Review of Measures 529
Continuation Inquiry 532

Exporter visit briefing
29 January 2020

Agenda

1. The Goods
2. Cost allocation
3. Model matching
4. Other matters
5. Exporters

The Goods: Hollow Structural Sections

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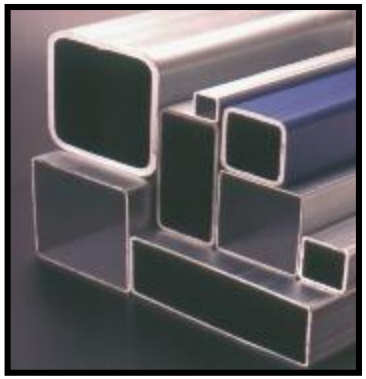
- Electric resistance welded steel pipe and tube
- Either circular (CHS) or non-circular (RHS, SHS, rail, silo - rectangular/square/oval) = collectively HSS
- Circular Product
  - Outside diameter > 21mm to 165.1mm
- Rectangular, square and oval products
  - Up to and including a 1277.3 mm perimeter (950.0 mm for Thailand)
- Finish types for the goods include pre-galvanised, hot-dipped galvanised (HDG), and non-galvanised HSS.
- Coatings applied – paint, oil, primer
- Ends may be plain, threaded, swaged or shouldered

✓ The goods



× Not 'the goods'

How is HSS made?

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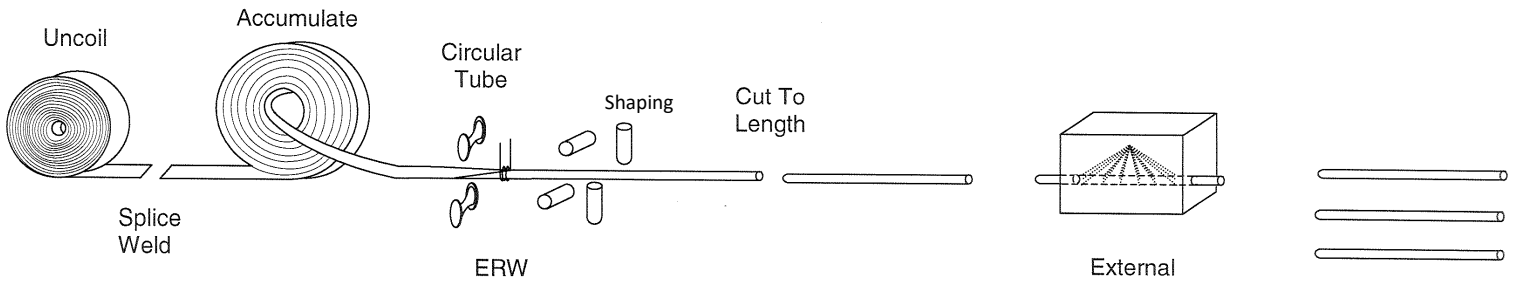
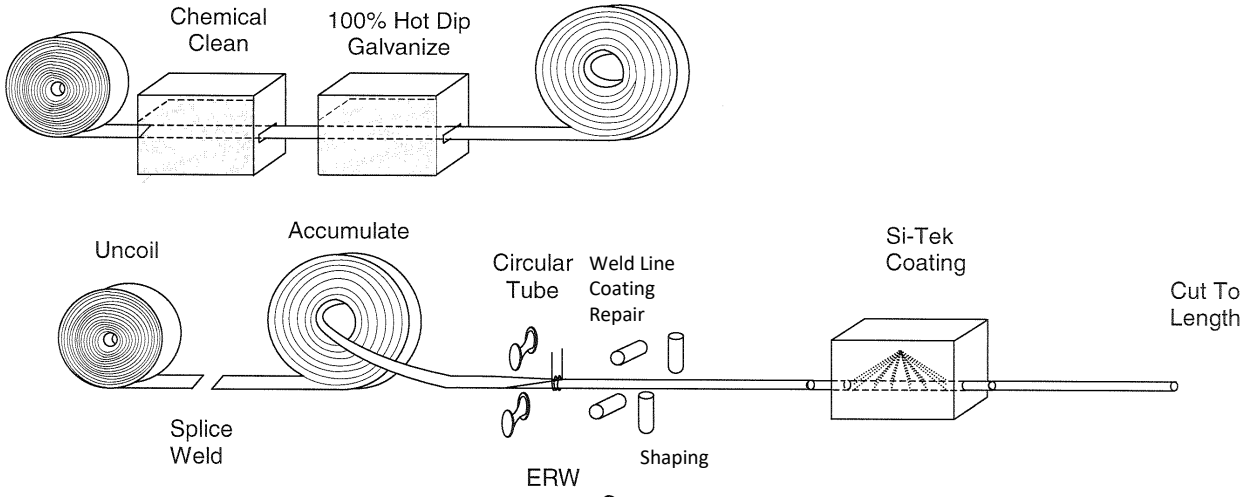
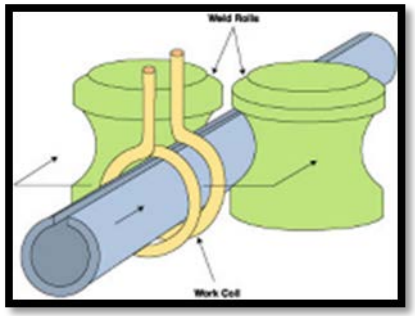


