

## JCAPCPL – A TS16949 &amp; ISO9001 certified company

## 1. Capacity

- 0.6 Million Ton / annum

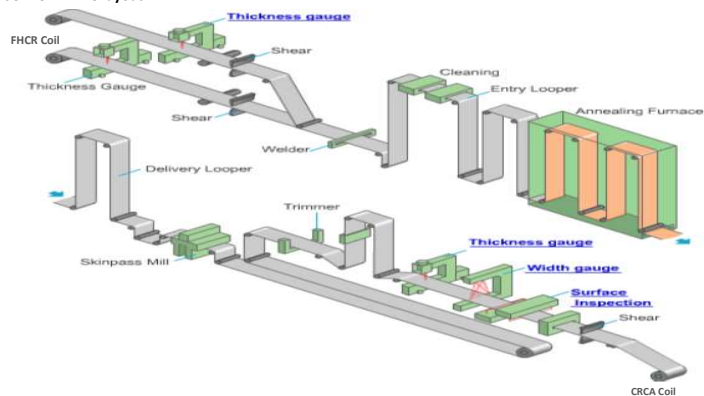
## 2. Grades

- Mild Steel (including IF Steel and Skin Panel)
- 340 – 590MPa High Strength Steels(780,980Mpa under commercialization)

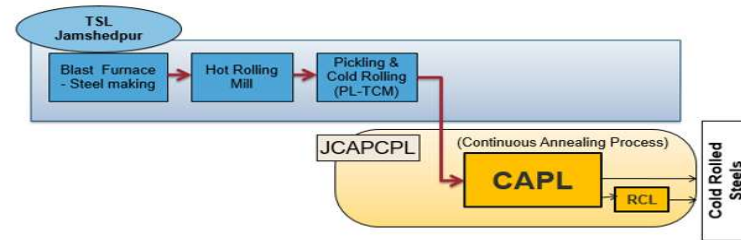
## 3. Product Range

- Thickness : 0.4 – 2.3 mm
- Width : 800 – 1680 mm

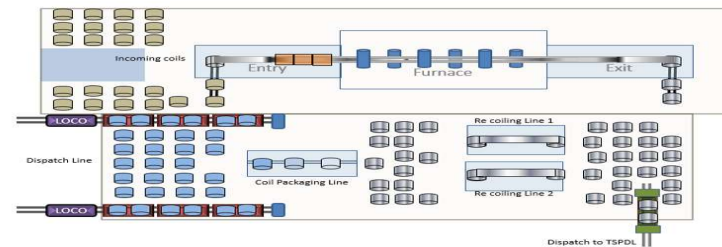
## JCAPCPL – Line layout



## Manufacturing Process



## Material Flow



## JCAPCPL Grades Summary Table

Classification		International Standards				
		JCAPCPL Grades	JFS	JIS	IS	EN
Mild Steel	B-Al-K	CQ	JSC270C	SPCC	CR1	DC01
	Ti-B-IF	DQ	JSC270D	SPCD	CR2	DC03
	Ti-B-IF	DDQ	JSC270E	SPCE	CR3	DC04
	Ti-B-IF	EDDQ	JSC270F	SPCF	CR4	DC05/DC06
High Strength Steel(HSS)	HSLA	HSLA340	-	-	ISC340Y	HC340LA
		HSLA260	-	-	ISC260Y	HC260LA
	C-Mn	C-Mn -340	JSC340W	SPFC340	ISC340W	-
		C-Mn -440	JSC440W	SPFC440	ISC440W	-
	Rephosphorised Steel	IF 340	JSC340P	SPRC340	ISC340P	-
	HSS High Yield ratio	CQ 590	JSC590R	-	ISC590W	-
	HSS Low Yield ratio	DP590	JSC590Y	-	ISC590Y	DP34/60

