

## C Channel (C-Type) Steel



### Available Sizes

Channel	Spec
(H)	75mm-150mm
(B)	40mm-75mm
(L)	6M-12M

### Available Grade

Division	Spec	Symbol
General Structure	CNS 2473	SS400, SS490, SS540
	JIS G3101	
	ASTM A36	A36
	AS 3679.1	GR300
Welded Structure	CNS 2947	SM400A, SM490A
	JIS G3106	
	CNS 13812	SN490B
	JIS G3136	
	ASTM A572	GRADE 50 TYPE 2, GRADE 65 TYPE 2
	ASTM A709	GRADE 50 TYPE 2
Structure	EN 10025-2	S235JR, S235J0, S235J2
		S275JR, S275J0, S275J2
		S355JR, S355J0, S355J2, S355K2

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Shape and Tolerance on Dimension

Item	Sub-Item	Tolerance	Remark	
(B) mm	$B < 50$	$\pm 1.5$		
	$50 \leq B < 100$	$\pm 2.0$		
	$100 \leq B < 200$	$\pm 3.0$		
	$200 \leq B$	$\pm 4.0$		
(H) mm	$H < 100$	$\pm 1.5$		
	$100 \leq H < 200$	$\pm 2.0$		
	$200 \leq H < 400$	$\pm 3.0$		
	$400 \leq H$	$\pm 4.0$		
(t1),(t2) mm	$H < 130$	$t < 6.3$		$\pm 0.6$
		$6.3 \leq t < 10$		$\pm 0.7$
		$10 \leq t < 16$	$\pm 0.8$	
		$16 \leq t$	$\pm 1.0$	
	$130 \leq H$	$t < 6.3$	$\pm 0.7$	
		$6.3 \leq t < 10$	$\pm 0.8$	
		$10 \leq t < 16$	$\pm 1.0$	
		$16 \leq t < 25$	$\pm 1.2$	
	$25 \leq t$	$\pm 1.5$		
(L) mm	$L \leq 7m$		$\pm 40, 0$	
	$7m < L$	Add 5mm to plus side tolerance for every increase of 1m or its fraction		
(T) mm	All Sizes	$T \leq 2.5\% \times B$		
Warpage	All Sizes	$0.3\% \times L$ , Max	To be applied to warpage upward and downward, and to the right and left	

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### Chemical Requirements

Spec	Symbol	Composition %					
		C	Mn	P	S	Si	B
CNS 2473	SS400, SS490	-	-	0.050 max	0.050 max	-	0.0007 max
	SS540	0.30 max	1.60 max	0.040 max	0.040 max	-	0.0007 max
CNS 2947	SM400A	0.26 max	2.5* Cmin	0.035 max	0.035 max	-	0.0007 max
	SM490A	0.20 max	1.65 max	0.035 max	0.035 max	0.55 max	0.0007 max
CNS 13812	SN490B	0.18 max	1.65 max	0.030 max	0.015 max	0.55 max	0.0007 max
JIS G3101	SS400, SS490	-	-	0.050 max	0.050 max	-	-
	SS540	0.30 max	1.60 max	0.040 max	0.040 max	-	-
JIS G3106	SM400A	0.23 max	2.5* Cmin	0.035 max	0.035 max	-	-
	SM490A	0.20 max	1.65 max	0.035 max	0.035 max	0.55 max	-
JIS G3136	SN490B	0.18 max	1.65 max	0.030 max	0.015 max	0.55 max	-
ASTM A36	A36	0.26 max	-	0.040 max	0.050 max	0.40 max	-
ASTM A572	GRADE 50 TYPE 2	0.23 max	1.35 max	0.040 max	0.050 max	0.40 max	-
	GRADE 65 TYPE 2	0.26 max	1.35 max	0.040 max	0.050 max	0.40 max	-
ASTM A709	GRADE 50 TYPE 2	0.23 max	1.35 max	0.040 max	0.050 max	0.40 max	-
AS 3679.1	GR300	0.25 max	1.60 max	0.040 max	0.040 max	0.50 max	-
EN 10025-2	S235JR/S235J0/S235J2	0.17 max	1.40 max	0.035/0.030/0.035 max		-	-
	S275JR	0.21 max	1.50 max	0.035 max	0.035 max	-	-
	S275J0/S275J2	0.18 max	1.50 max	0.030/0.025 max		-	-
	S355JR	0.24 max	1.60 max	0.035 max	0.035 max	0.55 max	-
	S355J0/S355J2/S355K2	0.20 max	1.60 max	0.030/0.025/0.025 max		0.55 max	-

Spec	Symbol	Y. S $_N/mm^2$ (ksi)		T. S $_N/mm^2$ (ksi)	Elongation %	Bending (180°)	Impact Test		
		$t \leq 16$	$16 \leq t < 40$						
CNS 2473 JIS G3101	SS400	245min	245min	400-510	(B) $\geq$ 40	21min ( $t \leq 5$ )	1.5 * t OK	-	
						17min ( $5 < t \leq 16$ )			
						21min ( $16 < t \leq 50$ )			
	SS490	285min	275min	490-610	(B) $\geq$ 40	(B) $\geq$ 40	19min ( $t \leq 5$ )	2.0 * t OK	-
							15min ( $5 < t \leq 16$ )		
							19min ( $16 < t \leq 50$ )		
	SS540	400min	390min	540min	(B) $\geq$ 40	(B) $\geq$ 40	16min ( $t \leq 5$ )	2.0 * t OK	-
							13min ( $5 < t \leq 16$ )		
							17min ( $16 < t \leq 40$ )		
CNS 2947 JIS G3106	SM400A	245min	235min	400-510	(B) $\geq$ 40	23min ( $t \leq 5$ )	-	-	
						18min ( $5 < t \leq 16$ )			
						22min ( $16 < t \leq 50$ )			
	SM490A	325min	315min	490-610	(B) $\geq$ 40	(B) $\geq$ 40	22min ( $t \leq 5$ )	-	-
							17min ( $5 < t \leq 16$ )		
							21min ( $16 < t \leq 50$ )		
CNS 13812 JIS G3136	SN490B	325-445 (80%↓)		490-610	(B) $\geq$ 40	17min ( $6 < t \leq 16$ )	-	-	
						21min ( $16 < t \leq 50$ )			
ASTM A36	A36	250 (36)min		400-550 (58-80)	(B) $\geq$ 40	20min(g.l)200mm	-	-	
ASTM A572	GRADE 50 TYPE 2	345 (50)min		450 (65)min	(B) $\geq$ 40	18min(g.l)200mm	-	-	
ASTM A709									
ASTM A572	GRADE 65 TYPE 2	450 (65)min		550 (80)min	(B) $\geq$ 40	15min(g.l)200mm	-	-	
EN 10025-2	S235JR, S235J0, S235J2	235min	225min	360-510	(B) $\geq$ 40	22 min (g.l=5.65√S0)	-	-	
	S275JR, S275J0, S275J2	275min	265min	410-560	(B) $\geq$ 40	22 min (g.l=5.65√S0)			
	S355JR, S355J0, S355J2, S355K2	355min	345min	470-630	(B) $\geq$ 40	22 min (g.l=5.65√S0)			
AS 3679.1	GR300	$t < 11$	$11 \leq t \leq 17$ )	440min	(B) $\geq$ 40	22 min (g.l=5.65√S0)	-	-	
		320min	300min						