Painted Tube Manufacturing Process



Pre-Gal Manufacturing Process



How is HSS used?

- Structural elements in buildings and other structures
- A range of manufactured products
- Applications in residential and commercial construction, mining, engineering, manufacturing, agriculture and transport






2. Cost Allocation

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SHAPING POSSIBILITIES

Cost Allocation

Cost elements include:

- Hot Rolled Coil
- Energy (electricity and gas)
- Labour
- Mill consumables (coolant, paint, ERW copper work coils)
- Maintenance items (tooling, bearings, housings, ERW welder components)
- Strapping for bundling, export packaging

[Raw materials are approximately 80% of cost to make]

3. Model Matching

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SHAPING POSSIBILITIES

Model Control Codes

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Item	Category	Sub-category	Identifier
1	Prime	Prime	P
		Non-Prime / downgrade	N
2	Galvanising	Galvanised	G
		None (e.g. mill finish, 'black')	N
3	Finish	Oiled	O
		Painted	P
		No oil or paint	N
4	Shape	Circular	C
		Rectangular or square	R
5	Steel grades - nominal minimum yield strength	Structural steel grade with nominal minimum yield strength less than or equal to 300 MPa	250
		Structural steel grade with nominal minimum yield strength greater than 300 MPa but less than 380 MPa	350
		Structural steel grade with nominal minimum yield strength equal to or greater than 380 MPa	450
		Non-structural steel grade	N
6	Ends	Plain	P
		Threaded (at one or both ends)	T
		Threaded and coupled	C

Table 2: Proposed MCC

1	**Prime**	Prime	P
		Non-Prime	N
2	**Finish or Coating**	Galvanised	G
		Painted	P
		Other	N
3	**Shape (compare same shapes)**	Circular Hollow Section (CHS)	C
		Rectangular Square Hollow Section (RHS SHS)	R
		Other (oval, rail, silo)	O
4	**Steel grades/ Standards nominal minimum yield strength**	Minimum yield strength less than 300MPa.eg **AS 1074 and AS/NZS 1163-250** - Compare to TIS 107-2533 Grade HS41, JIS G3444 Grade STK400, JIS G3466 Grade STKR400, ASTM A500 Grade A and B.	250
		Minimum yield strength 300MPa to 380 MPa. eg **AS1450 and AS/NZS 1163-350** Compare to TIS 107-2533 Grade HS51, JIS G3444 Grade STK490, JIS G3466 Grade STKR490, ASTM A500 Grade C	350
		Minimum yield strength greater than 380MPa. eg **AS/NZS 1163-450**	450
		No nominal minimum yield strength specified	N
5	**End type**	Plain	P
		Threaded one end or both ends	T
		Other eg. swaged, shouldered, coupled	O
6	**Gauge, thickness**	<= 2mm: less than or equal to 2mm thickness	1
		> 2mm to <= 5mm: greater than 2mm to 5mm thickness	2
		> 5mm: greater than 5mm thickness	3

