

# Hollow Structural Sections Exporter Briefing – Public File Anti-Dumping Commission – Melbourne

January 30, 2020.



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Everything in Steel

# Agenda

1. The Goods
2. Model Control Codes
3. Production Process
4. HSS Cost Elements
5. Forms of steel coil substrate (HRC & Galvanised)
6. Market Trends
7. Mass Tolerances
8. Industry Subsidisation (China)

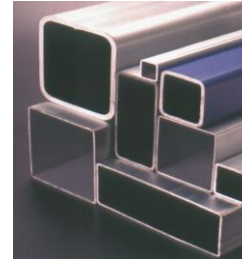
# 1. What are Hollow Structural Sections (“HSS”)?

- Electric resistance welded pipe and tube made of steel, comprising circular and non-circular hollow sections.
- The goods are normally referred to as either CHS (circular hollow sections) or RHS (rectangular or square hollow sections).
- Collectively referred to as HSS.
- Circular Product:
  - Exceeding 21mm outside diameter; and
  - Up to and including 165.1mm
- Rectangular, square and oval products:
  - Up to and including 1,277.3 mm perimeter.
- Finish types for the goods include pre-galvanised, hot-dipped galvanised (HDG), and non-galvanised HSS.

Circular HSS =>



Non-Circular HSS =>



# 1. What are Hollow Structural Sections (“HSS”)?

- HSS is primarily manufactured to the following Australian Standards:
  - AS/NZS 1163 *Cold-formed structural steel hollow sections (SHS,RHS and CHS)*;
  - AS 1450 *Steel tubes for mechanical purposes (Oval)*; and
  - AS 1074 *Steel tubes and tubulars for ordinary service (CHS)*.

## 2. Model Control Codes – Orrcon

Item	Category	Sub-Category	Identifier	Sales Data	Cost Data
1	Prime	Prime	P	Mandatory	Not applicable
		Non - Prime	N		
2	Steel Base / Type	Hot roll (Mill Finish)	H	Optional	Mandatory
		Cold roll	C		
		Other (e.g. alloy, heat-treatable, stainless steels)	A		
3	Surface Coating Type	Nil	O	Mandatory	Mandatory
		Zinc (Electro Galv/Continuous Galv/Pre Gal, Batch HDG)	E		
		Other - Aluminized or Zinc-Alloy	N		
3.1	Coating Mass	N/A	0	Mandatory	Mandatory
		>20 g/m2 to <= 100 g/m2	1		
		>100 g/m2 to <= 275 g/m2	2		
		>275 g/m2 to <= 600 g/m2	3		
4	Surface Finish	Oiled	O	Mandatory	Mandatory
		Clear Coat or Painted	P		
		No Oil Or Paint	N		
5	Shape	Circular	C	Mandatory	Mandatory
		Square	S		
		Rectangular	R		
		Oval	O		
		Other	T		
5.1	Circular Size	<= 60.3mm (50 nominal bore)	1	Mandatory	Mandatory
		> 60.3mm to 165.1mm (50NB to 150NB)	2		
5.2	Rectangular/Square/Oval Size	<= 25 x 25mm	1	Mandatory	Mandatory
		> 25 x 25mm to 40 x 40mm	2		
		> 40 x 40mm to 65 x 65mm	3		
		> 65 x 65mm to 150 x 150mm	4		
6	Thickness	<= 1.5mm	A	Mandatory	Mandatory
		1.6mm	B		
		2mm	C		
		>2mm to 3.2mm	D		
		>3.2mm to 6mm	E		
		>6mm to 9mm	F		
7	Length	<= 4.5m	1	Optional	Optional
		4.5m to <6.5m	2		
		6.5m to <8m	3		
		8m to 12.1m	4		
		>12.1m	5		
8	Steel Grade	C250L0	A	Optional	Mandatory
		C350L0	B		
		C450L0	C		
		C350 (No impact assessment)	D		
		Other	E		
9	End Configuration	Plain-End	P	Mandatory	Mandatory
		Square Faced or Bevelled	S		
		Other	O		

