

Types of Cold Rolled Steel

Steel Type		Cold Formed Steel	Structural Steel	Heal-Treated Structural Steel
Usage		Primarily used for parts that require simple or moderately complex deformation processes. These parts generally do not endure heavy loads, making this steel suitable for applications such as automotive body panels, machinery housings, food containers, and oil drums.	Commonly employed for structural components that undergo simple deformation processes such as bending. These parts typically bear higher loads and are used in applications like building frameworks, vehicle chassis, and external panels for appliances such as refrigerators.	Mainly used for components that require heat treatment to achieve specific mechanical properties. Depending on the heat treatment process, the steel can be tailored for various applications, including machinery parts and precision-cut components.
Requirements		Designed to meet the needs of parts that require moderate complexity in processing and deformation without compromising structural integrity.	Must withstand significant external forces without deforming, ensuring the structural integrity of the components under high stress.	Must meet specific heat treatment requirements to ensure the desired mechanical properties are achieved, such as hardness, toughness, and resistance to wear.
Indicator		Processing performance indicators include yield strength ratio (ReL/Rm), plastic strain ratio (r-value), and strain hardening exponent (n-value), which collectively determine the material's formability and suitability for various applications.	Mechanical performance indicators include yield strength (ReL), tensile strength (Rm), and elongation after fracture (δ), which help assess the steel's ability to endure stress and deformation under load.	Chemical composition indicators include elements like carbon (C), silicon (Si), manganese (Mn), phosphorus (P), sulfur (S), and aluminum (Al), which are critical for achieving the intended performance after heat treatment.
Classifications of Steel		By Steel Quality Commercial quality (CQ) Drawing quality (DQ) Deep drawing quality (DDQ) Extra-deep drawing quality (EDDQ) Super extra-deep drawing quality (SEDDQ)	By Yield Strength 195 215 235 275	By Carbon Content 03Al 08Al
Grade	Chinese Standard	DC01, DC03, DC04, DC05	Q195, Q215, Q235, Q275	03Al, 08Al
	Japanese Standard	SPCC, SPCD, SPCE, SPCF	SS330, SS400, SS490, SS540	S10C
	USA Standard	CSypc, CSypcA,B, DDS	-	SAE1006, SAE1008, SAE1010

Technical Specifications

Type	Batch-Annealed Cold Rolled Steel Sheet		Continuously-Annealed Cold Rolled Steel Sheet
Thickness	0.18-2.0mm		0.4-2.0mm
Width	900-1500mm		900-1500mm
Grade	SPCC/DC01/DC03		SPCC/DC01
Production Capacity	7 production lines 5,000,000 tonnes/year		20 production lines 800,000 tonnes/year
Surface Roughness	Rough/Lustrous		Rough/Lustrous

Tolerances of Dimensions

Width Tolerance	Nominal Thickness	Normal Accuracy PWA	Advanced Accuracy PW.B
	≤1200	0.5	0.2
	>1200-1250	0.6	0.2
Thickness Tolerance	To ensure customer satisfaction, our standard products are delivered with negative tolerances. If specific requirements are needed, they should be communicated when placing the order.		
	Our thickness tolerances are more stringent than the Chinese national standards. However, slight variations may occur at the beginning or end of the steel coils (within the first or last 30 meters), which is a common industry practice.		

Mechanical Properties

Mechanical Properties of Continuously-Annealed Cold Rolled Steel Sheet

To improve product quality, our internal standards exceed Japanese standards for mechanical properties, ensuring enhanced yield strength, tensile strength, and elongation performance.

Grade	Thickness (mm)	Yield Strength (MPa)		Tensile Strength (MPa)		Elongation A50 (%)		Tensile Strain Mark
		Standard	Internal Control	Standard	Internal Control	Standard	Internal Control	
SPCC	0.40-0.8	-	≤270	>270	300-410	≥36	≥39	No requirements
	≥0.8-1.2	-	≤260	>270	300-410	≥37	≥39	
	≥1.2	-	≤250	>270	300-410	≥37	≥39	
SPCD	0.40-0.8	≤240	≤230	>270	290-400	≥38	>40	Under standard room temperature storage conditions, steel sheets and coils with an FD surface grade should be used within three months of production to avoid the appearance of tensile strain marks.
	≥0.8-1.2	≤240	≤220	≥270	290-400	≥39	>42	
	≥1.2	≤240	≤220	≥270	290-400	≥39	>42	

Mechanical Properties of Batch-Annealed Cold Rolled Steel Sheet

Our production complies with European (national) standards, and to ensure superior product quality, we implement internal controls that exceed these benchmarks.

Grade	Thickness (mm)	Yield Strength (MPa)		Tensile Strength (MPa)		Elongation A80 (%)		R Value		N Value		Tensile Strain Mark
		Standard	Internal Control	Standard	Internal Control	Standard	Internal Control	Standard	Internal Control	Standard	Internal Control	
DC01	0.40-0.6	280	260	270-410	300-410	≥28	≥28	-	≥1.3	-	-	Under standard room temperature storage conditions, FD-grade steel sheets and coils should be used within three months of production to prevent the formation of tensile strain marks.
	>0.6-0.8	280	250	270-410	300-410	≥28	≥29	-	≥1.3	-	-	
	≥0.8-1.2	280	≤245	270-410	300-410	≥28	≥29	-	≥1.3	-	-	
	≥1.2	280	≤240	270-410	300-410	≥28	≥30	-	≥1.3	-	-	
DC03	0.40-0.8	240	≤240	270-370	300-410	≥34	≥34	≥1.3	≥1.4	-	≥0.16	For regular-grade steel sheets and coils, use within six months under similar storage conditions to ensure the material remains free of tensile strain marks.
	>0.8-12	240	230	270-370	300-410	≥34	≥35	≥1.3	≥1.4	-	≥0.16	
	≥1.2	240	≤220	270-370	300-410	≥34	≥36	≥1.3	≥1.4	-	≥0.16	

Surface Quality

Classification	Symbol	Characteristics	Requirements
Advanced Surface	FB	Allows for minor surface imperfections that do not impact formability or coating adhesion. These may include slight scratches, indentations, small pits, or slight discoloration due to oxidation.	General Requirements
Standard Surface	FC	The exposed surface must meet high quality standards, free from any defects that could affect the appearance or coating adhesion after painting or electroplating. The non-exposed surface should at least conform to FB standards.	Special Requirements
Super Advanced Surface	FD	One side must meet the highest quality standards, free from any defects that could affect the final appearance or coating adhesion. The reverse side should at least meet FB standards.	Special Requirements

Surface Roughness

Surface Finish	Symbol	Roughness Value
Rough	D	0.4-1.9μm
Lustrous	B	≤0.9μm