Prime or non-prime

- "Downgrade" or Factory Seconds = product that does not meet specification
- Sold at a discounted price into the domestic market
- Accounts for between 5% (world class) and 10% (typical) of production in HSS production
- Would not expect to see export sales of downgrade or factory seconds ie. Exclude domestic sales of non-prime from comparison to export sales

Finish or coating

- Key cost and sales price driver – important MCC category
- Pre-galvanized coil is approx AU$XXX premium over uncoated HRC
- Painted product – verify precision painting versus protective coating
  - Finish = "Oiled – O" or "Painted or Clearcoat - P" "No Coating - N"

Shape

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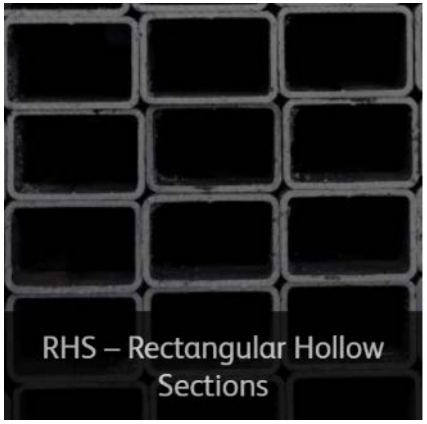
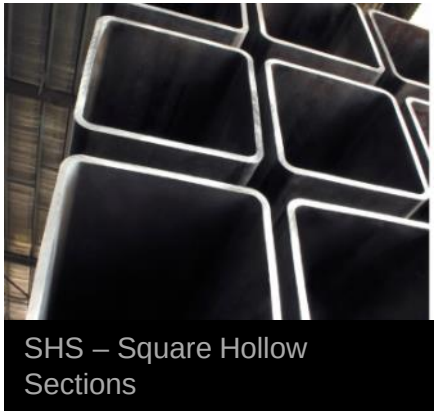
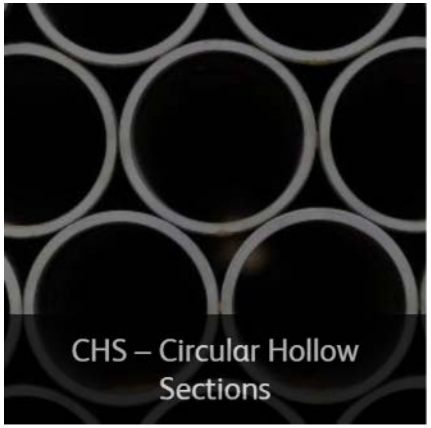
- Compare like shaped HSS







Common

Less Common

Gauge or thickness

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- <= 2 mm
- > 2 to 5 mm
- > 5 mm

- Price points reflect different gauge HRC costs
- Typically lighter and heavier gauge HRC cost more (than >2 to 5mm)

Grade
Standard minimum yield strength

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- KEY MCC CATEGORY – largest price differentiator
- Higher grade HSS will typically sell at a higher price due to the cost of the higher grade coil used to make the HSS
- Higher grade coil production involves more (expensive) alloy additions to deliver the required higher strength (chemical/metallurgical strengthening mechanism)

- Exports made to:
    - AS/NZS 1163 Cold-formed structural steel hollow sections (SHS, RHS and CHS)
    - AS 1450 Steel tubes for mechanical purposes (Oval)
    - AS 1074 Steel tubes and tubulars for ordinary service (CHS)

- Domestic sales made to other international Standards OR AS/NZS 1163 OR commercial grade/downgrade/non-prime (unlikely for export)