## Product Characteristics

	JCAPCPL Grade	Chemical Composition (%)									
		C	MN	P	S	SI	AL	N	TI	B	Nb
Mild Steel	CQ	0.03-0.05	0.17-0.27	0.018	0.015	0.04	0.020-0.065	0.004	-	0.001-0.004	-
	DQ	0.004	0.05-0.15	0.02	0.012	0.04	0.020-0.060	0.004	0.045-0.065	0.0007	0.005
	DDQ	0.0035	0.05-0.15	0.018	0.012	0.04	0.020-0.060	0.004	0.045-0.065	0.0005	0.005
	EDDQ	0.003	0.05-0.15	0.015	0.012	0.04	0.020-0.060	0.004	0.045-0.065	0.0005	0.005
High Strength Low Alloy Grade	HSLA340	0.035-0.08	0.75-0.95	0.03	0.015	0.04	0.02-0.07	0.007	-	-	0.025-0.04
	HSLA260	0.03-0.06	0.2-0.3	0.02	0.015	0.04	0.03-0.06	0.006	-	-	0.018-0.025
High Strength Steel Grade	DDQ HSS340	0.004	0.40-0.60	0.045-0.055	0.01	0.03	0.020-0.065	0.004	0.035-0.060	0.0003-0.0007	0.005
	DQ HSS340	0.03-0.05	0.3-0.4	0.025	0.018	0.03	0.015-0.055	0.005	0.005	0.001-0.004	0.005
	DQ HSS440	0.09-0.12	0.95-1.1	0.025	0.01	0.05-0.15	0.015-0.055	0.006	0.005	0.0005	0.005
	CQ HSS590	0.13-0.15	1.3-1.5	0.02	0.01	0.2-0.3	0.01-0.035	0.007	0.005	0.0005	0.015-0.025
	DP HSS590	0.065-0.085	1.8-1.9	0.02	0.01	0.4-0.5	0.02-0.05	0.005	0.005	0.0005	0.005
	JCAPCPL Grade	Mechanical Properties									
		YS (Mpa)		UTS(Mpa)		EL (%)		RBAR		NBARM	
Mild Steel	CQ	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	DQ	135	255	270	370	36.6	55.4	-	-	-	-
	DDQ	125	225	270	340	39.5	57.4	1.051	-	0.21	-
	DDQ	110	205	270	340	41.5	58.5	1.251	-	0.21	-
High Strength Low Alloy Grade	DDQ	110	185	270	340	43.5	60.5	1.451	-	0.22	-
	HSLA340	340	420	410	-	29	-	-	-	0.13	-
	HSLA260	240	310	340	420	27	-	-	-	-	-
High Strength Steel Grade	DDQ HSS340	145	255	340	390	34.6	53.4	1.251	-	0.21	-
	DQ HSS340	195	340	340	-	35	-	-	-	-	-
	DQ HSS440	265	380	440	500	25.5	46.5	-	-	-	-
	CQ HSS590	410	580	590	700	15.6	35.4	-	-	-	-
	DP HSS590	305	470	590	700	15.6	39.4	-	-	-	-

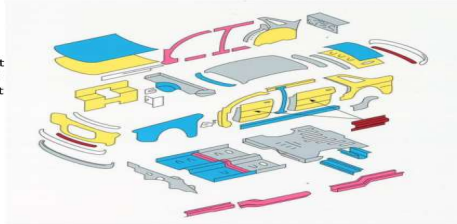
YS: Yield Strength, UTS: Tensile Strength, MPa: Mega Pascal (Values shown in both tables are Only for reference)

## Product Application

## Application examples of mild steel and High-Strength cold-rolled steel sheets

Trend has been toward increased applications and higher strength of high-strength steel sheets to meet requirements for higher fuel efficiency through car weight reduction and for higher safety in a collision.

Tensile strength (MPa)	
Mild steel	
340-370	
390-440	
490-540	
590-780	
980	



## Gradewise application

Grade	Component		Main applications
Mild steel			Side Body Outer Roof Outer Door Inner Hood Inner Floor Fender Wheel House
	Crash Member Front	Door Sash Upper	
High Strength Steel (340/440)			Hood Outer (340) Door Outer (340) Luggage Panel (340) Cross member (440) Side member (440)
	Pillar CTR OTR LH	Panel Rear FLR FR	
High Strength Steel (590)			Center-pillar Front-pillar Side member Cross Member Side Sill
	Panel Sill Side Inner	Side Rail	

## Thickness Tolerance for Mild Steel

Specification minimum Tensile strength (MPa)	Nominal thickness (mm)	Width(mm)			
		700-999	1000-1249	1250-1599	1600-1700
UTS≤270	0.40	0.599	±0.05	±0.05	±0.06
	0.60	0.799	±0.06	±0.06	±0.06
	0.80	0.999	±0.06	±0.07	±0.08
	1.00	1.249	±0.07	±0.08	±0.09
	1.25	1.599	±0.09	±0.1	±0.11
	1.60	1.999	±0.11	±0.12	±0.13
	2.00	2.3	±0.13	±0.14	±0.15
	2.00	2.3	±0.13	±0.14	±0.15

(\*All Tolerances are as per JIS G 3141-2011, please contact our representative for enquiry on any other tolerances)

