</b>	<b>Procurement via Metal-Asia.pw</b>
Engineering selection by end product	Not provided	Thickness, grade and coating calculated by profile and forming requirements
Supply consolidation	Coils only	Coils + technical support + accessories + forming recommendations
Formability verification	Not available	Pre-production sample testing on buyer's forming equipment
Coating adhesion control	Not guaranteed	T-bend, cupping, impact testing conducted on-site

Criterion	Direct Mill Purchase	Procurement via Metal-Asia.pw
Application-related claims	Not accepted	Technical support, replacement if specification error is identified
Minimum order volume	25 – 50 tonnes per specification	From 5 tonnes; multi-specification mixed shipments

## HS Codes for Customs Clearance

HS Code	Description	Notes
7210.70.1000	Flat-rolled products $\geq 600$ mm wide, painted or coated with polymers, iron or non-alloy steel	Primary code for PPGL coil
7210.70.9000	Other flat-rolled products painted or varnished	For specialised coating types
7225.99.0000	Flat-rolled products of other alloy steel $\geq 600$ mm wide	For alloyed grades
7226.99.0000	Flat-rolled products of other alloy steel $< 600$ mm wide	For slit coils and narrow strip
7210.41.1100	Flat-rolled products plated or coated with aluminium-zinc alloys	For uncoated GL substrate

## Product Gallery: Quality Inspection and Dimensional Reporting



## Frequently Asked Questions (FAQ)

**Q1:** Which steel grade is required for metal roof tile production? **A:** For standard metal roof tiles, DX51D+AZ or DX52D+AZ with PE or SMP coating at 20 – 25  $\mu\text{m}$  thickness is sufficient. For complex profiles with deep drawing, DX53D+AZ with a T-bend rating of 0T – 1T is required. Substrate thickness: 0.45 – 0.50 mm for residential, 0.50 – 0.60 mm for industrial roofing.

**Q2:** Can PPGL be used for sandwich panel manufacturing? **A:** Yes — PPGL is the optimal material for sandwich panel external skins due to its high solar reflectivity and corrosion resistance. We recommend 0.40 – 0.50 mm thickness with PE or SMP coating. For cold rooms and healthcare facilities, antibacterial coatings are available.

**Q3:** What is the service life of a PPGL rainwater system? **A:** With correct installation and standard PE coating, 12 – 15 years. With SMP coating, 15 – 20 years. The critical factor is joint quality and sealant specification. We recommend using complete systems from a single production batch to ensure identical corrosion behaviour.

**Q4:** Is precision component manufacturing from PPGL feasible for appliance OEMs? **A:** Yes. For precision stamping and deep drawing, we supply DX54D+AZ with PU coating or specialist precision polyester formulations. Thickness: 0.30 – 0.45 mm. Bend radii must be maintained at minimum 2t to prevent coating fracture.

**Q5:** What are the welding constraints for PPGL? **A:** The aluminium-zinc coating must be removed 15 – 20 mm from both sides of the weld zone to prevent the evolution of zinc and aluminium oxide fumes. Post-weld anti-corrosion treatment (primer, zinc paste) is mandatory. We recommend resistance spot welding or MIG/MAG with filler wire.

**Q6:** Is PPGL suitable for food-industry applications? **A:** Yes, provided food-grade certified coatings (polyurethane, antibacterial) are specified. We confirm compliance with FDA Regulation and European Regulation (EC) No 1935/2004. Applications include refrigeration equipment, food containers and warehouse racking.

**Q7:** What are the minimum volumes for a bespoke profile or colour? **A:** For exclusive colours or textures: from 20 tonnes. For standard RAL colours and textures: from 5 tonnes. For large contracts (100+ tonnes), exclusive production line allocation with quarterly volume and price locking is available.

**Q8:** Do you supply blanks or only coils? **A:** Our standard supply format is coil for buyer's own production. Upon request, we can arrange sheet supply on pallets, coil-to-sheet cutting to specified length, slitting (cutting to strip), and can provide introductions to certified profiling contractors in China.

## Contact Information

For further information regarding our full range of services, please visit [Metal-Asia.pw](http://Metal-Asia.pw).

### Customer Relations Department:

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*Professional quality control at every stage of the supply chain*

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