Grade
Standard minimum yield strength

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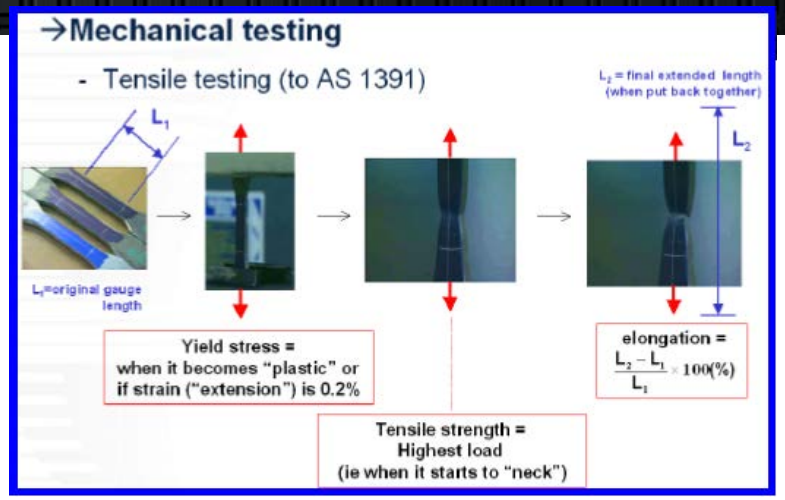

- AS/NZS 1163:2016 (Structural Steel Hollow Sections) steel grades:
  - Mechanical properties (Table 7)
  - Higher strength grades can withstand greater bending, compression and tension forces before failure.

Grade	Minimum yield strength (MPa)	Minimum tensile strength (MPa)	Minimum elongation as a proportion of gauge length $5.65\sqrt{S_o}$	
			CHS	RHS/SHS
C250, C250L0	250	320	22	18
C350, C350L0	350	430	20	16
C450, C450L0	450	500	16	14

CHS

RHS/ SHS

AS/NZS 1163 – C350L0

- C = cold-formed
- 350 = nominal minimum yield strength in MPa
- L = impact properties
- 0 = impact test at 0° C

Grade
Standard minimum yield strength

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Pacific Pipe Products

Carbon Steel Tubes for General Structure
ท่อเหล็กกลม สำหรับงานโครงสร้าง

JIS G3444

Grade	% Chemical Composition (Max)					Mechanical Properties (Min)		
	C	Si	Mn	P	S	Yield Strength	Tensile Strength	Elongation
						MPa	MPa	%
STK400	0.25	-	-	0.040	0.040	235	400	23
STK490	0.18	0.55	1.65	0.035	0.035	315	490	23

Carbon Steel Rectangular Tubes for General Structure
ท่อเหล็กรูปสี่เหลี่ยมผืนผ้า สำหรับงานโครงสร้าง

JIS G3466

Grade	% Chemical Composition (Max)					Mechanical Properties (Min)		
	C	Si	Mn	P	S	Yield Strength	Tensile Strength	Elongation
						MPa	MPa	%
STKR400	0.25	-	-	0.040	0.040	245	400	23
STKR490	0.18	0.55	1.50	0.040	0.040	325	490	23

Carbon Steel Round Pipe for General Structure
ท่อเหล็กกลม สำหรับงานโครงสร้าง

ASTM A500

Grade	% Chemical Composition (Max)						Mechanical Properties (Min)		
	C	Si	Mn	P	S	Cu	Yield Strength	Tensile Strength	Elongation
							Round	Round	Round
							MPa	MPa	%
Grade A	0.30	-	1.40	0.045	0.045	0.18	230	310	25
Grade B	0.30	-	1.40	0.045	0.045	0.18	290	400	23
Grade C	0.27	-	1.40	0.045	0.045	0.18	315	425	21
Grade D	0.30	-	1.40	0.045	0.045	0.18	250	400	23

Grade
Standard minimum yield strength

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Beware: Verification by Mill Test Certificate

[Confidential test certificate example]

Grade
Standard minimum yield strength

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Beware: Model matching by Mill Test Certificate

ADRP Report 2018/88:

102. Ursine argues that in selecting a domestic model or grade for comparison to the exported goods, the Commission ought to have focused upon the actual yield strength of the domestic products rather than on the minimum yield strength for each grade or model and the minimum yield strength specified by the relevant Taiwanese and Australian standards. The rationale for this method of selection is that if a domestic model or grade shares a common coil specification with an export grade or model, the domestic and exported products' actual yield strength will be the same and that yield strength may exceed the minimum yield strength required by both the relevant domestic and export standards.

