

**MATERIAL SPECIFICATION FOR PIPE /TUBING OF API SPEC 5CT
GRADE P110**

| Rev | Reason of change | Date | Made By | Reviewed By | Approved By | Status |
|------------|---|-------------|----------------|--------------------|--------------------|---------------|
| 0 | Initial release | 24-08-2018 | MN | AS | KKD | Released |
| 1 | Hardness requirement deleted & Elongation amended to 13% min. from 15%. | 06-12-2018 | MN | AS | KKD | Released |

1.0 SCOPE

1.1 This specification covers API spec 5CT grade P110 seamless and welded steel pipe and tubes.

2.0 APPLICABLE SPECIFICATIONS

2.1 API SPEC 5CT

3.0 CHEMISTRY REQUIREMENTS

3.1 The heat and product analysis shall conform to one of the compositions listed below. Values are weight percentages.

| | P110 |
|-----------------|-------------|
| Carbon | 0.26 – 0.35 |
| Silicon | 0.17 – 0.37 |
| Manganese | 0.40 – 0.70 |
| Phosphorus, max | 0.020 |
| Sulfur, max | 0.010 |
| Chromium | 0.80 - 1.10 |
| Nickel, max. | 0.20 |
| Copper, max | 0.20 |
| Molybdenum | 0.15 – 0.25 |

4.0 MECHANICAL PROPERTIES: Mechanical property requirements are listed below. Each heat shall be tested and the listed mechanical properties shall be reported.

| MECHANICAL PROPERTIES | RANGE |
|------------------------------|---------------|
| TENSILE STRENGTH, PSI | 1,25,000 Min. |
| YIELD STRENGTH, PSI | 75,000 Min. |
| ELONGATION IN 2" GAGE LENGTH | 13% Min. |

5.0 INSPECTION

5.1 Material shall be inspected for surface imperfections such as seams, laps or tears. Defects of this type shall be removed by grinding.