

## API 5CT L80

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### • Production Standard of API 5CT L80

#### • API 5CT L80

API 5CT L80 pipe is manufactured by American Petroleum Institute (API) authorized manufacturers. API 5CT L80 is a well casing steel pipe primarily used in petroleum industries. It helps to protect the well from collapse and other damage while drilling. It is also used in the production of casing and tubing for oil and gas wells. API 5CT L80 steel pipe are essential components of the oil and gas industry.

### • Dimensions and Sizes of API 5CT L80 Tubing

| DN    | O. D. |      | Weight                     |                        | W. T. |      | End Processing |      |     |      |     |      |      |
|-------|-------|------|----------------------------|------------------------|-------|------|----------------|------|-----|------|-----|------|------|
|       |       |      | Non-upset coupling-t hread | Upset coupling-t hread |       |      | Steel Grade    |      |     |      |     |      |      |
|       | in    | mm   | lb./ft.                    | lb./ft.                | in    | mm   | H40            | J55  | L80 | N80  | C90 | T95  | P110 |
| 2 3/8 | 2.38  | 60.3 | 4                          | –                      | 0.167 | 4.24 | PU             | PN   | PN  | PN   | PN  | PN   | –    |
|       |       |      | 4.6                        | 4.7                    | 0.19  | 4.83 | PNU            | PN U | PNU | PN U | PNU | PN U | PNU  |
|       |       |      | 5.8                        | 5.95                   | 0.254 | 6.45 | –              | –    | PNU | PN   | PNU | PN   | PNU  |

|       |      |      |      |       |       |           |    |    |     |     |     |    |     |
|-------|------|------|------|-------|-------|-----------|----|----|-----|-----|-----|----|-----|
|       |      |      |      |       |       |           |    |    |     | U   |     | U  |     |
|       |      |      | 6.6  | –     | 0.295 | 7.49      | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 7.35 | 7.45  | 0.336 | 8.53      | –  | –  | PU  | –   | PU  | PU | –   |
| 2 7/8 | 2.88 | 73   | 6.4  | 6.5   | 0.217 | 5.51      | PN | PN | –   | –   | –   | –  | –   |
|       |      |      | 7.8  | 7.9   | 0.276 | 7.01      | –  | –  | –   | –   | –   | –  | –   |
|       |      |      | 8.6  | 8.7   | 0.308 | 7.82      | –  | –  | PLB | PLB | PLB | –  | PLB |
|       |      |      | 9.35 | 9.45  | 0.34  | 8.64      | –  | –  | PLB | PLB | PLB | –  | PLB |
|       |      |      | 10.5 | –     | 0.392 | 9.96      | –  | –  | PLB | PLB | PLB | –  | PLB |
|       |      |      | 11.5 | –     | 0.44  | 11.1<br>8 | –  | –  | –   | –   | PLB | –  |     |
| 3 1/2 | 3.5  | 88.9 | 7.7  | –     | 0.216 | 5.49      | PN | PN | PN  | PN  | PN  | PN | –   |
|       |      |      | 9.2  | 9.3   | 0.254 | 6.45      | PN | PN | PN  | PN  | PN  | PN | PN  |
|       |      |      | 10.2 | –     | 0.289 | 7.34      | PN | PN | PN  | PN  | PN  | PN | –   |
|       |      |      | 12.7 | 12.95 | 0.375 | 9.52      | –  | –  | PN  | PN  | PN  | PN | PN  |
|       |      |      | 14.3 | –     | 0.43  | 10.9<br>2 | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 15.5 | –     | 0.476 | 12.0<br>9 | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 17   | –     | 0.53  | 13.4<br>6 | –  | –  | P   | –   | P   | P  | –   |
| 4     | 4    | 102  | 9.5  | –     | 0.226 | 5.74      | PN | PN | PN  | PN  | PN  | PN | –   |
|       |      |      | –    | 11    | 0.262 | 6.65      | PU | PU | PU  | PU  | PU  | PU | –   |
|       |      |      | 13.2 | –     | 0.33  | 8.38      | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 16.1 | –     | 0.415 | 10.5<br>4 | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 18.9 | –     | 0.5   | 12.7      | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 22.2 | –     | 0.61  | 15.4<br>9 | –  | –  | P   | –   | P   | P  | –   |
| 4 1/2 | 4.5  | 114  | 12.6 | 12.75 | 0.271 | 6.88      | PN | PN | PN  | PN  | PN  | PN | –   |
|       |      |      | 15.2 | –     | 0.337 | 8.56      | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 17   | –     | 0.38  | 9.65      | –  | –  | P   | –   | P   | P  | –   |
|       |      |      | 18.9 | –     | 0.43  | 10.9<br>2 | –  | –  | P   | –   | P   | P  | PLB |
|       |      |      | 21.5 | –     | 0.5   | 12.7      | –  | –  | P   | –   | P   | P  | PLB |