The Commission representatives noted that the actual yield strength

> "is something which is not typically known to, or of interest to the customer … All the customer is interested in, and prepared to pay for, is that the product meets the minimum [yield strength] standard."[40]

Grade
Standard minimum yield strength

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Beware: MCCs must be completed using final product Standard specifications

Continuation Inquiry 379 : Huludao verification visit report:

3.2.1 Grade Allocation

The verification team noted that the grade of steel listed for each transaction on the Australian sales data was lower than the grade listing identified on the mill certificates for each transactions. Huludao advised that when preparing the listing they had allocated the grade for both domestic and export sales based on the grade of the raw materials used in the production of the finished goods, and not the grade of the finished goods. Huludao explained that occurred to allow the comparison to the cost data which as prepared using the raw material grade.
The verification team consider that this allocation was reasonable and was consistent with expected grade variations between raw materials and finished goods provided by the applicant and consistent with the approach taken in the 2012 verification.

This should not be allowed. Final products, certified to a given Standard, with finish applied should be shown in the sales files with final sales pricing data for proper comparison.

Grade
Standard minimum yield strength

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Common international Pipe and Tube Standards

Australia	AS/NZS 1163:2016	Cold-formed structural steel hollow sections
	AS 1074 1989 (R2018)	Steel tubes and tubulars for ordinary service
Japan	JIS G3444:2015	Carbon steel tubes for general structural purposes
	JIS G3466:2015	Carbon Steel Square And Rectangular Tubes For General Structure
	JIS G3445:2016	Carbon Steel Tubes For Machine Structure
United States	ASTM A 500/A500M : 2018	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
	ASTM A 1085/A1085M : 2015	Standard Specification for Cold-Formed Welded Carbon Steel Hollow Structural Sections (HSS)
Europe/UK	BS EN 10219-1 : 2006	Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions
Korea	KS D 3566:2016	Carbon steel tubes for general structural purposes
	KS D 3568:2016	Carbon steel square pipes for general structural purposes
Taiwan	CNS 7141:2014	Carbon steel square and rectangular tubes for general structure
	CNS 15727:2014	Carbon steel tubes for building structure
China	GB/T 6728 : 2017	Cold forming hollow sectional steel for general structure
	GB/T 6725 : 2017	General requirements of cold forming steel sections
Malaysia	MS 1862:2005	Welded carbon steel pipes and tubes for machine structural
Thailand	TIS 107-2533	Hollow Structural Steel Sections Standard

Note: designation of a strength grade may not reflect the minimum yield strength of the material. American (ASTM) and Japanese (JIS) standards name the grade designation in terms of the minimum tensile strength, not yield strength.

Grade
Coil grade and product grade

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- **Suitable coil grades are required to produce a given product grade**
  **If constructing cost – critical to include correct coil grade cost for the grade/product cost being constructed

Product	Product Grade	Suitable HRC Coil Grades
AS/NZS1163 CHS/Pipe products only	C250L0	JIS SPHT2, AS HA250, ASTM SS33
AS/NZS1163 CHS, RHS, SHS	C350L0	JIS SPHT3, AS HA300, ASTM SS40
AS/NZS1163 RHS, SHS	C450L0	JIS SPHT4, AS HA350, ASTM SS50
AS1450 Ovals	C350	JIS SPHT3, AS HA300, ASTM SS40
AS1074 Pipe products only	Not Specified min 195MPa	JIS SPHT2, AS HA250, ASTM SS33

* Note: rule of thumb there is a 20% strength increase from Coil to finished product

Coil grade
Why is it important?