## 2. Model Control Codes – Steel Grade Standard Comparisons (MCC Item #4)

Item	Category	Sub-Category	Identifier	Comparative Standard & Grade (Shape - C, R)	Sales Data	Cost Data	Key Category
4	Steel Grades / Nominal minimum yield strength	C250 - <u>AS1074 &amp; AS/NZS 1163-250 (LO)</u>	250	JIS G 3444 STK490 KS D 3566 STK490 (C) KS D 3568 SPS490 (R) API 5L X42 (C) ASTM A500 Grade C (C) China: Q295A TIS 107-2533 HS50 (C & R)	Mandatory	Mandatory	No
		C350 - <u>AS1074 &amp; AS/NZS 1163-350 (LO)</u>	350	JIS G 3444 STK500 KS D 3566 STK500 (C) KS D 3568 SPSR500 (R) API 5L X52 (C) ASTM A500 Grade C (R) China: Q345A TIS 107-2533 HS51 (C only)			
		C450 - <u>AS1074 &amp; AS/NZS 1163-450 (LO)</u>	450	API 5L X65 (CHS) KS D 3568 SPSR500 (R) Chinese Grade: Q460C = C450L0			
		No nominal minimum yield strength specified	N	KS D 3566 STK290			

Notes on Impact Properties	Charpy V-Notch $\geq 27$ Joule at zero degrees Celsius	P	JIS G 3475 EN10219 + Option 1.3 + JOH API 5L + PSL2 (C only) Chinese Grade: Q345C = C350L0
	No impact	N	API 5L + PSL1 (C only) TIS 107-2533

## 2. Model Control Codes – ADC

Item	Category	Sub-category	Identifier	Sales Data	Cost data	Key category
1	Prime	Prime	P	Mandatory	Not applicable	Yes
		Non-Prime / downgrade	N			
2	Galvanising	Galvanised	G	Mandatory	Mandatory	No
		None (e.g. mill finish, 'black')	N			
3	Finish	Oiled	O	Mandatory	Mandatory	No
		Painted	P			
		No oil or paint	N			
4	Shape	Circular	C	Mandatory	Mandatory	Yes
		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	Mandatory	Optional	No
		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	Optional	Optional	No
		Threaded (at one or both ends)	T			
		Threaded and coupled	C			

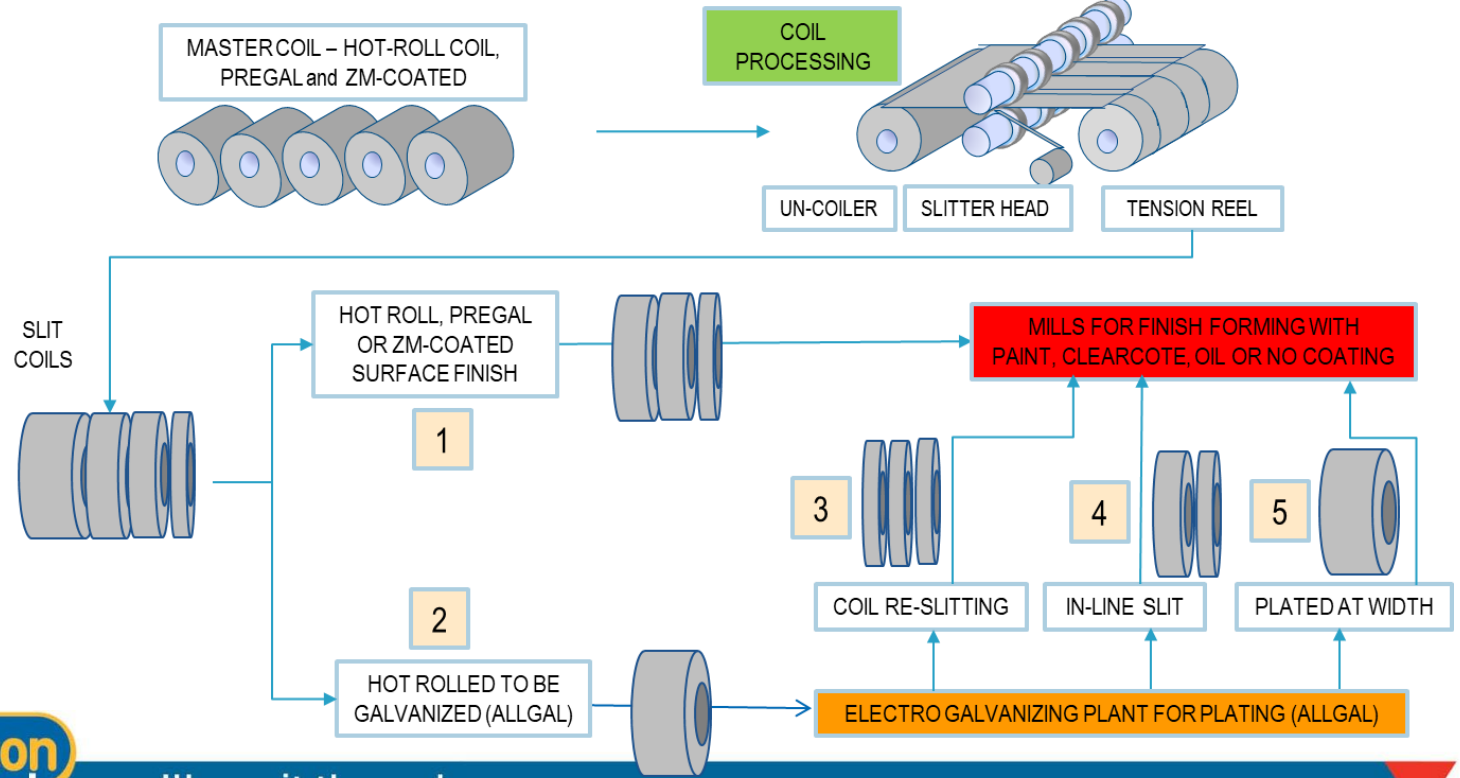
### 3. Model Control Codes – Other Aust. Industry