## Thickness Tolerance for HSS Grade

Specification minimum tensile strength(MPa)	Nominal thickness (mm)	Width(mm)			
		700-999	1000-1249	1250-1599	1600-1700
270<UTS<780	0.40	0.599	±0.05	±0.05	±0.07
	0.60	0.799	±0.06	±0.06	±0.08
	0.80	0.999	±0.07	±0.08	±0.09
	1.00	1.249	±0.08	±0.09	±0.10
	1.25	1.599	±0.10	±0.11	±0.12
	1.60	1.999	±0.11	±0.12	±0.14
	2.00	2.3	±0.13	±0.14	±0.16
	2.00	2.3	±0.13	±0.14	±0.16

## JCAPCPL - CUSTOMERS

## Continuous Annealed &amp; Processed Automotive Steel



	Width Thickness	800-850	851-900	901-950	951-1000	1001-1050	1051-1100	1101-1150	1151-1200	1201-1250	1251-1300	1301-1350	1351-1400	1401-1451	1451-1475	1476-1500	1501-1524	1525-1540
		0.4-0.44	0.45-0.49	0.50-0.54	0.55-0.59	0.60-0.64	0.65-0.69	0.70-0.79	0.80-0.89	0.90-0.99	1.00-1.24	1.25-1.49	1.50-1.99	2.0-2.30				
Mild Steel	0.4-0.44																	
	0.45-0.49																	
	0.50-0.54																	
	0.55-0.59																	
	0.60-0.64																	
	0.65-0.69																	
	0.70-0.79																	
	0.80-0.89																	
	0.90-0.99																	
	1.00-1.24																	
High Strength Steel (340 & 440)	1.25-1.49																	
	1.50-1.99																	
	2.0-2.30																	
	0.4-0.44																	
	0.45-0.49																	
	0.50-0.54																	
	0.55-0.59																	
	0.60-0.64																	
	0.65-0.69																	
	0.70-0.79																	
High Strength Steel (590)	0.80-0.89																	
	0.90-0.99																	
	1.00-1.24																	
	1.25-1.49																	
	1.50-1.99																	
	2.0-2.30																	
	0.4-0.44																	
	0.45-0.49																	
	0.50-0.54																	
	0.55-0.59																	

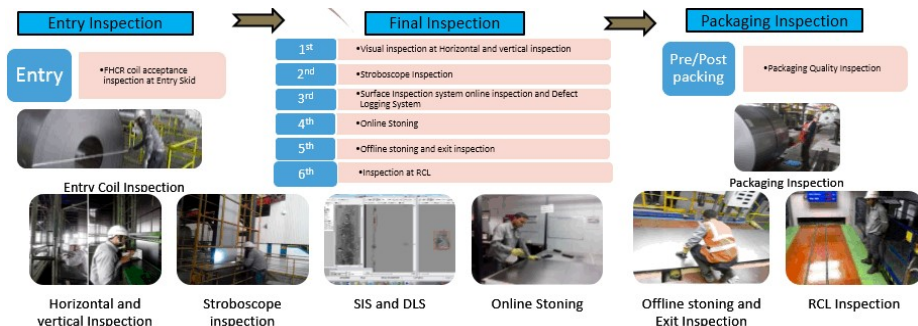
Legend	Description
	Within Mill Capacity
	Outside Mill Capacity

(\*Above matrix represents typical capability of sizes which being commercially supplied , please contact our representative for enquiry on any other specific size requirement )

## Width Tolerance

Width Of the Coil	Tolerance			
	Untrimmed		Mill Trimmed Edge	
	(+)	(-)	(+)	(-)
≤ 800 mm to ≥ 1200	7	0	3	0
< 1200 mm to ≥ 1540	10	0	3	0

## Product Quality Inspection ways



## Coil Diameter

Inside Diameter	508-610 mm
Outside Diameter	2100 mm (max)

## Shape standard

Form	Standard	1	2	3	4	5	6
Edge wave	Wave height (Max mm)	2	4	6	8	8	20
Steepness	Max %	0.5	1	1	1.5	2	3.5
Center buckle	Wave height Max mm	2	3	5	6	6	15
Steepness	Max %	0.5	0.5	1	1.5	2	3
Cross bow	Max (mm)	2	6	6	8	12	25
Squareness	Max (mm)	Less than 2/1000					
Camber (Sheet material)	Max(mm)	Less than 2/2000					
Cutting burr Max (mm)	Nominal thickness less than 1.6 mm	0.07mm					
	Nominal thickness More than 1.6 mm	0.1mm					

