

# Metal-Asia

## Commercial Proposal for Supply

### Optimal PPGL Coil Packaging: Route-Based Cost Engineering & Supply Chain Efficiency



*Route-based packaging optimisation for global steel procurement*

#### Executive Summary

Metal-Asia.pw presents this analytical commercial proposal for selecting the optimal packaging configuration for PPGL (Pre-Painted Galvalume) steel coil shipments, based on logistics routing, total landed cost and transport mode. Correct packaging selection reduces the total cost of delivery by 8 – 15% through the elimination of transit damage, optimisation of container fill rates and reduction of customs clearance risk.

The core procurement challenge for international buyers is the tension between packaging economy and the preservation of a high-value polymer coating system. Many direct Chinese mills offer minimal packaging to reduce unit price, resulting in transit damage. We provide a balanced solution: engineered cost reduction without compromise to protective performance.

#### Packaging Type Comparison by Cost and Protection Level

Packaging Type	Cost USD / tonne	Protection Level	Recommended Route	Loading Efficiency	Damage Risk
Standard Seaworthy (3-layer, GI sheet, steel bands)	45 – 65	High	Ocean freight, all climates	Moderate	Low (2 – 3%)
Reinforced Seaworthy (VCI, 4+ layers, timber pallet)	70 – 95	Maximum	Extended ocean, coastal destinations	Moderate	Minimal (< 1%)
Economy (no GI sheet, reinforced fibreboard)	25 – 40	Moderate	Dry containers, road haulage	High	Moderate (5 – 8%)

Packaging Type	Cost USD / tonne	Protection Level	Recommended Route	Loading Efficiency	Damage Risk
Container horizontal (Eye to Wall, palletised)	50 – 75	High	20 ft / 40 ft containers	Maximum	Low (2 – 4%)
Container vertical (Eye to Sky, palletised)	55 – 80	High	40 ft HC, crane discharge	High	Low (3 – 5%)
Rail-specific (2 coils on reinforced pallet)	60 – 85	High	Rail freight via Central Asia	Moderate	Low (2 – 3%)
Premium (steel pallet, full VCI, stretch hood)	90 – 120	Maximum	Premium batches, long-term storage	Moderate	Minimal (< 1%)

### Packaging Recommendations by Transport Mode

Route / Transport Mode	Recommended Packaging	Securing Features	Avg. Packaging Cost	Savings at 25 tonnes
Ocean 20 ft (China port → Baltic / Med / Black Sea)	Horizontal Eye to Wall, timber pallet, 3-layer, GI sheet, 4+4 bands	Timber chocks, lashing straps, anti-slip pads	USD 1,250 – 1,875	Baseline
Ocean 40 ft HC	Vertical Eye to Sky, reinforced strapping, VCI film	Double-stacked for widths ≤ 600 mm, spreader bars	USD 1,500 – 2,250	Up to 15% via volume
Rail freight (China → Central Asia → Europe)	2 coils per reinforced ISPM 15 timber pallet	Rail-rated straps, anti-rollback chocks, tarpaulin for open flats	USD 1,500 – 2,125	10 – 12 days faster
Road truck (direct)	Horizontal on low pallet, simplified packaging under curtain	Chain securing, shock-absorbing pads	USD 1,000 – 1,500	Fastest route
Multimodal (container + rail + road)	Reinforced Seaworthy, steel pallet, full VCI kit	Transshipment-point marking, transfer instructions	USD 2,000 – 2,500	Maximum protection

### Cost-Engineered Solutions by Transport Mode

#### Containerised Ocean Freight (Most Economical Format)

Horizontal packing on timber pallets (Eye to Wall) enables maximum density loading of a 20 ft container up to 25 – 28 tonnes. Key performance indicators:

Parameter	Eye to Wall (Horizontal)	Eye to Sky (Vertical)
20 ft fill density	25 – 28 tonnes	21 – 24 tonnes
Transit stability	High (low centre of gravity)	Moderate (tip-over risk)
Fork-lift unloading	Optimal	Requires crane or specialist equipment
Edge damage risk	Minimal	Possible on uneven container floor
Recommended coil height	Any	Preferably $\leq 1,200$ mm
Additional securing	Diagonal lashing straps	Timber spreaders between tiers

### Direct European Delivery (Rail / Road)

Specialist packaging: 2 coils per reinforced ISPM 15 certified timber pallet:

