

# API Specification 5L Changes

## General Requirements

ITEM	API 5L 41st	API 5L 42nd PSL-1	API 5L 42nd PSL-2
Grade Range	A25 through X80	A25 through X70	B through X80
Welder frequency - electric welds (min)	None	None	100 kHz
Heat treatment - electric welds	>X42 - required	>X42 - required	B through X80 - required
Certification	When SR15 specified	When SR15 specified	Mandatory
Traceability	Traceable until all tests passed, unless SR15 specified	Traceable until all tests passed, unless SR15 specified	Traceable even after completion of tests
Special Processes	NDE not included	NDE not included	NDE included

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## Inspection

ITEM	API 5L 41st	API 5L 42nd PSL-1	API 5L 42nd PSL-2
NDE - seamless	SR4 only	SR4 only and any Q&T grade B	SR4 required
Residual Magnetism	None	30 gauss maximum for a) pipe $\geq 6$ " OD, and b) pipe $< 6$ " OD if inspected with or handled by magnetic equipment	30 gauss maximum for a) pipe $\geq 6$ " OD, and b) pipe $< 6$ " OD if inspected with or handled by magnetic equipment
Hydrostatic Testing	Test pressure for grade B limited to 2500 psi for $\leq 3\frac{1}{2}$ " OD and 2800 psi for $> 3\frac{1}{2}$ " OD; test pressure for grades X42-X80 limited to 3000 psi	Where alternate test pressure is specified, the pressure will be limited to 7260 psi max for $< 16$ " OD and 3630 psi max for $\geq 16$ " OD	Where alternate test pressure is specified, the pressure will be limited to 7260 psi max for $< 16$ " OD and 3630 psi max for $\geq 16$ " OD

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## Mechanical Properties

ITEM	API 5L 41st	API 5L 42nd PSL-1	API 5L 42nd PSL-2
Yield Strength (max)	None	None	B - SMYS+30 ksi X42 - SMYS+30 ksi X52 - SMYS+25 ksi X60 - SMYS+22 ksi
Tensile Strength (max)	None	None	B through X70 - 110 ksi
Fracture Toughness	SR5 only	SR5 or SR19 only	20 ft-lb transverse or 30 ft-lb longitudinal at +32° F; SR optional

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## Chemistry

ITEM	API 5L 41st	API 5L 42nd PSL-1	API 5L 42nd PSL-2
Carbon - seamless (max)	B - .27 (heat) X42 - .29 (heat) X52 - .31 (heat) X60 - .26 (heat)	≥B - .28 (product)	.24 (product)
Carbon - welded (max)	B - .26 (heat) X42 - .28 (heat) X52 - .30 (heat) X60 - .26 (heat)	≥B - .26 (product)	.22 (product)
Phosphorus (max)	≥A - .030 (heat)	≥A - .030 (product)	.025 (product)
Sulfur (max)	≥A - .030 (heat)	.030 (product)	.015 (product)
Carbon Equivalent - walls ≤.800" (max)	SR18 only	SR18 only	C ≤.12 - .25 (Pcm) C >.12 - .43 (IIW)
Carbon Equivalent - walls >.800" (max)	SR18 only	SR18 only	As agreed upon by purchaser and manufacturer