Model Control Codes - Hollow Structural Sections (HSS) REV 529							
Item	Category	Sub category	Identifier	Sales data	Cost data	Key category	Notes
1	Prime	Prime	P	Mandatory	Not Applicable	Yes	Non-prime products are typically downgrade that are sold below their full cost to make and sell but at a higher price than scrap value.
		Non-Prime	N				
2	Finish or Coating	Galvanised	G	Mandatory	Mandatory	No	Reports the surface finish of the HSS. "Other" includes No Oil or Paint (NOPC), oiled, lacquered and any other non-paint or non-galvanised finish.
		Painted	P				
		Other	N				
3	Shape (compare same shapes)	Circular Hollow Section (CHS)	C	Mandatory	Optional	No	Like shapes need to be compared to each other, there are observable price differences.
		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	Mandatory	Mandatory	No	This category reports the steel grade of Hollow Structural Section (HSS). There are observable cost differences in the price of coil used to produce the different grade products. The steel grade determines the guaranteed or typical mechanical properties of the product. The 250 / 350 / 450 type grades are 'Structural' steel grades, with the numerical values designating their minimum Yield Strength.
		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	Mandatory	Optional	No	Different end types have observable differences in price points.
		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	Mandatory	Optional	No	There are observable price differences depending on the gauge or thickness of the HSS.
		> 2mm to <= 5mm: greater than 2mm to 5mm thickness	2				
		> 5mm: greater than 5mm thickness	3				



# 3. HSS Production Process

The master coil material is slit to critical widths to achieve specific finish product sizes. At the Salisbury manufacturing site, there are up to 5 different paths the material may travel between the Master Coil and Finished Product. Involves; **COIL PROCESSING**, **ELECTROGALVANIZING** (if ALLGAL® coating is required) and the **STRUCTURAL MILLS** (OTO, RS90, Mill6).



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## 4. HSS Cost Elements

Cost elements:

- Hot Rolled Coil (“HRC”) – [XX]%
- Zinc – [XX]%
- Energy (electricity & gas) – [XX]%
- Labour – [XX]%
- Mill consumables (coolant, paint etc) – [XX]%
- Maintenance (tooling – machining, roll replacements etc, bearings, ERW welding components) – [XX]%
- Strapping & Packaging – [XX]%

## 5. Forms of Steel Coil Substrate

Standard HSS route

- HR COIL -> SLIT COIL (MULT) -> TUBE

Non-standard route (Additional conversion costs & indicates excess coil or spare capacity)

- HRC -> PICKLE & OIL -> SLIT COIL -> TUBE
  - HRC -> PICKLE -> COLD ROLL -> SLIT COIL -> TUBE
  - HRC -> COUPLED PICKLE & COLD ROLL & OIL -> SLIT COIL -> TUBE
- 
- HRC can be rolled from steel slab in conventional Blast Furnace or Electric Arc Furnace (EAF)
  - HRC can be either black or pregalvanized
  - Tube mill producer may have slitter, cold rolling and galvanizing capability
  - AS/NZS 1163 impose chemistry limits due to structural end-use
  - AS/NZS 1163 impose limits on the amount of cold reduction permitted ...
  - Minimum nominal thickness for AS/NZS 1163 is 1.6mm ... any nominal thickness less than 1.6mm is outside the scope of AS/NZS 1163.