|                                                                                 |  |  |      |   |      |           |   |   |   |   |   |   |     |
|---------------------------------------------------------------------------------|--|--|------|---|------|-----------|---|---|---|---|---|---|-----|
|                                                                                 |  |  | 23.7 | — | 0.56 | 14.2<br>2 | — | — | P | — | P | P | PLB |
|                                                                                 |  |  | 26.1 | — | 0.63 | 16        | — | — | P | — | P | P | PLB |
| P——Plain; N—— Non-upset coupling-thread; U—— Upset coupling-thread; L——Integral |  |  |      |   |      |           |   |   |   |   |   |   |     |

## •Specification & Size of API 5CT L80 Casing

| DN    | O. D. |        | Weight |       | W. T. |       | H40 | End Machining Form |     |     |            |      |
|-------|-------|--------|--------|-------|-------|-------|-----|--------------------|-----|-----|------------|------|
|       |       |        |        |       |       |       |     | Steel Grade        |     |     |            |      |
|       | in    | mm     | lb/ft  | kg/m  | in    | mm    |     | J55<br>K55         | L80 | N80 | C90<br>T95 | P110 |
| 4 1/2 | 4.5   | 114.3  | 9.5    | 14.14 | 0.205 | 5.21  | PS  | PS                 | —   | —   | —          | —    |
|       |       |        | 10.5   | 15.63 | 0.224 | 5.69  | —   | PSB                | —   | —   | —          | —    |
|       |       |        | 11.6   | 17.26 | 0.25  | 6.35  | —   | PSLB               | PLB | PLB | PLB        | PLB  |
|       |       |        | 13.5   | 20.09 | 0.29  | 7.37  | —   | —                  | PLB | PLB | PLB        | PLB  |
|       |       |        | 15.1   | 22.47 | 0.337 | 9.56  | —   | —                  | —   | —   | —          | PLB  |
| 5     | 5     | 127    | 11.5   | 17.11 | 0.22  | 5.59  | —   | PS                 | —   | —   | —          | —    |
|       |       |        | 13     | 19.35 | 0.253 | 6.43  | —   | PSLB               | —   | —   | —          | —    |
|       |       |        | 15     | 22.32 | 0.296 | 7.52  | —   | PSLB               | PLB | PLB | PLBE       | PLB  |
|       |       |        | 18     | 26.79 | 0.362 | 9.19  | —   | —                  | PLB | PLB | PLBE       | PLB  |
|       |       |        | 21.4   | 31.85 | 0.437 | 11.1  | —   | —                  | PLB | PLB | PLB        | PLB  |
|       |       |        | 23.2   | 34.53 | 0.478 | 12.14 | —   | —                  | —   | —   | PLB        | —    |
| 5 1/2 | 5.5   | 139.7  | 24.1   | 35.86 | 0.5   | 12.7  | —   | —                  | —   | —   | PLB        | —    |
|       |       |        | 14     | 20.83 | 0.244 | 6.2   | PS  | PS                 | —   | —   | —          | —    |
|       |       |        | 15.5   | 23.07 | 0.275 | 6.98  | —   | PSLB               | —   | —   | —          | —    |
|       |       |        | 17     | 25.3  | 0.304 | 7.72  | —   | PSLB               | PLB | PLB | PLBE       | PLB  |
|       |       |        | 20     | 29.76 | 0.361 | 9.17  | —   | —                  | PLB | PLB | PLBE       | PLB  |
|       |       |        | 23     | 34.23 | 0.415 | 10.54 | —   | —                  | PLB | PLB | PLBE       | PLB  |
|       |       |        | 26.8   | 39.88 | 0.5   | 12.7  | —   | —                  | —   | —   | —          | —    |
|       |       |        | 29.7   | 44.2  | 0.562 | 14.27 | —   | —                  | —   | —   | —          | —    |
|       |       |        | 32.6   | 48.51 | 0.625 | 15.88 | —   | —                  | —   | —   | —          | —    |
|       |       |        | 35.3   | 52.53 | 0.687 | 17.45 | —   | —                  | —   | —   | —          | —    |
|       |       |        | 38     | 56.55 | 0.75  | 19.05 | —   | —                  | —   | —   | —          | —    |
| 6 5/8 | 6.625 | 168.28 | 40.5   | 60.27 | 0.812 | 20.62 | —   | —                  | —   | —   | —          | —    |
|       |       |        | 43.1   | 64.14 | 0.875 | 22.22 | —   | —                  | —   | —   | —          | —    |
|       |       |        | 20     | 29.76 | 0.288 | 7.32  | PS  | PSLB               | —   | —   | —          | —    |
|       |       |        | 24     | 35.72 | 0.352 | 8.94  | —   | PSLB               | PLB | PLB | PLBE       | PLB  |
|       |       |        | 28     | 41.67 | 0.417 | 10.59 | —   | —                  | PLB | PLB | PLBE       | PLB  |

