

Material properties

Material	210 M 15 (United Kingdom / B.S.)
Group	Structural and constructional steels
Subgroup	BS 970-1 Wrought carbon manganese steels for mechanical and allied engineering purposes
Comment	This grade is a category 1 carbon manganese steel intended for case hardening.

Application In the form of blooms, billets, slabs, bars, rods and forgings used in the as-rolled, as-forged or softened condition as appropriate.

Tensile Stress[MPa]			
Dimension	Min	Max	Approx

Forgings; Heat Treated; d =19 mm	460	-	-
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Elongation A5 [%]			
Dimension	Min	Max	Approx

Forgings; Heat Treated; d =19 mm	16.0	-	-
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Impact [J]			
Dimension	Min	Max	Approx

Forgings; Heat Treated; d =19 mm	35	-	-
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Impact Test: Charpy V Notch

Chemical Composition [%]			
Criterion	Min	Max	Approx

C	0.1200	0.1800	-
Mn	0.9000	1.3000	-
P	-	0.0500	-
S	0.1000	0.1800	-
Cr	-	0.3000	-
Mo	-	0.1500	-
Ni	-	0.4000	-

Heat Treatment

Blank carburizing (cooling in air): 880-930 C (min. 1 hour) Re-heating (quenching in oil): 900-930 C