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[Confidential grade extras price list]

The increased cost of different strength grades is typically presented as an extra to a base coil price.

4. Other matters

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SHAPING POSSIBILITIES

Date of Sale

- Invoice date/bill of lading date should be considered date of sale

- Example - Kukje :
  - Investigation 177 – “Date of shipment is date of sale”
  - Continuation Inquiry 379 – “Date of order is date of sale”
  - Review 419 – “Date of order is date of sale” (rejected by ADC)
  - Review 529 – “Date of shipment is date of sale”

Export adjustments

Kukje – REV 419 EQR:

> **Since there is no significant difference in packing method between export sales and domestic sales, Kukje has not reported any packing costs for both Australian sales and domestic sales.**

- Packaging : HSS is surface critical – needs additional protection for export. Export packaging cost upward adjustment to NV made for Kukje in REP 379.

- Containerisation : Where exports are packed in containers, these export-specific costs require an upward adjustment.

- Inland transport : Different ports may be used by an exporter with different transport costs associated.

> **During the period of investigation, Kukje separately invoiced extra transportation charge for some order, which were not shipped from "Pohang" port. Kukje reported the extra charges, calculated on order-specific basis, in the column "Other Charges".**

Kukje EQR
Inv 177 at p20

Sale source

- Purchase of HSS from other domestic or imported source for on-sale?
- Sales of goods outside production capability?

5. Exporters

AustubeMills
SHAPING POSSIBILITIES

Verification Challenge:

Understanding how Kukje is able to export xxxxxxxxxxxxxxxxxxxxxx xxxxx [*observation concerning Korean export price*] xxxxxxxxxxxxx.

Kukje - Korea

MCCs reported in EQR:

Exporter	Market Aust. Domestic	MCC	Prime		Galvanised		Finish			Shape		Steel grade - Nom Min Yield Strength				Ends		
			P - Prime	N - DG	G - Yes	N - No	O - Oiled	P - Painted	N - NOP	C - CHS	R - RHS SHS	250 - <=300	350 - >300<380	450 - >=380	N - Non Structural	P - Plain	T - Threaded	C - Threaded Coupled
Kukje KR	Aust.	PNNC250P	X			X			X	X		X				X		
		PNNC350P	X			X			X	X			X			X		
		PGNC350P	X		X				X	X			X			X		
		PNPC250P	X			X		X		X		X				X		
		PNPC350P	X			X		X		X			X			X		
		PNNR350P	X			X			X		X		X			X		
		PGNR350P	X		X				X		X		X			X		
		PNPR350P	X			X		X			X		X			X		
		PNPCNP	X			X		X		X					X	X		
		PNPCNT	X			X		X		X					X		X	
	Domestic	PNNC250P	X			X			X	X		X				X		
		PNNC350P	X			X			X	X			X			X		
		PGNC350P	X		X				X	X			X			X		
		NGNC350P		X	X				X	X			X			X		
		PNNR350P	X			X			X		X		X			X		
		PNNR250P	X			X			X		X	X				X		
		NNNR250P		X		X			X		X	X				X		
		NNNR350P		X		X			X		X		X			X		
		PGNR350P	X		X				X		X		X			X		
		NGNR350P		X	X				X		X		X			X		
		PNPR350P	X			X		X			X		X			X		
		PNNCNP	X			X			X	X					X	X		
		PGNCNP	X		X				X	X					X	X		
		PNNRNP	X			X			X		X				X	X		
		PGNRNP	X		X				X		X				X	X		
		NNNCNP		X		X			X	X					X	X		
		NGNCNP		X	X				X	X					X	X		

Kukje - Korea

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Coil costs allocation – averaging?

EQR G6.2 pg 38

> Please see Attachment G-4 Cost Calculation of the Largest Production Volume Sold in the Domestic Market. Actually, Kukje provided the cost calculation for all models produced during the investigation period.

Review 419 EQR pg 40:

> Second, Kukje calculates the raw material cost by the coil's grade (such as HR, HGI, PO etc.) without considering the specification of the coil. Rather, Kukje considers all the skelp has the same unit price regardless of the coil's grade.

