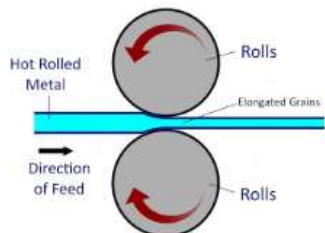


## Cold Rolling



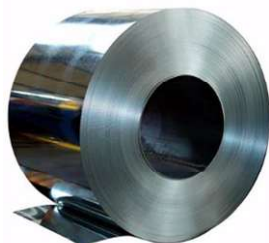
## Cold Rolled Coil (CRC)

is produced by taking hot rolled coil and reducing its thickness at room temperature through the cold rolling process. It is then annealed to achieve properties suitable for forming applications. At present, TCRSS can produce CRC with thicknesses ranging from 0.12 to 3.40 mm.

## Features of Cold Rolled Steel Sheet (CRC)

- Smooth and attractive surface, suitable for applications where appearance matters
- Clean surface without scale, unlike hot rolled steel
- Higher strength and hardness compared to hot rolled steel
- Good for bending, folding, and stamping (depending on grade)

## Application / การนำไปใช้งาน



### Automobile



CRC is a primary raw material in the automotive industry. It is suitable for forming parts that require precision and an attractive appearance, such as automobile body panels, seat structures, and interior components.

### Home appliance/Electrical

CRC is commonly used to manufacture household electrical appliances that require a smooth surface, high dimensional accuracy, and durability, such as refrigerator structures, washing machine bodies, microwave ovens, and gas stoves.



### Furniture

CRC is used for manufacturing furniture that requires a smooth and attractive surface, strength, easy formability, and thinness, such as cabinets, tables, chairs, and shelves. It is commonly combined with painting or coating processes to enhance appearance and provide rust protection.



### Pipe/Drum



CRC is used for rolling or folding into pipes/tubes of various cross-sections, or for producing drums (containers) that require high dimensional accuracy, a smooth surface, and high strength.

### Coated steel (GI/GA/EG)

CRC is used as a raw material for producing coated steel, such as galvanized steel or pre-painted steel. It is widely applied in the automotive, electrical appliance, and construction industries.



### Porcelain enameling



CRC coated with porcelain enamel. It is often applied to special low-carbon steel grades to prevent air bubbles during high-temperature firing. The result is a surface that is strong, resistant to scratches and heat, making it suitable for cookware, bathtubs, and grilling racks.

### High Carbon

The use of High Carbon CRC focuses on strength, wear resistance, and a fine smooth surface. It is suitable for producing parts that require hardness, such as chains, saw blades, leaf springs, safety shoe caps, and automotive components that must withstand high loads.



### Tin Plate steel

CRC coated with tinfoil. This process enhances properties such as strength, smooth surface, easy formability, corrosion resistance, and excellent soldering and welding performance. It is primarily used in the production of food and beverage packaging.



## Specification

● CRC for General use

Classification/ Temper grade	Standard				
	JIS G 3141	JFS A2001	TIS 2012	ASTM A1008/A1008M	SNI 07-3567-2006
Commercial Quality	SPCC	JSC270C	CR1	CS	BjDC-SR BjDC-SK
Drawing Quality	SPCD	JSC270D	CR2	DS	BjDD1-SR BjDD1-SK BjDD2-SR BjDD2-SK BjDD3-SR BjDD3-SK
Deep Drawing Quality	SPCE	JSC270E	CR3	DDS	
	SPCF	JSC270F	CR4	-	-
	SPCG	JSC260G	CR5 / CRA260M	EDDS	-
Full hard	SPCC-1	-	CR1-1	-	BjDC-1R BjDC-1K
1/4 Hard	SPCC-4	-	CR1-4	-	
1/8 Hard	SPCC-8	-	CR1-8	SS331	

● CRC for Automotive use

Classification/ Temper grade	Standard				
	JIS G 3135	JFS A2001	TIS 2140	ASTM A1008/A1008M	SNI 07-3567-2006
Commercial	SPFC340	JSC340W	CRA340	-	-
	SPFC370	JSC370W	CRA370	SS332	-
	SPFC390	JSC390W	CRA390	SS401	-
	SPFC440	JSC440W	CRA440	-	-
Deep drawing	SPFC340S	JSC340P	CRA340D	-	-
	SPFC370S	JSC370P	CRA370D	-	-
	-	JSC390P	CRA390D	-	-
	-	JSC440P	CRA440D	-	-
High Yield Ratio	SPFC590	JSC590R	CRA590	-	-
Low Yield Ratio	SPFC590Y	JSC590Y	CRA590L	-	-