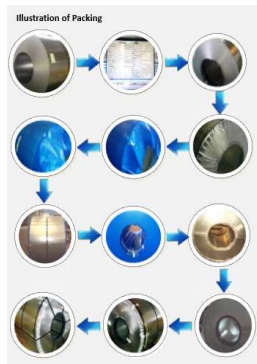
## Packing &amp; Labelling

## Packing

We follow stringent packing standards for CRCA Products to ensure safe delivery, to sustain multiple handlings and keeping in mind the nature of storage. Below is an illustration of packing standards for Skin Panels -

Packing Consumables	QTY	Specification
Plastic ID protector both side	2 Nos.	Size : 50 X 100 mm Thickness : 2.00 mm Material : Modified HDPE
Plastic OD protector both side	2 Nos.	Size : 75 X 75 mm Thickness : 1.35 mm Material : Modified HDPE
VCI film	1 layer	Thickness : 50 micron Width : 245 mm
HDPE Fabric	1 layer	Thickness : 80 GSM Material : High Density Poly Ethylene
Metwrap Plus	1 layer	Thickness : 2.5 mm Material : Polypropylene
Metwrap side disc	2 Nos. (one each side)	Thickness : 2.5 mm
HR ID Protector	2 Nos. (one each side)	Thickness : 1.6 mm Face X Leg Length : 50 x 75 mm
GP metal ID sleeve	1 No.	0.5 mm GP
GP top metallic sheet / Body Wrap	1 No.	0.5 mm GP
GP metal side disc	2 Nos. (one each both side)	0.5 mm GP
GP metal OD protector	2 Nos. (one each both side)	Thickness : 0.8 mm Face X Leg Length : 60 x 120 mm
Filament tape (edge sealing at ID / OD both side and all metal joints / overlaps)	All Edge sealing at ID / OD both side and all metal joints / overlaps sealing.	Tensile Strength - 50kgf (±1) % Elongation - 7.0% (±1) Carrier - 80 Filament Woven fabric (Cross) Width - 2" (50.8 mm), Thickness - 0.25 mm Adhesive - 1.3 kg/Gross (±1, 0.3kg)
Circum strapping - Over Pack	< 300mm wide coil - 2 Nos. > 300 mm wide coil - 3 Nos.	31.75 mm x 0.64 mm, Breaking Strength-1900 kg min, UTS-92 kg/qm min
Eye strapping - Over Pack	6 Nos.	31.75 mm x 0.64 mm, Breaking Strength- 1900 kg min, UTS - 92 kg/qm min

(\*: Above illustration is for a selected product form, please contact our representative for packing standard of other product forms)



## Surface finish and roughness

The surface finish may be bright, semi - bright, normal or rough. In the absence of a requirement on the order, products shall be supplied with normal finish. Limiting values for the average surface roughness for the two types of finish are given in the below table

Roughness	Surface Finish
Skin Panel	0.8 μm < Ra ≤ 1.2 μm
Internal	0.7 μm < Ra ≤ 1.6 μm

(\*actual Customer specification is followed while manufacturing & certification)

## Labelling

Each coil is pasted with stickers on the Package wrap to facilitate better traceability. The stickers consist of all relevant information about the coil along with bar-coding facility.

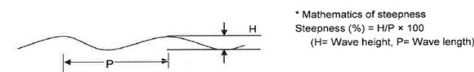
Label pasting position on Package	
<b>FG Label - 5 nos.</b>	
1	Below Clock position 2 of Eye Strap on top sheet
2	Below Clock position 10 of Eye Strap on Side Disc
3	Below Clock position 2 of Eye Strap on Side Disc
4	Between Clock position 2 & 5 of Eye strap on Inner sleeves
5	On Inner sleeve with tape for Wagon unitization
<b>Arrow Label - 1 no.</b>	
1	Below Clock position 2 of Eye Strap on Side Disc
<b>Skin Panel Label - 3 no.</b>	
1	Below clock position 2 & FG Label of Eye strap on side disc
2	Below Clock position 2 of Eye Strap opposite to FG label on top sheet
3	Below Clock position 10 & FG label of Eye strap on side disc



## Oiling Types &amp; Norms

Rust Preventive Oil Type Used	Range of Oil Amount
Quaker	0.3GSM to 3GSM
Fuchs	0.3GSM to 3GSM
Parker	0.3GSM to 3GSM
DOS-A	30mg/m <sup>2</sup> to 300mg/m <sup>2</sup>

\*Flatness is measured at Horizontal inspection station with steel rule to be kept parallel with strip and maximum value of wave height to be measured with subsequent next wave with taper gauge to measure severity



## Squareness :