Parameter	Standard Configuration	Reinforced Configuration
Coils per pallet	1	2 (vertical or horizontal)
Pallet material	Standard timber	Reinforced timber with steel corner angles
Strapping	4 steel bands	6 bands + lashing straps
Edge protection	Standard rings	Double metal rings + plastic corner guards
Pallet load capacity	Up to 7 tonnes	Up to 12 tonnes
Unloading features	Standard	Optimised for crane or fork-lift

### Packaging Economy: Where to Save, Where Never to Compromise

Packaging Element	Can Savings Be Applied?	Risk if Reduced	Our Recommendation
Outer GI sheet	No	Punctures, scratches, batch rejection	Always retain — non-negotiable
VCI film	Yes (short routes)	Corrosion if transit is delayed	Mandatory for ocean > 21 days
Steel pallet	Yes (switch to timber)	Reduced rigidity on rail	ISPM 15 timber for majority of routes
Strapping quantity	No (below 4+4)	Package disintegration under vibration	Minimum 4 longitudinal + 4 circumferential
Labelling and tags	No	Warehouse confusion, customs delays	Bilingual labelling mandatory

Packaging Element	Can Savings Be Applied?	Risk if Reduced	Our Recommendation
Silica gel / desiccants	Yes (winter routes)	Internal condensation	Mandatory for summer ocean transits

## Procurement Challenges and Risk Mitigation

Challenge	Financial Impact	Metal-Asia.pw Solution
Over-payment for unnecessary premium packaging	Excess cost of USD 20 – 30 / tonne	Route-specific calculation, optimal price-to-protection balance
Economy applied to critical elements	10 – 30% batch damage, contractual penalties	Mandatory-elements checklist; GI sheet and minimum strapping are non-negotiable
Misunderstanding of transport requirements	Overload, freight cost overrun, delays	Preliminary engineering calculation with 3D loading simulation
ISPM 15 non-compliance	Customs detention, fines, packaging destruction	Guaranteed fumigated pallets with certified marks
Incorrect coil orientation	Damage during unloading, re-handling costs	Russian-language unloading instructions, "top / bottom" marking

## 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

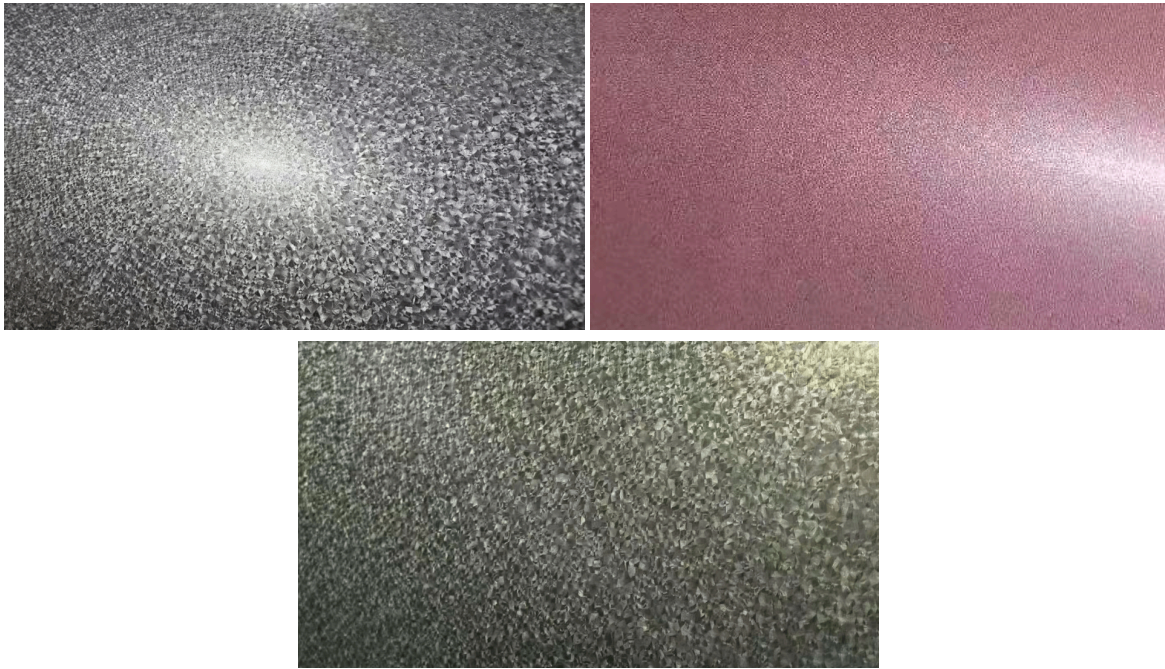
Criterion	Direct Mill Purchase	Procurement via Metal-Asia.pw
Packaging consultation	Not provided; standard template	Route-specific engineering: climate, transport, budget