> Fourth, Kukje does not calculate the cost of painted pipe separately. Rather, the paint costs are allocated to non-painted products.

- Pre-gal HRC vs regular HRC must be separated for costing purposes. If this is averaged it could severely distort the CTMS.
- Paint cost must only be applied to painted product which is predominantly applied to export sales.

Kukje - Korea

Cost allocation – incomplete?

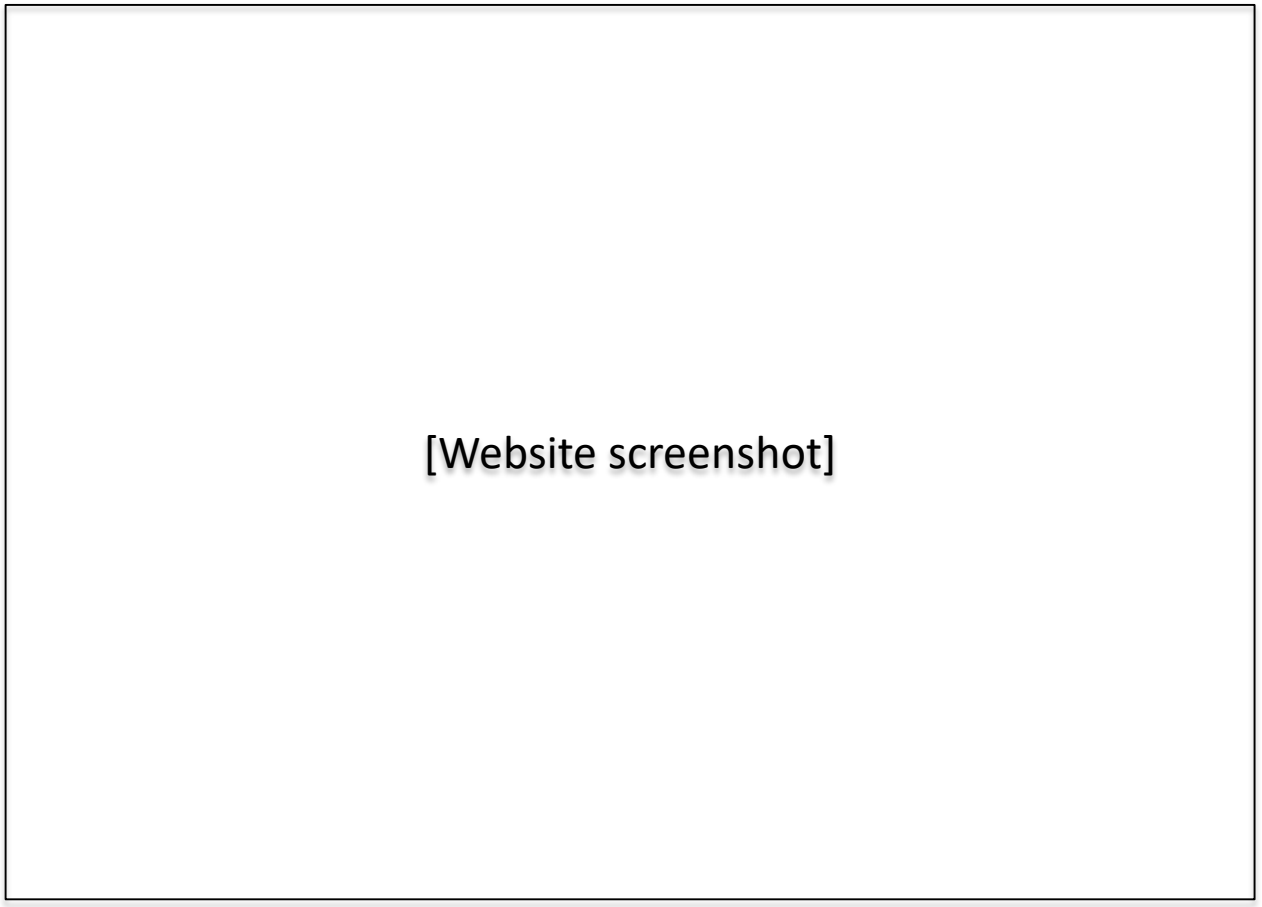
REV 419 EQR pg 7

> **None of steel scraps generated at the slitting and forming stage of production are re-inputted into the production process, but are sold to unaffiliated purchasers. In the normal cost accounting system, however, Kukje does not evaluate the steel scrap cost. Rather, it recognizes income when it sells them.**

