

Tolerance - BS EN 10219

Tolerances	Type	Cold formed welded structural hollow sections of non-alloy and fine grain steels	
		BS EN 10219	
Outside Dimension (OD)	CHS	$\pm 1\%$ with a min. of $\pm 0.5\text{mm}$ and a max. of $\pm 10\text{mm}$	
	SHS & RHS	Size (mm)	Tolerance
		$H, B < 100\text{mm}$	$\pm 1\%$ with a min. of $\pm 0.5\text{mm}$
		$100\text{mm} \leq H, B \leq 200\text{mm}$	$\pm 0.8\%$
		$H, B > 200\text{mm}$	$\pm 0.6\%$
Thickness (t)	CHS	For $OD \leq 406.4\text{mm}$	
		$t \leq 5\text{mm}$	$\pm 10\%$
		$t > 5\text{mm}$	$\pm 0.50\text{mm}$
		For $OD > 406.4\text{mm}$	
			$\pm 10\%$ with a max. of 2mm
SHS & RHS	$t \leq 5\text{mm}$	$\pm 10\%$	
	$t > 5\text{mm}$	$\pm 0.50\text{mm}$	
Tolerances of Length	CHS	$-0\text{mm}, +50\text{mm}$	
	SHS & RHS		
Out of Roundness	CHS	2% for hollow sections having a diameter to thickness ratio not exceeding 100	
Concavity / Convexity	SHS & RHS	max. 0.8% with a min. of 0.5mm	
Squareness of size	SHS & RHS	$90^\circ \pm 1^\circ$	
External corner profile	SHS & RHS	$t \leq 6\text{mm}$	1.6T to 2.4T
		$6\text{mm} < t \leq 10\text{mm}$	2.0T to 3.0T
		$10\text{mm} < t$	2.4T to 3.6T
Twist	SHS & RHS	2mm plus 0.50mm/m length	
Straightness	CHS	0.2% of total length	
	SHS & RHS	0.15% of total length	
Mass	CHS	$\pm 6\%$ on individual length	
	SHS & RHS	$\pm 6\%$ on individual length	