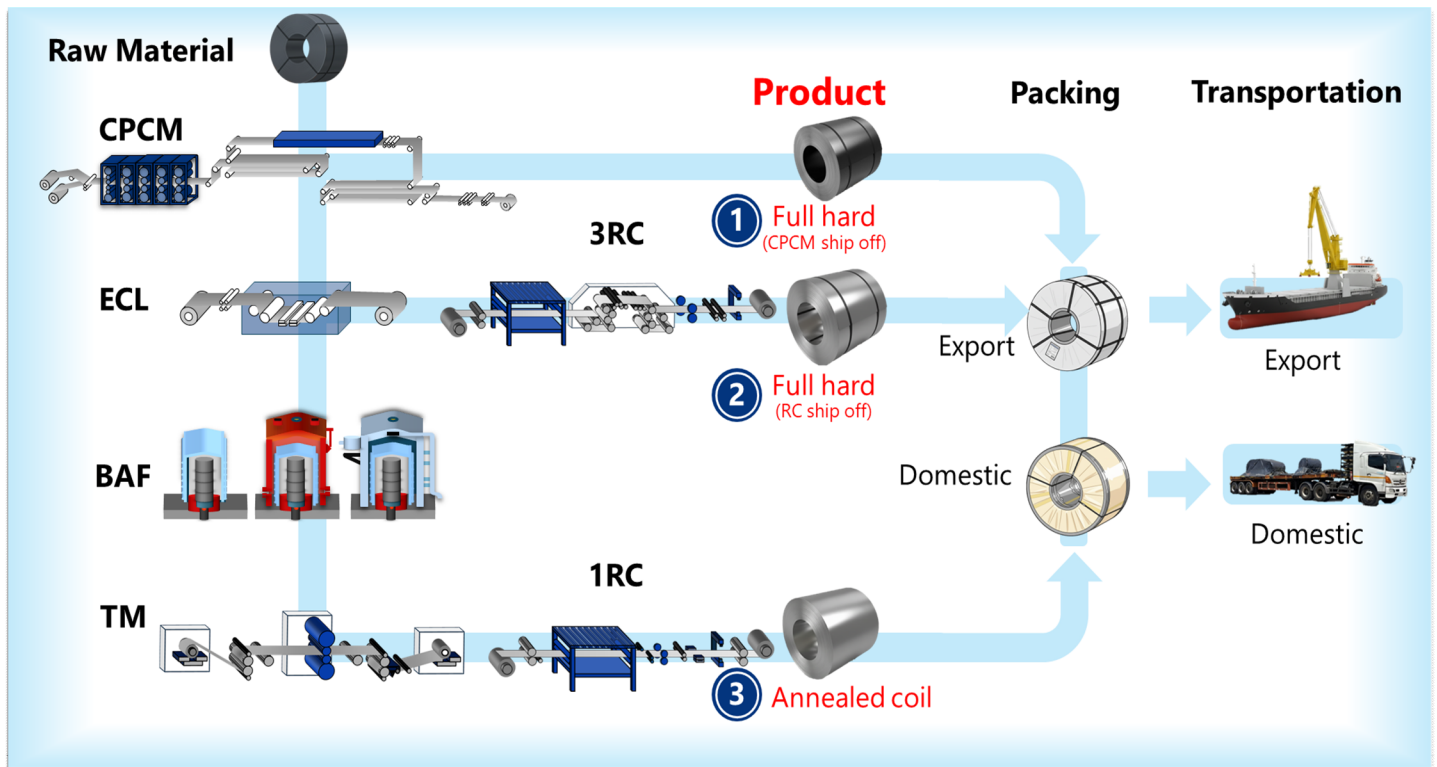
● High Carbon

Classification/ Temper grade	Standard				
	JIS G 3311	SAE	TIS	ASTM A684	SNI
Carbon steel	S30CM	SAE1030	-	-	-
	S35CM	SAE1035	-	-	-
	S45CM	SAE1045	-	-	-
	S50CM	SAE1050	-	-	-
	S55CM	SAE1055	-	-	-
	S60CM	SAE1060	-	A684 Class 1	-

- CRC for Porcelain enameling

Classification/ Temper grade	Standard				
	JIS G 3133	TCR std.	TIS	ASTM	SNI
Commercial Quality	SPPC	TCR-P2C	-	-	-
Drawing Quality	SPPD	TCR-P1D	-	-	-
Deep Drawing Quality	SPPE	TCR-P2E	-	-	-

