

# S690QL – Technical Datasheet

## **1. Chemical & Mechanical Properties**

#### A. Chemical Composition

Element	% Composition		
Carbon (C)	≤ 0.20%		
Silicon (Si)	≤ 0.80%		
Manganese (Mn)	≤ 1.70%		
Phosphorus (P)	≤ 0.020%		
Sulphur (S)	≤ 0.010%		
Chromium (Cr)	≤ 1.50%		
Nickel (Ni)	≤ 2.00%		
Molybdenum (Mo)	≤ 0.70%		
Boron (B)	≤ 0.005%		

#### **B. Mechanical Properties**

Property	Value	
Yield Strength (YS)	≥ 690 MPa (≤50 mm)	
Tensile Strength (TS)	770 – 940 MPa	
Elongation	≥ 14%	
Impact Test	≥ 30 J at -40 °C	

## 2. Equivalent / Alternative Grades

Standard	Grade	YS (MPa)	TS (MPa)	Impact
ASTM A514	Grade Q	690	760-895	≥ 27 J @ -40 °C
ISO 630-6	S690Q	690	770-940	≥ 30 J @ -40 °C
GB/T 16270	Q690D/E	690	770-930	≥ 27 J @ -40 °C

## **3. Common Applications**

- Lifting equipment (crane booms)
- Heavy transport trailers
- Mining and earthmoving machinery
- Structural components requiring ultra-high strength

#### 4. Standard Conformance

EN 10025-6:2004 + A1:2009 – Ultra-high strength Q&T structural steel.

"S" structural, "690" minimum yield (MPa), "Q" quenched & tempered, "L" -40 °C impact.

# 5. Disclaimer

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