|  |  |  |      |       |       |       |    |      |     |     |      |     |
|--|--|--|------|-------|-------|-------|----|------|-----|-----|------|-----|
|  |  |  | 32   | 47.62 | 0.475 | 12.06 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 17   | 25.3  | 0.231 | 5.87  | PS | —    | —   | —   | —    | —   |
|  |  |  | 20   | 29.76 | 0.272 | 6.91  | PS | PS   | —   | —   | —    | —   |
|  |  |  | 23   | 34.23 | 0.317 | 8.05  | —  | PSLB | PLB | PLB | PLBE | —   |
|  |  |  | 26   | 38.69 | 0.362 | 9.19  | —  | PSLB | PLB | PLB | PLBE | PLB |
|  |  |  | 29   | 43.16 | 0.408 | 10.36 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 32   | 47.62 | 0.453 | 11.51 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 35   | 52.09 | 0.498 | 12.65 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 38   | 56.55 | 0.54  | 13.72 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 42.7 | 63.54 | 0.625 | 15.88 | —  | —    | —   | —   | —    | —   |
|  |  |  | 46.4 | 69.05 | 0.687 | 17.45 | —  | —    | —   | —   | —    | —   |
|  |  |  | 50.1 | 74.56 | 0.75  | 19.05 | —  | —    | —   | —   | —    | —   |
|  |  |  | 53.6 | 79.77 | 0.812 | 20.62 | —  | —    | —   | —   | —    | —   |
|  |  |  | 57.1 | 84.97 | 0.875 | 22.22 | —  | —    | —   | —   | —    | —   |
|  |  |  | 24   | 35.72 | 0.3   | 7.62  | PS | —    | —   | —   | —    | —   |
|  |  |  | 26.4 | 39.29 | 0.328 | 8.33  | —  | PSLB | PLB | PLB | PLBE | PLB |
|  |  |  | 29.7 | 44.2  | 0.375 | 9.52  | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 33.7 | 50.15 | 0.43  | 10.92 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 39   | 58.05 | 0.5   | 12.7  | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 42.8 | 63.69 | 0.562 | 14.27 | —  | —    | PLB | PLB | PLB  | PLB |
|  |  |  | 45.3 | 67.41 | 0.595 | 15.11 | —  | —    | PLB | PLB | PLB  | PLB |
|  |  |  | 47.1 | 70.09 | 0.625 | 15.88 | —  | —    | PLB | PLB | PLB  | PLB |
|  |  |  | 51.2 | 76.19 | 0.687 | 17.45 | —  | —    | —   | —   | —    | —   |
|  |  |  | 55.3 | 80.3  | 0.75  | 19.05 | —  | —    | —   | —   | —    | —   |
|  |  |  | 24   | 35.72 | 0.264 | 6.71  | —  | PS   | —   | —   | —    | —   |
|  |  |  | 28   | 41.62 | 0.304 | 7.72  | PS | —    | —   | —   | —    | —   |
|  |  |  | 32   | 47.62 | 0.352 | 8.94  | PS | PSLB | —   | —   | —    | —   |
|  |  |  | 36   | 53.57 | 0.4   | 10.16 | —  | PSLB | PLB | PLB | PLBE | PLB |
|  |  |  | 40   | 59.53 | 0.45  | 11.43 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 44   | 65.48 | 0.5   | 12.7  | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 49   | 72.92 | 0.557 | 14.15 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 32.3 | 48.07 | 0.312 | 7.92  | PS | —    | —   | —   | —    | —   |
|  |  |  | 36   | 53.57 | 0.352 | 8.94  | PS | PSLB | —   | —   | —    | —   |
|  |  |  | 40   | 59.53 | 0.395 | 10.03 | —  | PSLB | PLB | PLB | PLBE | —   |
|  |  |  | 43.5 | 64.73 | 0.435 | 11.05 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 47   | 69.94 | 0.472 | 11.99 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 53.5 | 79.62 | 0.545 | 13.84 | —  | —    | PLB | PLB | PLBE | PLB |
|  |  |  | 58.4 | 86.91 | 0.595 | 15.11 | —  | —    | PLB | PLB | PLB  | PLB |
|  |  |  | 59.4 | 88.4  | 0.609 | 15.47 | —  | —    | —   | —   | —    | —   |