## Manufacturing process

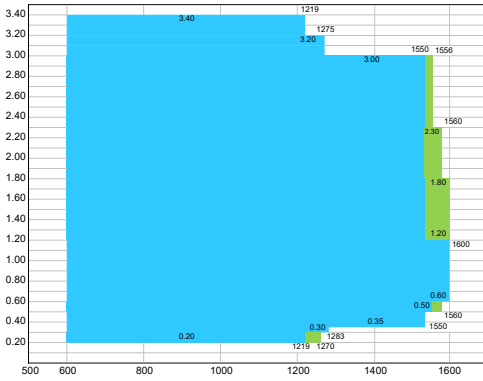


Process	Function
<b>CPCM</b> (Coupled Pickling and Tandem Cold Mill)	<ul style="list-style-type: none"> <li>● Descaling of iron oxide on the surface of hot-rolled coils by using HCL acid.</li> <li>● Edge trimming is performed according to customer requirements.</li> </ul>
<b>ECL</b> (Electrolytic Cleaning Line)	<ul style="list-style-type: none"> <li>● Electrolytic cleaning to remove the cold rolling lubricant from the strip.</li> </ul>
<b>BAF</b> (Batch Annealing Furnace)	<ul style="list-style-type: none"> <li>● Annealing to obtain the desired microstructure and improve mechanical properties.</li> <li>● Applying 99.99% Hydrogen atmosphere annealing facilities.</li> </ul>
<b>TM</b> (Temper Mill)	<ul style="list-style-type: none"> <li>● Re-rolling to eliminate yield point elongation, improve strip flatness and to impart the desired surface finish.</li> <li>● Prevent the occurrence of stretcher strains during forming and deep drawing.</li> </ul>
<b>1RC / 3RC</b> (No.1 / No.3 Recoiling line)	<ul style="list-style-type: none"> <li>● Inspecting coil dimensions, strip surface condition and improve flatness.</li> <li>● Edge trimming is preformed customer requirement trim.</li> <li>● Split coil to specified weight and apply rust preventive oil.</li> </ul>

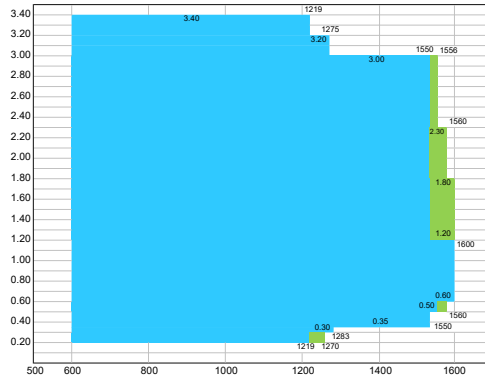
**AVAILABLE SIZE**

AVAILABLE NEGOTIABLE

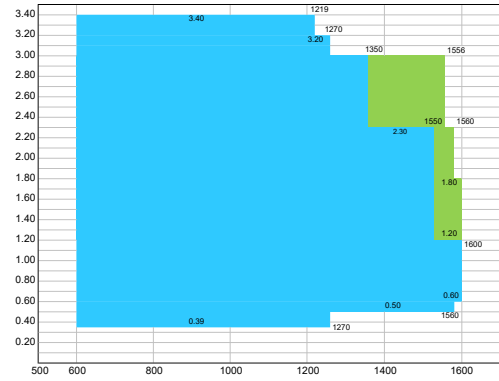
**Commercial quality**  
SPCC



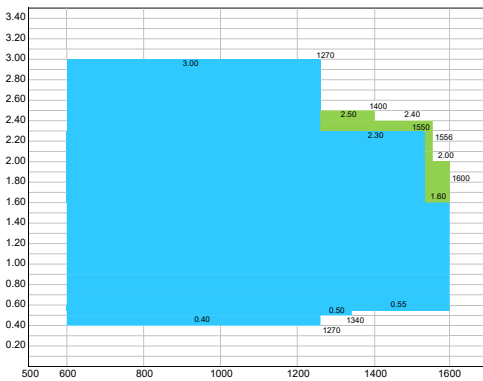
**Drawing quality**  
SPCD, JSC270C



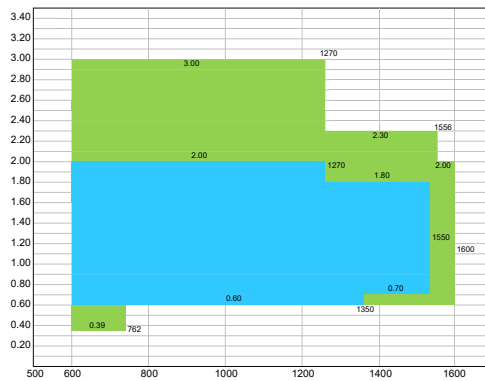
**Deep drawing quality**  
SPCE, SPCEN, JSC270D