<b>Criterion</b>	<b>Direct Mill Purchase</b>	<b>Procurement via Metal-Asia.pw</b>
3D loading simulation	Unavailable	Available for large shipments; container count optimisation
Packing quality supervision	Random	Photo / video of every layer, pre-seal container checklist
Cargo insurance	Self-managed or absent	All-risks marine cargo insurance via partner network
Preservation claims	Practically unenforceable	End-to-end claims management including insurance liaison
Minimum order volume	25 – 50 tonnes per specification	From 5 tonnes; multi-buyer cargo consolidation

### HS Codes for Customs Clearance

<b>HS Code</b>	<b>Description</b>	<b>Notes</b>
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: Popular Colours and Coatings



## Frequently Asked Questions (FAQ)

**Q1:** Which packaging option is most cost-effective for a 25-tonne delivery to a Mediterranean port? **A:** For ocean delivery to Mediterranean ports, standard horizontal Eye to Wall packaging on timber pallets with three protective layers is optimal. At USD 45 – 60 per tonne, it delivers reliable protection at a reasonable cost. Omitting the outer GI sheet to save USD 15 – 20 per tonne is not economically rational – the damage risk exceeds the saving by a factor of 5 – 10.

**Q2:** Is it possible to ship without pallets to reduce weight and cost? **A:** While technically possible ("bare" coil loading), it is practically unsuitable for PPGL. Absence of pallets eliminates fork-lift unloading, increases discharge time by a factor of 3 – 4, and elevates mechanical damage risk when working with slings. Pallets are recommended for all shipments.

**Q3:** How many coils fit into a 20 ft container? **A:** At a standard coil weight of 5 – 6 tonnes and horizontal Eye to Wall orientation, a 20 ft container accommodates 4 – 5 coils with a total weight of 24 – 27 tonnes. In vertical Eye to Sky orientation with widths of 1,000 – 1,250 mm, 4 coils is the standard. Precise calculation is performed upon receipt of coil specifications: outer diameter, width and weight.

**Q4:** For smaller volumes, which is more economical: LCL or FCL? **A:** For shipments below 15 tonnes, LCL (Less than Container Load) may appear cheaper, but we do not recommend it for steel coil. LCL involves 2 – 3 transshipment handlings, which is critical for polymer coating integrity. It is more advantageous to consolidate the shipment to FCL (20 – 25 tonnes) with other steel products or to use our cargo consolidation service.

**Q5:** How does season affect packaging selection? **A:** During summer (June – August), ocean shipments require enhanced hydro-isolation and silica gel due to high humidity in port areas. Winter (December – February) transit through Central Asia can expose cargo to temperatures as low as -40°C, requiring verification of coating and packaging cold resistance. Spring and autumn permit standard packaging configurations.

**Q6:** Can different packaging types be combined in one container? **A:** Yes – for example, standard packaging for port-to-port ocean legs and reinforced packaging for onward rail distribution. However, this

complicates loading and increases handling-error risk. We recommend a single packaging standard per shipment, or clear physical segregation by transport leg.

**Q7:** How does packaging type affect cargo insurance premiums? **A:** Standard marine all-risks insurance for steel products is 0.15 – 0.25% of CIF value. Applying reinforced packaging with VCI and full GI outer shield can reduce the premium to 0.10 – 0.15% due to demonstrable risk reduction. Annual insurance savings partially offset the additional cost of premium packaging.

**Q8:** What pallets are used for rail freight, and is fumigation required? **A:** For rail transport we use reinforced timber pallets with steel corner angles, load-rated to 12 tonnes. ISPM 15 fumigation is mandatory with either HT (heat treatment) or MB (methyl bromide) stamps. Metal-Asia.pw provides full phytosanitary documentation for seamless EAEU and EU customs clearance.

## Contact Information

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

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

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