

### Carbon Spring Steel

#### Typical Applications

- Springs
- Suspension parts
- Aerospace components
- Lock picks
- Clamps

#### Product Description

S513 is a simple carbon spring steel containing higher levels of carbon than S510 and S511. Available in hardened/tempered sheet and strip but tensile strength only reaches hardness. The material requires protection from corrosion if it is to be exposed to the atmosphere.

#### Related Specifications

- 1.169

#### Key Features:

- Carbon spring steel
- Higher levels of carbon than S510 & S511
- Can be supplied as sheet or strip
- Can be hardened/tempered
- Corrosion protection required if exposed to atmosphere
- Tensile strength only reaches hardness

#### Corrosion Resistance

Protection required if exposed to the atmosphere

#### Availability

Sheet, strip

#### Chemical Composition (weight %)

Weight (%)	C	Si	Mn	P	S
Min	0.17	0.30	1.30		
Max	0.23	0.60	1.60	0.035	0.035

#### Mechanical Properties (softened)

Annealing Hardness (HBS)	235
Cold Pull Hardness (HBS)	262
Pre-heating temperature	788°C
Tensile Strength (MPa)	540 - 690

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

#### UK Service Centres:

Smiths Belfast **02895 908 897**  
 Smiths Biggleswade **01767 604 704**  
 Smiths Birmingham **0121 728 4940**  
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#### Quality & Testing:



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