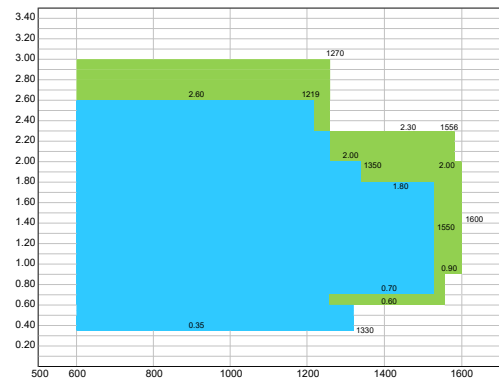
**Extra deep drawing quality**  
SPCF, SPCG, TCR-UFD, JSC270E, JSC270F, JSC270G



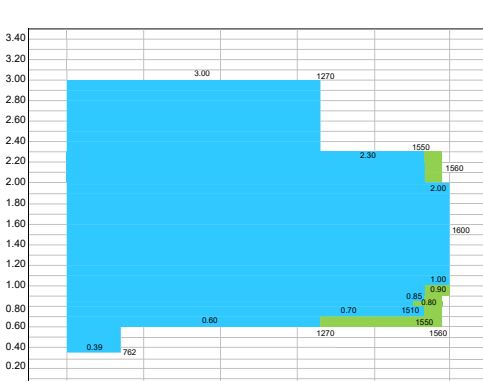
**High Strength Steel : 340MPa**  
SPFC340, JSC370



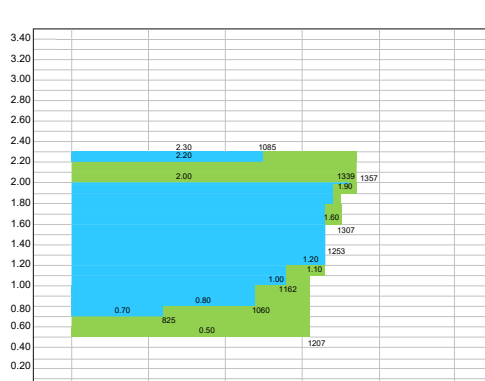
**High Strength Steel : 370MPa**  
SPFC370, SPFC390, JSC370, JSC390



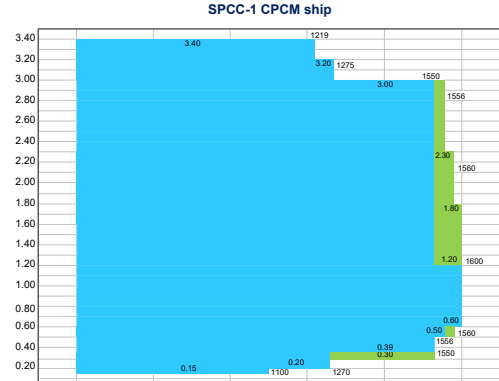
**High Strength Steel : 440MPa**  
SPFC440, JSC440



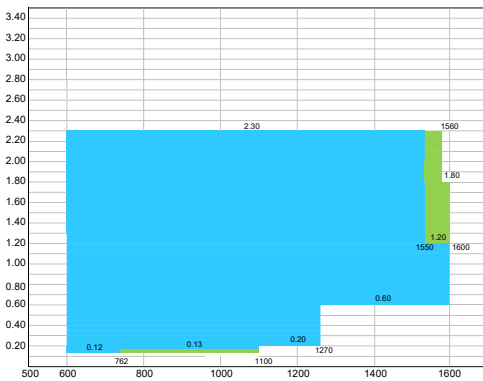
**High Strength Steel : 590MPa**  
SPFC590, JSC590



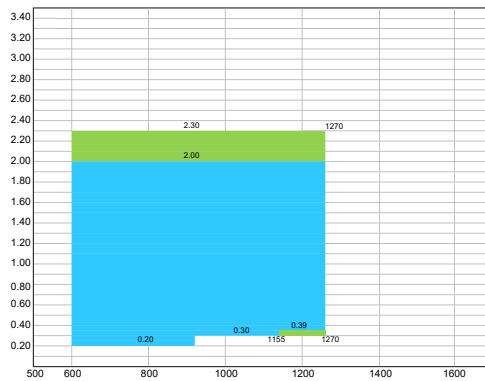
**Hard material**  
Base metal for galvanized sheet (GI use)  
SPCC-1 CPCM ship