|        |        |        |       |        |       |       |     |      |     |     |      |     |
|--------|--------|--------|-------|--------|-------|-------|-----|------|-----|-----|------|-----|
|        |        |        | 64.9  | 96.58  | 0.672 | 17.07 | —   | —    | —   | —   | —    | —   |
|        |        |        | 70.3  | 104.62 | 0.734 | 18.64 | —   | —    | —   | —   | —    | —   |
|        |        |        | 75.6  | 112.5  | 0.797 | 20.24 | —   | —    | —   | —   | —    | —   |
| 10 3/4 | 10.75  | 273.05 | 32.75 | 48.74  | 0.279 | 7.09  | PS  | —    | —   | —   | —    | —   |
|        |        |        | 40.5  | 60.27  | 0.35  | 8.89  | PS  | PSB  | —   | —   | —    | —   |
|        |        |        | 15.5  | 67.71  | 0.4   | 10.16 | —   | PSB  | —   | —   | —    | —   |
|        |        |        | 51    | 75.9   | 0.45  | 11.43 | —   | PSB  | PSB | PSB | PSBE | PSB |
|        |        |        | 55.5  | 82.59  | 0.495 | 12.57 | —   | —    | PSB | PSB | PSBE | PSB |
|        |        |        | 60.7  | 90.33  | 0.545 | 13.84 | —   | —    | —   | —   | PSBE | PSB |
|        |        |        | 65.7  | 97.77  | 0.595 | 15.11 | —   | —    | —   | —   | PSB  | PSB |
|        |        |        | 73.2  | 108.93 | 0.672 | 17.07 | —   | —    | —   | —   | —    | —   |
|        |        |        | 79.2  | 117.86 | 0.734 | 18.64 | —   | —    | —   | —   | —    | —   |
|        |        |        | 85.3  | 126.94 | 0.797 | 20.24 | —   | —    | —   | —   | —    | —   |
| 11 3/4 | 11.75  |        | 42    | 62.5   | 0.333 | 8.46  | PS  | —    | —   | —   | —    | —   |
|        |        |        | 47    | 69.94  | 0.375 | 20.24 | —   | —    | —   | —   | —    | —   |
|        |        |        | 54    | 80.36  | 0.435 | 8.46  | —   | —    | —   | —   | —    | —   |
|        |        |        | 60    | 89.29  | 0.489 | 9.53  | —   | —    | —   | —   | —    | —   |
|        |        |        | 65    | 96.73  | 0.534 | 11.05 | —   | —    | —   | —   | —    | —   |
|        |        |        | 71    | 105.66 | 0.582 | 14.42 | —   | —    | —   | —   | —    | —   |
| 13 3/8 | 13.375 | 339.73 | 48    | 71.43  | 0.33  | 8.38  | PS  | —    | —   | —   | —    | —   |
|        |        |        | 54.5  | 81.1   | 0.38  | 9.65  | —   | PSB  | —   | —   | —    | —   |
|        |        |        | 61    | 90.78  | 0.43  | 10.92 | —   | PSB  | —   | —   | —    | —   |
|        |        |        | 68    | 101.19 | 0.48  | 12.19 | —   | PSB  | PSB | PSB | PSB  | PSB |
|        |        |        | 72    | 107.15 | 0.514 | 13.06 | —   | —    | PSB | PSB | PSB  | PSB |
| 16     | 16     | 406.4  | 65    | 96.73  | 0.375 | 9.53  | PS  | —    | —   | —   | —    | —   |
|        |        |        | 75    | 111.61 | 0.438 | 11.13 | —   | PSB  | —   | —   | —    | —   |
|        |        |        | 84    | 125.01 | 0.495 | 12.57 | —   | PSB  | —   | —   | —    | —   |
|        |        |        | 109   | 162.21 | 0.656 | 16.66 | —   | P    | P   | P   | —    | P   |
| 18 5/8 | 18.625 | 473.08 | 87.5  | 130.21 | 0.435 | 11.05 | PS  | PSB  | —   | —   | —    | —   |
| 20     | 20     | 508    | 94    | 139.89 | 0.438 | 11.13 | PSL | PSLB | —   | —   | —    | —   |
|        |        |        | 106.5 | 158.49 | 0.5   | 12.7  | —   | PSLB | —   | —   | —    | —   |
|        |        |        | 133   | 197.93 | 0.635 | 16.13 | —   | PSLB | —   | —   | —    | —   |