- Scrap costs/yield losses not taken into account in CTMS.
- Ensure steel cost is the actual steel consumed which is approx XX% higher than actual finished product weight (XX% mill yield loss and X% slitter yield loss). Simply applying the coil cost per t to the finished product weight is not correct.

Thai Premium Pipe - Thailand

Additional freight costs for painted HSS?



Website shows no painting facilities.
Factor in additional freight costs to painting contractor/s.

Thai Premium Pipe - Thailand

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Clarify MCC's – does "P" mean actually painted or just coated with oil or clear varnish?

Exporter	Market Aust. Domestic	MCC	Prime		Galvanised		Finish			Shape		Steel grade - Nom Min Yield Strength				Ends		
			P - Prime	N - DG	G - Yes	N - No	O - Oiled	P - Painted	N - NOP	C - CHS	R - RHS SHS	250 - <=300	350 - >300<380	450 - >=380	N - Non Structural	P - Plain	T - Threaded	C - Threaded Coupled
Thai Premium Pipe TH	Aust.	PPNR350P	X			P			X		X		X			X		
		PNPR350P	X			X		X			X		X			X		
	Domestic	NNNC250P		X		X			X	X		X				X		
		NNNC350P		X		X			X	X			X			X		
		NNOC250P		X		X	X			X		X				X		
		NNOR250P		X		X	X				X	X				X		
		NNOR350P		X		X	X				X		X			X		
		NNPR250P		X		X		X			X	X				X		
		NNPR350P		X		X		X			X		X			X		
		NPNC250P		X		P			X	X		X				X		
		NPNR250P		X		P			X		X	X				X		
		NPOR250P		X		P	X				X	X				X		
		PNOC250P	X			X	X			X		X				X		
		PNOC350P	X			X	X			X			X			X		
		PNOR250P	X			X	X				X	X				X		
		PNOR350P	X			X	X				X		X			X		
		PNPC250P	X			X		X		X		X				X		
		PNPC350P	X			X		X		X			X			X		
		PNPR250P	X			X		X			X	X				X		
		PNPR350P	X			X		X			X		X			X		

Tianjin Youfa - China

Adjustment for narrow strip over HRC

ADRP Report 2018/88 (Review 419 decision):

165. The predominant issue in dispute between the parties resolves around the relative costs to be attributed three of Tianjin Youfa's raw material inputs of:
- structural grade HRC;
- nonstructural grade HRC; and
- narrow strip, which can only produce nonstructural grade goods.

Tianjin Youfa in effect argues that the above three main raw material inputs reflects a hierarchy of decreasing costs, with structural grade the most expensive and narrow strip the least expensive of the three. It is the Commission's position, based upon its analysis of Tianjin Youfa's own production data, that evidence does not support the existence of such a hierarchy and that there is little, or immaterial difference in the costs of nonstructural grade and narrow strip.

169. Further, the Commission mapped purchases of structural and nonstructural grade product by quarter and found, in two of the four quarters for the Review Period, the purchase prices of the nonstructural grade had higher unit prices than structural grade. Based upon this analysis, the Commission considers that the purchase prices of structural and nonstructural grade by do not support a finding that there is a consistent or material price difference between structural and nonstructural HRC such as to warrant separate adjustments being made for each. I agree with the Commission's analysis and conclusion. In doing so I acknowledge the majority of Tianjin Youfa's purchases of nonstructural grade was in the form of narrow strip.

Thank you

AustubeMills

SHAPING POSSIBILITIES