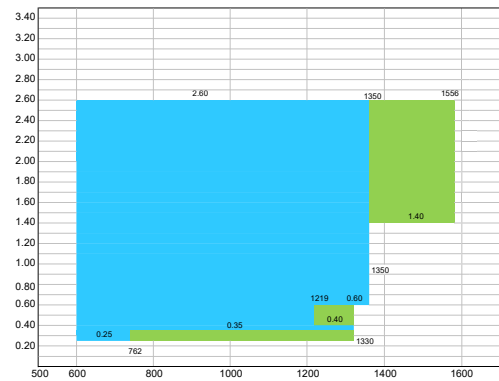
**Hard material**  
SPCC-1 RCL ship



**Hard material**  
SPCC-4



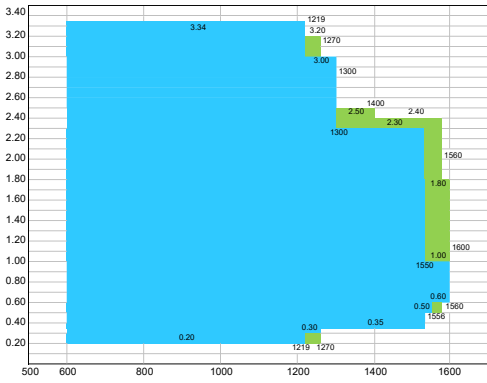
**Hard material**  
SPCC-8



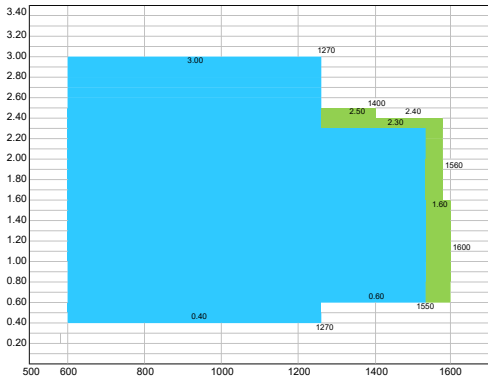
**AVAILABLE SIZE**

AVAILABLE NEGOTIABLE

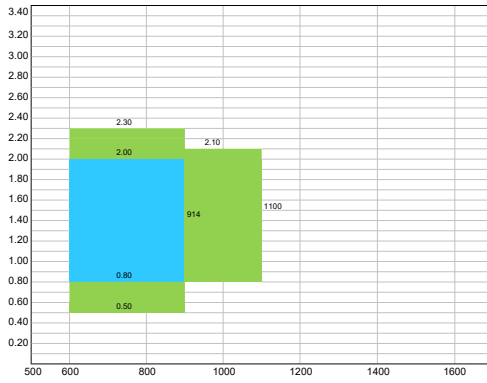
**Porcelain enamelling : Commercial quality**  
TCR-P2C



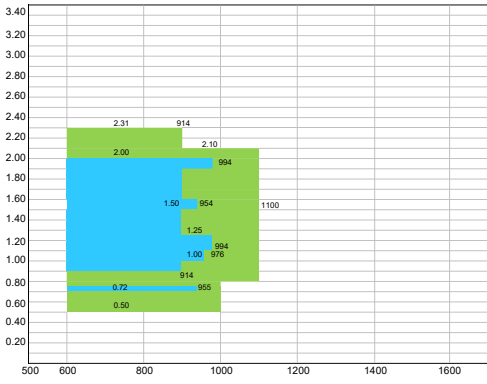
**Porcelain enamelling : Drawing quality**  
TCR-P2E, TCR-P1D



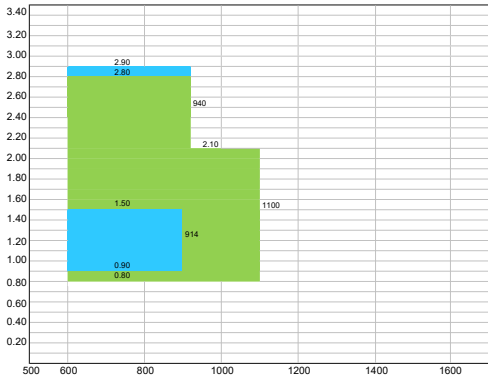
**High carbon**  
S35C



**High carbon**  
S45C, S50C



**High carbon**  
S55C



**High carbon**  
S60C