P——Plain; S——Short-thread; L——Long-thread; B——Buttress thread; E——Extreme thread

## ●Chemical Composition of API 5CT L80

| Group | Grade | Type | C    |      | Mn   |      | Mo   |      | Cr   |      | Ni  | Cu  | P    | S    | Si |
|-------|-------|------|------|------|------|------|------|------|------|------|-----|-----|------|------|----|
|       |       |      | min. | max. | min. | max. | min. | max. | min. | max. |     |     |      |      |    |
| 2     | L80   | 1    | 0.15 | 0.22 | 0.25 | 1    | —    | —    | 12   | 14   | 0.2 | 0.2 | 0.02 | 0.03 | 1  |

## ●Mechanical Properties Tensile Strength and Yield Strength of API 5CT L80

| API 5CT Casing<br>Pipe Standard | API 5CT Casing<br>Pipe Type | API 5CT Casing<br>Pipe Tensile<br>Strength MPa | API 5CT Casing<br>Pipe Yield<br>Strength MPa | Total Elongation under<br>load % |
|---------------------------------|-----------------------------|------------------------------------------------|----------------------------------------------|----------------------------------|
| API SPEC 5CT L80                | 1                           | ≥655                                           | 552 ~ 655                                    | 0.5                              |
| API SPEC 5CT L80                | 9Cr                         | ≥655                                           | 552 ~ 655                                    | 0.5                              |
| API SPEC 5CT L80                | 13Cr                        | ≥655                                           | 552 ~ 655                                    | 0.5                              |