# 5. Forms of Steel Coil Substrate – Taiwan [*import offer details*]



# 5. Forms of Steel Coil Substrate – Korea [*import offer details*]



# 5. Forms of Steel Coil Substrate – China & Korea (CHS) *[import offer details]*



## 6. Market Trends

HRC:

- The Commission has previously determined that HRC accounts for ~90% of the cost to make HSS.
- Any change in HRC costs in the domestic market of an exporter would directly influence the HSS normal value, either in the Ordinary Course of Trade (269TAC(1)) or under a constructed scenario (269TAC(2)(c)(ii).
- The following chart depicts HRC for China, Korea and Taiwan (including a combined average Korea/Taiwan data line) from July 2016 to June 2019.
- This time-series includes the ADC419 investigation period of FY2017.
- Domestic HRC prices for the three countries have increased.
- On an Australian Dollar per metric tonne basis, a comparison between the inquiry period in ADC 419 (FY2017) to the FY2019 period yields the following price increase differentials:
  - China – from AU\$[XXX] (FY17) to AU\$[XXX] (FY19); an increase of [XX]%;
  - Korea – from AU\$[XXX] (FY17) to AU\$[XXX] (FY19); an increase of [XX]% and
  - Taiwan – from AU\$[XXX] (FY17) to AU\$[XXX] (FY19); an increase of [XX]%.

# 6. Market Trends



Movement in domestic HRC prices for China, Korea and Taiwan (Source: [XXX]).



## 6. Market Trends

### Iron Ore & Coal:

- The primary driver for the change in the above-noted HSS and HRC prices is the continued elevated traded prices for the main raw materials used in steel making (i.e. iron ore and coking coal).
- The below depicts a correlation between the sustained iron ore and coking coal prices, and the above-noted movements in HRC (and consequently HSS) domestic prices.



## 7. Mass Tolerances

- An important normal value consideration when both domestic and export sales are made on a **theoretical** weight basis (with the normal value determined under 269TAC(1)).
- HSS mass tolerance ensures that the product has the required physical steel material to meet the structural design application.
- Australian HSS standard AS/NZS 1163 has a tighter mass tolerance than many equivalent international standards (e.g. JIS G3466).
- “Rolling light” is a term used for manufacturing close to the minimum mass tolerance.

HSS Product Standard	Mass Tolerance	Thickness Tolerance
AS/NZS 1163	-4%	+/- 10%
ASTMA500	None	+/- 10%
JIS 3444	+/- 10%	+/- 10%
JIS 3466	+/- 10%	+/- 10%
EN 10219	-6%	+/- 10%

## 7. Mass Tolerances

- Normal value considerations:
  - Assuming all export sales made to AS/NZS 1163; and
  - Assuming all domestic sales made to JIS G3466; then
  - The model comparison mass tolerance adjustment comparison is:

<b>Standard</b>	<b>AS/NZS1163</b>	<b>JIS G3466</b>
Mass tolerance	-4%	-10%

Uplift to Normal Value required of 6%

## 8. Industry Subsidisation (China)

### Previous Australian Findings:

- The Commission has previously identified a range of countervailable subsidy programs applicable to producers in the Chinese steel and aluminium industries.
- The Commission has previously concluded that goods manufactured from HRC attract a broad range of subsidies.
- In Review Inquiry No. 419 the Commission examined 45 subsidy programs, comprising:
  - The 28 programs deemed countervailable in respect of HSS during the original investigation (#177) and covered by the countervailing duty notice; and
  - 17 additional subsidy programs that the Commission examined as part of Continuation 379.

### WTO Notifications:

- In an April 2018 publication titled “*Steel, fisheries subsidies take centre stage at committee meeting*” the WTO noted as follows in relation to China’s non-notification:

## 8. Industry Subsidisation (China)

### China

The United States once again raised concerns about China's non-notification of possible subsidy programmes for the steel sector; company reports of the Chinese steel producers themselves show many subsidy programmes, the US said, with more recent annual reports indicating the level of support has been maintained. The European Union said notification of subsidy programmes was crucial to the effective work of the SCM committee and that China's notification was not complete with regards to subsidies provided at the sub-central level. Other members highlighted the importance of transparency.

China said it noted the consistent concerns of the United States and the European Union on this issue. China has made great efforts to address these concerns, and said it was currently working on a new and full notification which would cover subsidies at both the central and sub-central levels.

Source: World Trade Organisation [https://www.wto.org/english/news\\_e/news18\\_e/scm\\_24apr18\\_e.htm](https://www.wto.org/english/news_e/news18_e/scm_24apr18_e.htm)

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